

Madison County Multi-Jurisdictional Hazard Mitigation Plan

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MADISON COUNTY HAZARD MITIGATION PLAN

PURPOSE OF THIS DOCUMENT

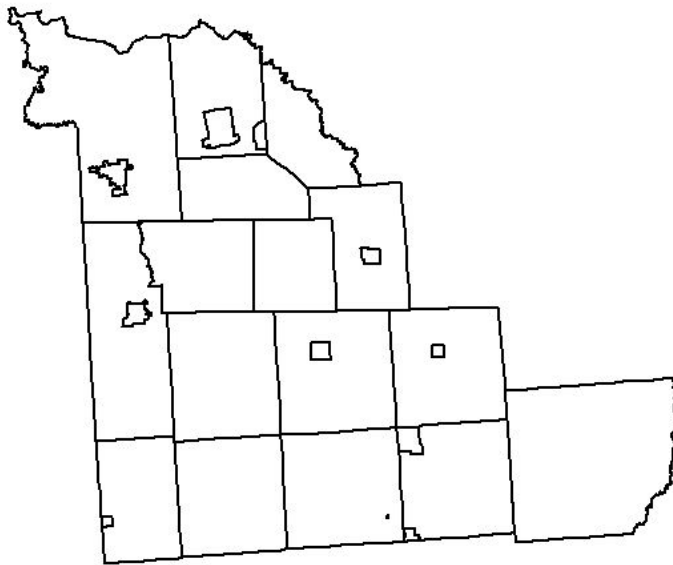
Hazard Mitigation is defined as “actions taken to reduce or eliminate the long-term impacts of a disaster”. In the context of this document, we are discussing actions that can be taken prior to a disaster that can prevent or lessen the effects of a disaster.

For many years, officials in local, state, and federal government have been dealing with the effects of disasters after the disasters occur. Since 1996, the Federal Emergency Management Agency has been funding mitigation projects that can in some cases actually prevent disasters from occurring. In Madison County, New York the best example of a mitigation project was the successful draining and demolition of the upper Mount Hope Reservoir in the City of Oneida. This reservoir, constructed in 1906 as a water supply for the city, was no longer serving its intended purpose and was in danger of dam failure. The resulting flood would cause damages estimated at \$1 million. The city was able to obtain \$591,563 in funding in 1996 from FEMA of which \$370,204 was actually spent. This funding provided for the draining of the reservoir and the breaching of the dam. The parcel now serves as a city park and the danger of flooding downstream of the site has been removed.

In 2000, Congress passed the Disaster Mitigation Act. As result of this legislation, for every declared disaster, mitigation funds equal to an additional 7 ½ % of the federal disaster funding are set aside. When New York State eventually has an approved Enhanced State Mitigation Plan, an amount equal to 20% of each disaster will be set aside for mitigation work. Communities involved in declared disaster areas are then eligible to apply for these funds to pay for mitigation projects that will be funded on a 75% federal/ 25% local cost share basis. As of November, 2004 only communities with a written Disaster Mitigation Plan will be eligible for federal mitigation funding.

MADISON COUNTY HAZARD MITIGATION PLAN

Madison County, NY is a mainly rural county located at the geographic center of the state. It is adjacent to the southern shore of Oneida Lake which serves as the border with Oswego County to the north and is bordered on the northeast and east by Oneida and Otsego Counties, on the south by Chenango County, and on the west by Onondaga and Cortland Counties. It covers an area of 423,040 acres or 661 square miles. It has a population of 69,441 according to the year 2000 census. The county is comprised of 15 towns and one city of 10,987 people located at its northeast corner. There are 10 smaller villages in the county that have their own local government. The steep north-facing Onondaga Limestone (Helderberg) escarpment divides the county into two distinct physiographic regions: the lower lying Oneida Lake Plain in the north and the hilly Appalachian Plateau in the south. The northern Towns of Sullivan and Lenox and the City of Oneida are traversed by the New York State Thruway as well as the New York Central (CSX) rail corridor. These northern municipalities are the most populous and are located close to Utica on the east and Syracuse on the west.



The Planning Process

The Madison County Hazard Mitigation Planning Team consists of members of the Madison County Planning Department, Madison County Office of Emergency Preparedness, Madison County Highway Department, and Madison County Soil and Water Conservation District. During the planning process, personnel from Madison County Soil and Water Conservation District (SWCD) have visited the governing bodies of every local unit of government within the County. Every Village, Town, and our one city have decided to participate and have a separate section written on their municipality. SWCD personnel have also met with the Madison/ Oneida Chapter of the American Red Cross, the Madison County Sheriff's Department, the Madison County Fire Advisory Board, and the Madison County Traffic Safety Board. Press. Drafts of the Plan were reviewed by a committee that included Jack Miller, Planning Department Head; Russ Lura, Executive Secretary to Board of Supervisors Chairman; Brenda White, Planner; Joe Slivinski, County Highway Superintendent, Jim Kinsella, County Health Department, and Susan Tonra, Madison-Oneida Red Cross. Jack Miller provided input on flood regulations and local zoning. Brenda White edited the document and wrote the Table of Contents. Jim Kinsella provided information on the County's planning efforts for human epidemics. Joe Slivinski provided needed highway department information. Russ Lura and Susan Tonra provided suggestions for mitigation measures. The maps accompanying this report were provided by Scott Ingmire of the County Planning Department.

Releases were sent to local newspapers in early October, 2004. Public Meetings were held at Canastota High School at 7 PM on October 25, 2004 and at the Cooperative Extension Building in Morrisville at 7 PM on October 27, 2004. The purpose of these meetings was to accept input from the general public on the Madison County Hazard Mitigation Plan. No one from the public attended either of these meetings. Joe DeFrancisco, County Emergency Preparedness Director, attended the Canastota meeting. Ron Raymond, Regional Planner for NY SEMO, attended the Morrisville meeting. One concerned citizen from the City of Oneida called the SWCD office before the meetings because he was unable to attend. This person expressed concerns about flooding in the Flats Section of Oneida. Flooding in that area has been covered in this report.

Additional Input to this report was provided by Anne Saltman, Central New York Regional Planning and Development Board; Ron Raymond, New York State Emergency Management Office; Laurie Fuess, USDA Farm Service Agency; Paul Wrege, USDA Animal and Plant Health Inspection Service; James Brewster, National Weather Service. Anne Saltman provide information on Flood mitigation. Laurie Fuess provided information on Drought and Extreme Temperatures. Paul Wrege provided information on Infestation and animal Epidemic. James Brewster provided information on Severe Storms, Winter Storms, and Flooding.

MADISON COUNTY ASSETS

Estimates of the value of building inventories, transportation systems, and utilities are provided by HAZUS, a disaster loss estimation model developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. The figures provided by HAZUS will be used in this report unless better information can be found on the local level. The HAZUS program will be used to estimate losses from severe storms and earthquakes later in this report.

Building Inventory

HAZUS is a computer program developed by the Federal Emergency Management Agency (FEMA). FEMA estimates damages caused by a limited number of disaster types for communities throughout the United States. HAZUS estimates that there are 21,000 buildings in the county that have an aggregate total replacement value 3.826 billion dollars. Table 1 provides a general distribution of the building values in the county. Wood frame construction makes up 70% of the building inventory.

Table 1: Building Exposure by Occupancy Type

Occupancy	Exposure (\$1000)	Percent of Total
Residential	3,188,000	83.3%
Commercial	344,296	9.0%
Industrial	124,181	3.2%
Agricultural	31,101	0.8%
Religious	33,028	0.9%
Government	50,941	0.9%
Education	54,481	1.4%
Total	3,826,028	100.0%

Essential Facilities

Essential Facilities include hospitals, medical clinics, schools, fire stations, police stations, and emergency operations facilities. There are two hospitals, Oneida Health Care Center and Hamilton Community Memorial, with a total bed capacity of 345 beds. There are 31 schools, 23 fire stations, and 8 police stations. The locations of these facilities will be shown on maps of the individual municipalities provided in this report.

High Potential Loss (HPL's) Facilities

HPL's include dams, levees, military facilities, nuclear power plants, and hazardous material sites. There are no nuclear power plants in the county. There is only one military radar testing facility in the county that has a low level of usage. According to HAZUS there are 13 hazardous material sites. HAZUS also lists 35 dams in the county of which 5 are listed as "high hazard". Dam locations will be shown on maps of the individual municipalities.

Transportation Systems

Transportation Systems can include highways, railways, light rail, bus, ports, ferry, and airports. Madison County does not have light rail, ports, or ferry. Other than some private grassed runways, the County has only one real airport located in the Village of Hamilton. (HAZUS lists four airports.) Highway systems include the New York State Thruway, State Highways, County Highways, and Town Roads. Railway include the CSX rail corridor across the northern portion of the county and the New York Susquehanna and Western freight line across the southeast corner of the County.

Utility Inventory

Utilities can include potable water, wastewater, natural gas, crude and refined oil, electric power, and communications. Table 3 lists some details of the utility inventory. Values that do not agree with HAZUS values are listed in blue. HAZUS lists no facilities for oil systems or electrical power.

Table 3

System	Component	#	Value
Potable Water	Distribution Lines	NA	\$54,400,000
	Public Water Systems	9	
	Facilities	0	0
	Pipelines	0	0
	Subtotal		
Waste Water	Distribution Lines	NA	\$32,600,000
	Facilities	6	\$471,500,000
	Pipelines	0	0
	Subtotal		\$504,200,000
Natural Gas	Distribution Lines	NA	21,800,000
	High Pressure Transmission Lines		
	Villages with Municipal Gas Service		
	Facilities	0	0
	Pipelines	0	0
	Subtotal		21,800,000
Communications	Facilities	7	800,000
Includes:	Radio Stations	3	
	911 Alert System	1	
	Subtotal		800,000
	Total		\$581,100,000
Electrical Systems			
Oneida-Madison Electric	Distribution Lines		
Village of Hamilton	Distribution Lines		
National Grid	Distribution Lines		
NYSEG	Distribution Lines		
Fenner Windmills	30 Megawatt Turbines	20	
Madison Windmills	11.55 Megawatt Turbines	7	

POLICE AGENCIES

New York State Police (Major Steven White, Troop D Commander)

P.O. Box 30, 265 Genesee St., Oneida, NY 13421

315-366-6000

The headquarters for Troop D is located on Route 5 in Oneida. The State Police also have substations in the Town of Sullivan on Fyler Road, the Village of Morrisville at 133 East Main St., the hamlet of New Woodstock at 2116 Main St., the Village of Wampsville, and an unstaffed office in the Village of Munnsville.

Madison County Sheriff (Ronald Cary, County Sheriff)

P.O. Box 16, 138 N. Court Street, Wampsville, NY 13163

315-366-2318

The headquarters for the Madison County Sheriff is located at the county seat in Wampsville. The Madison County jail is located there and has capacity for 123 prisoners. This facility does have backup power that comes on automatically in case of a power failure. The Sheriff's Department is also capable of landing helicopters if necessary. Unmanned substations are located in the Village of DeRuyter, Village of Munnsville at 5266 N. Main St., and Village of Morrisville.

City of Oneida Police (Dave Meeker, Chief)

109 N. Main St., Oneida, NY 13421

315-363-9111

Police headquarters does have holding cells for prisoners if needed.

Village of Canastota Police (James Zophy, Chief)

205 S. Peterboro St., Canastota, NY 13032

315-697-2240

Village of Chittenango Police (Jeffrey Paul, Chief)

222 East Genesee St., Chittenango, NY 13037

315-687-3930

Village of Cazenovia Police (David Amico, Chief)

90 Albany St., Cazenovia, NY 13035

315-655-3276

Village of Earlville Police (Larry Loomis, Chief)

P.O. Box 88, 8 North Main St., Earlville, NY 13332

315-691-2030

Village of Hamilton Police (James Tilbe, Chief)

3 Broad St., Hamilton, NY 13346

315-824-3311

Madison-Oneida Chapter of the AMERICAN RED CROSS (Susan Tonra, Director)
240 Main St.
Oneida, NY 13421
315-363-0823

The Madison-Oneida Chapter of the American Red Cross covers all of Madison County and the Vernon-Verona-Sherrill School District of Oneida County.

This chapter has an up to date Disaster Response Plan and will respond to any State of Emergency involving displaced people at the request of local government or a Fire District. The Red Cross has the ability to bring in a self-contained fully manned kitchen with a 25,000 meal per day capacity. The Red Cross has purchase agreements with SYSCO, Hood Dairy, and local grocery stores. 1,000 cots and 1,000 blankets are available for a disaster. This Red Cross Chapter has 160 volunteers available locally and 60,000 volunteers are available through the National Office. The Red Cross has shelter agreements with all of the school districts in Madison County; the primary shelters listed in the Disaster Response Plan are as follows:

Brookfield Central School 1910 Fairground Road Brookfield, NY 13314-9999	Capacity 150 Equipped with Generator
Canastota Jr/ Sr High School 120 Roberts Road Canastota, NY 13032-1196	Capacity 358 Equipped with Generator No external hook-up Emergency lights/ heat
Peterboro St. Elementary School 220 N. Peterboro Street Canastota, NY 13032-1199	Capacity 80 No Generator No external hook-up
South Side Elementary School 200 High Street Canastota, NY 13032-1599	Capacity 50 No Generator No external hook-up
Cazenovia Central School 31 Emory Ave. Cazenovia, NY 13035-1098	Capacity 330 Equipped with Generator Emergency lights/heat No external hook-up
Chittenango Jr/Sr High School 150 East Genesee Street Chittenango, NY 13035-1789	Capacity 470 No Generator External hook-up

DeRuyter Central School
711 Railroad Street
DeRuyter, NY 13052-9700

Capacity 135
No Generator
No external hook-up

Hamilton Central School
47 West Kendrick Ave
Hamilton, NY 13346

Capacity 100
Equipped with Generator
Emergency lights/heat
No external hook-up

Madison Central School
7303 Route 20
Madison, NY 13402-9774

Capacity 125
No Generator
No external hook-up

Morrisville Eaton Jr/Sr High School
5061 Fearon Road
Morrisville, NY 13408-9999

Capacity 245
No Generator
No external hook-up

Andrew R. Edwards Elementary School
55 Eaton Street
Morrisville, NY 13408-9999

Capacity 160
No Generator
No external hook-up

Oneida High School
560 Seneca Street
Oneida, NY 13421-2692

Capacity 257
Equipped with Generator
Heat Only
No external hook-up

Otto Shortell Middle School
Markell Drive
Wampsville, NY 13163-9999

Capacity 165
Equipped with Generator
Heat Only
No external hook-up

Stockbridge Valley Central School
6011 Williams Road
Munnsville, NY 13409-9999

Capacity 324
No Generator
No external hook-up

St. Paul's United Methodist Church
551 Sayles Street
Oneida, NY 13421-1838

Capacity 75
No Generator
No external hook-up

Community Wesleyan Church
7693 Kirkville Road N.
Kirkville, NY 13082-9775

Capacity 87
Generator by Contract
External hook-up

Oneida Recreation Center
217 Cedar Street
Oneida, NY 13421

Capacity 240
Equipped with Generator
Emergency lights/heat
No external hook-up

FIRE DEPARTMENTS

There are 23 fire departments in Madison County with a total of 26 fire stations. Each fire department has its own coverage area. There are mutual aid agreements between all departments. A map of the fire districts is included in the County wide section on Fires in this plan.

Bridgeport Fire Department,
P.O. Box 600, 427 Route 31, Bridgeport, NY 13060

Firehouse has backup power

Equipment:	2	Engines
	1	Tanker
	2	Truck mounted portable generators
	1	Gas powered portable pump

Brookfield Fire Department,
10517 Main St., Brookfield, NY 13314

No backup electric power

Equipment:	4	Engines
	1	Tanker
	5	1-5 KW Portable Generators
	2	Gas Powered portable Pumps

Canastota Fire Department
P.O. Box 81, 127 East Center St., Canastota, NY 13032

Firehouse has backup power

Equipment:	3	Engines
	1	Tanker
	5	1-5 KW Portable Generators
	1	5.5-7.5 KW Truck Mounted Generator
	1	10+ KW Truck Mounted Generator
	2	Gas powered portable pumps
	6	Submersible Pumps
	1	Floating Pump

Cazenovia Fire Department
127 Albany Street, Cazenovia, NY 13035

Firehouse has backup power

Equipment:	2	Engines
	1	Mini Engine
	2	Tankers
	1	Aerial Ladder
	1	1-5 KW Portable Generator
	1	5.5-7.5 KW Truck Mounted Generator
	1	10+ KW Truck Mounted Generator

Chittenango Fire Department

P.O. Box 356, 417 East Genesee St., Chittenango, NY 13037

Firehouse has backup power

Equipment:	1	Engine
	1	Tanker
	1	Aerial Ladder
	4	1-5 KW Portable Generators
	1	10+ KW Trailer Mounted Generator
	2	Gas powered Portable Pumps
	7	Submersible Pumps

DeRuyter Fire Department

P.O. Box 278, 1663 Cortland St., DeRuyter, NY 13052

Firehouse has backup power

Equipment:	2	Engines
	1	Tanker
	2	1-5 KW Portable Generators
	1	5.5-7.5 KW Truck Mounted Generator
	4	Gas powered portable pumps

Earlville Fire Department

P.O. Box 37, Earlville, NY 13332

No backup electric power

Equipment:	3	Engines
	2	Tankers
	4	1-5 KW Portable Generators
	1	1-5 KW Truck Mounted Generator
	5	Gas powered portable pumps

Eaton Fire Department

P.O. Box 52, 2631 Mechanic St., Eaton, NY 13334

Firehouse has backup power

Equipment:	2	Engines
	3	1-5 KW Portable Generators
	1	5.5-7.5 KW Portable Generator
	2	5.5-7.5 KW Truck Mounted Generator
	3	Gas powered portable pumps
	1	Submersible Pumps

Erieville Fire Department

3653 Eatonbrook Rd., Erieville, NY 13061

Firehouse has backup power

Equipment:	2	Engines
	1	Tanker
	3	1-5 KW Portable Generators
	1	10+ KW Truck Mounted Generator
	2	Gas powered portable pumps

Georgetown Fire Department

P.O. Box 215, 957 Route 26, Georgetown, NY 13072

No backup electric power

Equipment:	2	Engines
	1	Tanker
	3	1-5 KW Portable Generators
	1	5.5-7.5 KW Truck Mounted Generator
	2	Gas powered portable pumps
	2	Submersible Pumps
	1	Floating Pump

Hamilton Fire Department

121 Lebanon St, Hamilton, NY 13346

Firehouse has backup power

Equipment:	2	Engines
	1	Tanker
	1	Aerial Ladder
	2	1-5 KW Portable Generators
	1	10+ KW Truck Mounted Generator
	2	Gas powered portable pumps

Hubbardsville Fire Department

P.O. Box 847, 8162 Green Road, Hubbardsville, NY 13355

No backup electric power

Equipment:	2	Engines
	1	Tanker
	1	1-5 KW Portable Generators
	1	5.5-7.5 KW Portable Generator
	1	10+ KW Truck Mounted Generator
	1	Gas powered portable pumps

Leonardsville Fire Department

P.O. Box 185, 11306 Mill St., Leonardsville, NY 13364

Firehouse has backup power

Equipment:	2	Engines
	1	Tanker
	2	1-5 KW Portable Generators
	1	1-5 KW Truck Mounted Generator
	4	Gas powered portable pumps

Lincoln Fire Department

P.O. Box 60, 7224 Old County Road, Clockville, NY 13043

No backup electric power

Equipment:	1	Engine
	2	Tankers
	4	1-5 KW Portable Generators
	1	5.5-7.5 KW Truck Mounted Generator
	1	10+ KW Truck Mounted Generator
	2	Gas powered portable pumps
	1	Submersible Pumps
	1	Floating Pump

Madison Fire Department

P.O. Box 72, 7362 Route 20, Madison, NY 13402

No backup electric power

Equipment:	2	Engines
	2	Tankers
	1	1-5 KW Portable Generators
	1	1-5 KW Truck Mounted Generator
	1	5.5-7.5 KW Truck Mounted Generator
	1	Gas powered portable pumps

Morrisville Fire Department

P.O. Box 244, 50 East Main St., Morrisville, NY 13408

Firehouse has backup power

Equipment:	2	Engines
	1	Tanker
	1	Aerial Ladder
	1	1-5 KW Portable Generators
	1	5.5-7.5 KW Portable Generator
	1	5.5-7.5 KW Truck Mounted Generator
	2	8-10 KW Truck Mounted Generators
	1	10+ KW Truck Mounted Generator
	1	Gas powered portable pumps

Munnsville Fire Department

5210 South Main St., Munnsville, NY 13409

Firehouse has backup power

Equipment:	2	Engines
	1	Tanker
	1	1-5 KW Portable Generators
	1	1-5 KW Truck Mounted Generator
	1	Gas powered portable pumps

New Woodstock Fire Department

Box 165, 2632 Mill St., New Woodstock, NY 13122

No backup electric power

Equipment:	2	Engines
	1	Tanker
	1	5.5-7.5 KW Portable Generators
	1	10+ KW Truck Mounted Generator
	1	Gas powered portable pumps

North Brookfield Fire Department

9199 Main St., North Brookfield, NY 13418

No backup electric power

Equipment:	1	Engine
	1	Tanker
	1	1-5 KW Portable Generators
	1	5.5-7.5 KW Truck Mounted Generator
	1	10+ KW Truck Mounted Generator
	1	Gas powered portable pumps

North Chittenango Fire Department

P.O. Box 180, 1699 Fyler Road, Chittenango, NY 13037

No backup electric power

Equipment:	1	Engine
	1	Tanker
	1	1-5 KW Portable Generators
	1	5.5-7.5 KW Portable Generator
	1	5.5-7.5 KW Truck Mounted Generator
	1	10+ KW Portable Generator
	1	10+ KW Truck Mounted Generator
	2	Gas powered portable pumps
	1	Submersible Pumps

Oneida Fire Department

109 N. Main St., Oneida, NY 13421

Firehouse has backup power

Equipment:	3	Engines
	1	Aerial Ladder
	3	1-5 KW Portable Generators
	3	1-5 KW Truck Mounted Generator
	1	1-5 KW Trailer Mounted Generator
	7	Gas powered portable pumps
	3	Submersible Pumps

Smithfield Fire Department

P.O. Box 115, 4581 Peterboro Rd., Peterboro, NY 13134

No backup electric power

Equipment:	2	Engines
	2	Tankers
	2	1-5 KW Portable Generators
	1	8-10 KW Truck Mounted Generator
	1	Gas powered portable pumps

Wampsville Fire Department

P.O. Box 163, 148 N. Court St., Wampsville, NY 13163

Firehouse has backup power

Equipment:	1	Engine
	1	Tanker
	2	1-5 KW Portable Generators
	1	1-5 KW Truck Mounted Generator
	1	10+ KW Truck Mounted Generator
	3	Gas powered portable pumps
	3	Submersible Pumps

AMBULANCE CORPS

Ambulance Service is available to all of Madison County. There are 13 ambulance corps serving almost all of the County. An additional two ambulance corps from neighboring counties serve small areas of the county. These 13 ambulance corps fall into three classes: 1. Fire department ambulance corps, 2. Independent non-profit ambulance corps, and 3. Proprietary ambulance corps run as a private business. Each of these ambulance corps has their own coverage area. Emergency service can be obtained by dialing 911 on the telephone.

Fire Department Ambulance Corps

Eaton Fire Department, Mechanic St. Eaton
315-684-3411 Level of Care: Advanced EMT – Critical Care

Georgetown Emergency Squad, Route 26, Georgetown
Level of Care: Paramedic

Independent Ambulance Corps

Greater Lenox Ambulance Service (GLAS), 420 E Canal St, Canastota
315-363-2511 Level of Care: Paramedic

Smithfield-Eaton Volunteer Ambulance Corps (SEVAC), 27 Cedar St, Morrisville
315-684-9342 Level of Care: Paramedic

Cazenovia Area Volunteer Ambulance Corps (CAVAC), 1 Forman St, Cazenovia
315-655-9798 Level of Care: Paramedic

Madison Ambulance, 7362 Route 20, Madison
315-893-1821, 363-2090 Level of Care: Paramedic

S Madison County Volunteer Ambulance Corps, Inc(SOMAC), 86 Lebanon St, Hamilton
315-824-2222, 824-3333 Level of Care: Paramedic

West Eaton Volunteer Ambulance Corps (WEVAC), 2745 Eagleville Rd, West Eaton
315-684-7287 Level of Care: Basic Life Support

Waterville Area Volunteer Ambulance Corps (WAVAC), 7769 Route 20, Sangerfield
315-841-4400

Proprietary Ambulance Corps

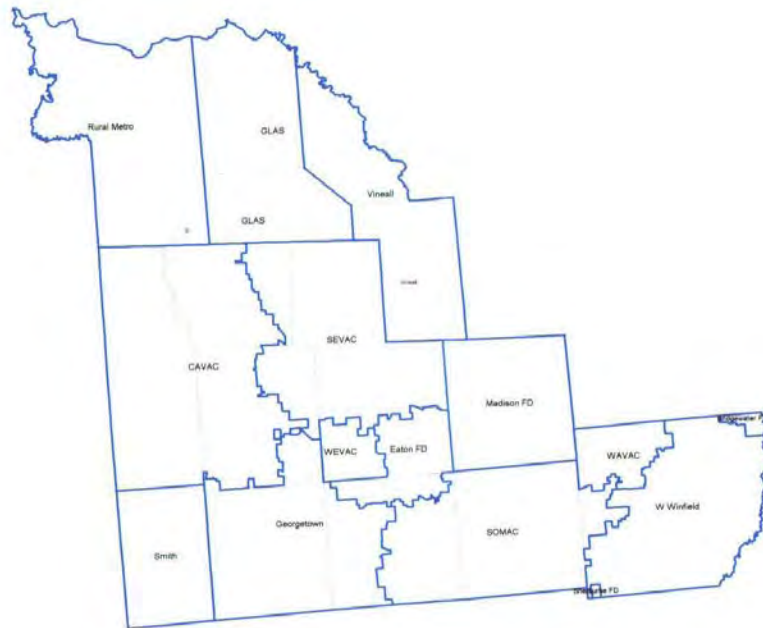
Rural Metro Ambulance Service, 488 W Onondaga St, Syracuse
315-471-0102

Smith Ambulance Service Inc., 1655 Cortland St, DeRuyter
315-852-3393 Level of Care: Paramedic

Vineall Ambulance, Inc., 317 Sconondoa St, Oneida
315-361-1000 Level of Care: Paramedic

Edward's Ambulance Service (a.k.a. West Winfield), 3440 Oneida St, Chadwicks

Coverage Areas for Ambulance Service in Madison County



Potential Threats or Disasters and Corresponding Focal Agencies

In September of 2003 a Vulnerability Study was completed as part of Madison County's Comprehensive Emergency Management Plan. The Plan was compiled from information and historical data provided by the National Oceanic and Atmospheric Agency, ESRI Hazards Database, the HAZNY program, and the Madison-Oneida American Red Cross. As part of this Vulnerability Study, types of potential threats or disasters that might occur and focal agencies were listed as follows:

DISASTER TYPE	FOCAL AGENCY
Blight	Agriculture & Markets/ DEC
Civil Disturbance/ Terrorism	State Police/ Sheriff/ Local Police
Contamination – Air	Environmental Conservation
Contamination – Water	Environmental Conservation
Drought	Environmental Conservation
Earthquake/ Volcanic Activity	SEMO
Energy Emergency	Energy Office
Epidemic	Health
Explosion	State (OFPC)
Fire	State (OFPC)
Flood/ High Water	Environmental Conservation
Forest Fire	Environmental Conservation
Hazardous Materials	Environmental Conservation
Hurricane/ Tornado/ Windstorm	SEMO
Ice Jams	Environmental Conservation
Ice Storms	Public Service Commission
Infestation	Health
Landslide/ Mudslide	Transportation
Oil Spill	Environmental Conservation
Radiological Accident/ Incident	Health
Snowstorm/ Blizzard	Transportation
Transportation Accident	Transportation
Wave Action	Environmental Conservation

The probability of occurrence of any one, or a combination of these threats varies from area to area, season to season. Some of these threats (Forest Fire) have a low likelihood of occurring. Some threats (Ice Storm, Snow Storm, Epidemic) could occur anywhere in the county with almost equal likelihood and the mitigation of these disasters are addressed in the section on all of Madison County. Some events (Floods) are more likely to occur within a specific Town, Village, or City and will be covered in the individual section for a locality.

HAZARD ANALYSIS

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data.

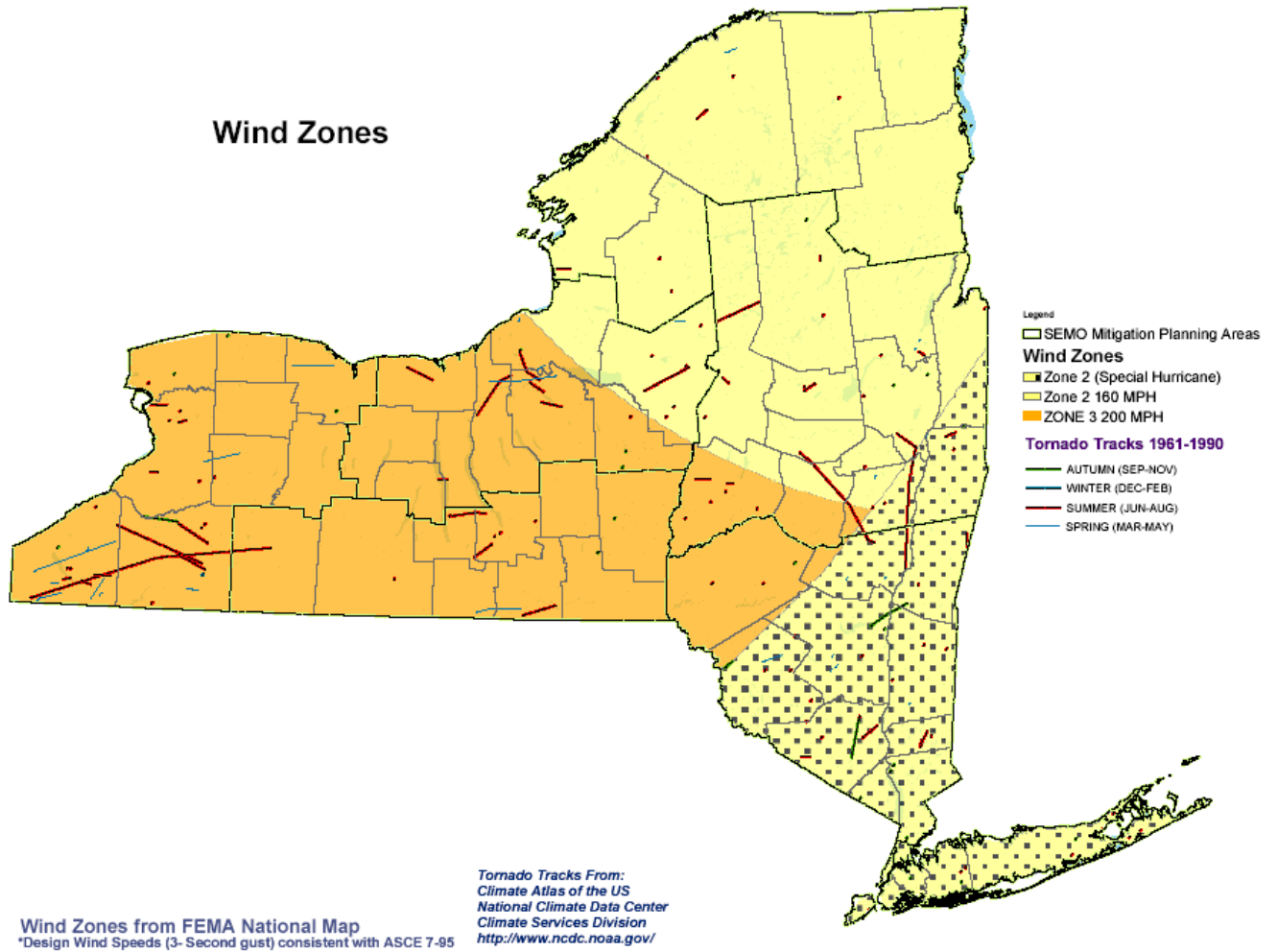
Hazard Ranking Legend	
321 to 400	High Hazard
214 to 320	Moderately High Hazard
161 to 240	Moderately Low Hazard
44 to 160	Low Hazard

Hazard	Classification	Ranking
Severe Storms	Moderately High	312.2
Transportation Accidents	Moderately High	285.2
Winter Storm	Moderately High	272.2
Fires	Moderately High	265.2
HAZMAT (in Transit)	Moderately High	245.2
Ice Storm	Moderately Low	236.2
Terrorism	Moderately Low	231.2
Flood	Moderately Low	222.8
Utility Failure	Moderately Low	218.5
Water Supply Contamination	Moderately Low	207.8
Tornado	Moderately Low	202.5
Oil Spill	Moderately Low	195.2
HAZMAT (Fixed Site)	Moderately Low	170.8
Ice Jam	Moderately Low	180.5
Infestation	Moderately Low	173.8
Radiological (Fixed Site)	Moderately Low	170.8
Extreme Temperatures	Moderately Low	169.8
Epidemic	Moderately Low	164.2

Drought	Moderately Low	164.2
Explosion	Moderately Low	163.8
Wildfire	Low	160.5
Structural Collapse	Low	159.8
Wave Action	Low	159.5
Dam Failure	Low	159.2
Hurricane	Low	158.8
Earthquake	Low	150.5
Radiological (In Transit)	Low	143.2
Air Contamination	Low	123.8
Civil Unrest	Low	111.2
Blight	Low	96.2

Hazards and their Effects on All of Madison County

1. Severe Storms



Definition: Severe Storms include hail storms, wind storms, and severe thunderstorms. A thunderstorm is a local storm accompanied by lightning and thunder and is often accompanied by gusty winds, heavy rain, and sometimes hail. The National Weather Service classifies a thunderstorm as severe if it produces winds greater than 57mph or hail $\frac{3}{4}$ inch or more in diameter. Hurricanes are not included in this section because historically their main effect in Madison County has been flooding.

Probability of Future Occurrence: Based on recent history in Madison County, we have experienced two severe storms during the past 13 years. With the perceived increasing severity of weather events, it can be expected that severe storms will occur once within a 5 year period.

Location: All of Madison County
Seasonal Pattern: Spring – Summer

Warning Availability: 1 day

Duration: Hours

Impacts: The greatest expected impacts from a Severe Storm are associated either with damage from flooding, hail, or wind. Flooding is covered as a separate category and will be addressed in another section of this document. As of this writing, little information is available on hail damage in Madison County.

Historical Severe Storm Damage: During the past ten years, there have been two notable severe storms that caused extensive damage in Madison County and fatalities within the Central New York area: these storms occurred on July 15, 1995 and September 7, 1998.

Madison County was a Presidentially-declared disaster No. 1244 for the September, 1998 event. The following account is an assessment of damages from the Labor Day Storm of September 7, 1998.

National Weather Service Storm Survey – September 7, 1998, “Labor Day Storm”

Public Information Statement -- un-edited text
National Weather Service **Binghamton NY**
730 PM EDT MON SEP 7 1998

...A NATIONAL WEATHER SERVICE POST STORM DAMAGE SURVEY TEAM HAS CONFIRMED THE DAMAGE IN ONONDAGA COUNTY INTO MADISON COUNTY AS A MICROBURST OF F1 – F2 INTENSITY...

REPRESENTATIVES FROM THE NATIONAL WEATHER SERVICE CONDUCTED GROUND AND AERIAL SURVEYS THIS AFTERNOON OF THE DAMAGE PRODUCED BY THE THUNDERSTORMS THAT MOVED ACROSS THE REGION BETWEEN 1:00 AND 3:00 AM. THEY FOUND WIDESPREAD STRAIGHT LINE WIND DAMAGE OF 70-90 MPH... WITH LOCALIZED WIND GUSTS OF 100- 115 MPH.

SUBSTANTIAL DAMAGE IN ONONDAGA COUNTY WAS FOUND IN A 30 MILE LONG SWATH THAT WAS 6-7 MILES WIDE... WITH ADDITIONAL DAMAGE BACK TO THE WEST ACROSS SENECA AND CAYUGA COUNTIES AND TO THE EAST IN MADISON AND ONEIDA COUNTIES. THE HARDEST HIT LOCATIONS INCLUDED THE NEW YORK STATE FAIR GROUNDS... DOWNTOWN SYRACUSE INCLUDING THORNDEN PARK AND SYRACUSE UNIVERSITY... AND THE DEWITT AND MANLIUS AREAS.

IN ADDITION TO THOUSANDS OF DOWNED TREES ... DAMAGE TO MANY STRUCTURES... ESPECIALLY ROOFS WAS NOTED. A CHURCH WAS BADLY DAMAGED IN THE CITY OF SYRACUSE AND JUST SOUTH OF ROUTE OF 481 IN DEWITT... TWO LARGE ANTENNAS WERE BLOW DOWN. THERE WERE ROOFS BLOWN OFF A FIRE STATION AND A SMALL STRIP MALL IN MALIUS.

WITHIN A LARGE SCALE DOWNBURST SUCH AS THIS EVENT IT IS LIKELY THAT LOCALIZED EDDIES FORMED THAT PRODUCED SOME DAMAGE WITH A SWIRLING OR TWISTING PATTERN. HOWEVER...ALL OF THE DAMAGE WAS ASSOCIATED WITH THE LARGE SCALE STRONG STRAIGHT LINE WINDS. THIS IS VERY TYPICAL OF A DERECHO...OR LONG LIVED WIND STORM. THIS EVENT...ALTHOUGH NOT AS WIDESPREAD...WAS SIMILAR TO THE JULY 15, 1995 EVENT THAT CAUSED MAJOR DAMAGE ACROSS THE ADIRONDACKS AND ALSO PRODUCED DAMAGE ACROSS MUCH OF CENTRAL NEW YORK.

According to WKTV Utica, the storm caused over 50 million dollars worth of damage in the Central New York area. Damages that were reported to FEMA by Madison County municipalities amounted to \$741,205 of which \$431,391 was paid by the federal agency. This \$721,205 figure does not include damages incurred by private residences and businesses. Damages reported to FEMA by municipality are as follows:

Jurisdiction	Eligible	Payee
Madison County	\$ 7,936	\$ 7,182
Madison County		
Village of Canastota	40,655	36,793
Village of Cazenovia	11,037	9,989
Town of Cazenovia	99,725	90,252
Town of Fenner	29,444	26,647
Town of Lenox	35,669	32,281
Town of Lincoln	14,949	13,529
City of Oneida	122,609	81,431
City of Oneida		
Town of Smithfield	17,590	15,920
Town of Stockbridge	26,415	23,905
Town of Sullivan	71,032	64,284
Chittenango CSD	5,348	4,840
Oneida Madison Electric Co-op	34,140	30,897
Madison County SWCD		
Oneida City SD	6,665	6,032

HAZUS Simulation for Labor Day Storm

Madison County Planning Department personnel used the HAZUS program to estimate losses from another storm similar to the event of September 7, 1998. The following information is the result of this computer simulation:

Scenario Name: Simulated Labor Day Storm
Type: Deterministic
Maximum Peak Gust in Study Region: 103 mph
Storm Information: Deterministic Scenario

General Building Stock Damage

HAZUS estimates that about 322 buildings will be at least moderately damaged. This is over 1% of the total number of buildings in the region. There are an estimated 11 buildings that will be completely destroyed. Table 1 summarizes the expected damage by general building type.

Table 1: Expected Building Damage by Building Type

Building Type	None		Minor		Moderate		Severe		Destruction	
	Count	%	Count	%	Count	%	Count	%	Count	%
Concrete	85	89.66	8	8.32	2	1.95	0	0.07	0	0.00
Masonry	2,057	85.19	271	11.23	73	3.01	13	0.54	1	0.03
MH	2,457	98.92	19	0.77	6	0.25	0	0.00	1	0.06
Steel	131	91.04	10	6.92	3	1.87	0	0.17	0	0.00
Wood	13,609	87.89	1,694	10.94	169	1.09	5	0.03	8	0.05

Essential Facility Damage

HAZUS estimates that there will be no loss of functioning hospital beds from this event nor will there be any moderate damage to essential facilities. Some loss of use to essential facilities is projected in Table 2.

Table 2: Expected Damage to Essential Facilities

Classification	Total	Expected Loss Use > 1 day
EOCs	1	0
Fire Stations	12	5
Hospitals	2	2
Police Stations	7	2
Schools	31	13

Debris Generation

HAZUS estimates the amount of debris that will be generated by the event. The model breaks the debris into three general categories: a) Brick/ Wood, b) Reinforced Concrete/ Steel, c) Trees. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 2,304,943 tons of debris will be generated. 0.2% or 5,475 tons will be from building debris. The remaining 99.8% or 2,299,468 tons will be from trees.

Projected Economic Losses

HAZUS estimates a total economic loss for Madison County at 32.6 million dollars, which represents 0.85% of the total replacement value of the County's buildings. This figure seems to be in the ballpark for the losses of over 50 million dollars reported by WKTV for the four-county area of Madison, Onondaga, Cayuga, and Oneida Counties from the actual Labor Day Storm.

In the HAZUS program, building related losses are broken into two categories: direct property damage losses and business interruption losses. The direct property damage losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the storm event. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the storm.

4% of the estimated losses would be to the business interruption in the county. By far, the largest loss would be sustained by residential properties: 92% of the total loss. Table 2 provides a summary of the estimated losses for a simulated Labor Day storm.

Table 2: Building Related Economic Loss Estimates
(thousands of dollars)

Property Damage

	Residential	Commercial	Industrial	Others	Total
Building	24,476.04	532.89	288.42	449.13	25,746.48
Content	3,118.27	129.41	152.80	165.57	3,566.04
Inventory	0.00	3.48	17.27	7.34	28.10
Subtotal	27,594.31	665.78	458.48	622.04	29,340.61

Business Interruption Loss

	Residential	Commercial	Industrial	Others	Total
Income	0.00	85.79	7.12	34.13	127.03
Relocation	1,584.14	108.27	32.64	129.55	1,850.60
Rental	723.88	56.78	5.89	22.73	809.28
Wage	0.00	86.49	7.86	402.82	497.18
Subtotal	2,308.03	337.33	53.51	585.23	3,284.09

Totals for Both Property Damage and Business Interruption Loss

Residential	Commercial	Industrial	Others	Total
29,902.34	1,003.11	511.99	1,207.27	32,624.71

Mitigation Project

Red Cross Shelter, External Generator Hook-up for Eight Shelters – According to the Madison-Oneida Red Cross, there are 17 primary emergency shelters in Madison County. Of these 17, 9 do not have an emergency back-up generator and 8 of these 9 do not have an external hook-up for an outside generator. At \$2,000 each, it would cost \$16,000 to equip the eight shelters with an external hook-up. Work would be done by an outside electrical contractor. Source of funding is unknown at this time. This is a Medium Priority for Madison County.

2. Transportation Accidents

Although transportation accidents are not a natural disaster, they are covered under this mitigation plan because the law enforcement agencies that respond to transportation accidents also respond to most natural disasters.

HAZNY Definition: A mishap involving one or more conveyances on land, sea, and/ or in the air which results in mass casualties and/ or substantial loss of property.

Frequency: Monthly

Location: All of Madison County

Duration: Minutes

Seasonal Pattern: All Seasons

Warning Availability: None

Background: According to Robert B. Young, Traffic Safety Coordinator for Madison County, there were 1,800 motor vehicle accidents of all kinds and 12 fatalities in 12 separate motor vehicle accidents in the county during 2004.

Local Organization:

County Traffic Advisory Board (Joe Slivinski, Chair)

This 10 member board is composed of mainly retired professional law enforcement and highway professionals. The Board considers problem road segments and presents recommendations for improvements. Meetings are held quarterly. State and Federal Highway Safety grants are administered by the board; these grants include public outreach and education, purchase of speed enforcement equipment, D.W.I. enforcement, and bicycle safety.

Local police forces in Villages of Canastota, Chittenango, Cazenovia, Earlville, Hamilton, and City of Oneida are in charge of transportation accidents that occur within those municipalities.

Transportation accidents in the remainder of Madison County are handled by the closest New York State Trooper or Madison County Sheriff.

The Planning Process

Michael Johnston, Madison County SWCD, met with the Traffic Safety Advisory Board on Thursday, September 16, 2004 at their regularly scheduled semi-annual meeting in the County Highway Department offices in Wampsville. A rough draft of the Transportation Accident section of the County Mitigation Plan was presented and discussed. Mr. Johnston then met with Robert Young, Madison County Traffic Safety Coordinator at the Madison County Sheriff's office in Wampsville.

Assets

The Madison County Sheriff's Department divides Madison County into four "zones". Under normal conditions there is one Sheriff's vehicle with one officer patrolling each zone.

The New York State Police divide Madison County into six “posts”. The New York State Thruway is handled separately by Troop T.

Madison County Highways

There are 425 miles of county-owned road in Madison County and a total 440 miles of road in which the County is in charge of reconstruction and maintenance.

State Highways

State highways in Madison County include NYS 31, 5, 365A, 20, and 80 running east and west and NYS 13, 8, 12, 12B, 26, 46, 92, and 316 running north and south.

New York State Thruway

Also known as Interstate 90, this is a limited access four lane toll road administered by the NYS Thruway Authority. There are 16.9 miles of the New York State Thruway in Madison County.

Hamilton Airport, Hamilton, NY

This small airport has a 5,300 foot runway that is capable of handling small jet airplanes. It has no commercial service. The assessed value for this airport is \$500,000.

CSX and Conrail Rail Line

17 miles of double tracked rail line cross northern Madison County. This is a major rail corridor. Besides freight service, Amtrak service between Buffalo and New York City runs along these tracks. There are no switching yards in Madison County.

New York Susquehanna and Western Railroad

11.5 miles of single track rail line cross the southeast corner of Madison County. This railroad carries freight only.

Specific Hazards

Intersection of State Highway 92 and U.S. Route 20 (Town of Cazenovia) – Traffic Light is needed at this location to replace blinking red light.

Intersection of Court Street and State Route 13, Town of Lenox

A number of serious accidents have occurred at this location. Stop Light is needed to replace the flashing caution light.

Intersection of U.S. 20 and State Highway 46 – This intersection has had repetitive multi-vehicle collisions with injuries and fatalities.

Historical Disasters:

Aircraft Accidents: There have not been any major aircraft accidents to date in Madison County. The county is on the flight path for Hancock Airport in Syracuse so there is a real possibility that an airplane accident involving 100 passengers could occur. On average small plane crashes occur once every two years in Madison County.

Three small plane crashes with fatalities have occurred in Madison County. One crash occurred during the 1960’s with 2 fatalities and another occurred during the 1980’s with another 2 fatalities. In 1999 a medivac helicopter crashed in DeRuyter with 3 fatalities.

Train Accidents: Three derailments have occurred on the CSX line across northern Madison County in the recent past:

January 23, 2008 Thirteen cars of a thirty-one car freight train derailed within the limits of the Village of Canastota in the area of Barlow Street and Beebe Bridge Road. None of these cars contained hazardous materials. A small amount of fuel spilled from a refrigerated car but was quickly cleaned up.

March 12, 2007 Twenty-eight cars in a seventy-eight car freight train derailed on the west side of the City of Oneida in a relatively unpopulated area. Several tank cars carrying chemicals exploded and burned for hours. Thousands of City of Oneida residents were evacuated.

June 14, 1999 Twelve cars of a 111 car freight train derailed about a quarter mile from Barlow and Main Streets. Some Canastota residents were evacuated because it was believed that chemicals from one of the cars may have seeped into the ground.

Automotive Accidents:

November 11, 2001 Single car accident at Colgate University in Village of Hamilton; 4 deaths occurred

Associated Costs

Transportation accidents with fatalities will usually involve 7 police personnel for an average of 7 hours each at the scene. A computerized survey is conducted of the accident scene. After the accident, accident reconstruction and investigation involves two police personnel an average of 40 hours each. Total costs are accrued from 129 hours of police work at an average of \$30 per hour and equal \$3870.

Existing Mitigation Measures

Public Outreach – According to Madison County’s Traffic Safety Coordinator, public outreach is the most effective measure that can be implemented for the prevention of motor vehicle accidents. This public outreach effort can be continued by the continuation of funding for the Traffic Safety Coordinator position.

County Traffic Advisory Board Recommendations – This Board makes various recommendations pertinent to traffic safety such as:

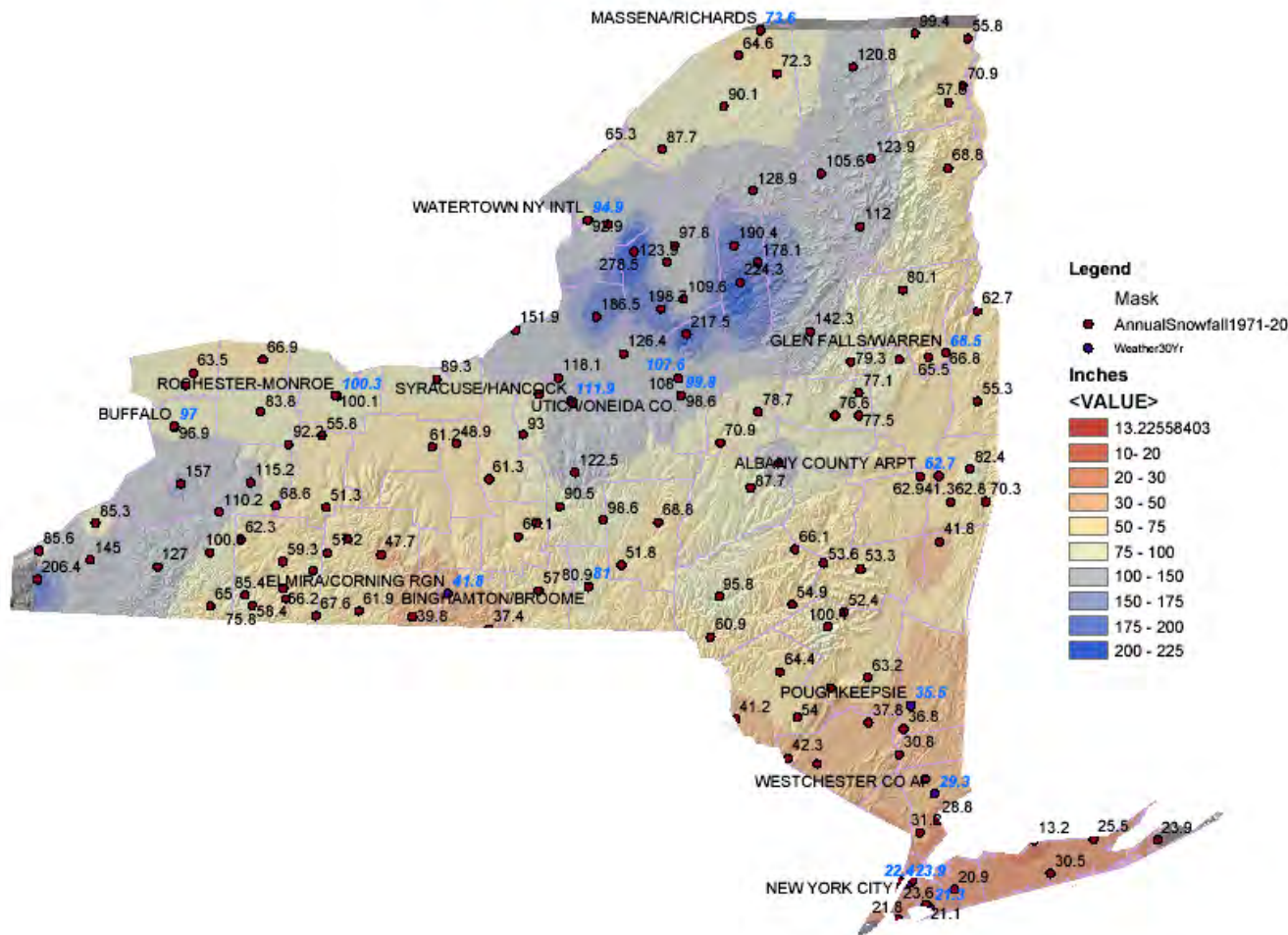
- Change road geometry in problem segments and intersections
- Traffic Signs
- Widen Roads, Pave Shoulders
- Move Road Ditches and Trees Away from Roads
- Traffic Signs
- Line Painting on Roads

Proposed Mitigation Measures

Create Centralized Data Base on Accidents – Under the present system, information on accidents are kept in a number of different filing systems. The New York State Department of Transportation does have a computer system that tracks accidents that have occurred on roads under their jurisdiction. Police reports on accidents are actually more complete and are not part of NYS DOT's files; DOT's files do not cover County and local roads. Different accidents are reported in the County Sheriff's files than in the State Police files. A centralized system for tracking accidents would be helpful to Madison County's Traffic Advisory Committee. This is a Medium Priority for Madison County.

3. Winter Storms

Annual Snowfall Normals 1971-2000



Definition: Winter Storms occur anytime between October and May in Madison County and produce frozen precipitation. These storms can become disasters when they produce large quantities of precipitation, or have severe winds and low temperatures. According to Madison County Highway Department personnel, storms that produce more than 12 inches of snow in 12 hours severely tax the resources of the county. Ice Storms are a separate category.

HAZNY Definitions:

Heavy Snow – Six inches in 12 hours or less

Blizzard – Characterized by low temperatures, winds 35 mph or greater, and significant falling and/ or blowing snow in the air to frequently reduce visibility to ¼ mile or less for a duration of at least three hours.

Severe Blizzard – Characterized by temperatures near or below 10 degrees F, winds exceeding 45 mph, and visibility reduced by snow to near zero for a duration of at least three hours.

Frequency: Yearly

Probability of Future Occurrence

Heavy Snow can be expected to occur at least six times during a winter season in Madison County.

Blizzards are more infrequent. Based on past history and a perceived increase in severe weather, blizzards can be expected to occur once every ten years.

Location: All of Madison County

Duration: 1-2 days

Seasonal

Assets

Madison County Highway Department (Joe Slivinski, Superintendent)

Madison County has 425 miles of County owned road. The County Highway Department plows 459 miles of road; this includes State Highways that the County plows and County roads that some Town Highway Departments plow through cooperative agreements. The County has two large garages where equipment is housed and repaired. The Northern Division of County Highway is based in Wampsville and is responsible for all roads north of U.S. Route 20. The Southern Division is based in Morrisville and is responsible for all roads south of U. S. Route 20.

Equipment:

3 bulldozers, 2 D7's, 1 D4

2 Gradalls

2 Pavement Rollers

1 15 ton tree crane

1 20 ton bridge crane

3 Pavers

2 Brush chippers

1 Rock Crusher

2 Rubber Tired Backhoes
4 Front End Loaders
2 graders
3 Front-end Loaders
2 Semis with Low Boy Trailers
1 Tow Truck (very large)

Normally 21 Plow trucks with sanders are used during a snow storm.

The County owns 12 six wheel plow trucks and 30 ten wheel plow trucks.

New York State Department of Transportation (Tom Madison, Commissioner)

A State Highway garage is located in Morrisville. NYS DOT has a centralized system capable of dispatching specialized equipment anywhere in New York State.

Local Organization and Regulations

Public Works Committee of the Madison County Board of Supervisors (Walt Jaquay, Chair)

This 7 member committee is composed entirely of members of the County Board of Supervisors. This committee is the decision making and policy determining body for the County Highway Department and produces the Department's annual budget proposal.

Locations Subject to Hazard

County Highway personnel cited 19 road segments that are particularly susceptible to blowing snow and drifting. Other road segments are listed under sections for individual Madison County townships. The County segments are as follows:

1. U.S. Route 20 from Morrisville to Cole Road
2. State Route 46 from U.S. 20 to State Route 26
3. Erieville Road, Nelson to Morrow Road
4. Rocks Road, Davis Corners to Pratts Hollow
5. Swamp Road, Morrisville to Peterboro
6. Bradley Brook Road, Geer Road to Lebanon
7. State Highway 26, Hatch Lake Road to Erieville Road
8. State Route 12B, Hamilton to Earlville
9. State Route 46, Lynch Road to Munnsville
10. Eaton Brook Road, Hatch Lake Road to Erieville
11. Cole Street, ¼ mile
12. Bingley Road, 1/3 mile
13. Cody Road, ½ mile
14. East Lake Road in Cazenovia, ¾ mile
15. Buyea Road, ¾ mile
16. Nelson Road, 1 mile
17. Peterboro Road, Buyea Road to North Butler Road, 1 mile
18. Pleasant Valley Road, ½ mile
19. State Route 173, ¼ mile

Historical Data

December 25 & 26, 2002 Snowstorm – This was presidential emergency FEMA 3173 EM-NY. During a 48 hour period, a record snowfall occurred in parts of Madison County. Snowfall amounts ranged from 18 inches in the Town of Eaton to 39 inches in the Town of Brookfield. At 100% reimbursement, the Madison County received \$44,685 from the federal government.

March 1993 Blizzard – This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (up to 1700 feet vs. 300 feet), portions of Madison County probably sustained greater amounts of snowfall.

Blizzard of '66 – This was a three day storm during the month of January that was characterized by steady snow and continuous winds.

Potential Losses

For the Madison County Highway Department, a 12" storm requires 3 circuits of standard routes by 21 plows taking 9 hours. According to Mike Resig of the County Highway Department, the average cost per mile of plowing snow is \$23 per mile. This figure includes the cost of personnel, gas, sand, and salt. The County Highway Department plows 459 miles of road. At that rate the cost for a 12" snowfall is calculated \$23/ mile
Cost = 20 trucks x 459 miles/ run \$90/ hour/ truck x 3 runs = \$31,671

In the mid-1980's, Madison County Highway Department lost a lawsuit in which 1 fatality occurred because of a car accident that occurred on Swamp Road in the Town of Smithfield during freezing rain conditions. According to County Highway Superintendent Joe Slivinski's recollection, during the appeal process the lawsuit was settled out of court for approximately \$300,000.

Mitigation Measures

Living Snow Fence Site Identification and Prioritization - Living snow fences consisting of evergreen trees could be installed at distances of at least 100 feet upwind of problem stretches of road. Snow fences cause snow to deposit just downwind of the plantings. With 1,320 trees per mile and a cost of \$2 per tree installed, living snow fences could be installed at a cost of \$2,640 per mile. Parcels that could be used for the installation of windbreaks need to be identified and prioritized. This would be a good project for a summer intern through Colgate University's Upstate Institute. This is a Medium Priority for Madison County.

Guide to Winter Driving Brochure – A brochure similar to one published by Livingston County that advises drivers how to drive safely in winter conditions could be published. Traffic Safety would be the lead agency on this publication. Cost would be \$1,000 for the first 1,000 copies published. This is a High Priority for Madison County.

4. Fires

HAZNY Definition: The uncontrolled burning in residential, commercial, industrial, institutional, or other structures in developed areas.

Assets

Fire Departments

There are 23 fire districts covering the whole of Madison County. These fire companies not only respond to fire calls but are also available to calls from flooding, wind damage, transportation accidents, and most other possible disasters.

Ambulance Corps

13 ambulance corps cover parts of the County.

American Red Cross

The Madison-Oneida Chapter of the American Red Cross is available to assist victims of fires involving occupied structures. The Red Cross will provide clothing, food, and shelter to fire victims for three days after a fire.

911 System

The entire County is part of a centralized 911 system that is connected to a county-wide paging system. The paging system consists of a two way mobile low band and a VHF system “land mobile radio”. The system works from three towers: the main tower at Mutton Hill in the Town of Fenner, Beaver Hill in the Town of Brookfield, and the Sheriff’s Office at the County Seat in Wampsville. Coverage for the County is less than satisfactory with poor reception in many of the hilly areas in the southern part of the County.

Water Supplies

Water Supplies are critical to attacking fires. In Madison County, there are two types of water supplies for fire protection: 1. fire hydrants connected to municipal water supplies located in a large part of the northern townships and villages in the south, and 2. rural fire companies that depend upon tanker engines carrying water from either the firehouse or a local water body. These rural fire companies can draw water from water bodies through the use of a suction hose or a dry hydrant.

Local Organization

Fire Advisory Board (Roland Shea, Chair)

The Madison County Fire Advisory Board has at least one representative from every township in Madison County. This board coordinates grants and training sessions for the fire departments.

The Planning Process

Michael Johnston, Madison County SWCD, met with the Madison County Fire Advisory Board on Thursday, September 23, 2004 at the Munnsville Fire Station. Mr. Johnston explained the hazard mitigation program and then went over a map of Madison County with the Board members. Mr. Johnston met with Joe DeFrancisco, Madison County Emergency Preparedness Director, on February 10, 2005 to review a history of Madison County fire disasters and discuss possible mitigation projects.

Locations Subject to Hazard

Senior Housing Facilities apart from nursing homes have been cited as being particularly susceptible to fire danger.

Historical Data

Residential and Commercial Fires:

Downtown Canastota

Between 1970 and 1990, large sections of the downtown area were burned including:

- Center Street to Peterboro Street, 16 apartments
- Block of buildings between the post office and canal
- 4 buildings where the present municipal building now stands (late 70's)
- Titan Building, 19 acre mill on Center Street (1995?)
- Worlock Building, 1 block north and west of library (1996)
- Queensboro Farm factory, Main Street and Hickory Street

City of Oneida

- 2 buildings on Madison Street, 2001
- Main Street and Lenox Street, Drake Building, a 4 story apartment block (early 80's)
- Lenox Ave. and Railroad Street, Harden factory mill (late 80's)

Cazenovia

- Dwyre's Pharmacy (1973)
- Albany Street, Continental Cordage (1981 or 1982)
- State Route 92 and U.S. Route 20, Ryan Ford dealership (late 70's)

Hamilton

- Montgomery Ward block (1980)
- Main Hangar at Hamilton Airport (late 80's)

Agricultural Fire:

Joe DeFrancisco, County Emergency Preparedness Director, estimates that, on average, there are three barn fires per year in Madison County. Past fires include:

- Large horse farm on Nelson Road, Town of Nelson (1988)
- Nower Farm, River Road and Lebanon Road, Town of Hamilton (2001)

Economic Losses

The mean average for fire losses during the years 2000 to 2005 was \$1,404,967. By year the losses were:

2000	\$2,714,300
2001	901,249
2002	1,241,200
2003	1,521,084
2004	1,293,869
2005	758,104

Mitigation Measures

County-Wide Paging System Upgrade - A 1999 study recommended an upgrade of the County-wide paging system that would cost \$8 million dollars. This is a High Priority for Madison County and will be accomplished through private contracts.

Municipal Water Supply Infrastructure Improvements for Improved Fire Fighting – Municipal water supplies can be improved by adding pumping stations, increasing the size of water lines or adding hydrants. This is a Medium Priority for County Government because the County does not have jurisdiction. Improvement of the Earlville Water Supply is addressed in the separate section for Earlville.

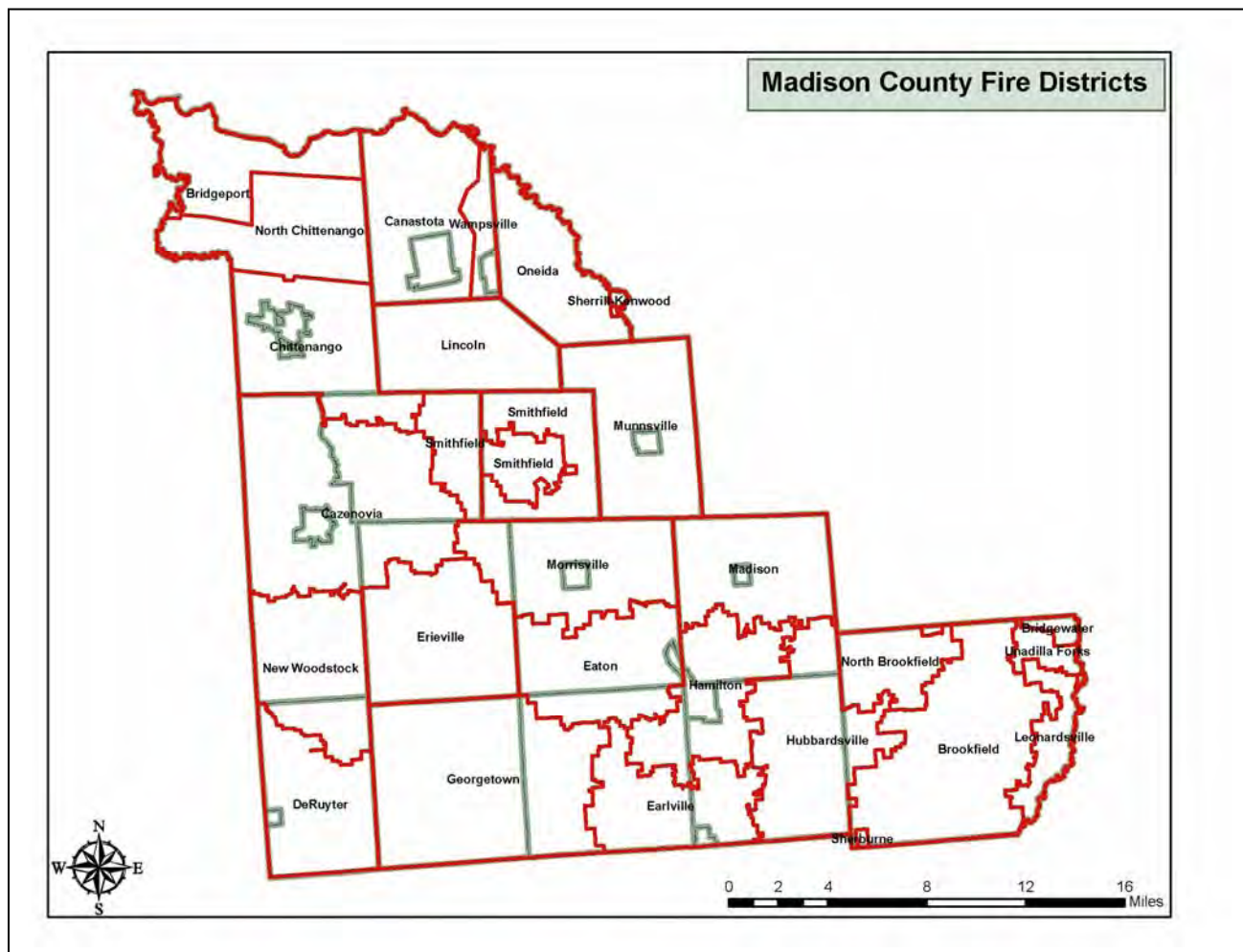
Dry Hydrant Installation in Rural Areas - Rural water supplies can be improved by constructing more dry hydrants along local streams and ponds. On average, Madison County measures 30 miles, north to south, and 22 miles east to west and covers 661 square miles. Dry hydrants cost around \$1,000 installed. Estimating that 40% of the county is already covered by municipal water supplies or existing dry hydrants, it would cost approximately \$397,000 to locate dry hydrants within one mile of every location in Madison County. Dry Hydrant construction is an ongoing process. In the past, Legislative Member Items have been provided to the County's Office of Emergency Preparedness. Work is usually done by local fire personnel. This is a Medium Priority for Madison County.

GIS Mapping of Dry Hydrant Locations – All of the dry hydrants in the county could be mapped as a GIS mapping layer. This mapping would help to reveal where gaps occur in coverage with dry hydrants. Work could be done with SWCD and Planning Department personnel. Expenses would be associated with personnel costs. At 60 hours x \$25/ hour, cost for this project would be \$1,500. A source of funding is unknown at this time. This is a Medium Priority for Madison County.

Improved Fire Equipment Access through Local Subdivision Rules – New subdivisions that include new roads could be required to build roads large enough to accommodate the large fire trucks used by today's fire departments. Roads could either be through roads or have cul-de-sacs large enough for trucks to make u-turns. Local planning boards would be the agencies in charge of this mitigation measure. There would be no cost to the local community. This is a Medium Priority for Madison County.

Smoke Detector Exchange Program - Because smoke detectors have an expected life expectancy of 7 years, an exchange program is an effective fire prevention strategy. At \$15 per unit, a 1,000 unit exchange program would cost \$15,000. This is a High Priority for Madison County. The County Office of Emergency Preparedness will actively seek funding for this program.

Evacuation Plans for Senior Housing through Local Planning Board Review – Evacuation Plans for Senior Citizen/ Subsidized Housing projects could be required during the local Planning Board review process. This will be a recommendation By the County Planning Department. This is a High Priority for Madison County.



5. Ice Storms

HAZNY Definition: Ice storms occur when rain freezes on contact with surfaces at ground level. Substantial accumulations can cause power outages and disruption in transportation.

Hazard Area

All of Madison County has the potential for ice storm damage. Because elevation varies from 371 feet above sea level at Oneida Lake to 2140 feet above sea level on Fire Tower Hill, the location and extent of ice storm damage can vary. Generally, icing will be worst at higher elevations but under severe conditions all of the county could suffer damage from icing.

Locations Subject to Hazard

Senior Housing Facilities apart from nursing homes have been cited as being particularly susceptible to power failures caused by ice storms.

These facilities include:

- Stoneleigh Apartments, Canastota
- The Commons
- Cazenovia Village Apartments
- Carriage Lane Apartments, Cazenovia
- Madison Lane Apartments, Hamilton

Historical Data

April 4, 2003 – Madison County declared Disaster No. 1467 for this ice storm. From U.S. Department of Commerce, National Climatic Data Center – Steady widespread freezing rain started during the day of April 4 and continued through the night. Ice accumulations were mostly a quarter of an inch with a few locations up to an inch. Tens of thousands of electricity customers in a ten county area were without power, some for up to a week.

January, 1998 – Six counties in North Country and four other New York Counties were declared Disaster No. 1196. The North Country Counties of Clinton, Essex, Franklin, Jefferson, Lewis, and St. Lawrence were hit hardest. 2 to 6 inches of rain fell during freezing temperatures and caused 3 to 4 inches of ice accumulation. Almost all utility customers lost power for part of the event, some up to 23 days.

Historical Losses

April 4, 2003 - From U.S. Department of Commerce, National Climatic Data Center – Economic losses for a ten county area were listed as 28.5 million.

Potential Losses

The worst case scenario for Madison County would be an ice storm similar to the disaster that occurred in northern New York in January, 1998. Madison County is similar to these counties in terms of population and industry. Damage in this sort of event can include dairy farm damages, damage to housing, and lost wages.

Dairy – Madison County is one of the top 100 dairy counties in the United States with approximately 300 commercial dairy farms. According to the FEMA Ice Storm Overview of the January, 1998 disaster, 1,400 of 1,800 North Country dairies (78%) were damaged because of a power outage. Average damages according to their calculations were \$22,075 per farm. If 78% of the dairies in Madison County were to sustain damages of \$22,075 per farm, economic losses would equal 234 dairies x \$22,075/ dairy = \$5,165,550

Lost Wages – As a result of the January, 1998 Disaster, most businesses were closed for three days and almost the entire labor force was out of work for those three days. The cost to Madison County for a similar disaster

Mitigation Measures

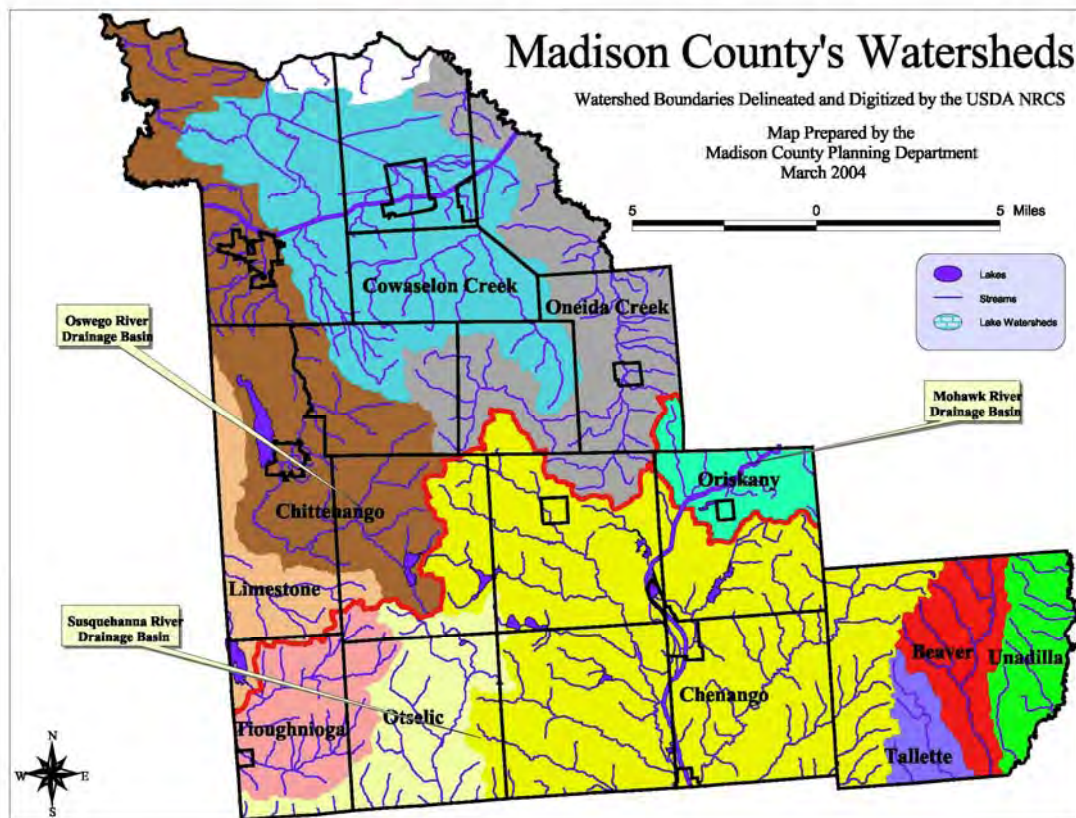
Underground Utility Requirement through Local Subdivision Regulations – On a Town by Town basis, subdivision regulations could require underground utilities for new construction. This is a Medium priority for Madison County.

Red Cross Shelter, External Generator Hook-up for Eight Shelters – According to the Madison-Oneida Red Cross, there are 17 primary emergency shelters in Madison County. Of these 17, 9 do not have an emergency back-up generator and 8 of these 9 do not have an external hook-up for an outside generator. At \$2,000 each, it would cost \$16,000 to equip the eight shelters with an external hook-up. Work would be done by an outside electrical contractor. Source of funding is unknown at this time. This is a Medium Priority for Madison County.

6. Floods and Hurricanes

HAZNY Definition: Flooding usually is a natural cyclic occurrence in existing water bodies. When a waterbody overflows its “normal” banks, a potentially violent and/ or destructive waterway can form. A flash flood is a sudden transformation of a small stream into a violent waterway after heavy rain and/ or rapid snowmelt.

Flooding is New York’s most consistently damaging natural hazard. Since 1955 New York has recorded more flood events than any other state in the Northeast.



Flooding can be caused by, or by a combination of, excessive precipitation, rapid snowmelt, ice jams, beaver dams, dam failures, and tidal surges. Urban or street flooding is caused by excessive precipitation and/ or clogged storm sewers. Ruptured water main can also cause urban flooding. Floods and Hurricanes are considered together in this section because Madison County is located far enough inland and historically damage from hurricanes has been caused by excessive precipitation and not winds or storm surge.

Background

Madison County is located at the headwaters of three major drainage basins. In the southern 46.1% of Madison County, creeks flow towards the south and make their way to the Susquehanna River which in turn flows to the Chesapeake Bay. Waters in the northern 49.2% of Madison County flow to Oneida Lake located on the County's northern border; Oneida Lake is located in the Great Lakes watershed. In the east, 4.7% of Madison County drains to the Hudson River by way of Oriskany Creek and the Mohawk River. Though we do have flooding problems, in most cases downstream neighboring counties have greater problems with flooding than Madison County because of our position at the top of the watershed and the fact that we are dealing with less water.

Many of Madison County's flooding problems are closely related to its topography. The worst flooding problems can be found in the northern municipalities: Town of Sullivan, Town of Lenox, City of Oneida, Village of Chittenango, and the Village of Canastota. These municipalities are located on relatively flat land north of the steep north facing Onondaga Escarpment. Water flows down the face of the escarpment in waterways such as Chittenango Creek, Oneida Creek, Cowaselon Creek, Canaseraga Creek, and Canastota Creek. During peak flows caused by either spring snow melt or heavy rains these creeks carry large quantities of water. When these waters reach the lowlands, the grade of the creeks flatten out, velocity slows, water carrying capacity drops, and these creeks overflow their banks. Flooding problems can be exacerbated by the fact that these creeks also drop much of their bedload of gravel at the base of these slopes as the water velocity drops. Over time the creeks lose their water carrying capacity as the stream bed becomes filled with gravel. In a similar fashion, tree limbs and other debris are carried down the hills and become logjams on the lowlands. It is not unusual for logjams to cause flooding outside of the 100 year flood corridor.

On a smaller scale, flooding also occurs in the southern townships in a similar manner to northern Madison County. In August of 2003, heavy rains in the Towns of DeRuyter and Cazenovia caused floods to occur at the base of hills where the grade of creeks flattens out. Large bedloads of gravel were deposited overnight. Gravel deposits filled in culverts under Pompey Hollow Road in Cazenovia, Route 13 in DeRuyter, and Crumb Hill Road in DeRuyter causing water to overflow the roadways. Both Towns were declared disaster areas. Damages from this overnight storm were \$700,000.

Because Madison County is located 200 miles from the Atlantic Coast, the greatest probable effect from any hurricane or tropical storms is the flooding that can result from heavy downpours. Hurricane Agnes which occurred in June of 1972 is the most extreme example of the flooding that can result from a hurricane.

The manner in which flooding occurs is unique to each municipality. Some of our Towns and Villages suffer less flooding than others. Profiles of flooding events and possible mitigation strategies will be discussed in the sections on individual municipalities.

Maps that locate hazards are included with the section on each individual community in this plan. The 100 year flood plains for Madison County are included on these maps. Flood waters have a 1% chance of reaching or exceeding the limits of these flood plains in any year.

FEMA Flood Insurance Rate Maps (FIRMs)

Flood Insurance Rate Maps (FIRMs) are the official maps of communities that show areas at risk for flooding from the base flood. All of the FIRMs for Madison County are shown on the maps that accompany this report. Zone A for these maps delineates the 100 base floodplain. This is the flood that there is a 1% chance of occurring during each year. There are many factors that contribute to the amount of runoff from a particular storm including snowmelt, topography, watershed shape, soil type, and antecedent soil moisture but the 100 year flood in Madison County approximately corresponds to a 5.5 inch rainfall in a 24 hour period. The following is the system FEMA uses on the FIRMs to categorize the different floodplain areas:

Zone A	The 100-year or base floodplain. There are 6 types of A zones.	
	A	The base floodplain mapped by approximate methods, ie., BFEs are not determined. This is often called an unnumbered A zone or an approximate A zone.
	A1-30	These are known as numbered A zones. This is the base floodplain where the FIRM shows a BFE.
	AE	The base floodplain where base flood elevations are provided. AE zones are now used on new format FIRMs instead of A1-A30 zones.
	AO	The base floodplain with sheet flow, ponding, or shallow flooding. Base flood depths (feet above ground) are provided.
	AH	Shallow flooding base floodplain. BFEs are provided.
	A99	Area to be protected from base flood by levees or federal flood protection systems under construction. BFEs are not determined.
	AR	The base floodplain that results from the de-certification of a previously accredited flood protection system that is in the process of being restored to provide a 100-year or greater level of flood protection.
Zone V and VE	V	The coastal area subject to a velocity hazard (wave action) where BFEs are not determined on the FIRM.
	VE	The coastal Area subject to a velocity hazard (wave action) where BFEs are provided on the FIRM..
Zone B and Zone X (shaded)	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. B zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from the 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.	
Zone C and Zone X (shaded)	Area of minimal flood hazard, usually depicted on FIRMS as exceeding the 500-year flood level. Zone C may have ponding and local drainage problems that do not warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500- year flood	
Zone D	Area of undetermined but possible flood hazards.	

FEMA provides the following data for structures in the 100 year flood plain in Madison County:

County	Rating Score (Max 50)	# Of NFIP insurance policies	# Of NFIP claims	\$ Total NFIP claims	\$ Mil total NFIP policy coverage	# Of Repetitive Flood Loss Properties	# And % of residential structures in 100yr Floodplain	% Of County in 100yr Floodplain	# Of Flood Disasters	Pop den. HAZUS (sq mile)
Madison	23	522	164	506,688	43,094,500	7	1,917 8.9	7.00	4	196.4

Local Organization

Local Fire Departments and Police Agencies are dispatched in the event of flooding. Traffic control is the primary responsibility of the police though fire departments do assist with traffic. Most fire departments are also available to pump water as needed.

Madison County Soil and Water Conservation District has an agreement with the Towns of Sullivan, Manlius (Onondaga County), and Cicero (Onondaga County) to clear logjams from Chittenango Creek between the New York State Thruway and Bridgeport. The purpose of this agreement is to reduce Flooding in the area. The three Towns supply funding while the Soil and Water District organizes the program and hires contractors.

The Planning Process

Michael Johnston, Madison County SWCD, met with Jim Murphy and Dan DeGroat, Madison County Highway Department Wampsville Division, to discuss flooding problems in the northern half of Madison County, and in particular locations, damages, and proposed mitigation projects on December 21, 2004. Mr. Johnston met with Mr. Murphy again on January 14, 2005 to continue discussions on flooding problems. Mr. Johnston met with Chuck Becker and Loren Briggs, Madison County Highway Department Morrisville Division, on February 1, 2005 to discuss flooding problems and possible mitigation measures for the southern half of Madison County.

Historical Data

June, 1972 – Disaster No. 0338 declared for effects of Tropical Storm Agnes.

October 2, 1975 – Disaster No. 0487 declared for heavy rains, landslides, and flooding.

December 13, 1996 - From U.S. Department of Commerce, National Climatic Data Center – A combination of heavy rain and snowmelt produced small stream flooding along Chittenango Creek near Juddville.

January 23, 1996 – Disaster No. 1095 declared for severe storms and flooding.

May 13 & 14, 2000 – Widespread flooding was reported with many roads closed following heavy thunderstorm rains.

July, 2000 – Disaster No. 1335 declared for severe storms and flooding

June 23, 2001 – Emergency management officials reported numerous roads closed and basements flooded due to flash flooding from heavy thunderstorm rains.

Summer, 2003 – Disaster No. 1486 declared for severe storms and flooding

August, 2004 – Disaster declared for severe storms and flooding

November 28, 2004 – 1.5 to 3 inches of rain fell across Madison County on ground already saturated from recurrent storms including the last one on the 25th. Most of the rain fell on the morning of the 28th. Road flooding happened in many locations, including Madison, Cazenovia, and Hamilton. Property damage according to NOAA was \$10,000.

Locations Vulnerable to Flooding

Creek Road, Town of Smithfield

Flash Flooding occurs in a tributary to Cowaselon Creek. During peak runoff events, a large bedload of gravel is carried by this tributary. The gravel clogs the culvert, and flood waters and debris overflow across Creek Road.

Cooper Residence, Bridgeport-Kirkville Road, Town of Sullivan

2 houses at this location suffer repetitive damages. County Highway Department would like to maintain a drainage ditch at this location but landowner refuses to grant access.

Schoolheimer Road, City of Oneida

10 houses at this location suffer repetitive flooding.

Kelly Road, City of Oneida

2 houses suffer repetitive damages at this location

Cole Street at Lance Bridge Farm, Town of Madison

South side of Farm - 36 inch concrete box culvert lacks capacity, needs to be replaced with a 4 foot diameter squashed culvert.

North of Farm – 21inch diameter pipe needs to be replaced with a 30 inch diameter pipe

Fenner Street, Town of Fenner

House at 2595 Fenner Street has repetitive damages from water in basement. Five foot diameter round culvert needs to be upgraded.

Nelson Road, Town of Nelson

4 Residences suffer repetitive damages at this location. Concrete box culvert needs to be upgraded.

Crumb Hill Road, Town of DeRuyter (by Steve Best Farm)

An unnamed tributary to the Tioughnioga River carries a large bedload of gravel during storm events and plugs a 36 inch culvert at this location. Water and accompanying gravel then overtop the county highway.

Ouleot Road, Town of Brookfield

Lack of capacity of a road culvert is causing a washout of the road shoulder. A large enough storm will cause a total road washout.

Rodman Road, Town of Lebanon

Lack of capacity of a road culvert is causing a road shoulder washout on the north side of Rodman Road.

Damon Road, Town of Cazenovia

0.3 miles of road ditch washes out repeatedly after each one inch storm rainstorm. A larger storm has the potential to wash the road out.

Dugway Road, Town of Nelson

0.5 miles of road ditch and shoulder on both sides of the road wash out during large storm events.

Upham Road, Town of Georgetown (Culvert by parcel owned by Louie Ferrara)

Flooding here occurs on approximately an annual basis. During flood events, stream bedload clogs the culvert which subsequently washes out the road shoulder.

Potential Losses

Creek Road, Town of Smithfield

Lost use of road for one day,

Front end loader and dump truck with operators, 4 hours @ \$150 per hour = \$600

2 laborers, 4 hours @ \$22 per hour each; 2 x 4 x \$22 = 176

Total =

Cooper Residence, Town of Sullivan

2 houses, flooded basements \$10,000 per house, each event = \$20,000

Schoolheimer Road, City of Oneida

10 houses, \$5,000 per house, each event = \$50,000

Kelly Road, City of Oneida

2 houses, \$5,000 per house, each event = \$10,000

Cole Street, Town of Madison

1 residence, \$10,000 per event = \$10,000

Fenner Street, Town of Fenner

1 residence, \$10,000 per event = \$10,000

Nelson Road, Town of Nelson

4 residences, \$10,000 per event = \$40,000

Crumb Hill Road, Town of DeRuyter

Damages occur approximately 3 times per year. There is no damage to houses

But cleanup of road entails use of 2 dump trucks, a gradall, a grader, and a crew foreman from Madison County Highway Department for 1 day. \$1,000/ event

Ouleot Road, Town of Brookfield

Damages occur approximately 5 times per year. Each event involves cleanup by a County Highway crew for ½ day. \$500/ event

Rodman Road, Town of Lebanon

Repair of damages involves cleanup by a County Highway crew for one day. \$1,000

Damon Road

Damages occur approximately 3 times per year. Each event involves cleanup by a County Highway crew for one day. \$1,000/ event

Dugway Road, Town of Nelson

Repair of damages involves 3 days work by a County Highway crew. \$3,000

Upham Road, Town of Georgetown

Repair of damages involves 1 day of work by a County Highway crew. \$1,000

Materials: 16 ton #5 rock @ \$9/ ton = \$144

24 yards of gravel @ \$9/ yard = \$216

Total = \$1,360

Mitigation Measures

Buyout of Repetitive Flood Structures – Money could be appropriated to purchase structures that have had repetitive flood losses. This is a Medium Priority for Madison County at this time.

County-wide Stream Maintenance Program - It is recommended that Madison County adopt a county-wide maintenance program that would provide for the inspection and clearing of all streams in the county. The purpose of the program would be to make sure that the creeks are free of debris and have the capacity to conduct a maximum flow of water during flood events. This program could be modeled on the Chittenango Creek Logjam Clearing Project in the northwest Madison County. The program would be administered by the County Soil and Water Conservation District. SWCD would prioritize debris removal sites and hire private contractors to pull debris from streams. Town and County Highway Departments would supply dump trucks that would haul debris away. The County Landfill would accept the debris and use it to broaden slopes on the landfill cap. Such a program would have to be approved by the County Board of Supervisors who would also determine the annual budget. Annual Cost approximately = \$10,000. This is a High Priority for Madison County.

County Highway Department Infrastructure Inventory and Mapping – County Highway Department is planning an inventory of its culverts and other highway infrastructure. This work will be overseen by Highway Superintendent Joe Wisinski. This is a High Priority for the County.

Local Zoning Restriction on 100 Year Floodplain Construction – On a Town by Town basis, zoning could be utilized to prevent building in the 100 year floodplain or high hazard area. Priority is up to each individual municipality. This is a Low Priority for Madison County.

County Highway Department Drainage Projects:

Creek Road, Town of Smithfield

Grade Stabilization Structure needed with capability to have gravel cleaned out after storm events \$5,000

Cooper Residence, Town of Sullivan

Bantam Crew 80 hours @ \$350/ hr	\$28,000
Survey & Design – 40 hrs @ \$140/ hr	5,600
Track hoe rental – 80 hrs @ \$55/ hr	4,400
24" corrugated plastic pipe –700 ft. @ \$10.50/ ft	7,350

Schoolheimer Road, City of Oneida

Maintenance of Drainage Ditch needed

Kelly Road, City of Oneida

Road culvert needs to be upgraded from 15 inch diameter to 24" diameter x 60' long ls =

Cole Street, Town of Madison

South side of residence 36" diameter culvert needs to be upgraded to 48"x60' long squashed culvert

North side of residence 21" diameter culvert needs to be upgraded to 30"x60' long culvert

Fenner Street, Town of Fenner

5' diameter round culvert needs to be upgraded to 5'x8'x60' long concrete box culvert,

Nelson Road, Town of Nelson

3'x 4' existing box culvert needs to be upgraded to 6'x 4'x60' long concrete box culvert, c

Crumb Hill Road, Town of DeRuyter

36" culvert needs to be upgraded to a 48"x60' smooth bore plastic pipe

60 feet @ \$ / foot = \$

300' of stream channel needs to be armored with medium rip rap

2,000 tons @ \$9/ ton = \$18,000

Labor involves 5 days of for a County Highway Construction crew

5 days @ \$2400/ day= \$12,000

Ouleout Road, Town of Brookfield

24" culvert needs to be upgraded to a 36"x60' pipe	\$960
Gravel needed = 100 yards @ \$9/ yard =	\$900
#5 stone needed = 50 ton @ \$9/ ton =	\$450
Labor = 2 days County Highway construction crew @ \$2400/ day =	\$4,800
Total =	\$7,110

Rodman Road, Town of Lebanon

24" culvert needs to be upgraded to a 36"x60' culvert	\$960
Labor = 2 days County Highway construction crew @ \$2400/ day =	\$4,800

Damon Road, Town of Cazenovia

#5 stone needed = 180 tons @ \$9/ ton =	\$1620
Labor = 2 days County Highway construction crew @ \$2400/ day =	\$4,800

Dugway Road, Town of Nelson

New 24"x60' culvert needed for crossover =	\$800
Gravel = 100 yards @ \$9/ yard =	\$900
#5 stone = 400 ton @ \$9/ ton =	\$3,600
Labor = 4 days County Highway construction crew @ \$2400/ day =	\$9,600
Total =	\$14,900

Upham Road, Town of Georgetown

Solving this problem would involve excavating the stream bed for 1,000' and constructing a grade control structure that would accumulate gravel for subsequent cleaning. Costs = Excavator Contracting 16 hours @ \$90/ hour = \$1,440
Materials for the grade control structure would need to be determined based upon an engineer-approved design.

All of the forgoing work would be done by County Highway Department Crews out of Wampsville and Morrisville. With federal assistance these projects could be completed within two field seasons. Without federal assistance, these projects will probably get completed with County funds over the next ten years. These projects are a High Priority for Madison County.

7. **TORNADO**

HAZNY Definition: A local atmospheric storm, generally of short duration, formed by winds rotating at very high speeds, usually in a counterclockwise direction. The vortex, up to several hundred yards wide, is visible to the observer as a whirlpool-like column of winds rotating about a hollow cavity or funnel. Winds have been estimated to be as high as 400 miles per hour.

Background

New York State has an average of five tornadoes a year which can occur in any region. A tornado is a great threat to life and usually causes catastrophic damage to property within its path. Due to the great amount of damage that tornadoes cause in a relatively short amount of time, they are considered one of the most destructive natural hazards.

Assets

NOAA weather radio

Historical Data

According to www.tornadoproject.com, the following tornadoes causing two or more deaths have occurred in New York State:

June 13, 1857 – 4pm 2 dead 1 injured

A funnel cloud of nebulous character hit the edge of Utica

September 28, 1884 5:20 pm 3 dead 31 injured

Extensive damage occurred in the east half of Shongo, Allegany County

September 15, 1912 5:25 pm 3 dead 40 injured

This tornado passed from the outlet of Onondaga Lake, and passed just north of the Syracuse city limits.

According to the M.C.T. newspaper, this storm devastated a large strip of land in the Long Branch and Pitcher Hill areas of Onondaga County. This same storm arrived at Chittenango Station at 6 PM and did considerable damage but caused no serious injuries. Buildings were also destroyed in Canastota and Wampsville.

July 19, 1935 3:30 pm 2 dead 2 injured

A mother and daughter were killed as their farmhouse was destroyed near Philadelphia, Jefferson County.

May 2, 1983 4:05 pm 2 dead 2 injured

A tornado destroyed 100 buildings after moving over Chautauqua Lake.

November 16, 1989 12:05 pm 9 dead 18 injured

Nine children were killed at the Oldenham School in Orange County when a cafeteria wall was blown over.

September 3, 1993 1:15 pm 2 dead 0 injured

Near Batavia, a delivery van was dropped onto an oncoming tractor trailer. Both drivers were killed. This may have actually been a microburst.

According to www.tornadoproject.com, the following tornadoes have occurred in Madison County:

September 18, 1977 2 pm 1 injured Scale F2

November 16, 1989 9:15 am 0 injured Scale F0

July 29, 1993 4:45 pm 0 injured Scale F0

Probability of Future Occurrence Based on past history, 3 tornadoes have occurred in Madison County during the past 30 years. It can be expected that tornadoes will occur in Madison County once every 10 years.

Existing Mitigation Measures

The **Emergency Alert System (EAS)** is a national public warning system that requires broadcasters, cable television systems, wireless cable systems, satellite digital audio radio service (SDARS) providers and, direct broadcast satellite (DBS) service providers to provide the communications capability to the President to address the American public during a National emergency. The system also may be used by state and local authorities to deliver important emergency information such as AMBER alerts and weather information targeted to a specific area.

Source: www.fcc.gov/pshs/services/

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest [National Weather Service office](http://www.noaa.gov/nws/3/forecasts/). NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the National Oceanic and Atmospheric Administration (NOAA), part of the Department of Commerce. NWR includes more than 985 transmitters, covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. NWR requires a special radio receiver or scanner capable of picking up the signal. Broadcasts are found in the VHF public service band at these seven frequencies (MHz): 162.400 162.425 162.450 162.475 162.500 162.525 162.550

Source: www.weather.gov/nwr/

Codes Enforcement – Confirmation that buildings for human habitation are properly secured must be done prior to issuing a certificate of occupancy. This is an already existing mitigation program. In New York it is not legal to institute an inspection program on pre-existing structures.

Mitigation Project

Red Cross Shelter, External Generator Hook-up for Eight Shelters – According to the Madison-Oneida Red Cross, there are 17 primary emergency shelters in Madison County. Of these 17, 9 do not have an emergency back-up generator and 8 of these 9 do not have an external hook-up for an outside generator. At \$2,000 each, it would cost \$16,000 to equip the eight shelters with an external hook-up. Work would be done by an outside electrical contractor. Source of funding is unknown at this time. This is a Medium Priority for Madison County.

8. Ice Jam

HAZNY Definition: Large accumulations of ice in rivers or streams interrupting the normal flow of water and often leading to flooding conditions and/ or damage to structures.

Frequency

According to County Highway Superintendent Joe Slivinski, ice jams occur approximately once every four years in Madison County. Ice jams are most common during years when there are multiple mid-winter thaws that alternate with extreme cold temperatures.

Location

The following locations are subject to ice jams in Madison County:

Tuscarora Road Bridge over Chittenango Creek, Village of Chittenango

Sangerfield River Tributary east of Poolville Road, Hamlet of Poolville, Town of Hamilton

Eaton Brook just above confluence with Chenango River, Town of Eaton

State Route 26 Bridge over Otselic Creek, Town of Georgetown

Oneida Creek above Stockbridge Falls, town of Stockbridge

Duration

Ice jams beginning in late winter usually persist until a prolonged period of warm weather.

Assets

County Highway Department Bridge Inspection Crew – Madison County Highway Department inspects all bridges on Town and County roads.

Local Organization and Regulations

County Highway Department – Madison County Highway Department has removed ice jams on a few occasions in the past.

Historical Events

In January of 2004 an ice jam formed on the upstream side of the Tuscarora Road bridge over Chittenango Creek. This jam was caused by the formation of “anchor ice” extending from the creek bottom. This ice jam reportedly raised the water level in the creek 7 or 8 feet.

Potential Losses

During the January 2004 event, 3 properties in the Tuscarora and Race Street area suffered flooding. Double D’s Auto Service was closed during the event. Two residences suffered basement flooding. At \$10,000 per property, it is estimated that total losses were \$30,000.

Mitigation Measures

Bridge Inspection in Ice Jam Problem Areas – Bridges with a history of ice jams, in particular the Tuscarora Road bridge over Chittenango Creek, should be inspected with a solution in mind for the ice jam problem. This is a High Priority for Madison County.

County-wide Stream Maintenance Program – Creek segments with a history of logjam formation should be inspected and cleared of debris because quite often ice begins formation on debris in the creek. This work should be done during the summer months. SWCD personnel would inspect stream segments and make recommendations. A private contractor would be hired to clear debris. The local Town would be responsible for the cost of the contractor. Applicable stream segments are the Sangerfield River at Poolville and Eaton Brook in the Hamlet of Eaton. This is a High Priority for Madison County.

9. Infestation

HAZNY Definition: An excessive population of insects, rodents, or other animals requiring control measures due to their potential to carry diseases, destroy crops, or harm the environment.

Current Threats

Gypsy Moth – A severe outbreak in 2006 is denuding many hillsides in Madison County.

Pine Shoot Beetle –

SARIX Wood Wasp

Asian Longhorned Beetle – the preferred host for this pest is the sugar maple. It has the potential to kill all of the maple trees in Madison County.

Frequency

According to USDA APHIS Agent Paul Wrege, infestations occur in Madison County at a rate of one every three years.

Location

County-wide

Duration

In some cases, infestations are resolved in one to two years if the pest species can be eradicated. This occurred in the Chicago area where an Asian Longhorned Beetle infestation was eradicated through the use of an intensive tree culling operation.

In other cases, the infestation can become permanent such as the beetle that is the vector for Dutch elm disease.

Assets

USDA Animal and Plant Health Inspection Service (APHIS), 169 Main St., Oneida, NY 13421. This office implements USDA's Plant Protection and Quarantine program.

Local Organization and Regulations

Federal Permits – Federal permits are required for importation of apple stock. Imports are allowed only from five countries.

Locations Subject to Hazard

All of Madison County

Historical Events

2006 – Gypsy Moth, the most serious gypsy moth outbreak to date occurred in Madison County in 2006.

1996 – Asian Longhorned Beetle was discovered in New York City and parts of Long Island. This insect probably arrived in New York in packing crates or pallets from China. This outbreak is believed to be under control but it is possible that infected firewood may have been exported to the Upstate New York area.

Potential Losses

Sugar Maple – All of the standing sugar maple in Madison County could be destroyed in an Asian Longhorned Beetle infestation. The value of sugar maple in this County is estimated to be in the billions of dollars. Our local maple syrup industry would be destroyed. Tourism would be seriously affected.

Existing Mitigation Measures

Quarantine – Madison County is currently under quarantine for gypsy moth and pine shoot beetle. Wood products from Madison County are required to be inspected before they can be exported from the County. Another quarantine is being considered for SARIX wood wasp.

Cooperative Ag Pest Survey – The Cooperative Ag Pest Survey (CAPS) is a combined effort by Federal and State agricultural organizations to conduct surveillance, detection, and monitoring of agricultural crop pests and biological control agents. Currently 20 pests are targeted. Source: <http://ceris.purdue.edu/napis/docs/caps.html>.

Proposed Mitigation Measure

Biological Control of Pest Species – Some pests can be controlled with the use of biological agents. Examples include beetles on purple loosestrife, BT for gypsy moth, and beetles for leafy spurge. Some spraying of BT for Forest Tent Caterpillar was conducted in 2007. This spraying was conducted on private land and financed through private funds. This is a Low Priority for Madison County government at this time.

10. Extreme Temperatures

HAZNY Definition: Extended periods of excessive cold or hot weather with a serious impact on human and/ or animal populations particularly elderly and/ or persons with respiratory ailments.

Frequency

Extreme Cold can be expected in Madison County on an annual basis. For an average winter, it can be expected that some parts of the County will see temperatures of –20 F for at least one cold spell. On average every two years, some parts of the County will have temperatures of –30 F.

Extreme Heat – Temperatures in the low 90’s F can be expected on an annual basis. Once in ten years, temperatures will reach 98 F or 99 F.

Cascade Effect

The greatest danger from extreme temperatures in Madison County would be if a power failure were to occur during a period of extreme cold. Many of the residences in the County rely on heating system that require electricity in order to operate. If a power failure did occur during a period of extreme cold, water pipes in many houses would freeze and possibly burst unless corrective action were taken quickly.

Location

All of Madison County

Duration

Extreme Cold – Periods of extreme cold usually last around three days.

Extreme Heat – Periods of extreme heat usually last for four to five days.

Assets

Extreme Heat – Large Box Stores, Public Buildings

Local Organization and Regulations

Madison-Oneida Red Cross

USDA Farm Service Agency

Historical Data

From U.S. Department of Commerce, National Climatic Data Center

RECORD COLD

December 14, 2005 – 17 New York Counties including Madison listed. Morning temperatures at most locations recorded between 5 and 15 F below zero.

January 27, 2005 – 8 New York Counties including Madison listed. Morning lows were between 10 and 25 F below zero. Wind was 5 to 10 mph. Wind chills were as low as 30 F below zero.

January 23 –24, 2005 – 16 New York Counties including Madison listed. Low temperatures were between 10 and 20 F below zero. On the evening of the 23rd, winds were 10 mph. Wind chills were mostly 20 to 20 F below zero.

January 21 –22, 2005 – 18 New York Counties including Madison listed. Low temperatures that night were 10 to 25 F below zero. Winds were from 5 to 20 mph. Wind chills were in the 25 to 35 F below zero range.

January 15 - 16, 2004 – 17 New York counties including Madison listed. Some high temperatures on January 15 were below zero. Winds were from 15 to 25 mph. Wind chills were between 20 and 40 F below zero.

January 9-10, 2004 – 17 New York counties including Madison listed. Some locations did not get above zero on January 9. Low temperatures on the morning of January 10 were between 10 and 30 F below zero.

March 3, 2003 - 6 New York counties including Madison listed. Temperatures were as low as 18 F below zero. Wind chill values were 20 to 30 F below zero.

September 28- 29, 2000 – 17 New York counties including Madison listed. On the morning of September 29, a widespread killing frost occurred with most low temperatures below 30 F.

January 16-18, 1997 - 17 New York counties including Madison listed. On the morning of January 18, low temperatures of 5 to 30 F below zero were observed. Wind chills of 35 to 55 F below zero were observed on the morning of January 17.

October 4, 1996 - 17 New York counties including Madison listed. Widespread freeze conditions and several record lows were observed. The observer in Cooperstown recorded 22 degrees.

January 5-7, 1996 - -15F was observed late in the day of January 5. On the morning of *January 6*, -24F was observed in Syracuse.

RECORD HEAT

August 1 –10, 2001 – 17 New York counties including Madison listed. Many locations recorded temperatures in the upper 90's to lower 100's for several days.. On August 9th some locations equaled or exceeded temperature records for the month of August.

Potential Losses

From U.S. Department of Commerce, National Climatic Data Center

January 15-16, 2004 – Property Damages for the 17 county area were listed as \$220,000.

January 9-10, 2004 – Property Damages for the 17 county area were listed as \$180,000.

Mitigation Measures

Cooling Center Identification for Periods of Extreme Heat - During periods of extreme heat, cooling centers could be made available to County residents. The Red Cross office in Oneida is one already-existing cooling center. This program could be expanded to other locations. Existing locations with air conditioning need to be identified. Madison/ Oneida Red Cross in cooperation with the County Emergency Preparedness Office will identify these locations. There would be no cost for the identification phase of this program. This is a High Priority for Madison County.

Fan Distribution Program for Periods of Extreme Heat – Madison/ Oneida Red Cross personnel suggested the institution of a fan distribution program during periods of hot weather. It is unknown where these fans would come from or who would distribute them. This is a Medium Priority for Madison County.

Extreme Cold Educational Brochure – *What to Do When You Lose Heat During Extreme Cold Conditions* – This brochure could be developed utilizing County Planning Department and Emergency Preparedness personnel Utilizing already existing resources. This is a Medium Priority for Madison County.

11. Epidemic (Human)

HAZNY Definition: The occurrence or outbreak of disease to an unusual number of individuals or proportion of the population, human or animal.

Background

Of greatest concern is an outbreak of pandemic flu. Pandemics occur when a novel influenza virus emerges to which people have little or no immunity.

Frequency

On average, once every 33 years.

Location

All of Madison County

Duration

Pandemics usually stay in the community in waves that last 8 weeks with possible multiple waves striking a locality. The pandemic is usually over within one year.

Assets

Community Memorial Hospital, Hamilton – A 40 bed facility

Oneida Health Care Center – A 101 bed hospital.

Madison-Oneida Red Cross

Morrisville State College School of Nursing

Local Organization and Regulations

NY SEMO and NYS DOH will provide planning guidance to County emergency preparedness personnel and County Health Departments in developing a County plan.

Madison County belongs to a Regional Medical Reserve Corps for health personnel through the State Health Department and the Department of Homeland Security.

Locations Subject to Hazard All of Madison County, vulnerability increases with social contact

Historical Data

1918 Spanish Flu

1957 Asian Flu

1968 Hong Kong Flu

Potential Losses

Jim Kinsella, County Health Department, has made an estimate based on CDC software that in Madison County a moderate influenza out break in its worst week would use:

100% of hospital bed capacity

125% of intensive care capacity

more than 100% of hospital ventilator capacity (on top of the already 80% usage)

To date, 54% of cases of avian flu in humans have resulted in death

The 1918 killed 1% of the people who became sick.

Mitigation Measures

County Health Department Avian Flu Response Plan - Madison County Health Department is responsible for putting together a County Response Plan to an Avian Flu Outbreak. This plan will include:

- Public Education Programs including:
Recommendations for respiratory hygiene
Guidelines for staying home from work, school, and other public gatherings
- Crowd Control
- School and business closings, Long Distance learning guidelines
- Travel Advisories
- Stockpiling of non-perishable food and essential household items
- Limited Distribution of antivirals to priority groups
- Limited distribution of first vaccine after 6 months
- Guidelines for caring for the sick at home.

This response plan is a High Priority for Madison County. Existing County Health Department resources will be used to write the plan. This is a High Priority for Madison County.

Local Hospital Pandemic Flu Response Plan - Hospitals have been directed to prepare pandemic influenza plans. These plans are in addition to the County-wide plan. This is a Medium Priority for Madison County.

12. Epidemic (Animal)

HAZNY Definition: The occurrence or outbreak of disease to an unusual number of individuals or proportion of the population, human or animal.

Background

Three diseases are of concern for domestic animals and wildlife in Madison County: Chronic Wasting Disease (CWD) – Affects deer. Could be transmitted to people that eat infected venison. CWD causes the infected animal to lose weight, display abnormal behavior, become disoriented and experience a loss of bodily functions before death occurs. There is no known cure for CWD and it is always fatal.

Mad Cow Disease – This disease is related to Chronic Wasting Disease. It is caused by a prion, an organism that is not fully understood. Mad Cow has been discovered in Canada and has been exported to the Western United States.

Foot and Mouth Disease (FMD) – This disease has been discovered and eliminated in the United States and has not been observed since 1929. It can occur in cattle, swine, sheep, goats, deer, and other cloven-hoofed ruminants. This is by far the most dangerous of the three diseases. According to USDA APHIS, “it is the most infectious and economically devastating animal disease known”. FMD is currently present in Africa, South America, Asia, and part of Europe.

Frequency

Chronic Wasting Disease – Parts of Madison and Oneida Counties are currently under quarantine for Chronic Wasting Disease.

Mad Cow Disease – Mad Cow Disease has never been observed in Madison County. In 2004, there was an incidence of Mad Cow Disease in Washington State from an animal that had been imported from Canada.

Hoof and Mouth Disease – Hoof and Mouth Disease was last observed in the United States in 1929.

Duration

The quarantine after the culling of a herd would last an additional 2 years.

Assets

USDA Animal and Plant Health Inspection Service (APHIS), 169 Main St., Oneida, NY 13421. This office implements USDA’s Plant Protection and Quarantine program.

Local Organization and Regulations

Cornell Cooperative Extension of Madison County has been given the responsibility of distributing information from USDA APHIS on Foot and Mouth Disease and Mad Cow Disease.

Locations Subject to Hazard

All of Madison County is susceptible to these diseases

Historical Events

Chronic Wasting Disease (CWD) – CWD was first discovered in New York in two captive white-tailed deer herds in Oneida County during routine testing in March 2005. CWD has since been discovered in wild deer in Oneida County.

Potential Losses The largest dairy herd in Madison County consists of 680 mature cows, 330 heifers, and 300 calves. The value of these animals is \$2,200,000.

Existing Mitigation Measures

Chronic Wasting Disease Containment Area – Until recently, DEC had established a CWD containment area in parts of Oneida and northeast Madison County. Within the containment areas, regulations prohibited the movement of certain animal parts out of the containment area, established mandatory check stations for deer taken by hunters in the containment area, prohibited possession of any deer killed by a motor vehicle, and prohibited the collection, sale, possession or transport of deer or elk urine taken from the containment area. Though this containment area is no longer in effect, it could be re-established if Chronic Wasting Disease was again observed in the area.

Quarantine – When a case of Mad Cow Disease or Hoof and Mouth Disease is discovered, the entire herd is quarantined and destroyed. Efforts are concurrently made to trace back the source of the infection and isolate the source. USDA APHIS would lead agency in this effort. The complete USDA/APHIS Emergency Response Plan can be found at http://www.aphis.usda.gov/lpa/pubs/fsheet_faq_notice/fs_ahfmdres.pdf.

13. Drought

HAZNY Definition: A prolonged period of limited precipitation affecting the supply and quality of water.

Background

Droughts can occur during any period of time in any region of New York State. Even though the state normally possesses an adequate water supply with sufficient annual precipitation to replenish the State's reservoirs, lakes, rivers, and groundwater aquifers, certain areas have a history of being more susceptible to drought.

Drought periods progress through stages and drought intensity may vary considerably during the drought period. They are not sudden extreme events like floods. The time of occurrence and duration can cause significant variations in drought impacts. For example, a drought which occurs in the fall and winter months has little direct impact on crop production. For public water supplies, drought is more serious during the reservoir refill and groundwater recharge periods in the spring.

Frequency

According to NOAA – National Climatic Data Center, there was one drought that struck Madison County between 1950 and 2005.

Probability of Future Occurrence

Based on past history, the probability of future occurrence can be estimated that another drought will occur once in the next 50 years.

Location

All of Madison County.

Duration

The 1999 drought lasted 4 months. It effectively caused a disaster for the entire 1999 growing season in Madison County. Its effects were moderated for well users by rains that came in September.

Assets

USDA Farm Service Agency (FSA), 6503 Wes Road, Hamilton, NY 13346 – This agency records and reports Madison County agriculture information and also coordinates payments to farmers in the event of a USDA declared disaster.

Local Organization and Regulations

USDA Flash Reports - Reports of drought and other emergency conditions are made to the State Office of FSA by the local FSA office. A flash report would also be sent at the end of a drought period.

Damage Assessment Report (DAR) – A DAR is submitted by the FSA office upon request from the New York State governor. Included in this report are acres affected, dollar amounts, yields, and animal numbers affected.

USDA Secretarial Declared Disasters – The NYS Governor has 90 days from the ending date of a disaster to request a disaster designation from the Secretary of Agriculture. A minimum of 30% production loss of at least one crop in the county must have occurred.

Palmer Drought Index – This index is effective in determining long-term drought and rain surpluses. It uses 0 as normal, minus 2 is moderate drought, minus 3 is severe drought, and minus 4 is extreme drought.

The Crop Moisture Index (CMI) – The CMI responds more rapidly than the Palmer Index and is more effective in calculating short-term abnormal dryness.

National Ag Statistical Service – This branch of USDA publishes a variety of reports regarding agricultural inputs and commodities. National and individual state reports are produced. Monthly weather-crop summaries are produced.

Historical Data

1999 Growing Season – From U.S. Department of Commerce, National Climatic Data Center - A very dry spring and summer caused major crop failures and some wells to run dry. Many streams and rivers were also brought to their lowest recorded levels. The crops most affected were corn and hay, which dealt a major blow to dairy farmers. September rains from the remnants of Hurricanes Dennis and Floyd helped the summertime drought conditions although they came too late to help the vegetable and grain crops.

Potential and Historical Losses

1999 Growing Season – According to preliminary figures from the NYS Department of Ag and Markets, drought damage in Madison County was reported to be 5.9 million.

Existing Mitigation Programs

State Emergency Management Office Equipment – An individual municipality can request and borrow equipment including water buffaloes and a portable water treatment system from SEMO in the case of an emergency.

Crop Insurance – A variety of coverage can be obtained from private agents. Among other things, coverage can be based on yields or expected revenues.

Rural Development Utilities Programs – This program provides direct and guaranteed loans as well as grants up to 75% for community water facilities in rural areas.

Mitigation Measures

Identify Vulnerable Populations to Water Supply Problems Caused by Drought–

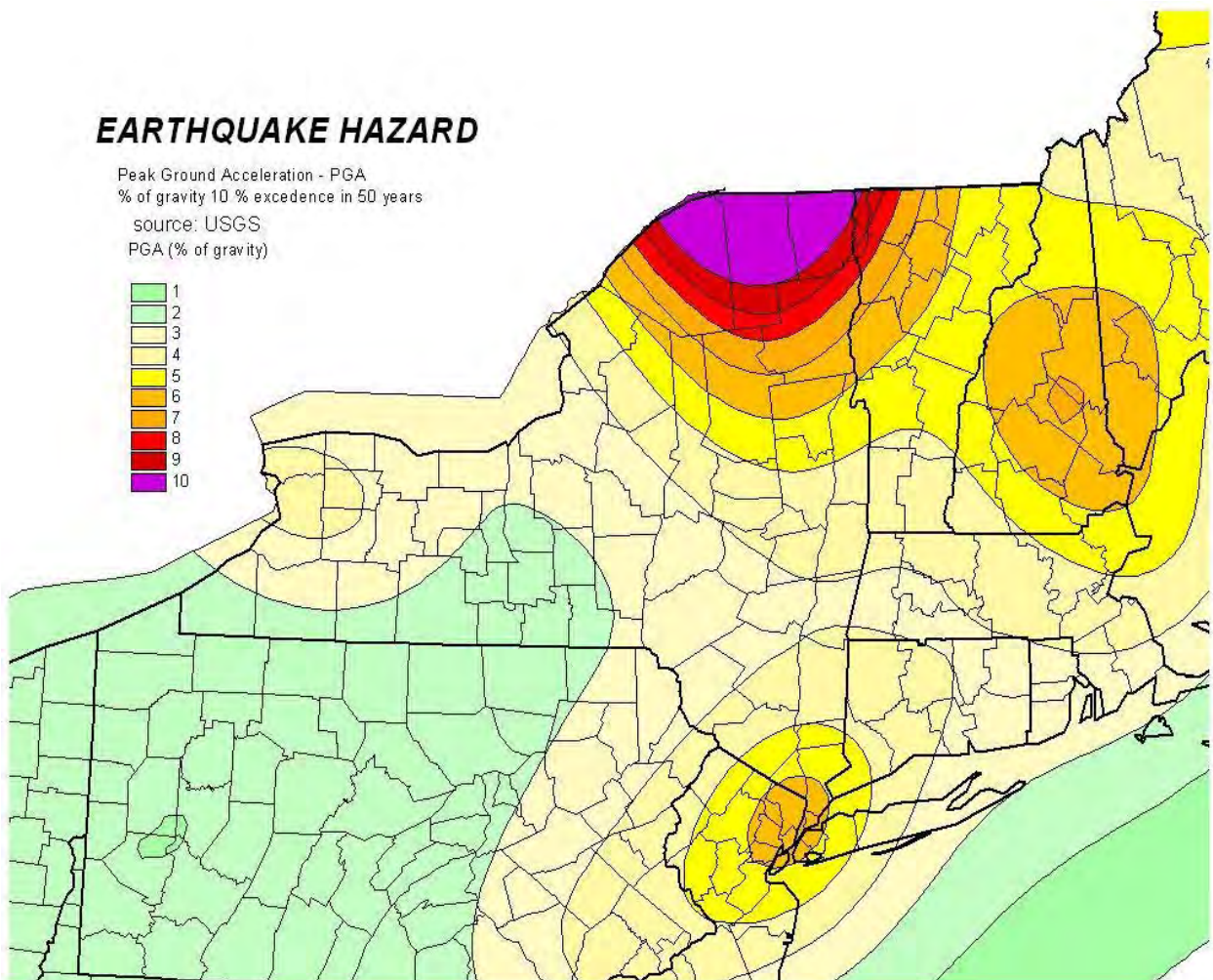
County residents with wells that are inadequate during drought could be identified. This work will be done by County Planning Department personnel through the use of their GIS system using already existing resources. This is a Medium Priority for Madison County.

14. Earthquake

FEMA Definition: An earthquake is a sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of Earth's tectonic plates. The severity of these effects is dependent on the amount of energy released from the fault or epicenter. The effects of an earthquake can be felt far beyond the site of its occurrence. They usually occur without warning and after just a few seconds can cause massive damage and extensive casualties. Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure.

Frequency:

The following map from the U.S. Geologic Survey shows that Madison County has a 10% chance in 50 years of experiencing an earthquake with peak ground acceleration equal to or greater than 3% of gravity.



Peak ground acceleration (PGA) is a measure of the strength of ground movements. The PGA measures the rate in change of motion relative to the established rate of acceleration due to gravity (g) (980 cm/sec/sec). For example, in an earthquake with an acceleration of the ground surface of 244 cm/sec/sec, the PGA or rate in change of motion is:

$$\frac{\text{Ground Surface Acceleration}}{\text{Rate of Acceleration due to Gravity}} = \frac{244 \text{ cm/sec/sec/}}{980 \text{ cm/sec/sec}} = 25\%g$$

Hazard Area

Affecting Conditions – Earthquake Hazard:

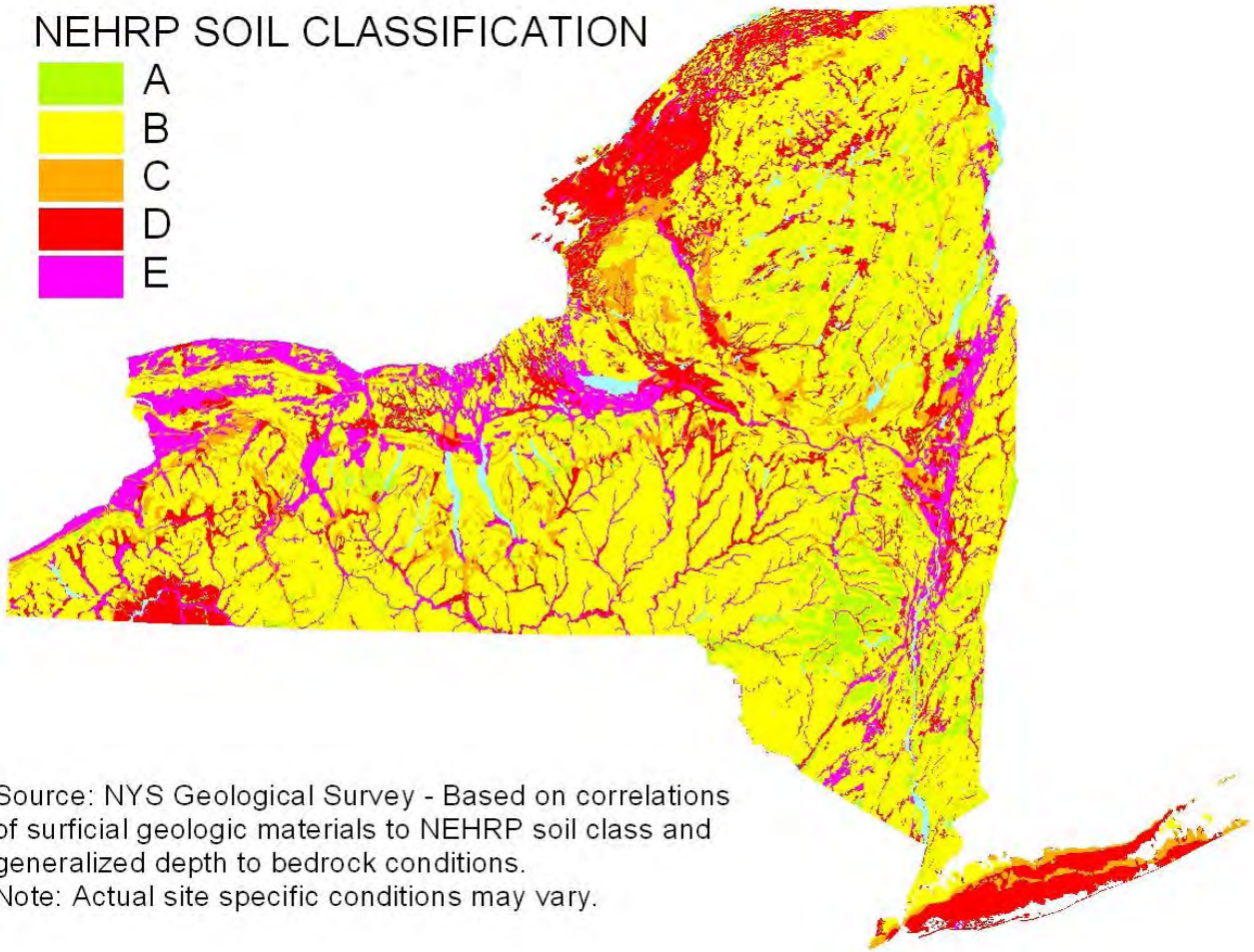
Soil type can substantially increase earthquake risk. For instance, “liquefaction” of soils during an earthquake is a commonly used term to describe how certain saturated “soft soil” ground can sometimes take on the characteristics of fluid when shaken by an earthquake. Amplification (strengthen) of shaking also results in areas of “soft soils” which includes fill, loose sand, waterfront, and lake bed clays.

Accordingly, the National Earthquake Hazard Reduction Program (NEHRP) developed a soil classifications graphic (**figure 3-32**) for New York State which indicates 5 NEHRP soils classes A through E (low(green) to high (purple)). The NEHRP soil classes graphic indicates types of soils that either tend to further amplify and magnify (high (red/purple) or reduce (low (green)) ground motions from an earthquake classified into the following 5 categories.

- “A” - Very hard rock (e.g., granite, gneisses; and most of the Adirondack Mountains)
- “B” - Rock (sedimentary) or firm ground
- “C” - Stiff Clay
- “D” - Soft to medium clays or sands
- “E” - Soft soil (including fill, loose sand, waterfront, lake bed clays)

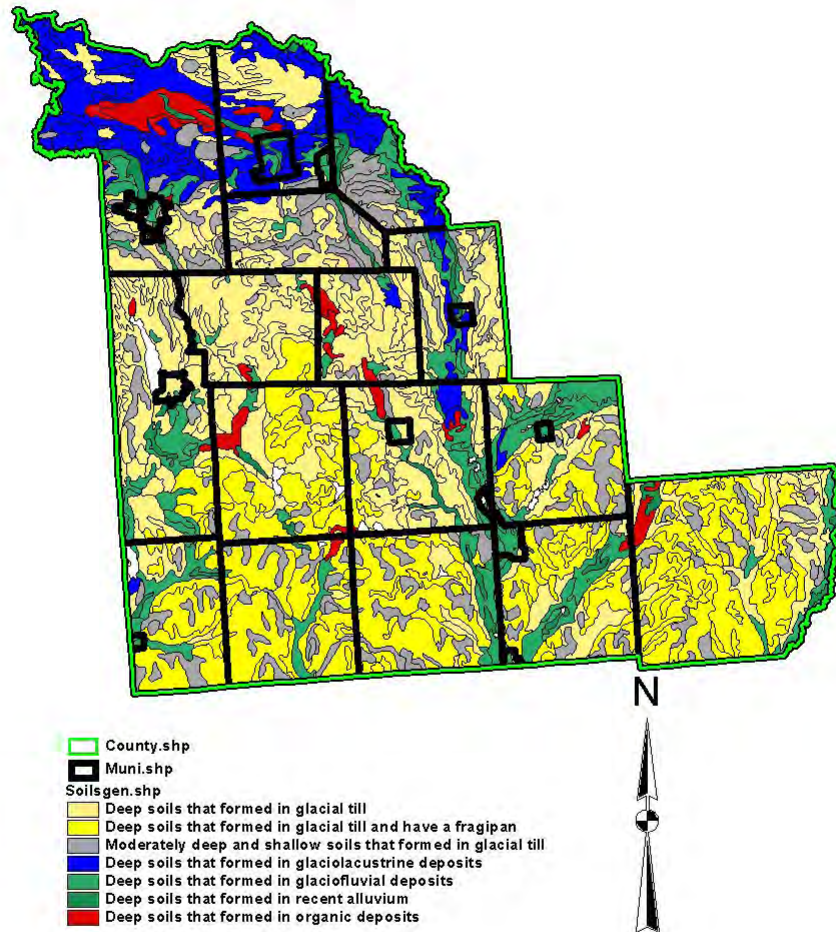
Overlaying the NEHRP soil classes map with the %PGA map indicates those areas that may experience an amplification of ground motion and resulting higher risk to a given magnitude. For instance areas of NYS that would experience an amplification of ground motion during seismic activity according to the NEHRP soil classification map would include but not be limited to the following; in northwest NY - northern Erie county, north central and northeast NY - Jefferson, St. Lawrence and northern Franklin counties, upper Hudson river area of eastern NY - northern Saratoga, Washington and southern Warren counties and southeaster NY western Nassau county and New York City.

NEHRP SOIL CLASSIFICATION



Source: NYS Geological Survey - Based on correlations of surficial geologic materials to NEHRP soil class and generalized depth to bedrock conditions.
Note: Actual site specific conditions may vary.

Generalized Soils of Madison County



Locations Subject to Hazard

HAZUS estimates that there are 21 thousand buildings in the county with a replacement value of \$3,826,000,000. Wood frame construction accounts for 78% of building inventory; unreinforced masonry accounts for 8.5% of building inventory; and manufactured housing account for 11% of inventory. Because a disproportionate amount of damage will occur to unreinforced masonry and manufactured housing, damage will be greatest where these types of construction are concentrated. Particularly susceptible are the downtown areas of the City of Oneida, Village of Canastota, Village of Chittenango, Village of Cazenovia, Village of Hamilton, and Village of Earlville where unreinforced masonry is most common.

By cross referencing the National Earthquake Hazard Reduction Map with the General Soil Map for Madison County, we can surmise that the group of soils that would sustain the greatest amount of damage (category E) would be deep soils that formed in glaciolacustrine (glacial lake laid) deposits. Category D soils would include deep soils that formed in glaciofluvial deposits and deep soils that formed in recent alluvium. The Village of Canastota is mapped as having the greatest proportion of Category E soils followed by the City of Oneida. The Villages of Hamilton, Chittenango, and Earlville have large amounts of unreinforced masonry and large proportions of Category D soils and would follow in earthquake susceptibility.

Historical Data: Abridged from Seismicity of the United States, 1568-1989 (Revised), by Carl W. Stover and Jerry L. Coffman, U.S. Geological Survey Professional Paper 1527, United States Government Printing Office, Washington: 1993.

Largest Earthquake in New York

Between Massena, New York and Cornwall, Ontario, Canada
1944 09 05 04:38:45.7 UTC (Local 09/04)
Magnitude 5.80
Intensity VIII

This severe earthquake was felt from Canada south to Maryland and from Maine west to Indiana. It caused property damage estimated at \$2 million at Massena and Cornwall. Many chimneys in that area required rebuilding, and several structures were unsafe for occupancy until repaired. Residents of St. Lawrence County reported that many water wells went dry.

At Massena, in northern St. Lawrence County, 90 percent of the chimneys were destroyed or damaged and house foundations, plumbing, and masonry were damaged severely. Similar effects were reported at Cornwall. Cracks formed in the ground at Hogansburg, and brick-masonry and concrete structures were damaged. Chimneys were

downed in several towns in New York, including Fort Covington, Keeseville, Malone, Norfolk, Ogdensburg, and Waddington.

Table of Significant Earthquakes in New York according to U.S. Geological Survey, excerpted from the NYS Hazard Mitigation Plan:

Table 3-48 Significant Earthquakes in New York State 1737 to 2002*				
Date	County	Community	Maximum Modified Mercalli Intensity	General Magnitude
1737 – Dec. 18	New York	New York City	VI	5.0est.
1853 – Mar. 12	Lewis	Lowville	VI	4.8est.
1857 – Oct. 23	Erie	Buffalo	V	4.6est.
1867 – Dec. 18	St. Lawrence	Canton	VI	4.8est.
1874 – Dec. 11	Westchester	Tarrytown	VI	4.8est.
1884 – Aug. 10	New York	Rockaway Beach	VI	5.3est.
1897 – May 28	Clinton	Plattsburgh	VI	Not Stated
1928 – Mar. 18	Franklin	Saranac Lake	VI	4.5est.
1929 – Aug. 12	Wyoming	Attica	VII	5.2
1931 – Apr. 20	Warren	Warrensburg	VII	4.5
1934 – Apr. 15	Clinton	Dannemora	VI	4.5
1944 – Sep. 5	St. Lawrence	Massena	VIII	6.0
1944 – Sep. 5	St. Lawrence	Massena	V	4.5
1966 – Jan. 1	Wyoming	Attica	VI	4.6
1967 – Jun. 13	Wyoming	Attica	V	4.4
1983 – Oct. 7	Essex	Newcomb	VI	5.1
1985 – Oct. 19	Westchester	White Plains	V	4.0
1991 – Jun. 17	Schoharie	Summit	V	4.1
1994 – Mar. 22	Livingston	Cuylerville	VI	3.6a

Potential Losses

Based on a simulated 5.8 magnitude earthquake under the center of Madison County, HAZUS estimates that about 5,193 buildings (22% of total) will be at least moderately damaged. An estimated 250 buildings will be completely destroyed. 149 (60%) of the destroyed buildings would be unreinforced masonry. 58 (23%) would be manufactured housing. 35 (14%) would be wood frame construction.

HAZUS did not compute any moderate damage to highways and railways.

HAZUS estimated 250 leaks and 63 breaks to potable water systems, 198 leaks and 50 breaks to wastewater systems, 212 leaks and 53 breaks to natural gas systems.

Of the estimated 23,368 households, HAZUS estimates the following numbers of households without electric and potable water service:

	At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Electric Power	15,465	9,170	3,356	562	20
Potable Water	256	0	0	0	0

Existing Mitigation Measure

Building Codes - Damage to manufactured housing could be limited by enforcing already-existing rules that require these building to be secured to the ground.

Proposed Mitigation Measure

Limiting Earthquake Susceptible Construction Through Local Zoning - Damage to unreinforced masonry buildings could be limited by banning new construction of this building type through local zoning regulations. This is a Low Priority for Madison County.

15. Dam/ Levee Failure

FEMA Definition:

A "dam" is an artificial barrier that has the ability to impound water, wastewater, or any liquid-borne material for the purpose of storage or control of water ([different types of dams](#)). Dams can fail for one or a combination of the following reasons:

- Overtopping caused by floods that exceed the capacity of the dam.
- Deliberate acts of sabotage.
- Structural failure of materials used in dam construction.
- Movement and/or failure of the foundation supporting the dam.
- Settlement and cracking of concrete or embankment dams.
- Piping and internal erosion of soil in embankment dams.
- Inadequate maintenance and upkeep.

Background

Dam Failures in the United States

A series of dam failures in the 1970's caused the Nation to focus on inspecting and regulating dams.

- On February 26, 1972, a tailings dam owned by the Buffalo Mining Company in Buffalo Creek, West Virginia failed. In a matter of minutes, 125 people were killed, 1,100 people were injured, and over 3,000 were left homeless.
- On June 5, 1976, Teton Dam, a 123-meter high dam on the Teton River in Idaho, failed, causing \$1 billion in damage and leaving 11 dead. Over 4,000 homes and over 4,000 farm buildings were destroyed as a result of the Teton Dam failure.
- In November 1977, Kelly Barnes Dam in Georgia failed, killing 39 people, most of them college students.

The Johnstown Flood

At 4:07 p.m. on the afternoon of May 31, 1889, the residents of Johnstown, Pennsylvania heard a low rumble that grew to a "roar like thunder." After a night of heavy rains, the South Fork Dam had failed, sending tons of water crashing down the narrow valley. Boiling with huge chunks of debris, the wall of flood water grew at times to 60 feet high, tearing downhill at 40 miles per hour and leveling everything in its path.

Thousands desperately tried to escape the wave. Those caught by the wave found themselves swept up in a torrent of oily, muddy water, surrounded by tons of grinding debris, which crushed some, provided rafts for others. Many became helplessly entangled in miles of barbed wire from a destroyed wire works.

Although it was over in 10 minutes, for some the worst was yet to come. Darkness fell, thousands were huddled in attics, others were floating on the debris, while many more had been swept downstream to the old Stone Bridge at the junction of the rivers. Piled up against the arches, much of the debris caught fire, entrapping forever 80 people who had survived the initial flood wave.

Source: FEMA 500 C Street SW, Washington, D.C. 20472
Disaster Assistance: (800) 621-FEMA, TTY (800) 462-7585

Historical Events in Madison County:

January 21, 2008 – The January 22, 2008 edition of the Syracuse Post Standard reported that the levee between Owl Creek and the Erie Canal had washed out. This washout did not result in flooding but water from Owl Creek was flowing into the Erie Canal. This levee washout was caused by the clogging of a dive culvert that normally allows water to flow under the Erie Canal. Maintenance had been performed on the dive culvert in 2006 but beaver activity had led to its clogging.

January, 1996 – Flooding occurred for a prolonged period of time at the Erie Canal Boat Museum because of debris blocking large box culverts where Chittenango Creek flows under the Erie Canal Aqueduct.

June 11, 1917 – According to the Madison County Leader newspaper, a downpour after weeks of incessant rain led to a number of dam failures in Madison County and the surrounding area. Three power dams went out between Eaton and West Eaton on Eaton Brook. A mill pond failure at Pratts Hollow in the Town of Eaton led to the death of Earl Roher. Two lives were lost in Oriskany Falls, Oneida County after 3 dams burst on Oriskany Creek near the border between Madison and Oneida Counties.

Location of Madison County Structures:

Madison County has 9 large dams and 2 levee systems that are capable of producing large flooding events in the case of structural failure. Seven of these dams and both of the levee systems are maintained by the New York State Canal Authority, a division of the New York State Thruway Authority. These structures were built in the 1800's as water supplies for the Erie Canal system. Alderbrook Preserve in the Town of Eaton is under private ownership. Sunset Lake in the City of Oneida is maintained by the City of Oneida.



Frequency of Dam or Levee Failure in Madison County

During the last twenty years, the largest dams in Madison County have been upgraded to withstand the 500 year probability flood. These structures include Lake Moraine, Lebanon Reservoir, Tuscarora Lake, Eaton Brook Reservoir, and DeRuyter Reservoir. These dams are well maintained and inspected on a regular basis. The frequency with which these structures can be expected to overtop and possibly fail is less than once in 500 years.

Other less dangerous structures in Madison County can be expected to fail on a more frequent basis. It is expected that some levee or dam will fail in Madison County once every 10 years. Such an event would lead to flooding that will cause economic damage but not injury or loss of life. Particularly susceptible is the system of levees associated with the Old Erie Canal that traverses the City of Oneida, Town of Lenox, and Town of Sullivan. All of the natural tributaries that flow north towards Oneida Lake have to cross under this canal. The culverts that cross the Erie Canal need to have a large capacity in order to accommodate peak storm flows. These structures can fail if debris clogs them and reduces their capacity.

Duration:

Failure of any of these structures would produce flash flooding. Dam Failure would produce a flash flood lasting 1 to 2 hours. Levee failure would produce flash flooding lasting up to 48 hours. Lingering effects of flooding would be greatest in flatland areas, Old Erie Canal Levee and Sunset Lake, and Villages located in the flood zone, Cazenovia and Hamilton.

Assets

New York State Canal Corporation
Syracuse Division
Suite 250, 2nd Floor
290 Elwood Davis Road
Liverpool, NY 13088-0308

The NYS Canal Corporation is a division of the New York State Thruway Authority. The Canal Corporation operates the 524 mile NYS Canal System and is responsible for water level management in 10 large lakes and reservoirs in Madison County: Cazenovia Lake, Tuscarora Lake, DeRuyter Reservoir, Eaton Brook Reservoir, Hatch Lake, Bradley Brook Reservoir, Lebanon Reservoir, Lake Moraine, Woodman Pond, and Leland Pond. The Canal Authority also operates a series of feeder canals that supply water to the NYS Barge Canal and portions of the Old Erie Canal that are no longer in operation but are still filled with water.

Local Organization and Regulations

The Madison County Office of Emergency Preparedness would coordinate the County's response to a dam or levee failure in Madison County. This office would coordinate the activities of local fire departments, local highway departments, County Highway Department, and law enforcement agencies.

An Emergency Action Plan (EAP) was written for Lake Moraine in 19__.

An EAP was written for Lebanon Reservoir in 19__.

An EAP was written for DeRuyter Reservoir in 19__.

These Emergency Action Plans are on file at the Office of Emergency Preparedness, 366-2258.

Potential Losses

The flood hazard zone that would experience the greatest damage in Madison County is the Lake Moraine Flood Hazard Zone. The largest parcel in the flood hazard zone is the Colgate University golf course. It is estimated that over 200 structures would be affected by a dam failure. At an estimated \$10,000 per structure in damages this would result in over \$2,000,000 in structural damages alone.

Existing Mitigation Programs

NYSDEC
Division of Water
Bureau of Flood Protection and Dam Safety
625 Broadway
Albany, NY 12233-3504
518-402-8151

The New York State Department of Environmental Conservation includes the Bureau of Flood Protection and Dam Safety. Functions of the department's Dam Safety Unit include: safety inspection of dams; technical review of proposed dam construction or modification; monitoring of remedial work for compliance with dam safety criteria; and emergency preparedness. (Source: NYS DEC website)

Mitigation Measures

Individual Dam Hazard Awareness

- Know your risk. Do you live downstream from a dam? Is the dam a high-hazard or significant-hazard potential dam? To find out, contact your state or county emergency management agency or visit the [National Inventory of Dams \(NID\)](#) or the [Association of State Dam Safety Officials \(ASDSO\)](#).
- Find out who owns the dam and who regulates the dam. This information also should be available from your state or county emergency management agency, [NID](#), or [ASDSO](#).
- Once you determine that you live downstream from a high-hazard or significant-hazard potential dam and find out who owns the dam, see if a current EAP is in place for the dam. An EAP is a formal document that identifies potential emergency conditions at a dam and specifies preplanned actions to be followed to reduce property damage and loss of life. An EAP specifies actions the dam owner should take to take care of problems at the dam. It also includes steps to assist the dam owner in issuing early warning and notification messages to responsible downstream emergency management authorities of the emergency.
- If there is a dam failure or an imminent dam failure and you need to evacuate, know your evacuation route and get out of harm's way. In general, evacuation planning and implementation are the responsibility of the state and local officials responsible for your safety. However, there may be situations where recreational facilities, campgrounds, or residences are located below a dam and local authorities will not be able to issue a timely warning. In this case, the dam owner should coordinate with local emergency management officials to determine who will warn you and in what priority.

Source: FEMA 500 C Street SW, Washington, D.C. 20472
Disaster Assistance: (800) 621-FEMA, TTY (800) 462-7585

Individual Dam Hazard Awareness is a Medium Priority for Madison County

GIS Mapping of Flood Hazard Areas of Hazard Dams – Maps of flood hazard areas in the Emergency Action Plans of Madison County hazard dams could be updated using the County's Geographic Information System. This would allow for an overlay of parcel boundaries and potential flood inundation area. Susceptible populations could then be better identified. This is a High Priority for Madison County.

13. WILDFIRE

Wikipedia Definition:

A **wildfire**, also known as a **wildland fire**, **forest fire**, **brush fire**, **vegetation fire**, **grass fire**, **peat fire**, **bushfire** (in [Australasia](#)), or **hill fire**, is an uncontrolled [fire](#) often occurring in [wildland](#) areas, but which can also consume houses or agricultural resources. Common causes include [lightning](#), human carelessness, [arson](#), [volcano](#) eruption, and [pyroclastic](#) cloud from active volcano. [Heat waves](#), [droughts](#), and cyclical [climate changes](#) such as [El Niño](#) can also have a dramatic effect on the risk of wildfires.

Background

There are basically two kinds of wildfires that are possible in Madison County: Woodland and Grassland. While there are no documented records of woodland fires in Madison County according to SEMO's State Hazard Mitigation Plan, grass fires during dry periods are not that unusual.

With the right weather conditions in Madison County, it is possible to have a high fire danger. According to NYS Emergency Management Office, the following weather conditions lead to this high fire danger:

High temperatures, low humidity, and swift winds increase the probability of ignitions and difficulty of control. Short and long-term drought further exacerbates the problem.

Fire Danger Rating level takes into account current and antecedent weather, fuel types, and both live and dead fuel moisture. The [adjective class rating](#) (Table 3-42 shown below) is a method of normalizing rating classes across different fuel models, indexes, and monitoring station locations. It is based on the primary fuel model cataloged for the station, the fire danger index selected to reflect staffing levels, and climatological class breakpoints. This information is provided by local monitoring station managers. Staffing class breakpoints are set by local managers from historical fire weather climatology.

Table 3-42
Fire Danger Rating and Color Code

Fire Danger Rating and Color Code	Description
Low (L) (Dark Green)	Fuels do not ignite readily from small firebrands although a more intense heat source, such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but woods fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting.
Moderate (M) (Light Green or Blue)	Fires can start from most accidental causes, but with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (H) (Yellow)	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are attacked successfully while small.
Very High (VH) (Orange)	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics such as long-distance spotting and fire whirlwinds when they burn into heavier fuels.
Extreme (E) (Red)	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions the only effective and safe control action is on the flanks until the weather changes or the fuel supply lessens.

Frequency

Records kept by the Madison County Office of Emergency Preparedness do not discriminate between forest fires and grass fires. All wildfires in Madison County are referred to as “brush fires”. In 2007, 161 brush fires were reported in Madison County. Madison County Emergency Preparedness Director Joe DeFrancisco states that 2007 had fewer brush fires than normal. Based on these facts, it can be concluded that wildfires will occur in Madison County annually.

Historical Events in New York State:

The following **Table 3-43** provides a brief list of wildfires in New York State.

Table 3-43 Past Wildfire Events in New York		
Date	Location	Damages
1903	Adirondacks	Economic loss to lumber industry
1908	Adirondacks	Economic loss to lumber industry
1911	Adirondacks	Economic loss to lumber industry
1913	Adirondacks	Economic loss to lumber industry
1915	Adirondacks	Economic loss to lumber industry
1950	Adirondacks	Economic loss to lumber industry
1995	Suffolk County	Sunrise Fires, 7,000 acres burned, \$5million in damage.
2001	Washington County	\$95k in property damage, 34 acres of land burned.
2001	Schenectady County	\$5k, 6 acres burned, threatened several homes west of the Glendale Nursing Home. Some residents of the nursing home were evacuated.
2001	Rensselaer County	\$2k, 3 acres of a corn field destroyed.
2001	Suffolk County	2injuries, dollar amount damage unknown.
2002	Adirondacks	340 acres burned, dollar amount damage unknown.

Source: SEMO archives, NCDC and Jonathan Meade

Duration:

Normal Grass Fires – It usually takes around two hours to control a normal grass fire by using frontal assault with tanker trucks.

Severe Wildfire - A wildfire’s duration is highly dependent upon weather conditions. Dry windy conditions make it more difficult to contain a fire. Based on this author’s personal experience, it is much easier to control wildfire during night time when the heating of the sun is absent and wind tends to die down. It can be expected that a wildfire in Madison County would be controlled by the end of the first night time period. Duration of a relatively severe wildfire in Madison County would be 1 day.

Assets

NYS DEC Forest Rangers would be the lead agency for wildfires located on state forest land. DEC Forest Rangers are trained in forest fire fighting techniques.

Forest Rangers (607) 753-3095x223 (607) 753-8532

Region 7 Program Contact Information

615 Erie Blvd. West

Syracuse, NY 13204-2400

reg7info@gw.dec.state.ny.us

Observed Fire Danger maps (**Figure 3-22** shows an example) are provided on a daily basis by the United States Department of Agriculture Forest Service. Observation maps are based on the mid-afternoon (2 pm LST) observations from the fire weather network as reported to the Weather Information Management System, WIMS ([USDA 1995](#)), by 5:00pm Mountain Time.

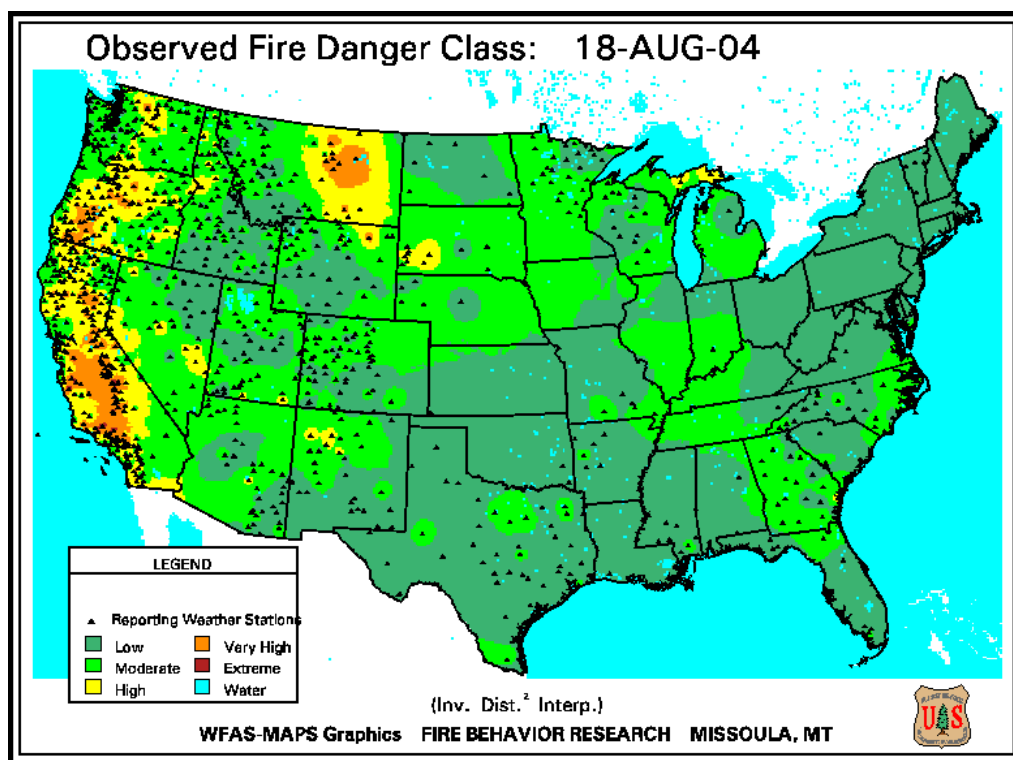


Figure 3-22 Source: United States Department of Agriculture Forest Service

Observed Experimental Fire Potential maps (**Figure 3-23** example shown below) are provided on a daily basis by the United States Department of Agriculture, Forest Service. The experimental fire potential index map uses satellite derived Relative Greenness, an NFDR fuel model map (both 1 km resolution), and an interpolated 10-hour time lag map as inputs to weight the relative influence of live and dead vegetation to fire potential. The scale ranges from 0 (low) to 100 (high). Except for 10-h moisture content, the calculations used in the National Fire Danger Rating System are not part of the Fire Potential Index.

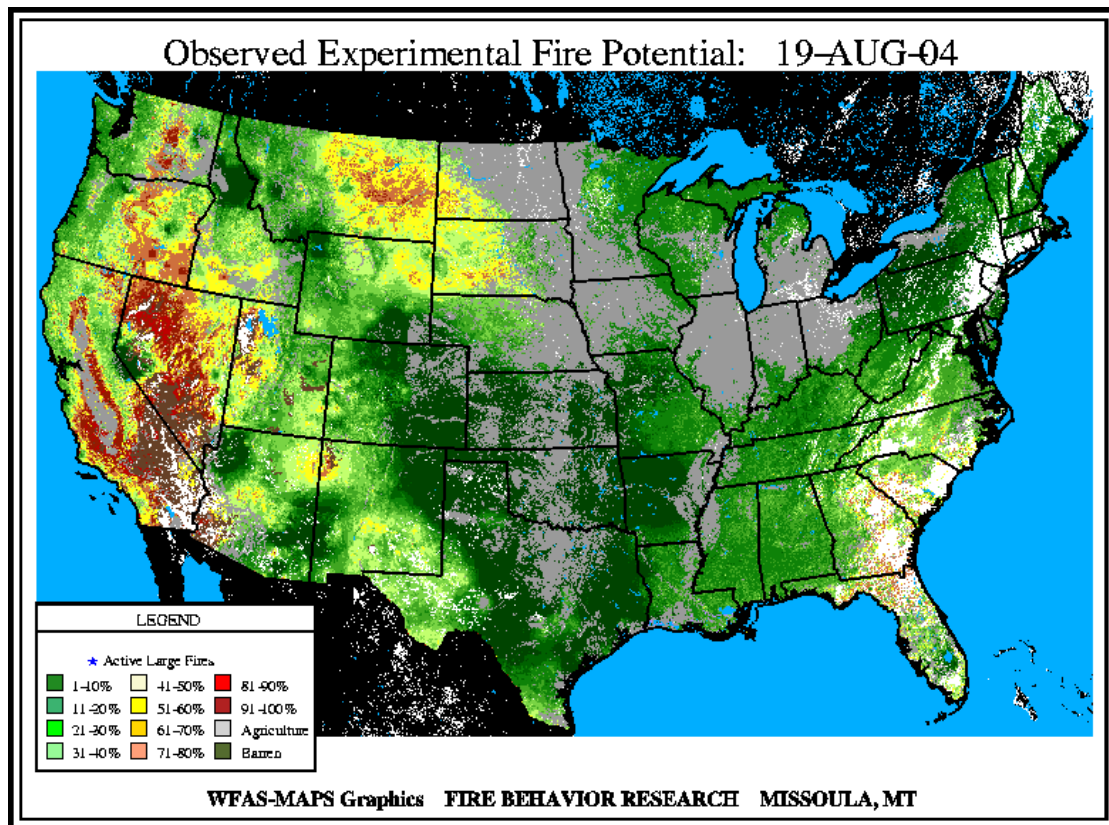


Figure 3-23 Source: United States Department of Agriculture Forest Service

Local Organization and Regulations

Grass Fires - Almost all grass wildfires would be handled by the local fire department.

Forest Fires - Forest wildfires on State land would be handled by NYS DEC Forest Rangers. Forest wildfires on private land would initially be handled by the local fire department. It would be up to the local fire chief in consultation with the County Emergency Preparedness Director whether to ask for assistance from NYS DEC.

Potential and Historical Losses

According to SEMO records, a 34 acre wildfire in Washington County during 2001 led to \$95,000 in damage.

The worst consequence of a wildfire in Madison County would probably be the

destruction of a family's home. The replacement value of an average house in Madison County is \$100,000.

Existing Mitigation Programs

In 1995, the non-profit New York Wildfire and Incident Management Academy was started at the Brookhaven National Laboratory on Long Island. In 2003, they matriculated a record-breaking 612 students representing more than two-dozen organizations and 35 states, plus one Canadian province. Their goal remains providing a safe learning environment for wildland firefighters and incident managers, and fostering partnerships. Sponsoring organizations include the Arizona and Colorado wildfire academies, the USDA Forest Service, National Park Service, Federal Emergency Management Agency, New York State Emergency Management Office, Central Pine Barrens Wildfire Task Force, and the Suffolk County Department of Fire Rescue. These sponsors also provide training equipment and staffing. The New York State DEC provides most of the logistical support.

Source: The NYS (State) Multi-Hazard Mitigation Plan

Proposed Mitigation Measures

Community Wildfire Protection Plans – Under a program sponsored by the U.S. Forest Service, a Community Wildfire Protection Plan can be written for any municipality in Madison County. The plan would address issues such as wildfire response, hazard mitigation including hazardous fuel reduction, and community preparedness in collaboration between agency personnel and community leaders. A local Planning Board would need to contact NYS DEC Forestry personnel to begin the process. A publication entitled *Preparing a Community Wildfire Protection Plan – A Handbook for Wildland-Urban Interface Communities* is available on the internet. This is a Low Priority for Madison County government since implementation is at the local level.

Wildfire Mitigation Measures for the Homeowner

- Provide for adequate access for fire engines and other emergency vehicles to your home
- Use fire resistant building materials, especially roofing
- Clear flammable materials and vegetation from within a 30 foot perimeter of your house
- Provide an outside source of water with hoses that can reach all sides of your house
- Never practice outside burning during dry, windy periods
- Clear flammable materials from a 10 foot diameter around your burn pit, barbeque, or campfire
- Keep shovels, rakes, and buckets on hand

Wildfire Mitigation Measures for the Homeowner are a Medium Priority for Madison County.

ALL-HAZARD MITIGATION MEASURES

Reverse 911 System - Institution of a reverse 911 system would require the commitment by the County Board of Supervisors to the annual cost of \$30,000 - \$45,000. This is a High Priority for Madison County.

Re-establishment of Emergency Operations Center (EOC) – At the present time, Madison County does not have an emergency operations center that could be put into service in case of a disaster. Two options exist:

- The large conference room that adjoins the Supervisor's Chambers on the second floor of the County Office Building could be converted so that it has the capability to be converted to an EOC in the event of an emergency. This would require the addition of telephone lines and computer lines that would connect to the 911 center downstairs. The cost of this conversion needs to be determined by County information technology staff.
- Public Defender staff housed in the basement of the Office Building could be moved to new quarters. This location is already equipped to be an EOC.

This is a Medium Priority for Madison County. Any decision on an Emergency Operations Center would have to be made by the County Board of Supervisors.

Identification of Vulnerable Populations for Emergency Situations – A group called the Madison County Citizen Corps Council is currently working on identifying vulnerable populations and formulating a plan to assist these people in case of an emergency. Membership of this Council includes Retired Senior Volunteer Program (RSVP), Madison County Office for the Aging, County Health Department, County Office of Disaster Preparedness, the Alzheimer's Association, The Red Cross, and the Salvation Army. The Council is having difficulty assembling a good list (database) of people who need this assistance because of confidentiality rules that apply to the agencies that have lists of clients. The current list has less than 100 names on it. The Council now plans to send out questionnaires with agency mailings that are already going out. This system will depend upon vulnerable populations identifying themselves. RSVP has already delivered Disaster Preparedness Kits to the already identified vulnerable population and will continue this activity. In the event of a long-term power failure or other disaster, the County Office of Emergency Preparedness will contact local fire departments and request that they check on at-risk individuals. This is a High Priority for Madison County.

PRIORITIZATION OF PROPOSED COUNTY MITIGATION MEASURES

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

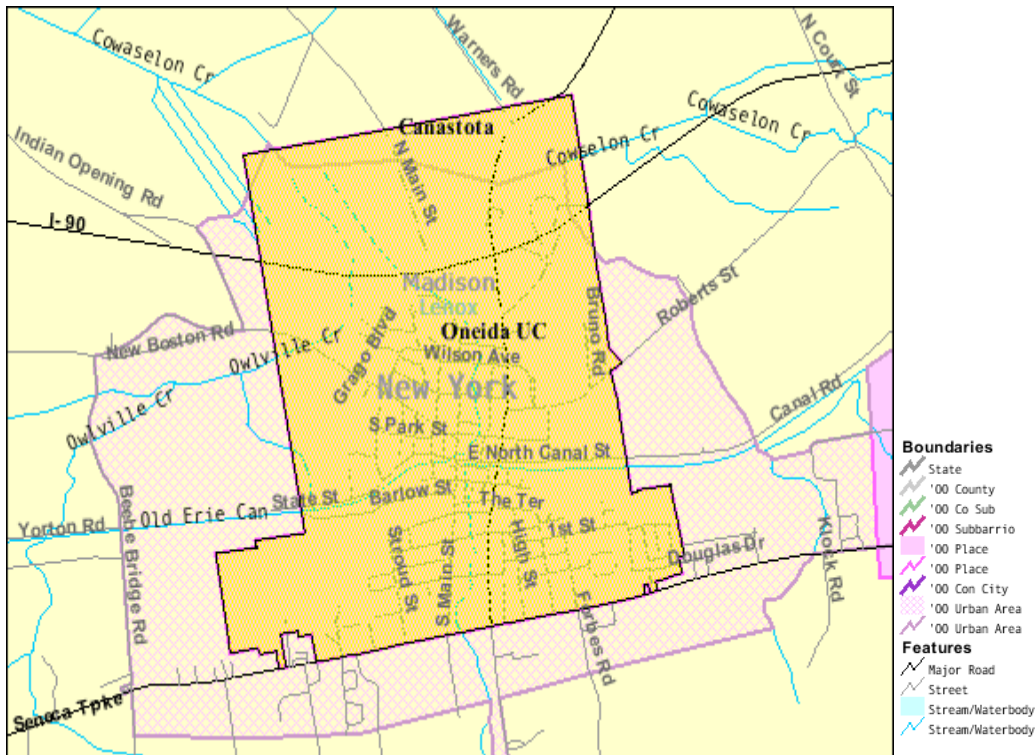
A Score of 6-7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Red Cross Shelter, External Generator Hook-up for Eight Shelters	+1	+1	0	+1	0	+1	+1	5
Centralized Data Base on Auto Accidents	+1	+1	-1	+1	-1	+1	+1	3
Living Snow Fence Site Identification & Prioritization	+1	+1	-1	+1	+1	+1	+1	5
Guide to Winter Driving Brochure	+1	+1	0	+1	+1	+1	+1	6
County Wide Paging System Upgrade	+1	+1	+1	+1	+1	+1	+1	7
Municipal Water Supply Infrastructure Improvements for	+1	+1	-1	+1	-1	+1	+1	3

Improved Fire Fighting								
Dry Hydrant Installation in Rural Areas	+1	+1	-1	+1	+1	+1	+1	5
GIS Mapping of Existing Dry Hydrants	+1	+1	-1	+1	+1	+1	+1	5
Improved Fire Equipment Access through Local Subdivision Rules	N	+1	+1	+1	-1	+1	+1	4
Smoke Detector Exchange Program	+1	+1	0	+1	+1	+1	+1	6
Evacuation Plans for Senior Housing through Local Planning Board Review	+1	+1	+1	+1	+1	+1	+1	7
Underground Utility Requirement through Local Subdivision Rules	-1	+1	+1	+1	0	+1	+1	4
Buyout of Repetitive Flood Structures	+1	+1	-1	-1	+1	+1	+1	3
County-wide Stream Maintenance Program	+1	+1	+1	+1	+1	+1	+1	7
County Highway Department, Infrastructure Inventory and Mapping	+1	+1	+1	+1	+1	+1	+1	7
Local Zoning Restriction on 100 Year Flood Plain Construction	-1	+1	+1	-1	-1	+1	+1	1
County Highway Department Drainage Projects	+1	+1	N	+1	+1	+1	+1	6
Bridge Inspection in Ice Jam Problem Areas	+1	+1	+1	+1	+1	+1	+1	7
Biological Control of Pest Species	+1	+1	-1	-1	-1	+1	+1	1
Cooling Center Identification for Periods of Extreme Heat	+1	+1	+1	+1	+1	+1	+1	7
Fan Distribution for Periods of Extreme Heat	+1	+1	-1	-1	+1	+1	+1	3

Extreme Cold Educational Brochure	+1	+1	-1	+1	+1	+1	+1	5
County Health Department Avian Flu Response Plan	+1	+1	+1	+1	+1	+1	+1	7
Local Hospital Pandemic Flu Response Plan	+1	+1	+1	+1	-1	+1	+1	5
Identify Vulnerable Populations to Water Supply Problems caused by Drought	+1	+1	-1	+1	+1	+1	+1	5
Limiting Earthquake Susceptible Construction Through Local Zoning	-1	+1	+1	-1	-1	+1	+1	1
Individual Dam Hazard Awareness	+1	+1	-1	+1	+1	+1	+1	5
GIS Mapping of Flood Hazard Areas of Hazard Dams	+1	+1	N	+1	+1	+1	+1	6
Community Wildfire Protection Plans	+1	+1	-1	N	-1	+1	+1	2
Wildfire Mitigation Measures for the Homeowner	+1	+1	-1	+1	-1	+1	+1	3
Reverse 911 System	+1	+1	+1	+1	+1	+1	+1	7
Re-establishment of Emergency Operations Center	+1	+1	-1	N	+1	+1	+1	4
Identification of Vulnerable Populations for Emergency Situations	+1	+1	+1	+1	+1	+1	+1	7

VILLAGE OF CANASTOTA



Mayor: Todd Rouse, 697-7559

Administrator:

DPW Foreman: Ron Bennet

Police Chief: James Zophy, 697-2240

Greater Lenox Ambulance Service President: Tim Williams, 697-3460

Background

The Village of Canastota is a community of 4,425 residents located in the town of Lenox. 74.7% of the residents are between the ages of 18 and 65, while only 17.9 % are over the age of 65 (residents). The village currently encompasses approximately 3.3 square miles. The village has an equalized assessed value of approximately \$212 million dollars, which is distributed across a variety of property classes. There are 905 single family occupied homes within the town. There is no real commercial development taking place at this time.

Land Use and Development Trends

Development in the Village is fairly slow at this time. There is not much room left within the Village limits for new development and there are no plans for annexation of new

properties into the Village limits. 60 new houses have been built in the Circle Drive neighborhood within the past twelve years. 18 new houses have been built in the Clark Circle and Port Street area in the past ten years, 5 lots are still available. 24 new town house style residences are planned for 1st Street. A 60 house development in the Towns of Lenox and Lincoln will tie into the Village's sanitary sewer system.

Assets

The Village Hall is located at 205 S. Peterboro St. The Canastota Village Police Department along with Village government is located here. The building has a small diesel generator in case of power outage. Emergency communications for the Village are centered at this location.

The Canastota Volunteer Fire Department is located at 129 East Center Street. The Fire Department is the evacuation center for the Village. This building is equipped with a natural gas fired generator in case of power outage.

Greater Lenox Ambulance Service: located at 1 Leland Wright Avenue. This building is equipped with a natural gas powered generator in case of a power outage.

Department of Public Works: located on East North Street. This building is not wired for easy hook up to a generator but some portable generators are on site.

Red Cross Shelters:

South Side Elementary School, 200 High Street, Canastota, Capacity = 50 people.

Peterboro Street School, 220 N. Peterboro Street, Canastota, Capacity = 80 people

Canastota Jr./ Sr. High School 120 Roberts St., Canastota, Capacity = 358

Local Organization and Regulations

The *Village Board of Trustees* meets on the 1st and 3rd Mondays of every month at 7 PM..

The *Village Planning Board* meets on the 2nd and 4th Wednesdays at 7 PM.

The *Zoning Board of Appeals* meets as needed.

The Planning Process

Michael Johnston, Madison County SWCD, met with the Village of Canastota Board of Trustees at their regular monthly meeting on Monday, February 2, 2004. The Board of Trustees directed Mr. Johnston to work with Village Administrator Bryan Gazda to collect the information needed to prepare a section a section of the mitigation plan on the Village of Canastota. Mr. Johnston met with Mr. Gazda at the Village offices on Tuesday, March 2, 2004. After preparing a first draft of the plan, Mr. Johnston met with Mr. Gazda and Mike Adsit, Village Enforcement Officer, on January 20, 2006. At that time, a tour of sites was made and photographs were taken. Vic Kopnitsky, Chairperson of the Village Planning Board, submitted comments on a draft of the plan by e-mail during the week of March 20, 2006. Mike Johnston met with Mike Adsit, Village Codes Enforcement Officer, and Ron Bennet, Village DPW Foreman, on March 27 to review a draft of the plan.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

The following organizations have been contacted for input into the Village of Canastota Hazard Mitigation Plan:

Village of Canastota Beautification Committee

Greater Canastota Chamber of Commerce

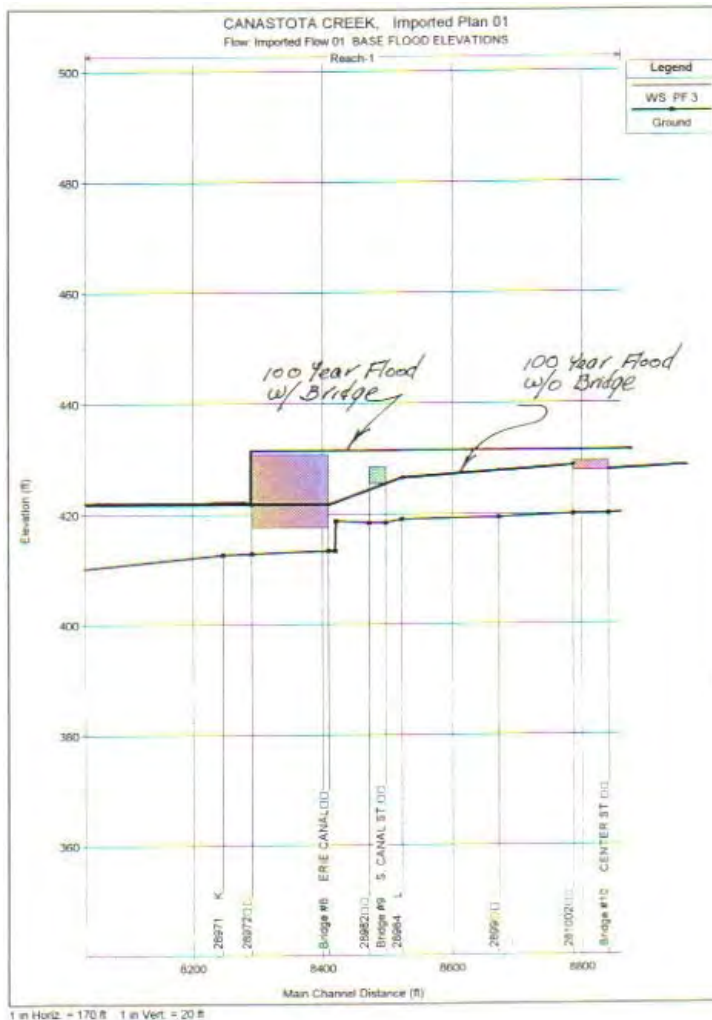
Existing Plans, Studies, Reports, and Technical Information

The Village has a Village Safety Plan in place. This plan applies mainly to employees located at the Village Hall and the Department of Public Works. The plan includes chapters on Policy, Safety Procedures, Reporting Standards, Hazardous Communications (labeling of hazardous materials), Emergency Evacuation Plan, Personal Protective Equipment Standards, Forms, and OSHA Standards.

Through Colgate University's Upstate Institute, in the summer of 2006 Colgate Geography Department students will map infrastructure in both the Villages of Canastota and Chittenango.

FEMA Review Canastota Creek Village of Canastota Madison County by T.S. Holbrook, PE May 8, 1999 On March 23, 1999 a Review of FEMA flood studies for Canastota Creek through the Village of Canastota was completed by T.S. Holbrook, P.E. of Syracuse, New York. On May 8, 1999 Mr. Holbrook submitted an additional overview of this flood study. In this overview he states:

It has been found through this review the largest impact on water surface elevations within the study area is caused by the existing structures which cross Canastota Creek at numerous locations. These structures are generally undersized and impede the smooth flow of water through the Village during large storms. In an attempt to determine what affect these structures have on water elevations, the Erie Canal structure was artificially removed. This lowered the 100 year storm elevation by 9 feet. It should be pointed out, that this bridge has the largest affect of any of the others on water elevation within the Village and its influence diminishes as you move upstream. The last page shows the 100 year water surface profile with and without the Erie Canal bridge removed.



Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Village of Canastota Probability Greater (G), Lesser (L) About Equal (E)	Village of Canastota Issues Beyond County-wide Plan Yes (Y), No (N)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	G	Y
Winter Storms	Mod. High	272.2	E	N
Fires	Mod. High	265.2	E	N
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	G	Y
Utility Failure	Mod. Low	218.5	L	N
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	E	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		L	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Village of Canastota.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Canastota Program	State BOCA Codes	No	Through Codes	N	SEQR for large developments	Federal Flood Insurance Program	N

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	N	N	N	Y	State Regs Apply	Y

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Canastota Program	N	N	N	N	N

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Canastota Program	N	Education of Elected to NIMS Standards	State Rules Apply	N

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Canastota Program	Design assistance available through SWCD	N	State Regs for greater than 1 acre development	N	State Rules Apply	DPW assesses trees within ROW	State & Federal Rules Apply	Oneida Lake Program

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Canastota Program	N	Fire Dept. Police Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System	N	Yes

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Canastota Program	N	N	N	Red Cross Shelters Fire Dept. shelter Safe Room in Village Hall

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Village of Canastota Safety Plan.

Mitigation Strategy Action Plan

The overall purpose of the Village of Canastota Mitigation Strategy Action Plan is to protect human life and property from naturally occurring hazards.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Flooding

The Village of Canastota has a number of locations that have specific flooding problems. Canastota Creek flows from south to north directly through the center of the Village. There are actually few structures located within the 100 year floodplain of this creek. Flooding problems do occur along this creek because many of the culverts through the village lack enough capacity to accommodate peak flows.

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

March 1993

Flooding occurred in the Village because of snowmelt in the Canastota Creek watershed. Flooding occurred in the downtown area between Main Street and Peterboro Street. Residences along West Hickory, Pleasant, Bruno, and James Streets suffered the worst flooding.

April, 2004

Flooding occurred between Barlow Street and Beebe Bridge Road especially in the area of the old town dump located between the New York Central railroad tracks and the Old Erie Canal. Water was three foot deep in places; two houses needed to have their basements pumped.

April, 2005

Flooding in the Barlow Street area was repeated. After this event, Canal authority personnel cleaned debris out of a dive culvert under the canal in July, 2005.

Locations Subject to Hazard

Flood waters cause problems at the following locations:

Kime's Hardware – Flooding occurs here during peak runoff events because a culvert lacks capacity to conduct peak flows of Canastota Creek. Unfortunately, fixing this culvert would cause flooding at the next culvert downstream that lacks capacity.

Basement Flooding along Lewis and Chapel Streets during periods of high water in Canastota Creek. Fire Department has documentation of the basements that have been flooded; this information is provided in an annual report to the Village Mayor.

Debris has accumulated in Canastota Creek below the Erie Canal. This is a maintenance issue that needs to be addressed.

Unnamed Tributary to Canastota Creek – 3 locations

- a. Undersized Culvert on Private Land
- b. Back of funeral home, culvert under Main Street
- c. Under James Street

Flooding occurs along James Street and behind houses located on Barlow Street

Potential Losses

2 houses along Pleasant Street have been subject to repetitive losses. The former Eisenhower residence suffers \$1,000 damage per event while another residence suffers \$500 damage per event.

Mitigation Measures

Kime's hardware and Canastota Creek – this culvert needs to be upgraded to the same size as the next culvert downstream on Canastota Creek. This project would lower the incidence of flooding but would not solve the problem. This would be the responsibility of the landowner. This is a Medium Priority for the Village.

Canastota Creek Culverts – The culverts downstream of the Erie Canal culvert conducting Canastota Creek through the Village need to be upgraded. This work needs to be done starting with the furthest culvert downstream, a pipe arch under Main Street owned by the Madison County Highway Department. The new culvert needs to be sized based upon the capacity of the Erie Canal culvert and the added runoff from the watershed in the Village below the Erie Canal. This work will be done at the end of the expected lifespan of the existing culvert. This is a High Priority for the Village. Work will be done by the County Highway Department under existing funding.

Nonamed Creek culverts – SWCD will assist Village DPW in sizing new culverts for the Nonamed Creek. Design work will be done during 2007 field season. Design work can be done at no cost to the Village. This is a High Priority for the Village.

B. Transportation Accidents

Mitigation Goals Protect the health and safety of Village residents from the effects of a serious chemical spill.

Historical Events

CSX Rail Line – The CSX Rail Line through the Village has had one derailment through the Village in the past seven years.

Locations Subject to Hazard

CSX Rail Line through the center of the Village.

NYS Thruway through the northern portion of the Village.

NYS Route 5 along the south boundary of the Village.

Potential Losses

A serious chemical spill involving chlorine could lead to a loss of life.

Mitigation Measures An evacuation plan is needed for the Village. Mike Adsit, Codes Enforcement officer for the Village, will work with the Police Chief and Fire Chief to put together the plan. This would be done during the winter months of 2007. This is a High Priority for the Village.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 5 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Canastota Creek Culvert Replacement @ Kime's Hardware	N	+1	-1	+1	-1	-1	+1	0
Canastota Creek Culvert Replacement @ Main Street	+1	+1	+1	+1	N	+1	+1	6
Canastota Creek Culverts Replacement between Erie Canal & Main Street	+1	+1	-1	N	+1	+1	+1	4
No Name Creek Culverts Design	+1	+1	+1	+1	+1	+1	+1	7
Evacuation Plan for Village	+1	+1	+1	+1	+1	+1	+1	7

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Village of Canastota's Codes Enforcement Officer and submit a copy of the evaluation form listed in appendix EF. The Village's Codes Enforcement Officer will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.

- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year

- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report

- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year

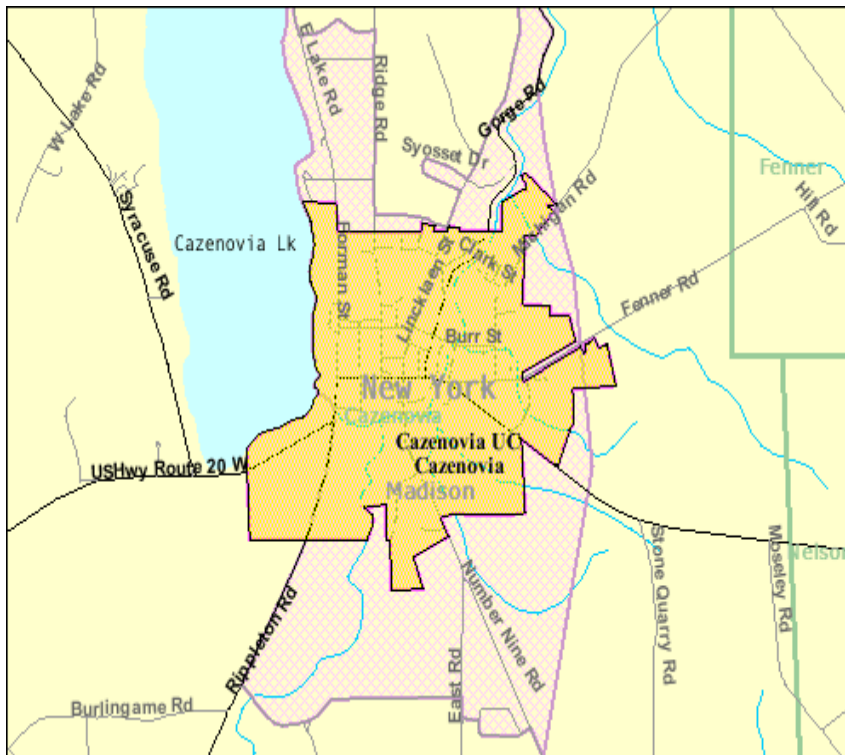
- Problems encountered in implementing the plan

- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Village's Codes Enforcement Officer and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Village of Canastota Trustees, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Village of Canastota subsection based on the reports supplied by the Village's Codes Enforcement Officer and other municipalities as well as input from the public. This updated plan will be submitted to the Village Trustees for approval before being forwarded to FEMA.

VILLAGE OF CAZENOVIA



Mayor: Thomas J. Dougherty

Public Works Administrator: William Carr, 655-3041

Police Chief: David J. Amico

Fire Chief: Richard Macheda, 655-2834 Fax 655-5418

Background

The Village of Cazenovia is a community of 2,700 residents located in the western portion of the county. 81.9% of the residents are between the ages of 18 and 65, while only 15.8 % are over the age of 65 (residents). The village currently encompasses approximately 1.5 square miles. The village has an equalized assessed value of approximately \$187,800,000 dollars, which is distributed across a variety of property classes. There are 516 single family occupied homes within the village.

Land Use and Development Trends

A number of new developments are either planned or under construction in the Village of Cazenovia. "South Village" is a 60 unit patio home development on Chenango Street on land that was annexed into the Village. A 21 house development on Burton Street has been approved by the Planning Board; construction has not yet begun on this project.

Assets

Village Hall: located at 90 Albany Street. This building is equipped with a generator in case of a power outage.

Cazenovia Village Police Department is located in the Village Hall.

Cazenovia Fire Department: located at 121 Albany Street. This building is equipped with a generator in case of a power outage.

Village Water Works: located on Chenango Street. This facility supplies drinking water for the Village from groundwater. It is equipped with a generator in case of a power outage.

Red Cross Shelter: The primary Red Cross shelter for this area is Cazenovia Central School, 31 Emory Avenue. Capacity is 330. It has a generator that will power emergency lights and heat. It does not have external hook-up for a supplemental generator.

Cazenovia Area Volunteer ambulance Corps, Inc. (CAVAC): This facility is located at 4 Forman Street. It has a paramedic level of care.

Local Organization and Regulations

Village Government consists of Mayor, 4 Village Trustees, a Village Clerk and two Village Justices.

The Village Board meets on the first Monday of each month at 7 PM

The Village Planning Board meets on the second Monday of each month.

The Zoning Board of Appeals meets on the fourth Tuesday of each month as needed.

The Historic Preservation Committee meets on the 4th Monday of each month at 7 PM.

The Village has an active tree maintenance program under which dead wood, dead trees, and hazard trees are removed. The budget for this program is \$20,000 per year. Work is performed by Bartlett Tree Expert Company.

The Planning Process

Mike Johnston, Madison County SWCD, met with the Village Board of Trustees at their regular monthly meeting on March 1, 2004. The Board directed Mr. Johnston to meet with Steve McLaughlin, former Village Public Works Administrator, in order to gather information on Village hazards. Mr Johnston met with Mr. McLaughlin on April 9, 2004. After reviewing problems at the Village Offices, the two made site visits throughout the Village. Mr. Johnston subsequently met with Mr. McLaughlin to review a draft of the Village of Cazenovia section on January 3, 2005. A later draft of the plan was reviewed with former Village Clerk Laura Abernathy on March 17, 2006 and with Steve McLaughlin on April 4, 2006. A further update for the plan was submitted by Mayor Thomas Dougherty on April 14, 2009. Input from Madison County Highway Department, Madison County Sheriff, Madison County Planning Department, Madison/Oneida Chapter of the American Red Cross, Madison County Fire Advisory Board, and Madison County Traffic Safety Board was considered in the writing of this plan.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

The following organizations have been contacted for comment on the Village of Cazenovia HMP:

Cazenovia College

Cazenovia Lake Association

Cazenovia Preservation Foundation

Cazenovia Area Community Development Association, Barbara Henderson

Greater Cazenovia Area Chamber of Commerce, Richard Borsellino

Existing Plans, Studies, Reports, and Technical Information

Village of Cazenovia Comprehensive Plan

Cazenovia Area Planning Project report

Village of Cazenovia Zoning Rules

Village of Cazenovia Emergency Response Plan

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Village of Cazenovia Probability Greater (G), Lesser (L) About Equal (E)	Village of Cazenovia Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	E	N
Winter Storms	Mod. High	272.2	E	N
Fires	Mod. High	265.2	E	N
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	E	Y
Utility Failure	Mod. Low	218.5	E	N
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	L	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	E	N
Wave Action	Low	159.5	E	N
Dam Failure	Low	159.2	G	Y
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	L	N
Landslide	Not Rated		E	N

Existing Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Village of Cazenovia. Appendix D of this plan can be used as a guide as to what mitigation actions can mitigate different hazards.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Cazenovia Program	State BOCA Codes	No	Village Codes	For Infrastructure	NYS SEQR	National flood insurance rules	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	Yes Detention Pond Areas	No	Lakeshore setback rules	Zoning Variance Permits	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Cazenovia Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Cazenovia Program	No	Education of Elected to NIMS Standards	State Rules Apply	No

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Cazenovia Program	Technical assistance through SWCD	No	State Regs for greater than 1 acre development	Canal Authority from Caz. Lake to Mill St.	State Rules Apply	Tree Maintenance Program	State & Federal Rules Apply	Oneida Lake Program

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Cazenovia Program	Emergency Preparedness Plan	Fire Police Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System	No	Yes

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Cazenovia Program	Yes	Floodwater Detention Basin	State Canal Corporation	Red Cross Shelters

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Village of Cazenovia Comprehensive Plan.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Flooding

Flash flooding has occurred in the Village three times in the last ten years including January 1996, April 2001, and August 8, 2003. Floods occur mainly in two areas, the east side of the Village and the southwest area just east of Route 13.

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

August 8, 2003

During this summer downpour, 4.5 inches of rain was observed in a 1 hour period at the Madison County Sewer District plant located just north of the Village on Route 13.

April 2001

This was a flood event that was caused by Spring snowmelt and was not associated with a rainfall event. Runoff from the Town and Country Shopping center washed out ½ of the north bound lane of Carriage Lane.

January 1996

This flood event was caused by a warm rain that melted the snowpack. It was equivalent to the 25 year storm.

June, 1972

Hurricane Agnes

Locations Subject to Hazard

Burr Street – Residences along this street have been flooded three times in ten years including January 1996, April 2001, and August 8, 2003. All of the houses on both sides of the street have had some degree of basement flooding. A tributary of Chittenango Creek flows westward behind the houses on the south side of Burr Street before turning north and flowing through a 36 inch diameter culvert under Burr Street. This small stream has a 380 acre watershed that covers the northeast corner of the Village and parts of the Town of Fenner. The Village of Cazenovia Public Works Department has reduced some of the inflow to the Burr Street area by diverting half of the flow from a Fenner Street storm drain into the detention basin west of the Town and Country Shopping Center. Additionally, an orifice plate was placed on the detention basin discharge to reduce peak flows to Burr Street.



Culvert outlet at Burr Street Outlet Ditch.

Town and Country Plaza – This shopping area is located north of US 20 on the east side of the Village. Stormwater runoff from this area flows towards Burr Street. A very large detention basin has been constructed on the east side of the shopping area. The watershed above this detention area is 270 acres. On August 8, 2003 the detention basin overflowed and flooded Town and Country Bowling Alley. Work has been completed since this event: the embankment for the basin has been raised two feet and a new emergency spillway should direct water into the parking lot and away from the bowling alley.



Detention Pond behind Town and Country Lanes. This photo was taken on January 18, 2006.

Fenner Road – Fenner Road is located north of the Town and Country Plaza and contributes runoff to the Burr Street area. During past flood events, the road side ditches have overflowed and deposited large amounts of debris on the road surface.

Carpenter's Pond – This pond is located on Carpenter Street is southwest of the downtown area. Adjacent houses receive basement flooding during periods of peak runoff.

Future Development in Hazard Area

No new development is occurring in the areas cited as having flooding problems.

Potential and Historical Losses

Burr Street Area – This area has suffered flooding three times during the past ten years. During flood events, three houses on the south side and two houses on the north side of Burr Street suffer severe damages estimated at \$10,000 per event. Another twelve houses on the south and three houses on the north suffer moderate damage estimated at \$5,000 per event. Total damage during each flood is \$125,000.



Backyard Flooding behind residences on south side of Burr Street, 1/18/06.

Carriage Lane – Damages to Carriage Lane have been caused by the overflow from the Detention Basin behind Town and Country Bowling Alley. Repairs from the January '96 flood totaled \$11,992. Repairs resulting from the 2001 flood totaled \$16,084. Modifications to the Detention Basin made late in 2001 will hopefully prevent future damages.



Paved Road Shoulder of Carriage Lane.

Carpenter's Pond – Flooding damage has occurred to houses north of the pond and one house east of the pond. More assessment is needed to establish the level of damage from past floods.

Mitigation Measures

In 1974 Stearns and Wheler, a local engineering firm, conducted a drainage of the East Cazenovia area. This area includes Burr Street, Town and Country Plaza, and Fenner Road. Recommendations from this study included:

- Installing a 36 inch culvert under Burr Street. Accomplished, Currently needs further upgrade
- Improving the channel behind the houses on the South side of Burr Street. Not accomplished
- Improving the channel east of Naomi Street and north of Fenner Road. This entire channel has been approved so far except for a section through a private property; this part of the channel is in fairly good condition.
- Installing a 36 inch culvert under Fenner Road. Not Done
- Constructing a new open channel from behind the Town and Country Plaza flowing northwest towards Fenner Road. No longer possible because of development
- Constructing a retention basin behind the Town and Country Plaza. Accomplished

More investigation is needed to determine how many recommended practices from the 1974 study are still feasible. This is a High Priority for the Village DPW Chief in conjunction with the Village Board of Trustees.

Other potential mitigation measures include: `

Burr Street Culvert – Increase the size of the culvert under Burr Street from a 36 inch diameter round culvert to a 3 foot tall by 5 foot wide by 55 foot long concrete box culvert. Richard Eliot P.E., a local engineer hired by the Village, has estimated that the materials for this project will cost \$15,000. An additional \$5,000 can be estimated for labor and machinery time. Total project will cost \$20,000. During times of high flows for Chittenango Creek, this project would be ineffective because water will back up through the culvert. This is a High Priority for the Village. Work is planned for the summer of 2009.

Burr Street Backflow Structure – During the Spring 2001 flood event, Steve McLaughlin, former Village DPW Chief, took elevation shots at the Burr Street outlet ditch. This ditch flows 259 feet from the Burr Street Culvert to Chittenango Creek. At that time, the elevation of water in Chittenango Creek was only 4 inches below the top of the culvert under Burr Street. Under such flood conditions, the Burr Street outlet ditch would be ineffective as an outlet for water flowing from the 380 acre watershed above it. Further study is needed to determine a possible solution to this situation. This is a Low Priority for the Village.

East of Burr Street and Burton Street intersection – Construct a detention pond on this village owned parcel in order to reduce peak flows behind Burr Street. This project would help to address peak flows coming from the Fenner Street area; runoff from this area is presently not controlled. A design done by Richard Eliot P.E. would require 4,000 cubic yards of fill to construct a dam. Estimated cost is \$40,000. This is a Medium priority for the Village until funding can be established.



Site of proposed detention pond just upstream of Burr Street.

Carpenter's Pond – Reconstruct the earthen emergency spillway that has been filled in over time because local residents did not recognize the importance of this structure. This project would require permission from a private landowner and would cross a driveway and the gravel access road to Canal Authority property. Cost for this project is estimated at \$10,000 but further study is needed to arrive at a more accurate estimate.



Non-functioning emergency spillway for Carpenter's Pond.

Flood mitigation projects for the Village of Cazenovia would be administered by the Department of Public Works. This department has a three person crew and has previously installed smaller projects and has overseen contractors on larger projects. Projects will be funded as money becomes available. FEMA Hazard Mitigation funding will be sought when available. Otherwise, projects will be funded out of the Village's annual budget slowly over time.

B. Dam Failure

Mitigation Goals

Prevent possible flooding to homes and Village infrastructure that could be caused by malfunctions of Canal Authority structures along Chittenango Creek.

Historical Events

Some problems have been observed during peak flows for Chittenango Creek, most recently spring of 2005.

Locations Subject to Hazard

Levee south of Carpenter's Pond – Piping of water through a levee that separates Chittenango Creek from Carpenter's Pond has been observed during periods of high flow for Chittenango Creek.

Future Development in Hazard Area

No new development is occurring in the Carpenter's Pond area of the Village.

Potential Losses

A disastrous breach of the levee would lead to the destruction of one house and basement flooding of three houses in the Carpenter's Pond area.

Mitigation Measures

Levee Rehabilitation - Clearing of woody vegetation as well as the recompaction of the levee that stretches from U.S. Route 20 to Mill Street could be accomplished as a fairly big project. In order to protect the Carpenter's Pond area, work could be limited to a shorter reach of levee. Levee Rehabilitation would be the responsibility of the NYS Canal Authority. This agency has the equipment that would be needed to perform this project. Communication between the Village and the Canal authority needs to be initiated. This is a High Priority for the Village.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6-7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Rewrite 1974 Stearns and Wheeler Drainage Study	+1	+1	-1	N	+1	+1	+1	4
Replace Burr Street Culvert	+1	+1	N	+1	+1	+1	+1	6
Install Burr Street Backflow Structure	+1	+1	-1	N	+1	-1	+1	2
Burr St./ Burton St. Detention Pond	+1	+1	-1	+1	+1	+1	+1	5
Carpenter's Pond Emergency Spillway	+1	+1	-1	+1	-1	+1	+1	3
Cazenovia Lake Outlet Levee Rehabilitation	+1	+1	-1	+1	-1	+1	+1	3

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Village of Cazenovia's DPW Administrator and submit a copy of the evaluation form listed in appendix EF. The Village's DPW Administrator will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.

- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year

- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report

- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year

- Problems encountered in implementing the plan

- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Village's DPW Administrator and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Village of Cazenovia Trustees, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Village of Cazenovia subsection based on the reports supplied by the Village's DPW Administrator and other municipalities as well as input from the public. This updated plan will be submitted to the Village Trustees for approval before being forwarded to FEMA.

VILLAGE OF CHITTENANGO

222 Genesee Street
Chittenango, NY 13037



Mayor: Robert Freunscht, 687-3936

Deputy Mayor: Ron Goeler

Public Works Superintendent: Raymond Snyder, 687-7043

Police Chief: Jeffrey Paul, 687-3936

Fire Chief: Mike Sudol

Chittenango Central Schools Superintendent: Thomas Marzeski

Village Historian: Dick Sullivan

Background

The Village of Chittenango is a community of 4,855 residents located in the western portion of the county. 71.2% of the residents are between the ages of 18 and 65, while only 12.3 % are over the age of 65 (residents). The village currently encompasses approximately 2.47 square miles. The village has an equalized assessed value of approximately \$178 million dollars, which is distributed across a variety of property classes. There are 1,174 single family occupied homes within the town.

Land Use and Development Trends

According to then Mayor Bob Freunscht, as of April 2006, there were 600 to 650 houses under construction; another 50 houses are under consideration for annexation into the Village. It is expected that 2,000 to 3,000 new houses will be built in the Village within the next ten years.

Assets

The Chittenango Fire Department is located at 417 Genesee Street in the downtown area. This building is outside of the 100year floodplain but within the 500 year floodplain. This building is equipped with a generator in the case of a power failure.

The Village Hall is located on the east side of Genesee Street in the downtown area just north of the intersection of Routes 5, 13, and 173. This building is wired to accommodate an electrical generator but does not have one on site.

Chittenango High School is located at 150 West Genesee Street just west of the south end of the downtown area. This facility is listed as the Red Cross shelter for the community and has capacity for 470 people. The high school does not have generators and but does have an external hook-up for an outside generator.

Local Organization and Regulations

As of October 23, 1984, the Village has had a local flood management law. A special permit is required from the Village for development within the flood plain. All mechanicals are required to be installed at the first floor or higher within the 100 year floodplain.

A chain of command is written into Village law so that decisions can continue to be made in the event of emergency.

A HAZMAT plan has been adopted by the Village in case of a hazardous materials spill. Escape routes for Village residents are part of this plan.

The Village has an active drainage program for pumping basements that utilizes dry wells.

An active tree maintenance program is in place; trees that are a hazard to houses are removed by a local arborist. New trees are planted under Niagara Mohawk Corporation's "10,000 Tree Program".

A Village resident (Bud Penner, 687-6604) collects rainfall measurements for the National Weather Service.

The Planning Process

Mike Johnston, Madison County SWCD, met with the Village Board at their regular monthly meeting on January 28, 2004 and was directed to meet with a group of Village personnel to discuss Village hazards. On February 10, 2004 Mr. Johnston met with Mayor Bob Freunscht, Trustee Ron Goeler, and Public Works Superintendent Ray Snider. Mr. Johnston again met with the Village Board on January 25, 2005 to discuss a first draft of the Village plan. Mr. Johnston subsequently met with Mayor Bob

Freunscht, Public Works Superintendent Ray Snyder, and Chittenango Fire Chief Mike Sudol on April 19, 2005 to discuss mitigation projects. (Mr. Sudol is also a Village Trustee and a private consultant to Madison County on emergency management. He authored the Madison County Comprehensive Emergency Management Plan.) A second draft of the plan was discussed on Tuesday, January 31, 2006 at a meeting attended by Mike Johnston, Mike Sudol, Ray Snyder, and Village Historian Dick Sullivan. A third draft of the plan was discussed between Mayor Freunscht, Fire Chief Sudol, DPW Chief Snyder, and SWCD Technician Johnston.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

A copy of the Chittenango HMP has been sent to:
Chittenango Landing Canal Boat Museum
Chittenango Fire Department

Existing Plans, Studies, Reports, and Technical Information

Valley Acres Subdivision Drainage Plan
Village of Chittenango HAZMAT Plan
FEMA Flood Insurance Study, Village of Chittenango
Chittenango Fire Department Standard Operating Procedures
Stearns and Wheler Sewage Treatment Plant Study
Stonehedge Rehabilitation Center Emergency Plan
The Village is currently working on a Long Range Plan

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Village of Chittenango Probability Greater (G), Lesser (L) About Equal (E)	Village of Chittenango Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	G	N
Winter Storms	Mod. High	272.2	E	N
Fires	Mod. High	265.2	E	Y
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	G	Y
Utility Failure	Mod. Low	218.5	E	Y
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	G	Y
Infestation	Mod. Low	173.8	L	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	L	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Village of Chittenango.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Chittenango Program	State BOCA Codes	No	Planning Board	Stormwater Drainage	SEQR for Large Subdivisions	Engineer's certification required for utilities above flood elevation	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	10% open space required in new subdivisions	Yes	No	Yes	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g. floodproofing)
Chittenango Program	Under Tax Sale	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Chittenango Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education, Village Government Program for 4 th Graders

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Chittenango Program	Technical Assistance Available through SWCD	No	State Regs for greater than 1 acre development	Debris clearing and bank stabilization by DPW	State Rules Apply	Tree planting through Onondaga Co. Coop. Extension	State & Federal Rules Apply	Oneida Lake Program

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Chittenango Program	Emergency Power for Sewage System	Fire Police EMS DPW	MSDS Sheets on File with Fire Department, MSDS Site Plan for ESCO, Inc.	911 Center Alert System, Local Fire Department Encoder		Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Chittenango Program	Yes	No	Levee at Valley Acres Subdivision	Red Cross Shelters

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the writing of the Long Range Plan for the Village.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Flooding

Flooding is the greatest hazard specific to the Village of Chittenango. The Village has numerous problems associated with flooding because of its location on relatively flat land at the base of foothills and the fact that Chittenango Creek passes right through the village. Historically, Chittenango began as a mill town that benefited from the hydropower that was available from Chittenango Creek. Unfortunately, much of the downtown area today is located within the 100 year flood plain.

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

The two benchmark flood events for Chittenango were Hurricane Agnes in *June, 1972* and the *January, 1996* flood caused by snowmelt and rain. During both of these events, water overflowed Chittenango Creek and flowed down Genesee Street through the center of downtown all the way from the Route 13 turn-off to Tuscarora road, a distance of 1 mile.

May 2004 – Seneca Street; Virginia Lane

These two separate locations suffered flooding and soil deposition following a 1 inch rainfall short duration storm. Large amounts of soil washed from farmland located uphill of these streets. Cropland had just been planted and was in a vulnerable condition because no plants were growing and the soil had not settled after tillage practices. On Seneca Street, a number of road culverts plugged with soil causing water to flow over State Route 13 (Genesee Street); one residence suffered gravel deposition in an attached garage.

August 30, 2004

More than five inches of rain fell in an eight hour period. The Valley Acres subdivision was particularly hard hit. 10 houses sustained damage. According to a November 17 article in the Post Standard, one house had eight inches of water on the ground floor while another house had 10,000 gallons of water in its basement in large part from sewer backups.

1981

Flooding closed Routes 5, 173, and 290. County was in State of Emergency.

December, 1983

Flooding occurred along Race Street

October 1977

Stonehedge Nursing Home evacuated because of flooding.

April 1974

Flooding closed roads and covered properties along Chittenango Creek. Dyke Road, Route 5, and Route 173 affected.

February, 1951

Basements in Chittenango flooded; homes were without heat.

December 14 & 15, 1901

Water was two or three feet deep in Chittenango.

July, 1897

Bridges destroyed in Town of Sullivan by flood. 3 days of flooding

March 16, 1865

Major flood swept away 20 bridges between Cazenovia and Chittenango. Lowlands remained flooded for days.

April 15, 1840

Referred to as a Great Flood

Locations vulnerable to flooding

Valley Acres Development: This is an 80 home development built in 1980 that is located on the west side of Chittenango Creek south of the downtown area. 34 of the houses are raised ranches with basements while the remaining 46 houses are colonial ranch houses without a basement. Access is from Dyke Road. A levee separates the development from the flood waters of Chittenango Creek. During large runoff events this development is flooded by a small stream that drains land above Dyke Road. This stream can not flow directly to Chittenango Creek because of the levee that protects the development from Creek floodwaters.

Chittenango Landing Canal Museum: This is a historic site located on the north side of the village along a no-longer used section of the Erie Canal. During flood events, timbers in the dry dock are actually floating out of place, threatening to cause the destruction of gates connecting the dry dock to the Erie Canal.

Sullivan Park: This is a Town-owned park located between Tuscarora Road and Route 5. A number of tributaries converge in the park. Flooding actually occurs downstream. Road shoulders for Tuscarora Road and Bolivar Road can get washed out. A church located at the northwest corner of these two roads is located within the flooded area. Flooding that formerly occurred within the park has been remedied since a drainage ditch was dug.

Downtown Area – Many of the buildings in the downtown area are located within the 100 year floodplain.

Downtown Area: Buildings located west of Genesee Street in the downtown area are in the 100 year flood plain. During previous flood events water flowing down Genesee Street was kept within the street curbs through the use of sand bags. During peak runoff periods, all of the downtown buildings can be subject to basement flooding because of the gravelly soil there. For this reason, most buildings don't have basements. Few buildings with basements have furnaces or hot water heaters located in the lower levels.

Any buildings that do have basements are usually equipped with sump pumps but damage can still occur in the event of a power failure.

Nursing Home: The nursing home is located west of the downtown area on the banks of Chittenango Creek. During earlier flood events, this facility was evacuated; on two of these occasions one of the residents died during the event. During current floods, residents remain in the building, doorways are sandbagged, and excess water is controlled with shopvacs. Because of gravel deposition in Chittenango Creek, a small levee protecting the home is presently threatened with bank erosion.

Tuscarora Road and Manor Road: This is an area of limited flooding caused by a lack of culvert capacity.

Madison Street (Perryville Road): This hazard area is located south of downtown on the east side of State Route 13 (Falls Boulevard). Because of a lack of culvert capacity under Route 13, water flows south and can flood 9 houses on Perryville Road and 10 houses on Brinkerhoff Street.

Virginia Lane: This is a dead end street located off of Madison Street. This location can suffer gravel deposition from uphill cropland if a heavy rainstorm occurs just after planting.

Seneca Street: The south end of Seneca Street can suffer from gravel deposition from uphill cropland if a heavy rainstorm occurs just after crop planting.

Future Development in Hazard Area

The Eisenhut Property located north of Tuscarora Road and west of Chittenango Creek is in a prime hazard area for development but has some land in the floodplain. Land along Lakeport Road on the north edge of the Village is also in a prime area for development but also has floodplain.)

No new development is planned in the floodplain at this time

Potential Losses

According to the Madison County Assessment office records, 404 parcels with a total assessed value just under \$31 million are listed within the 100 year flood plain in the Village of Chittenango. 359 parcels are valued over \$25,000 and have structures on the parcels. It is estimated that 100 of these parcels have basements that could sustain damage in the event of the 100 year flood or electric service interruption. It is estimated that on average these structures could sustain \$5,000 damage. Total damage would be \$500,000.

Damages to 10 houses in the Valley Acres subdivision from the August 30, 2004 flood were estimated to be \$89,000. In an October 1987 study, the U.S. Army Corps of Engineers determined that \$63,900 (\$106,074 in 2005 dollars) of flood damage occurs in Valley acres on an annual basis.

Mitigation Measures

Valley Acres – In May 2005, PLS Engineering, P.C. of Tully, New York submitted a document to the Chittenango Village government entitled Engineering Report for Improved Drainage and Flood Control for the Valley Acres Subdivision. In the Conclusion and Recommendation section of this report, PLS Engineering states:

The total cost of the least expensive combination of required remedial measures is:

Levee Construction	\$2,095,000
Basin #1 Flow Diversion.....	\$ 188,000
Basin #2 Flow Diversion (Alt. 2).....	\$ 450,000
Interior Drainage System for Valley Acres.....	<u>\$1,154,000</u>
Total Estimated Cost.....	\$3,887,000

PLS also states that a total project cost of \$1,500,000 appears to be justifiable and, therefore, implementation of this project is not recommended. This is a Low Priority for the Village.

Dredging of gravel from Chittenango Creek – Gravel Removal from the creek would reduce the danger of flooding to the downtown area. The cost of dredging the stream segment between Tuscarora Road and West Genesee Street is based on 550 lineal feet x 1 cubic yard/ lineal foot x \$20/ cubic yard. Total cost would be \$11,000. This is a Low Priority for the Village because permits from NYS DEC would be difficult to obtain.

Downtown – In the estimated 100 residences that still have utilities in basements, elevation of these utilities would cost an average of \$5,000 per house for a total of \$500,000. This is a Medium Priority.

Cleaning of gravel and other debris from the large box culverts that conduct Chittenango Creek under the Old Erie Canal - This work is usually done by the NYS Canal authority. The Director of the Chittenango Landing Canal Boat Museum and the Public Works Superintendent for the Village should work together to contact the Canal Authority when debris accumulates. This is a High Priority for the DPW Superintendent on an ongoing basis.

Grassed Waterways on farm fields above Seneca Street - One swale on farmland above Seneca Street was the primary source of sediment during the May 2004 disaster. A grassed waterway would not reduce the amount of water coming off of the hill but it would prevent large amounts of sediment from being carried with storm water. Cost of the project would be based on 1,200 lineal feet of grassed waterway at \$5 per foot for a total of \$6,000. This is a Medium priority for the Village.

Stonehedge Rehabilitation Center - An engineering analysis of flood levels in relation to rainfall amounts needs to be conducted for Chittenango Creek at the Stonehedge Rehabilitation Center. This study would establish the amount of rainfall that would lead to a high enough flood that would actually warrant the evacuation of the facility. This is a High Priority for the Village and would be funded under an upcoming budget.

Periodic Inspection of Village Drainage Systems – In 2006, the Village hopes to map all of its catch basins and drainage conveyances. In conjunction with this mapping, a schedule of recommended periodic inspections of catch basins should be written so that future Public Works Superintendents will have this information. This is a High Priority.

B. Power Failure

Electric power is fed to the Village along two separate transmission lines. A substation located on State Route 173 south of the Village feeds the older downtown area. A power feed along Tuscarora Road feeds the newer subdivisions along Tuscarora Road and businesses along State Route 5 on the north side of the Village. Power failures sometimes occur along one feed but not along the other.

Mitigation Goals

Prevent damage to private property and maintain critical services for Village residents.

Historical Events

Labor Day Storm, 1998 - This storm occurred during the early morning hours of Monday, September 7. Power was out for three days. Some Village residents had to bring medications to the firehouse for refrigeration.

August 16, 2003 – This was a blackout that affected many of the Northeast States and part of Canada. Power went out around 3 PM and came back during the night.

Locations Subject to Hazard

Downtown within 100 year floodplain - The Village is particularly susceptible to damage that could be caused by a power failure if this event happens during the Spring season.

At that time of year, sump pumps are operating in the downtown area and an electric interruption would result in water damage to many basements.

Village Sewage Treatment System – Included in the system are one lift station and two pumping stations. If sewage is allowed to back up in the system, big problems can occur, particularly in the Legion Drive neighborhood.

Future Development in Hazard Area

No new development is planned in the Downtown or Legion Drive areas.

Potential Losses

Flooding to the downtown area during a power failure could cause \$500,000 in damages.

Village Sewage Treatment System – During a power outage, the lift station and pumping stations must be pumped every 6 hours. This requires full time work by 2 public works employees at \$30 per hour each. For each 24 hour period of a power outage, damages amount to \$1,440.

Mitigation Measures

Downtown – In the estimated 100 residences that still have utilities in basements, elevation of these utilities would cost an average of \$5,000 per house for a total of \$500,000. Unless federal funding becomes available, this is the responsibility of the landowner but is not required by law. This is a Medium Priority for the Village.

Village Sewer Treatment System – 2 pump stations do not have automatic generators in case of a power failure. Of these two stations, Legion Drive is the higher priority and would be addressed first. An estimate by a qualified electrician is needed in order to

establish the cost of installing automatic generators. DPW is responsible for obtaining these estimates. This is a High Priority for the Village.

C. Ice Jams

Mitigation Goals

Prevent damage to private property and maintain critical services for Village residents.

Historical Events

In January of 2004 an ice jam formed on the upstream side of the Tuscarora Road bridge over Chittenango Creek. This jam was caused by the formation of “anchor ice” extending from the creek bottom. This ice jam reportedly raised the water level in the creek 7 or 8 feet.

Locations Subject to Hazard

The Tuscarora Road Bridge is known to be susceptible to ice jams. The Genesee Street bridge over Chittenango Creek located upstream has not had a problem with ice jams.

Future Development in Hazard Area

No new development is planned in the part of the Village where flooding from ice jams has occurred.

Potential Losses

During the January 2004 event, 3 properties in the Tuscarora and Race Street area suffered flooding. Double D’s Auto Service was closed during the event. Two residences suffered basement flooding. At \$10,000 per property, it is estimated that total losses were \$30,000.

Mitigation Measures

Reportedly, 25 years ago dynamite was used unsuccessfully on an ice jam at the Tuscarora Road Bridge.

Bridge Inspection – Bridges with a history of ice jams, in particular the Tuscarora Road bridge over Chittenango Creek, should be inspected with a solution in mind for the ice jam problem. This work would be performed by the County Highway Department Bridge Inspection Crew during their regular duties. This is a Medium Priority for the Village.

D. Fires

Mitigation Goal

Prevent loss of valuable records and disruption of services to Village residents that could be caused by damage to the Village offices.

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Locations Subject to Hazard

The Village Offices in downtown Chittenango are susceptible to fire because no fire detection system exists at this location. Police, Village Government and Codes Enforcement are housed at this location.

Potential Losses

Village Offices are insured for \$911,000. Village Trustee and Fire Chief Mike Sudol estimates replacement costs at \$1.5 to 2 million.

Mitigation Measures

A fire detection and security system for the Village Offices including the Police Department is estimated at \$8,000 - \$10,000. The Village plans to include this project in its 2007 budget. Work will be done by a private contractor. This is a High Priority for the Village.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

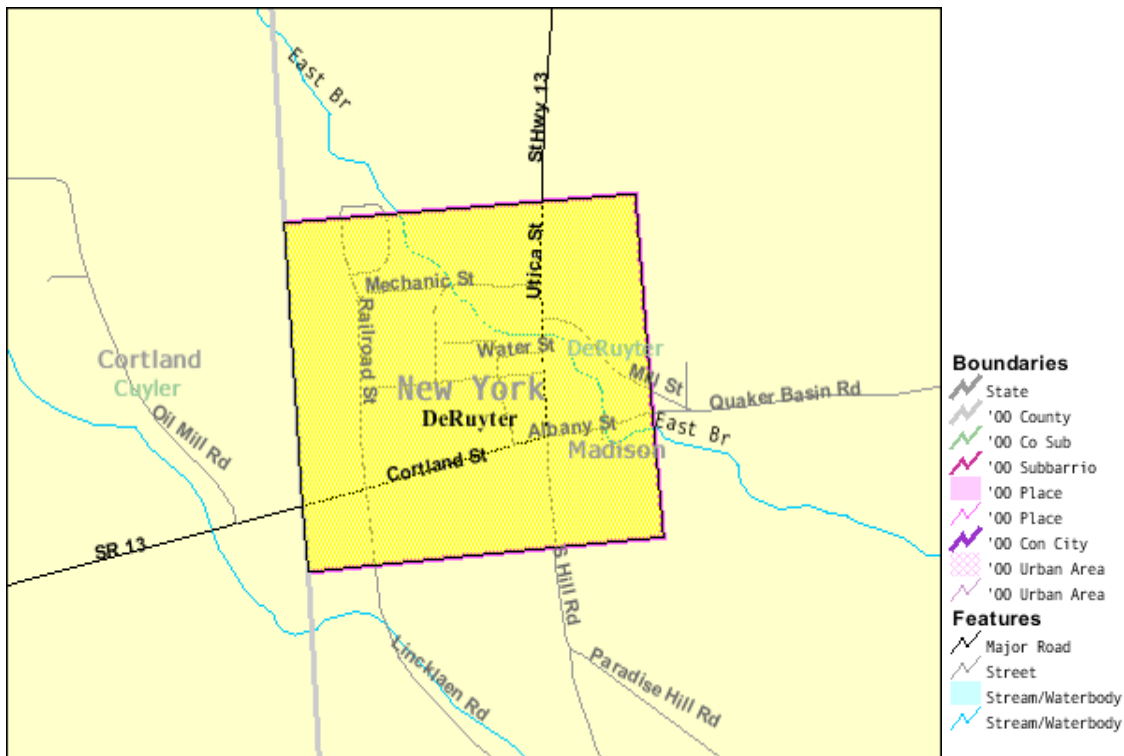
+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6-7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Valley Acres Drainage Improvement	+1	+1	-1	+1	N	-1	+1	2
Chittenango Creek Dredging	+1	-1	+1	+1	-1	+1	-1	1
Elevation of Utilities in Downtown Residences	+1	+1	-1	+1	+1	+1	+1	5
Clearing of Chittenango Creek Culverts under Erie Canal	+1	+1	+1	+1	+1	+1	+1	7
Grassed Waterways in Farm Fields above Seneca Street	+1	+1	-1	+1	-1	+1	+1	3
Stonhedge Rehabilitation Evacuation Plan Study	+1	+1	+1	+1	+1	+1	+1	7
Village Drainage System Inspection Program	+1	+1	+1	+1	+1	+1	+1	7

Village Sewer Pump Station Backup Power Study	+1	+1	+1	+1	+1	+1	+1	7
Ice Jam Bridge Study	+1	N	+1	+1	N	+1	+1	3
Village Office Fire Detection & Security System	+1	+1	+1	+1	+1	+1	+1	7

VILLAGE OF DeRUYTER



Mayor: Nancy Parkhurst
Public Works Superintendent: John Farewell
Village Clerk: Patricia Winters, 315-852-9625
Codes Officer: Roger Cook

Background

The Village of DeRuyter is a community of 531 residents located in the southwestern portion of the county. 73.8% of the residents are between the ages of 18 and 65, while only 16.4 % are over the age of 65 (residents). The village currently encompasses approximately .37 square miles. The village has an equalized assessed value of approximately \$14 million dollars, which is distributed across a variety of property classes. There are 103 single family occupied homes within the town.

Land Use and Development Trends

There has been no new development in the Village in recent years. The Village serves mainly as a bedroom community for Norwich, Cortland, and Syracuse.

Assets

Village Offices are located in the same building as the DeRuyter Fire Department. This building has a generator that kicks on automatically in the case of a power failure.

Public Works Department: The garage for the Public works Department is a 24' x 24' building is located at the Village owned fairgrounds at the end of Railroad Street. It does not have a generator. Equipment: One ton truck with plow.

Water Supply: Wellhead for this groundwater supplied system is at the Village fairgrounds. The pumping system is wired for a generator in case of a power failure. A 200,000 gallon water tank is located south of the Village at the intersection of Paradise Hill Road and South Hill Road. The tank has capacity for three days of peak usage by the Village.

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Local Organization and Regulations

The Village Board of Trustees meets on the second Thursday of each month at 7:30 PM.

The Village Planning Board meets on the third Wednesday of each month at 7 PM.

\$1,500 is budgeted annually for tree maintenance.

The Planning Process

Steve Lorraine, Madison County SWCD, attended the regular monthly meeting of the Village of DeRuyter Board of Trustees on Wednesday, February 18, 2004. The Board of Trustees directed SWCD personnel to work with John Farewell, Village Public Works Superintendent, to collect the information needed to prepare a section of the mitigation plan on the Village of DeRuyter. Michael Johnston, Madison County SWCD, met with Mr. Farewell on Friday, March 5, 2004 to review possible Village problems and locate them on a map of the Village. Mr. Johnston met with Mr. Farewell again on January 11, 2005 to go over a first draft of the Village of DeRuyter section of the mitigation plan.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

The following organizations have been contacted for comment on the Village of DeRuyter HMP: DeRuyter Fire Department

Smith Ambulance

Existing Plans, Studies, Reports, and Technical Information

Madison County Groundwater/ Wellhead Protection Program Report, Madison County Planning Department, January 1995

Village of DeRuyter Hydraulic Analysis of Proposed Water Supply System Improvements

These documents were not found to be applicable to the flooding hazard being closely considered in the Village of DeRuyter HMP.

Mitigation Strategy Action Plan

The overall purpose of the Village of DeRuyter Mitigation Strategy Action Plan is to protect human life and property from naturally occurring hazards.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Village of DeRuyter Probability Greater (G), Lesser (L) About Equal (E)	Village of DeRuyter Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	L	N
Winter Storms	Mod. High	272.2	E	N
Fires	Mod. High	265.2	E	N
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	G	Y
Utility Failure	Mod. Low	218.5	E	N
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	L	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	L	N
Drought	Mod. Low	164.2	L	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	L	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	L	N
Landslide	Not Rated		L	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Village of DeRuyter.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
DeRuyter Program	State BOCA Codes	No	Village Codes	No	NYS SEQR (not used recently)	National flood insurance rules	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	No	No	No	State Regs Apply	No

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
DeRuyter Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
DeRuyter Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
DeRuyter Program	Technical assistance through SWCD	No	State Regs for greater than 1 acre development	No	State Rules Apply	Tree Maintenance Budget	State & Federal Rules Apply	No

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
DeRuyter Program	No	Fire Police Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System	County health Dept. Rules for Minimum Living Standards and Drinking Water	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
DeRuyter Program	Debris clearing when money is available.	No	No	Red Cross Shelter at DeRuyter Central School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Village of DeRuyter zoning regulations.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. FLOODING

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

January '96 Flood – This event caused flooding and gravel deposition at two intersections in the downtown area.

August 13, 2004 – A short duration high intensity storm during the night time hours caused flooding at two intersections along Route 13.

Locations Subject to Hazard

State Route 13 and Cemetery Street intersection: The State Highway has been closed during storm events because of flooding and gravel deposition. Floodwaters and gravel originate in a stream that is 2,200 feet south. A culvert under Cemetery Street fills with gravel during peak storm events. Floodwaters then flow downhill towards Route 13.

State Route 13 and Lincklaen Street intersection: Gravel deposition also occurs at this intersection. Floodwaters and gravel originate in road ditches 1,000 feet south of the intersection.

Future Development in Hazard Area

None

Potential Losses

Flood events at two intersections downtown on State Route 13 – Two houses south of the Cemetery Street intersection have suffered flooded basements during past disasters. It is estimated that each house suffers \$10,000 worth of damage. During flood events DeRuyter Fire Department personnel direct traffic until gravel is cleared and pump basements of flooded houses. 12 firemen at \$20/ hour and two trucks at \$100/ hour for six hours total \$2640. The Village Public Works Department spends four hours clearing gravel during each event; the use of a front end loader and their one ton truck is \$100/ hour. Public works cost is \$400 per event. Total damages for each flood event is \$23,040.

Mitigation Measures

A 5 foot x 2 foot concrete box culvert under Cemetery Street lacks capacity. Flooding could be prevented if 3 foot diameter x 60 foot smooth bore plastic pipe was installed to supplement the concrete box. The proposed culvert would be installed downhill from the existing culvert and would serve as a spillway during periods of peak flow. Cost of the pipe would be 60 feet x \$32/ foot = \$1920. Machinery time would be \$100/ hour x 8 hours = \$800. Total project cost is \$2,720. This is a Medium Priority for the Village.

Lincklaen Street intersection flooding is caused by the erosion of road ditches uphill from Route 13. Road ditches within the village have been paved but 2,000 feet of ditch need to be lined with concrete. Estimated cost for this project is \$6,600. This is a High Priority for the Village and would be completed first.

The two forgoing projects would be completed by the Village Public Works Department as funding becomes available. While funding for the Cemetery Street Project could be justified under a FEMA Hazard Mitigation Grant, funding for the Lincklaen St. project would have to come from the annual Village budget.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

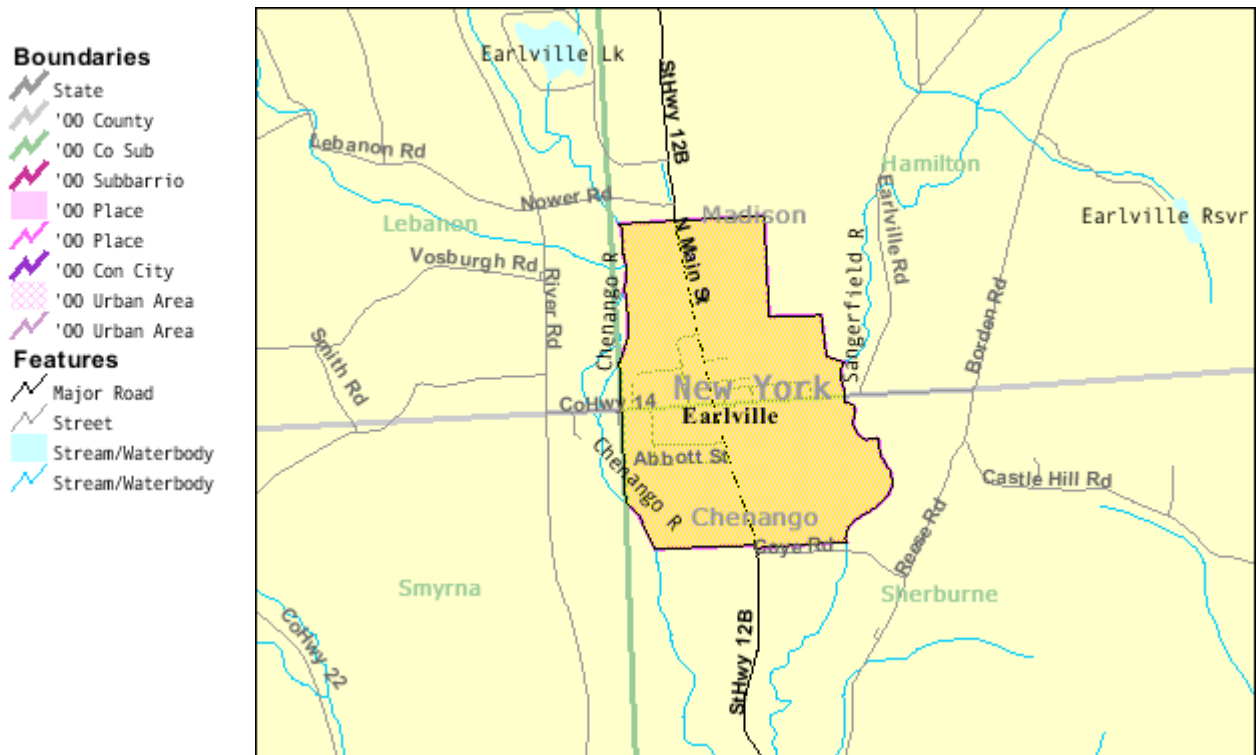
The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Supplemental Culvert under Cemetery Street	+1	+1	-1	N	+1	+1	+1	4
Paving Road Ditches above Lincklaen Street	+1	+1	N	+1	+1	+1	+1	6

VILLAGE OF EARLVILLE



Mayor: Toni Campbell (315) 691-2121

Police Chief: Murray Roach

Superintendent of Highways: Bruce Pedrick (315) 691-2353

Planning Board Chairperson: Barbara Golden

Background

The Village of Earlville is a community of 791 residents located on the border between Madison and Chenango Counties. The Village north of Main Street is in the Town of Hamilton and south of Main Street is in the Town of Sherburne. Seventy two percent of the population is between the ages of 18 and 65, with thirteen percent of the population over the age of 65(106 residents). The village is comprised of just over one square mile. The village has an equalized assessed value of almost 12 million dollars. There are 329 housing units in the village with 187 of them being single family owner occupied homes. There is no real commercial development taking place at this time.

Land Use and Development Trends

A 5 lot-9 acre subdivision is proposed north of East Main Street at the Village boundary. Very little undeveloped land is left within the Village limits. Village is looking to improve downtown with new businesses. Smith block façade was recently rebuilt. H & R Block is one new downtown business.

Assets

The village offices are located on Route 12B. A back-up generator is available in case of power failure from the Fire Department.

The Earlville Fire Department is located right next to the village offices on Route 12B. A back-up generator is available in case of power failure.

The Village Department of Public Works is located on Fayette Street. This facility does not have a generator or an external hook-up for an outside generator.

Equipment includes:

- 1 6 wheel dump truck with plow but no sander
- 1 Front end loader
- 1 Small Ford Tractor with Snowblower
- 1 ¾ ton truck with sander and plow

The Village Police Department is co-located with the Department of Public Works.

The Village has its own water supply that receives its water from wells located east of North Main Street. Water pressure is supplied by a 200,000 gallon reservoir located on the east side of North Main Street at a higher elevation than the well heads. Water is moved to the reservoir by a 40 horse power pump and a 25 horse power pump. These pumps do not have a back-up generator or an external hook-up for a back-up generator.

Local Organization and Regulations

There is a planning board in place to review new development and subdivisions.

The Village has an active tree maintenance program. The Village contracts with a private arborist to remove and replace trees as designated by the Village Board.

The Village does not enforce any local zoning ordinances.

The Planning Process

The Village Board of Trustees held a public meeting on 3/9/04 where discussion took place about the mitigation plan. The pros and cons of being included in the plan were discussed and it was decided to proceed with the planning process. The board suggested that we meet with the department of public works and a representative from the planning board. Several discussions took place with Barbra Golden from the planning board regarding issues in the village and how this planning process works. Steve Lorraine and Michael Johnston, Madison County SWCD, met with Bruce Pedrick, Earlville Superintendent of Highways, on February 2, 2006 to review an early draft of the

Village's plan. Mike Johnston met with Mayor Toni Campbell of May 12, 2006 to review a later draft of the plan.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

A copy of the Village of Earlville HMP has been sent to the following organization for comment:

Partnership for Community Development, Hamilton, NY

Existing Plans, Studies, Reports, and Technical Information

Emergency Action Plan – The Village Board is currently working on an update of the Village's Emergency Action Plan.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Village of Earlville Probability Greater (G), Lesser (L) About Equal (E)	Village of Earlville Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	L	N
Winter Storms	Mod. High	272.2	E	Y
Fires	Mod. High	265.2	L	Y
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	L	Y
Utility Failure	Mod. Low	218.5	E	Y
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	L	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	L	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		L	N

Existing Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Village of Earlville. Appendix D of this plan can be used as a guide as to what mitigation actions can mitigate different hazards.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Earlville Program	State BOCA Codes	No	Village Codes	Wellhead access	NYS SEQR	National flood insurance rules	No Village has little floodplain

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	No	No	No	State Regs Apply	NYS Regulations apply

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Earlville Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Earlville Program	Village clerk supplies Health Dept. and other info.	Education of Elected to NIMS Standards	State Rules Apply	Preschool Fire Safety CPR Training at Senior Center

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Earlville Program	Technical assistance through SWCD	No	State Regs for greater than 1 acre development	No	State Rules Apply	Tree Maintenance Program	State & Federal Rules Apply	No

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Earlville Program	Emergency Preparedness Plan being developed	Fire Police Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System	County Health Department rules for minimum living standards and drinking water	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Earlville Program	No	No	No	Sherburne Methodist Church acts as Red Cross Shelter

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the writing of the Village of Earlville emergency action plan.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Winter Storms

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

December 25 & 26, 2002 Record Snowfall - This was declared disaster FEMA 3173 EM NY in Madison County.

March 1993 Blizzard This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,200 feet vs. 300 feet), Earlville probably sustained greater amounts of snowfall.

Blizzard of 1966

Locations Subject to Hazard

Downtown Area – The small downtown area at the center of Earlville poses a problem during large snowfalls because there is not enough room to plow snow. Storm drains in this area are also prone to overflow if debris is allowed to accumulate.

Future Development in Hazard Area

Proposed new development is not in downtown area.

Potential Losses

Following a large snowstorm of 12 inches, it will take the Public Works Department three 12 hour days to haul snow from the downtown area. This entails work by two personnel at \$30/ hour/ worker and two pieces of machinery at \$55/ hour each. Total cost is \$6,120.

Existing Mitigation Measures

Storm Drain Maintenance – Inspection and clearing of storm drains is done annually after autumn leaf fall and before the first winter snow.

Fire Department now allows use of former elementary school parking lot and Baker's Field for storage of snow removed from downtown area.

Proposed Mitigation Measures

No new mitigation measures related to winter storms are proposed at this time.

Implementation and Administration of Mitigation Actions The Public Works Department with direction from the Village Board is responsible for existing mitigation measures.

B. Flooding

The Village of Earlville has the Chenango River on the west side of the Village and the Sangerfield River on the east side of the Village. At the present time there has not been any development in the flood plain of either of these two rivers. More flooding problems are associated with the remnants of the Chenango Canal that traversed the Village parallel to Route 12B just east of the downtown.

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

January '96 Flood – This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

Locations Subject to Hazard

Preston Street and Clyde Street- This area is northeast of the Village center. Runoff from hills northeast of the Village is conducted by the old Chenango Canal and causes flooding to seven houses in this vicinity. There is no suitable outlet for this runoff at the present time.

Future Development in Hazard Area

No new development is proposed in any of the floodplains or the Preston Street/ Clyde Street area.

Potential Losses

Preston Street and Clyde Street - 3 houses and 1 double wide pre-manufactured home on Preston Street and 3 houses on Clyde Street suffer basement flooding during peak runoff events. All of these houses have reportedly had their utilities raised above flood level. For the 6 houses with basements, losses are estimated at \$500 for each house per flood event for a total of \$3,000 per flood event.

Mitigation Measures

Village Zoning – At the present time, construction is allowed within the 100 year flood plain with a special permit. Zoning regulations could be changed so that construction within the flood plain would be prohibited. This is a Medium Priority for the Village.

Preston Street and Clyde Street –

Alternative #1: Purchase of the houses in this area would be one3 solution to the flooding problems. At \$40,000 per house the purchase of seven houses would cost \$280,000.

This is a Low Priority for the Village

Alternative #2: Flooding could be alleviated with the construction of a storm sewer system that would consist of 2 catch basins, a pump station, and 2,100 feet of buried 4 inch diameter pipe. Total cost is estimated at \$24,000. This is a Medium Priority for the Village. Funding is not available at this time.

C. Power Outages

Electricity is delivered to the Village by three main power lines: The west side gets electric from a substation on the west side of the village, the east side gets electric via a power line from the Poolville area, and the north side of the Village receives power from the Hamilton area.

Mitigation Goals

Prevent damage to private property and maintain critical services for Village residents.

Historical Events

April 2003 Ice Storm – This was an ice storm that struck the higher elevations of Madison County worse than the lower elevations of the County. Earlville was not affected.

August 16, 2003 Northeast Power Failure – This was an event that affected the entire Northeastern United States.

Locations Subject to Hazard Any part of the Village is subject to the hazard. In the winter months, there is the danger of pipes freezing and bursting if houses lose heat. The Village water system loses pressure when pipes burst at any residence which in turn increases the fire danger throughout the Village.

Future Development in Hazard Area Since space is limited within the Village boundaries, very little new construction is expected. Downtown buildings are being refurbished and new businesses are moving in.

Potential Losses

Highway Superintendent estimates that damage to a house that has frozen pipes and subsequent water damage is \$10,000 to 15,000. Damage to the Department of Public Works building would be \$5,000.

Mitigation Measures

Town Hall & Fire Department – The Town Hall and Fire Department are co-located on Rte 12B just north of the downtown. The Village Board has authorized the installation of a generator panel and a generator for this facility. This is a High Priority for the Village. Work will be done by a private contractor.

DPW and Police Department – The Department of Public Works and Village Police Department are co-located on Fayette Street. It would cost \$1,000 each to wire these facilities for an outside generator. A 5,500 watt generator that could service both Heating

systems would cost \$600. Total cost would be \$2,600. This is a Medium Priority for the Village. Work would be done by a private contractor.

D. Fire

Mitigation Goals

Prevent damage to public and private property and lessen the risk of injury and death to the residents of the Village.

Historical Events

Earlville Opera House Fire – The block of buildings that contains the Earlville Opera House caught fire in the late 1800's. No other big fires have occurred in the Village since that time.

Locations Subject to Hazard

Downtown Area – The downtown area at the center of Earlville has buildings located closer together than other parts of the Village.

Future Development in Hazard Area (types and numbers of future buildings, infrastructure, and critical facilities in hazard area)

Downtown Area – Future development in the downtown area consists of upgrades to existing buildings. As fire codes become more strict, upgrades should improve the fire safety of downtown buildings

Potential Losses

The average home in the Village sells for \$70-80,000.

Existing Mitigation Measures

Water Advisory Committee - The Village Board has authorized the creation of a Water Advisory Committee that has been charged with studying the current status of the Village water system and identifying where the system needs to be in five years.

Proposed Mitigation Measures

Water System Upgrade – It is expected that the Water Advisory Committee will recommend replacement of some Village water mains. An engineering study will probably be required in order to determine materials and costs. This is a high priority for the Village. Department, staff, funding source, and time frame will be determined by the Water Advisory Committee in cooperation with the Village Board. This is a High Priority for the Village.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Zoning Change to Prohibit Construction in 100 Year Floodplain	-1	+1	+1	-1	+1	+1	+1	3
Purchase of seven houses at Preston & Clyde Streets	-1	+1	-1	-1	+1	-1	+1	-1
Drainage & Pump System for Preston & Clyde Streets	N	+1	-1	+1	+1	+1	+1	4
Town Hall & Fire Department Generator	+1	+1	+1	+1	+1	+1	+1	7
DPW & Police Dept. Generator	+1	+1	-1	+1	+1	+1	+1	5
Water System Engineering Study	+1	+1	+1	+1	+1	+1	+1	7

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Earlville Fire Department Fire Chief and submit a copy of the evaluation form listed in appendix EF. The Earlville Fire Chief will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

A summary and analysis of all disasters that have struck Madison County during the previous calendar year.

A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year

A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report

A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year

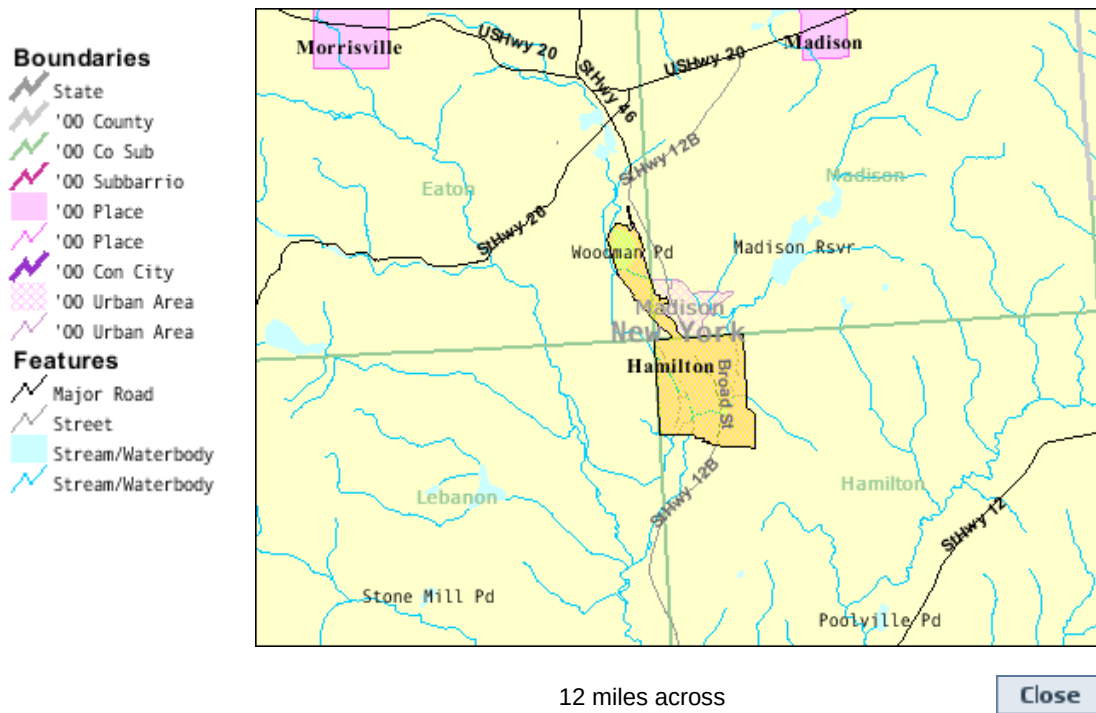
Problems encountered in implementing the plan

Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Earlville Fire Chief and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Earlville Village Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Village of Earlville subsection based on the reports supplied by the Earlville Fire Chief and other municipalities as well as input from the public. This updated plan will be submitted to the Village Board for approval before being forwarded to FEMA.

VILLAGE OF HAMILTON



Mayor: Sue McVaugh, 824-3200

Police Chief: James Tilbe, 824-3333

Director of Utilities and Public Works: Sean Graham, 824-1111

Hamilton Central Schools Superintendent: Pete Backus, 824-3300

Community Memorial Hospital: Dave Felton, 824-1100

Background

The Village of Hamilton is a community of 3509 residents located east of the Village of Morrisville and north of the Village of Earlville. Colgate University is located within the Village limits and results in 71% or 2500 of its residents being under the age of 24. Only 9% of the population is over the age of 65 (332 residents). With the annexation of the Hamilton airport in 1999 the Village has increased in size to approximately 2.6 square miles. The Village has an equalized assessed value of over \$537 million, which is distributed across various property classes. There are 785 housing units in the Village and most development is of a commercial nature along Route 12B and in the Hamilton Airpark.

Land Use and Development Trends

Five Trees subdivision off of Lebanon Street is under construction and will include 40 new houses.

In 2005 Colgate University completed construction of town house style apartments for

350 students west of Route 12B and south of the campus. Construction is currently underway at Colgate on a new Science Building and an expansion of the Case Library. A new medical office facility is planned for the Hamilton Airpark; construction is expected to begin in August of 2006.

Assets

Community Memorial Hospital is located on Route 12B in Hamilton. It is outside the 100 year flood plain. This building is equipped with a generator in case of power failure.

The police station and the village hall are located on Broad Street in the center of town. This building is located outside the 100 year floodplain

The fire station is located on Lebanon Street and is outside of the 100 year flood plain. This building is wired for and has a backup generator.

Somac Ambulance Corps is located across the street from the fire station on Lebanon Street and is not in the 100 year flood plain.

Hamilton Central Schools is located on West Kendrick Avenue and is wired for and has a generator on site. This building is outside the 100 year floodplain and can be used as a shelter in an emergency.

Municipal Utilities Corporation is located in the village and has backup generators for their shop to aid in their work during power outages. This agency is a division of village government and owns their own power line equipment making for faster repairs.

Hamilton Airport is located on airport road within the village limits. The runway is approximately 5000 feet in length.

The village wells are on backup generators to keep water flowing in times of power outages.

Local Organization and Regulations

The Village Board meets on the 2nd Tuesday of each month at 7 PM.

The Village Planning Board meets on the 3rd Thursday of each month.

The Zoning Board of Appeals meets as needed.

The Village of Hamilton has an Emergency Preparedness Plan already in place in the case of emergency. This plan addresses all potential emergencies that may arise and a plan of action to deal with the situation at hand. This plan can be reviewed at the village offices on Broad Street.

Village law prohibits any new construction in the 100 year flood plain.

The Village has an active tree maintenance program to lessen the damage during severe storm events resulting from blow downs.

The Department of Public Works administers 9.36 miles of road.

The Planning Process

The Village Board of Trustee's discussed the Hazard Mitigation Project on January 13, 2004 and determined who the initial contacts for this process would include. They were the village engineer, the head of the department of public works, the head of the Municipal Utilities Corporation, the Chief of Police and the local codes enforcer. This group had their initial meeting on January 30, 2004. Topics discussed were risk assessment, potential projects and mitigation strategies. On July 23, 2004 meet with the village engineer to discuss potential projects. On August 25, 2004 meet with village engineer to discuss critical facilities in the village. On October 27, 2004 there was a public meeting held to solicit more input from the public on risk assessment and potential projects. On 2/15/05 potential flood mitigation projects for a portion of the village were discussed with the village engineer.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

The following organizations have been contacted for input into the Village of Hamilton HMP:

Partnership for Community Development, Hamilton, NY
Colgate University, Paul Fick
NYS Canal Authority

Existing Plans, Studies, Reports, and Technical Information

Emergency Response Plan, Village of Hamilton, 2004 update was considered in writing this plan.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Village of Hamilton Probability Greater (G), Lesser (L) About Equal (E)	Village of Hamilton Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	E	N
Winter Storms	Mod. High	272.2	E	Y
Fires	Mod. High	265.2	L	N
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	L	N
Utility Failure	Mod. Low	218.5	L	N
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	L	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	L	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	G	Y
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		L	N

Existing Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Village of Hamilton. Appendix D of this plan can be used as a guide as to what mitigation actions can mitigate different hazards.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Hamilton Program	State BOCA Codes, Local Codes	Yes	Village Codes	Electric, Sewer, Water, Street, sidewalk	NYS SEQR	National flood insurance rules	Yes

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	Southern Madison Land Trust	10% bond required	State Health Dept. rules for onsite septic	Yes	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Hamilton Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Hamilton Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Hamilton Program	Technical assistance through SWCD	Urban Forestry Program through DEC	State Regs for greater than 1 acre development	No	State Rules Apply	Tree Maintenance Program	State & Federal Rules Apply	Woodman Pond Watershed Regulations, Cheseapeake Bay Tributary Strategy

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Hamilton Program	Emergency Response Plan	Fire Police Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System		Red Cross, Hamilton Fire Dept. in charge of incident command post

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Hamilton Program	No	Taylor Lake, Woodman Pond, Flood Hazard Area for Woodman Pond	No	Hamilton Central School is the Red Cross shelter for the community; Village Library, Village Offices, Colgate U. Field House, Colgate U. Ice Rink. For temporary morgue

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the writing of the Village of Hamilton Emergency Response Plan.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Severe Winter Storms

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Background

Winter storms are of the greatest concern to the residents of Hamilton. Power outages resulting from heavy snow or ice storms present the most common problem for the village to deal with. Prolonged power outages would result in problems for the Madison Lane Apartments for the elderly as well as for Colgate University when college is in session. Should this power outage take place in the winter, the potential for frozen and broken pipes as well as residents without heat are of real concern.

Historical Events

December 25 & 26, 2002 Record Snowfall - This was declared disaster FEMA 3173 EM NY in Madison County.

March 1993 Blizzard This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,200 feet vs. 300 feet), Hamilton probably sustained greater amounts of snowfall.

Blizzard of 1966

Locations Subject to Hazard

Hamilton Airpark – Runway is susceptible to drifting but open space is needed there.

Future Development in Hazard Area

Hamilton Airpark – The new medical facilities will be located close to Route 12B. Maintenance of access should not be a problem.

Existing Mitigation Measures

Hamilton Airpark – The Village owns a large self-propelled snowblower that is used to clear the runway.

Proposed Mitigation Measures

Hamilton Airpark – The Village's snowblower is a 1961 model. If money were to become available, this machine could be upgraded to a newer model. Cost would be approximately \$100,000. There is no money in the Village budget at this time. This is a Medium Priority.

B. Dam Failure

Mitigation Goals

Prevent loss of life and injury, damage to private property, and damage to critical infrastructure.

Background

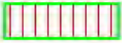
Currently there are three dams that could affect the Village of Hamilton if they experienced dam failure. The first and most critical would be the dam on Lake Moraine. Lake Moraine is a man made reservoir built in the late 1800's to act as a water supply for the Chenango Canal system. Today it still supplies the portion of the Chenango Canal that is still in existence as well as acts as a recreational lake. An emergency evacuation plan for this site was developed in 1981 by the Town of Madison, Town of Hamilton, Village of Hamilton, NYS DOT and NYS DEC (See appendix D). This plan was scheduled to be updated every 5 years. It spells out what to do in the case of emergency and who is responsible for what actions. An inspection schedule for the dam and its spillway is set up and maintained by NYS DOT. The spillway was enlarged in the mid 1980's to reduce the possibilities of the dam overtopping during a severe storm event.

Historical Events

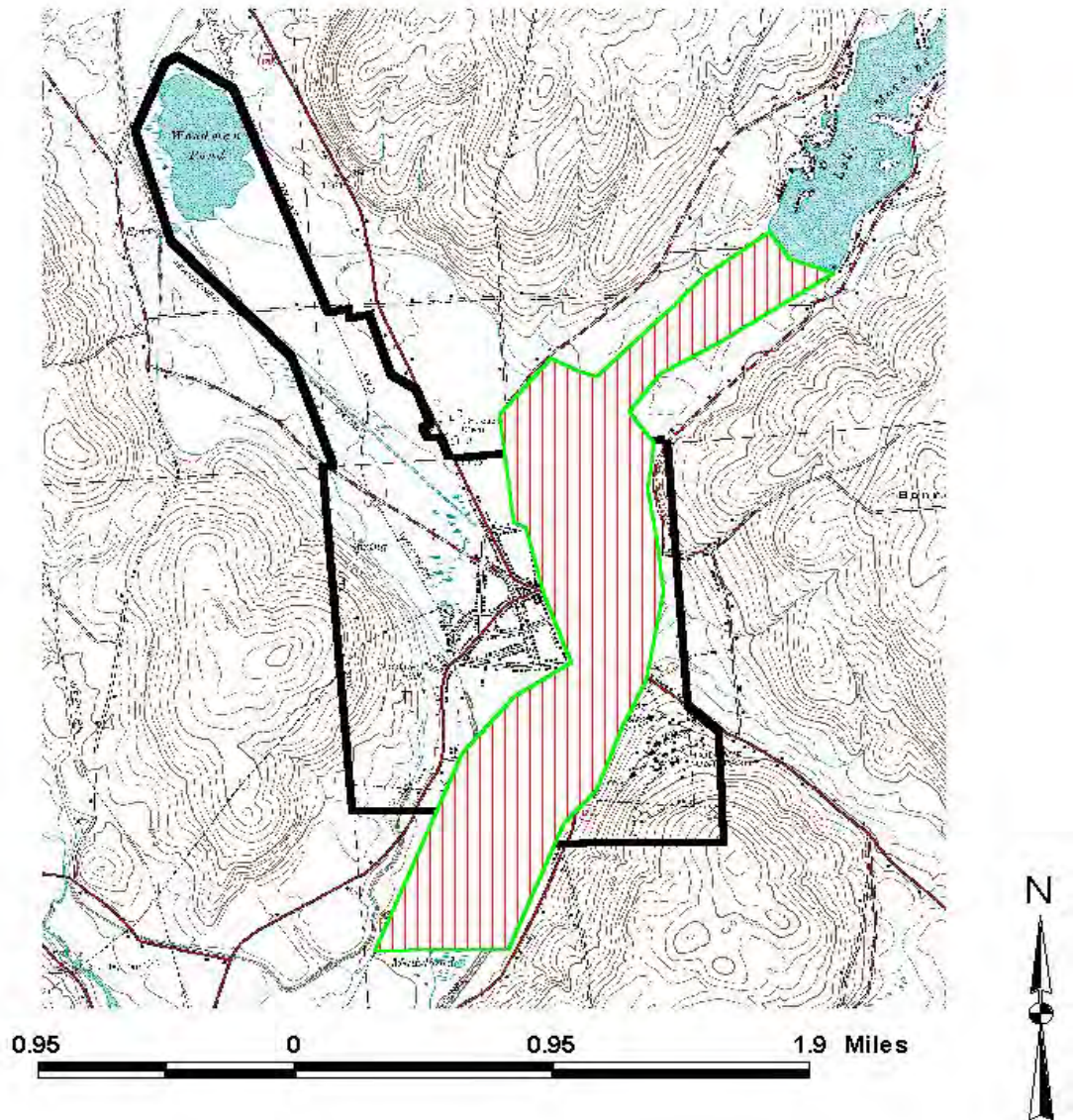
August 2003 – A heavy downpour in the Lake Moraine area caused water to flow over the causeway between the upper and lower basins. Water went over the concrete emergency spillway for the dam. The system worked as designed and there were no problems.

Newly constructed spillway for Lake Moraine.



 **Estimated affected areas of Lake Moraine dam failure.**

 **Village limits.**



Locations Subject to Hazard

Lake Moraine Flood Hazard Zone - The largest parcel in the flood hazard zone is the Colgate University golf course. It is estimated that over 200 structures would be affected by a dam failure. At an estimated \$10,000 per structure in damages this would result in over \$2,000,000 in structural damages alone.

Taylor Lake - The second area of concern would be the spillway at Taylor Lake on the Colgate University campus. Although this is a small lake, the spillway is located only 25 feet from Route 12B. The concern here is that if this spillway, built in the 1800's, were to give way that it would wash out the road causing tremendous traffic problems in downtown area. The photos below show the Route 12B bridge over Payne Brook, the outlet to Taylor Lake, on August 31, 2004 after a weekend of heavy rains, as well as the spillway itself. The 6x6 wooden beams were put in place to help keep the top of the spillway from giving out. It is estimated to replace the bridge alone would be over \$500,000.

Route 12B Bridge over Payne Brook.



Spillway with temporary bracing.



Woodman Pond - The final area of concern is the dam and spillway for Woodman's Pond. This was originally constructed as a reservoir for the Chenango Canal system in the 1800's. A feeder canal for the Chenango Canal system runs across the top of the dam. This area has not received the proper maintenance in the past and the banks of this feeder canal are covered with trees and holes from wildlife. On the day the site was reviewed for this plan, the water from the feeder canal had breached the banks and was running down the dam bank. While this area is within the village limits, it is owned and maintained by the NYS Canal Corporation, making any work to be done on it the responsibility of the canal corporation.

Water flowing over the Woodman Pond dam.



The spillway for Woodman Pond.



Development in Hazard Area

With the limited development occurring in Hamilton, no new development is occurring in flood hazard zones in the Village. Development within the 100 year flood plain requires a permit from the Village.

Potential Losses

Lake Moraine Flood Hazard Zone - At an estimated \$10,000 per structure in damages this would result in over \$2,000,000 in structural damages alone.

Woodman Pond - Were these structures to fail there is concern that flooding would occur in the northwest corner of the village, including Eaton, Montgomery, Milford and Lebanon streets. The potential exists for as many as sixty structures to be affected. It is estimated that these structures could sustain between \$5,000 and \$10,000 in damage each if this event were to occur.

Existing Mitigation Measures

Lake Moraine Flood Hazard Zone – The Village has in place a system of monitoring the lake level as well as an evacuation plan for the flood hazard zone.

Taylor Lake – Since the original first draft of the Hamilton Village Hazard Mitigation, the spillway for Taylor Lake was repaired by Colgate University in 2005. The culverts under Route 12B are currently being replaced by NYS DOT in 2006.

Woodman Pond – The spillway for Woodman Pond was repaired by the Canal Authority in 2005.

The Village of Hamilton is already implementing programs and enforcing regulations that achieve some of the objectives identified in this plan. These efforts will be maintained. The following high priority actions are currently being implemented by the village:

Zoning: The village has zoning ordinances in place already. An example would be that no new construction may occur within year 100 year flood plain.

Dam inspection program: Lake Moraine is classified as a high hazard dam, as such; it is included in the Department of Environmental Conservation's dam inspection program. The dam receives annual inspection from DEC engineers to ensure that all aspects of the dam are functioning as intended.

Proposed Mitigation Measures

Woodman Pond –Trees still need to be removed from the embankment for Woodman Pond. A study by a qualified engineer would be required to estimate the cost.. The Canal Authority would be the agency responsible for this project. This is a Medium Priority for the Village.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
New Snowblower for Village Airpark	+1	+1	-1	-1	+1	+1	+1	3
Cost Study for Woodman Pond Embankment Rehabilitation	+1	+1	-1	+1	+1	+1	+1	5

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Public Works Director and submit a copy of the evaluation form listed in appendix EF. The Public Works Director will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.

- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year

- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report

- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year

- Problems encountered in implementing the plan

- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Public Works Director and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Hamilton Village Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Village of Hamilton subsection based on the reports supplied by the Public Works Director and other municipalities as well as input from the public. This updated plan will be submitted to the Village Board for approval before being forwarded to FEMA.

VILLAGE OF MADISON



Mayor: Barbara Clark, 315-893-7387
Clerk: Douglas Bush, 315-893-1894
Codes Officer: Tim Cowen

Population 2000 Census: 315

Background

The Village of Madison is a community of 315 residents located in the eastern portion of the county. 75.6% of the residents are between the ages of 18 and 65, while only 16.2 % are over the age of 65 (residents). The village currently encompasses approximately .48 square miles. The village has an equalized assessed value of approximately \$34 million dollars, which is distributed across a variety of property classes. There are 75 single family occupied homes within the town.

Land Use and Development Trends

Madison is a small Village and has not seen a lot of new development. Four houses in the Village have recently been converted from 1 family houses to 2 and 3 family apartment houses.

Assets

The Village Hall is located at 7358 Route 20, just east of the middle of the Village. It is co-located with the offices for the Town of Madison. It has a maximum capacity for meetings of 51 people. This building is not equipped with a generator and does not have an outside hook-up for a generator. Village owns a generator located at pump house.

Madison Fire Department is located at 7362 Route 20 next to the Village Hall. This building is not wired with an external hook-up for a generator. The Fire Department owns a 5 KW portable generator, a 5 KW truck mounted generator, a 7.5 KW truck mounted generator, and gas powered portable pump. An ambulance corps is part of the Fire Department. A paid paramedic is employed weekdays from 7 AM to 5 PM. Volunteers with up to Level 3 EMT training are used at other times.

The village water supply draws water from a well located north of the Village limits. It has a water tower to provide pressure on a hill just southwest of the Village limits. Water mains run along Route 20 east $\frac{3}{4}$ of a mile beyond the Village limits, west $\frac{1}{2}$ of a mile beyond the Village limits, and south along South Street $\frac{1}{4}$ of a mile beyond the Village limits. All residential structures in the Village are located within 1,000 feet of a fire hydrant. The pump house has an outside hook-up for a generator that is kept on site in case of a power failure.

Madison Central School is located just northwest of the Village center at 7303 Route 20. It is the designated Red Cross shelter for the Village and has capacity for 125 people. This building is not equipped with a generator and does not have an external hook-up for a generator.

The Village does not have a Department of Public Works. Services are provided by the Town of Madison Highway Department.

Local Organization and Regulations:

The Village Board of Trustees meets on a monthly basis at the Village Hall.

Village Trustees conducted an urban forestry survey in 2002. Problem trees are addressed on a case by case basis.

Fire hydrants have been replaced at the rate of one or two per year in recent years. All are currently in good condition and tested annually by the fire department.

The Planning Process

Michael Johnston, Madison County SWCD, met with the Village Board of Trustees at their regular monthly meeting on Wednesday, February 9, 2005. The Board directed Mr. Johnston to work with Mayor Barbara Clark to collect information used to write a section on the Village of Madison. Mr. Johnston met with Mayor Clark and Trustee Norma St. Clair on February 14; Village assets and potential problems were discussed and then located on a map of the Village supplied by Mr. Johnston.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

A copy of the Emergency Management Plan has been sent to Madison Central School for their input.

Existing Plans, Studies, Reports, and Technical Information

The Madison Fire Department is currently applying will reduce its vulnerability to FEMA for a grant naturally occurring hazards. The strategy was developed as a result of meetings with community members to purchase a generator.

The Village has a program for updating its sidewalks. With another 120 linear feet of sidewalk in 2006, no new sidewalks will need discuss the plan of action. As part of this process the hazard analysis, information was reviewed with these individuals to replaced in the near future.

The Ambulance Corps in purchasing a new ambulance.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Village of Madison Probability Greater (G), Lesser (L) About Equal (E)	Village of Madison Issues Beyond County-wide Plan Yes (y), No (n)
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Fires	Mod. High	265.2	E	Y
Ice Storms	Mod. Low	236.2	L	N
Flood	Mod. Low	222.8	L	Y
Utility Failure	Mod. Low	218.5	E	Y
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	L	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	L	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		L	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Village of Madison. Appendix D of this plan can be used as a guide as to what mitigation actions can mitigate different hazards.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Madison Program	State BOCA Codes	No	State Health Codes Fire Codes	Local Gov. for Water	SEQR for major subdivisions	Federal Flood Insurance Rules apply	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	Time Limit on Permits	State Health rules for septic systems	Village Board Approval	State Regs Apply	No

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Madison Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Madison Program	Village Clerk distributes Health Dept. and other info.	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education Headstart

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Madison Program	Technical Assistance from County SWCD;	No	State Regs for greater than 1 acre development;	Village has excavated stream in past	State Rules Apply	Money to hire private arborist is in budget	State & Federal Rules Apply	No

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Madison Program	No	Madison Fire Dept,Ambulance State Police County Sheriff	MSDS Sheets on File with Fire Department	911 Center Alert System: Fire Department Siren	County Health Department Plan	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Madison Program	Yes	No	No	Red Cross Shelter Madison Central School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Village of Madison zoning regulations.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Flooding

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

South Street Flooding – In the 1970s, flooding occurred southwest of South Street. Since then, gravel has been excavated from a small stream in this area and the threat of flooding has been reduced.

Locations Subject to Hazard

One house located on South Street could be subject to flooding over time as deposition occurs from upstream erosion.

Future Development in Hazard Area

None at this time

Potential Losses

South Street Flooding – It is estimated that total losses from one house suffering basement flooding with loss of a furnace would be \$5,000

.

Mitigation Measures

South Street Flooding – The first step in preventing flooding in this area would be to conduct a check of the elevations in the channel and compare these elevations with those established just after the channel was cleaned in the 70's. This could be done by County SWCD staff at no cost to the Village. Excavation of the stream channel could require the use of an excavator and two dump trucks for two days. As this would be considered a maintenance project, it would not be eligible for FEMA Mitigation Program funding. Cost of excavation and trucking would have to be borne by the Village. Because there have been no problems with drainage since the last time the channel was excavated, this is a Medium Priority for the Village at this time.

B. Power Failure

Mitigation Goals

Provide needed services to Village residents in the case of a power failure.

Historical Events

August 16, 2003 Northeast Power Failure – This was an event that affected the entire Northeastern United States.

April 2003 Ice Storm – This was an ice storm that struck the higher elevations of Madison County worse than the lower elevations of the County. The Village of Madison did not sustain significant damage from this storm.

Labor Day Storm September 7, 1998 – This was presidential disaster FEMA 1244-DR-NY. This was a thunderstorm accompanied by intense straight line winds. The Village of Madison was south of the path of this storm and was unaffected.

Locations Subject to Hazard

Madison Central School is the designated Red Cross shelter for the community but does not have back-up power. In the event of a power failure, school would be closed but students would be sent home to houses that also did not have electric power or, in some cases, heat. Village has generator for town offices.

Future Development in Hazard Area

None

Existing Mitigation Measures

Village Water Supply – The pump system for the water supply has a backup generator in case of power failure. The generator is in its own permanent housing next to the pump but requires personnel on-site for starting. The water tower has capacity for three days normal usage. Water conservation is requested from Village residents in the case of a power failure.

Proposed Mitigation Measures

The Village Hall, Madison Central School, and the Fire Hall could all be wired with an external hook-up so that these buildings can be readily plugged into generators. A qualified electrician needs to make an estimate. Wiring of the village hall and fire hall are high priority for the village government. Wiring for the Madison Central School is a medium priority for village government since they do not have jurisdiction.

C. Fire

Mitigation Goals

Prevent damage to public and private property and lessen the risk of injury and death to the residents of the fire district.

Historical Events

Gazelle Store Block Fire - A large fire occurred around 1980 in which two 2-story buildings burned located at the corner of U.S. 20 and South Street.

Locations Subject to Hazard

The Village of Madison and the neighboring hamlet of Bouckville host mass gatherings of people during the antique festival in August and a smaller event in June. Most of the action occurs along U.S. Route 20. Fire equipment traversing Route 20 during the antique festival can be delayed.

Potential Losses

The average value of a house in the Village of Madison is \$60,000.

Existing Mitigation Measures

The Madison Fire Department Equipment – In 2005, the fire department received an \$80,00 grant from FEMA Homeland Security for the purchase of self-contained breathing apparatus and blood borne pathogen resistant outerwear.

State Police has accompanied EMS supervisor in enforcing rules.

State DOT has required vendors to move back 10' from the curb.

Vendors on US 20 are required to pay \$1.50 for EMS service.

Proposed Mitigation Measures

Intergovernmental Agreement for Ambulance Service – Many ambulance services in Madison County rely on volunteers. Since many of these volunteers are unavailable during the workday, Ambulance Corps with paid staff could assist neighboring areas through an agreement between the services. Village Mayor should discuss this plan with Joe DeFrancisco, Emergency Preparedness Director. This is a medium priority.

Warning Siren for Antique Festival- A warning siren loud enough to make commerce difficult could be installed near the grounds used for the antique festival. Money is not available at this time. This is a medium priority.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6-7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
South Street Channel Maintenance	+1	+1	-1	+1	+1	+1	-1	3
Village Hall and Fire Department Generator Wiring	+1	+1	+1	+1	+1	+1	+1	7
Madison Central School Generator Wiring	+1	+1	-1	+1	-1	+1	+1	3
Ambulance Service Intergovernmental Agreement	+1	+1	N	N	N	+1	+1	4
Antique Festival Warning Siren	+1	+1	-1	+1	+1	+1	+1	5

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Village of Madison Mayor and submit a copy of the evaluation form listed in appendix EF. The Mayor will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.

- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year

- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report

- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year

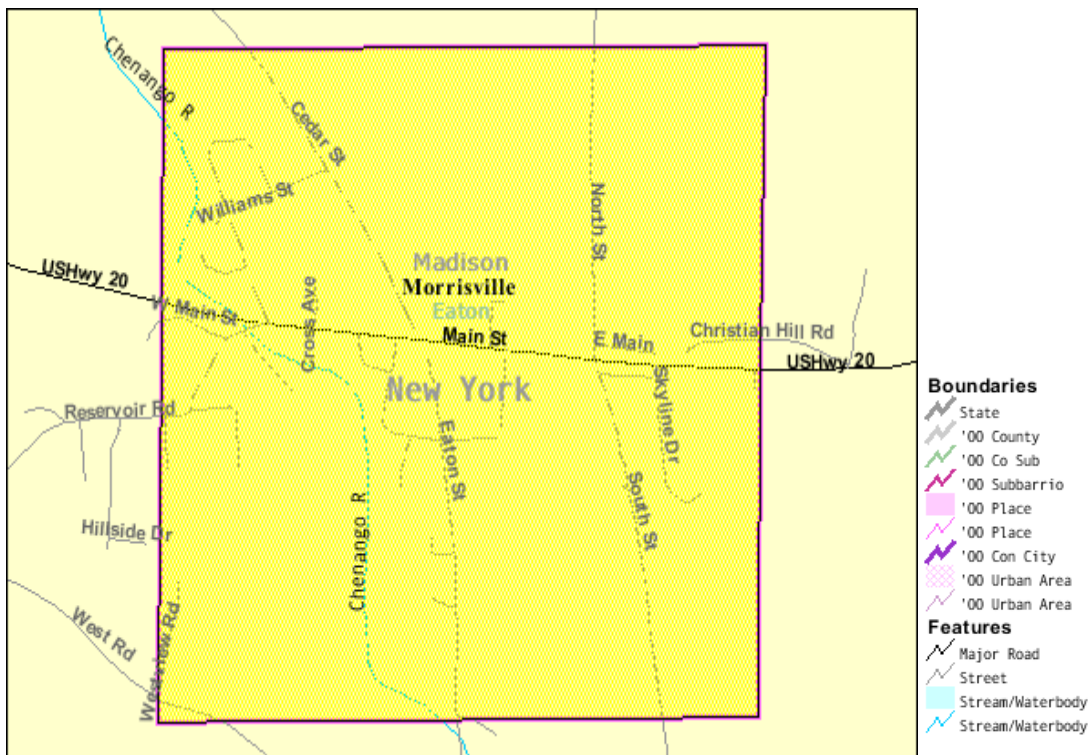
- Problems encountered in implementing the plan

- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Mayor and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Madison Village Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Village of Madison subsection based on the reports supplied by the Mayor and other municipalities as well as input from the public. This updated plan will be submitted to the Village Board for approval before being forwarded to FEMA.

VILLAGE OF MORRISVILLE



Mayor: Michelle Forward
Public Works Superintendent: Raymond Heh
Clerk: Amy Will, 315-684-7007
DPW Liason/ Trustee: Mark Shepard

Background

The Village of Morrisville is a community of 2,148 residents located in the central portion of the county. 91.0% of the residents are between the ages of 18 and 65, while only 10.6 % are over the age of 65 (residents). The village currently encompasses approximately 1 square miles. The village has an equalized assessed value of approximately \$31 million dollars, which is distributed across a variety of property classes. There are 164 single family occupied homes within the village.

Land Use and Development Trends Annexation of land into the Village is being considered on the north, south, east, and west. More than 50% of landowners in agiven area must request annexation. Space is limited within the Village boundaries. There is little new house construction. In the past two years, the Mobil Gas station expanded but eliminated a Sautter’s Diner in the process; a restaurant was remodeled under the new ownership of Morrisville State College; and Wilcox Apartments, a 24 unit subsidized housing facility, was constructed on Cedar Street on the north edge of the Village. Single family houses are being converted to multi-family housing throughout the Village.

Assets

The Village Office is located at 23 Cedar Street. This building houses offices for the Mayor, Clerk, and Code Enforcement Officer. There is also a substation of the Madison County Sheriff at this location. This building is not equipped with a generator or an outside electric hook-up for a generator.

The Morrisville Fire Department is located at the corner of Union Street and Route 20. Public meetings are held at this location and it is used as an emergency shelter. It has capacity for 60 people. This building is equipped with an outside hook-up for a generator. The Village owns a 30 KW generator that is used to power this facility as well as the Village water supply on an alternating basis.

The Public Works Garage is located at the north end of Cross Ave.. This building is large enough to do repairs on Village owned equipment. This building is not equipped with a generator or an outside electric hook-up for a generator.

A 30 KW diesel generator is owned by the Village. This generator is mounted inside a two ton box van

Village Water Supply – The Village supplies water to its residents. The source of this water is a well located just west of Callahan Drive. Pressure for the system is supplied by two 150,000 gallon tanks located on North Street and Reservoir Road. The system normally uses 60-75,000 gallons per day. During an extended power failure, the Village’s 30 KW generator can be used to power the pump between the well and the storage tanks.

Sewage Plant – The Village Sewer System was installed in 2002 and 2003 and came on line during the fall of 2003. The sewage plant is located at the south end of Callahan Drive. The plant is equipped with a natural diesel powered generator that kicks on during a power failure.

Edward R. Andrews Elementary School is located at 55 Eaton Street. This is the official Red Cross shelter for the community. It has capacity for 160 people. This building does not have a generator or external hook-up for a generator.

Cooperative Extension Building is located at 100 Eaton Street. It has a meeting hall and a large kitchen that can accommodate 80 people. This building does not have a generator or an external hook-up for a generator.

Morrisville State College – this state-owned facility has an enrollment of 3,300 students. It has two dining halls and dormitories that house 1,800 students.

The Planning Process

Michael Johnston, Madison County SWCD, met with the Village Board of Trustees at their regular monthly meeting on February 12, 2004. The Board of Trustees directed Mr. Johnston to work with Trustee Doug Mennig to collect the information needed to prepare a section of the mitigation plan on the Village of Morrisville. Johnston and Mennig toured the Village and reviewed hazards within the Village. Johnston wrote a first draft of the plan and sent copies to Mayor Forward, Codes Officer Cowan, and Trustee Mennig. Mayor Forward, Trustee Mennig, and Michael Johnston reviewed a draft of the plan on 6/13/06. Another update to the plan was submitted on 3/16/09.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality..

Hazard	Madison Co. Class.	Madison Co. Ranking	Village of Morrisville Probability Greater (G), Lesser (L) About Equal (E)	Village of Morrisville Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	E	N
Winter Storms	Mod. High	272.2	G	N
Fires	Mod. High	265.2	L	N
Ice Storms	Mod. Low	236.2	E	Y
Flood	Mod. Low	222.8	E	Y
Utility Failure	Mod. Low	218.5	E	Y
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	E	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		L	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Village of Morrisville. Appendix D of this plan can be used as a guide as to what mitigation actions can mitigate different hazards.

Prevention – Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Morrisville Program	State BOCA Codes	No	Village Codes	For Infrastructure	NYS SEQR for large subdivisions	National flood insurance rules	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	Codes Enforcement	No	Zoning Variance Permits	State Regs Apply	Regs in codes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Morrisville Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Morrisville Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Morrisville Program	Technical assistance through SWCD	No	State Regs for greater than 1 acre development	No	State Rules Apply	Tree maintenance budget form CHIPS program	State & Federal Rules Apply	No

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Morrisville Program	No	Fire Police Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System	No	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Morrisville Program	No	No	No	Red Cross Shelter at Edward R. Andrews Elementary School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the writing of the Emergency Action Plan for the Village of Morrisville.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Flooding

The Village of Morrisville does has serious problems with flooding during periods of peak runoff. The Village is located in a fairly flat valley with hills on the east and west. Stormwater flowing from the north and east has to pass through a large part of the Village before it can outlet into Callahan Brook. Callahan Brook flows from the northwest to the south.

Historical Events

January '96 Flood – this was a county-wide event but Morrisville was particularly hard hit. Water overflowed a culvert behind the bank on the east side of the Village. The water flowed down U.S. Route 20 flooding the basements of two houses on the southwest corner of Route 20 and Cedar Street. Water eventually flowed into storm sewers that outlet into Callahan Brook.

April 2004 Flood – This flood event hit the southern part of Madison County harder than the north. The culvert entrance behind Key Bank overflowed for 2 days and flood waters closed 2 lanes of the 4 lanes of Route 20.

Locations Subject to Hazard

Culvert under Route 20 – A culvert under U.S. Route 20 in the past has overflowed at a frequency of once every two years. This culvert flows from behind Key Bank north of 20 and travels southwest diagonally under Route 20 and outlets behind some private houses on the south side of Route 20. This culvert has not overflowed since the Route 20 drainage system was reconstructed in 2007 by NYS DOT.

Culvert under Eaton Road – This culvert is downstream from the culvert under Route 20 and flows under houses on the west side of Eaton Road.

Culvert under Mill Street – This culvert is downstream of the culverts under Eaton Road and Route 20. This culvert flows under houses on the east side of Mill Street. It outlets into Callahan Brook.

Culvert under Union Street – This culvert is undersized because a culvert from Morrisville State College outlets into it. This pipe carries water for approximately 1,000 feet south along Union Street under the College baseball fields and the elementary school fields before outletting on the west side of Eaton Road.

Culvert on East Main Street – This culvert takes water from the south side of Route 20 on the east side of the Village. The water flows through pipes under Morrisville State College and outlets into Callahan Brook southwest of the campus.

Future Development in Hazard Area

An apartment complex along Callahan Drive next to the floodplain is in very early stages of consideration.

Past Losses

According to information collected by Tim Cowan, Village Codes Enforcement Officer, flooding emanating from the culvert entrance behind Key Bank has accounted for \$184,848 in damage for the years 1996 to 2005. The April 2005 event accounted for \$11,348 in damage while \$125,000 damage was done in 2004.

Existing Mitigation Measures

In 2007, new drainage pipes were installed along and under U.S. Route 20 by the New York State Department of Transportation as part of a paving project. Two 36 inch diameter pipes, one on each side of Route 20, conduct water west until both outlet into a 48 inch diameter pipe that empties into Callahan Brook. Flooding has not reoccurred in the Village since this new drainage system was installed.

Key Bank Culvert Entrance Debris Guard – Flooding coming from overflow of the culvert entrance located behind Key Bank was formerly caused by a lack of capacity as well as debris clogging the culvert. In 2007, a sloping grate was installed over the culvert entrance; this grate functions so that the force of the water pushes debris up over the culvert entrance. The grate was constructed by Morrisville State College and installed by the Village Public Works Department.

Proposed Mitigation Measures

North Street Detention Basin – The incidence of flooding from the overflow of a culvert entrance behind Key Bank can be further reduced through the construction of a detention basin located ¼ mile north of the Village and just west of Route 20. This detention basin would be located on the site of a former mill pond. Survey and Design work is still needed but it is estimated that this project would cost around \$107,000. This project is low priority until it is determined whether improvements to Route 20 will mitigate flooding.

Culvert under Eaton Street – There has not been any flooding at this location to date. Madison County Highway Department plans to survey and design a new culvert that does not flow under a house. This is a medium priority for village government.

Culvert under Mill Street – A new culvert under Mill Street needs to be surveyed and designed. This would be the responsibility of the Village Public Works Department. Technical Assistance is available from the County Soil and Water Conservation District. This is a medium priority for the village.

B. Ice Storm/ Utility Failure

Mitigation Goals

Provide critical services to Village residents in the event of a power failure.

Historical Events

April 2003 – An ice storm at that time caused extensive power failures in the Morrisville area because of downed power lines.

Locations Subject to Hazard

Edward R. Andrews Elementary School – In the case of a power failure, the school would have to send children home. If the power failure is widespread, children would be sent to houses with no light and possibly no heat.

Wilcox Apartments, Cedar Street Apartments – These two subsidized facilities house elderly and disabled residents. Cedar Street Apartments is just outside the Village boundaries but receives Village water.

Traffic Light in center of Village – During a power outage, stops signs are installed here by either the Fire Department or the Public Works Department.

Proposed Mitigation Measures

Emergency Action Plan – The Village does not have an emergency action plan. Such a plan would address more clearly who is responsible for the traffic light and how the Village would deal with subsidized housing on Cedar Street. Village Government would be responsible for writing this plan. It is a high priority.

Edward R. Andrews Elementary School back-up generator – According to Doug Mennig, a local electrician and Village Trustee, back-up power for the elementary school would be expensive because the heating system requires three-phase power. An automatic generator would cost \$100,000 while an outside switch for a back-up generator would cost \$25,000. This is a medium priority for the village because they do not have jurisdiction.

The Village owns a generator mounted on a truck body that can be moved from site to site as needed. During power outages, this generator powers pumps for the water storage that provides water pressure throughout the Village and is also used for the Fire Department which serves as a temporary shelter and warming center. A second generator would mean that the existing generator would no longer have to be moved from site to site. This is the medium priority for the village.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6-7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
North Street Detention Basin	N	+1	-1	+1	+1	-1	+1	2
Culvert under Eaton Street	+1	+1	-1	+1	-1	+1	+1	3
Culvert under Mill Street	N	+1	-1	N	+1	+1	+1	3
Emergency Action Plan	+1	+1	+1	+1	+1	+1	+1	7
Elementary School back-up generator	+1	+1	-1	+1	-1	+1	+1	3
2 nd Emergency Generator for Public Works Dept.	+1	+1	-1	+1	+1	+1	+1	5

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Village of Morrisville Mayor and submit a copy of the evaluation form listed in appendix EF. The Mayor will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

A summary and analysis of all disasters that have struck Madison County during the previous calendar year.

A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year

A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report

A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year

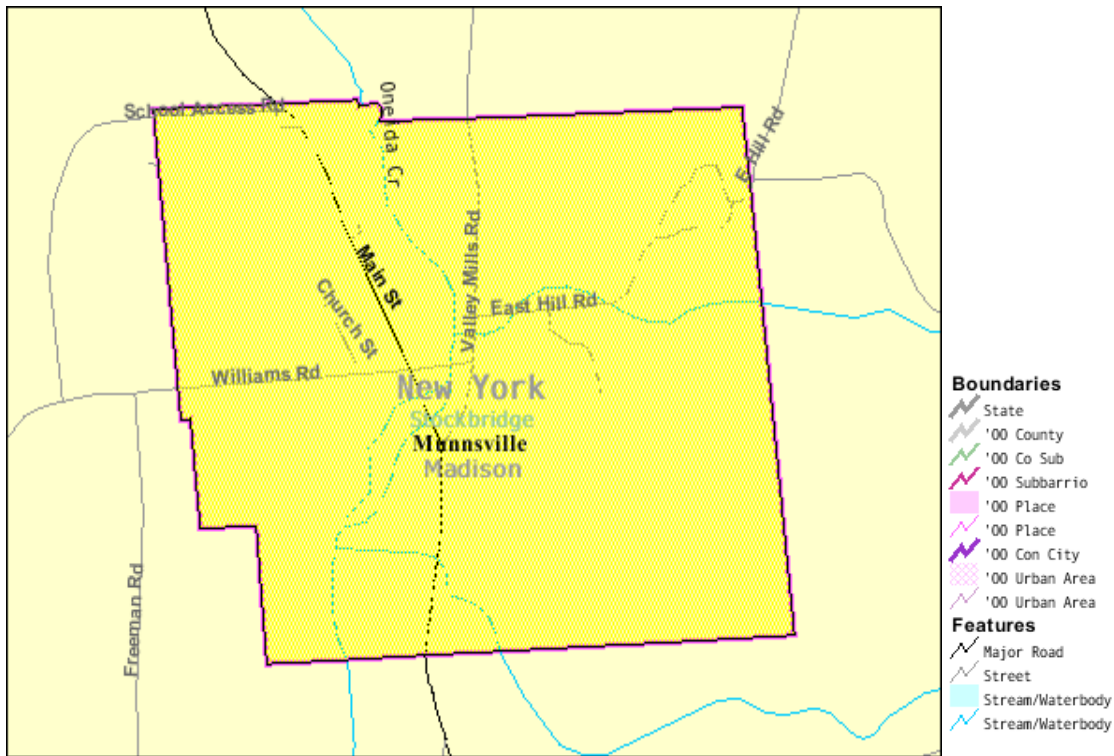
Problems encountered in implementing the plan

Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Mayor and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Morrisville Village Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Village of Morrisville subsection based on the reports supplied by the Mayor and other municipalities as well as input from the public. This updated plan will be submitted to the Village Board for approval before being forwarded to FEMA.

VILLAGE OF MUNNSVILLE



Mayor: Richard Snider
Clerk: Lori Branigan, 315-495-6546
Population 2000 Census: 437

Background

The Village of Munnsville is a community of 437 residents located in the eastern portion of the county. 73.5% of the residents are between the ages of 18 and 65, while only 11.7 % are over the age of 65 (residents). The village currently encompasses approximately .88 square miles. The village has an equalized assessed value of approximately \$14 million dollars, which is distributed across a variety of property classes. There are 81 single family occupied homes within the village.

Land Use and Development Trends

Stockbridge Valley Central School-moved into a new facility west of its former home in 1998.

Ferris Industries moved into the former school building in 1999.

There has not been very much residential construction.

A new chiropractic center was built in 2002. A satellite of Hamilton Community Hospital was built in 1997.

Assets

Munnsville Fire Department- This building has a meeting room that has capacity for 200 people. The building is equipped with a generator that kicks on automatically in the case of a power failure.

St. Teresa's Catholic Church – Located on State Route 26 south of the village center. This building has a meeting hall in basement with capacity for 50 people.

Congregational Church – Located on Williams Road west of the Village Center. This building has a meeting hall in basement with a capacity for 50 people.

Stockbridge Valley Central School – Located at 6011 Williams Road. This is the designated Red Cross shelter for the community and has capacity for 324 individuals. This building does not have a generator or an external hook-up for an outside generator.

Ferris Industries – Located on the west side of Route 46 just north of the village center. This building was formerly the Stockbridge Valley School and still has a large gymnasium.

American Legion Hall-East Hill Road in the former Golden Eagle Restaurant.

Local Organization and Regulations

The Village Board meets at the fire hall on a monthly basis.

The Planning Process

Michael Johnston, Madison County SWCD, met with the Village Board of Trustees at their regular monthly meeting on February 14, 2005. At this meeting, the Board reviewed the history of disasters in the Munnsville area. The Board also directed Mr. Johnston to work with Mayor Richard Snider to collect any additional information pertinent to the Village of Munnsville. Mr. Johnston met with Mayor Snider, members of the Munnsville Fire Department, and local resident Don Dimes on March 21, 2005. Johnston wrote a first draft of the Village plan and met with Mr. Snyder on January 12, 2006. At this meeting, Johnston, Mayor Snyder, and SWCD staff person Joanne Burke, a lifelong Town of Stockbridge resident, toured problem areas in the Village. Mr. Johnston met with Town of Stockbridge and Village of Munnsville Historian Olive Boylan on January 19, 2006 to review the history of disasters in the area.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison

County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

A copy of the Village of Munnsville HMP has been sent to Stockbridge Valley Central School for comment.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Village of Munnsville Probability Greater (G), Lesser (L) About Equal (E)	Village of Munnsville Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
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Infestation	Mod. Low	173.8	E	N
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Drought	Mod. Low	164.2	L	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N

Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N

Existing Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Village of Munnsville. Appendix D of this plan can be used as a guide as to what mitigation actions can mitigate different hazards.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Munnsville Program	State BOCA Codes	No	State Health Codes Fire Codes	No	No	National flood insurance rules	No

	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	Time limit on permits	State Health Rules for septic systems	No	State Regs Apply	No

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Munnsville Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Munnsville Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations &	Watershed Management

							Restoration	
Munnsville Program	Technical assistance through SWCD	NYS DEC 480A program available	State Regs for greater than 1 acre development	No	State Rules Apply	No	State & Federal Rules Apply	Oneida Lake Program

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Munnsville Program	No	Fire Police Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System	County Health Dept. rules for minimum living standards and drinking water	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Munnsville Program	No	No	No	Red Cross Shelter at Stockbridge Valley Central School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Village of Munnsville zoning regulations.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Flooding

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

January '96 Flood – During this flood event Oneida Creek overflowed its banks at Route 46, flowed down Valley Mills Road and returned to within its banks north of East Hill Road. Water flowed on both sides of a building owned by John Condon on the west side of Valley Mills Road.



Flooding behind Post Office, Valley Mills St., view looking East.



Oneida Creek Flooding- Normal creek bed is right of two story building. View looking south from bridge on Valley Mills St.



View of Park St. looking south from bridge on Valley Mills St.



Highway Department Gradall clearing debris from culvert on Valley Mills Rd.

August 23, 2004 – This was a freak summer storm concentrated in the area of Stockbridge Valley. Munnsville Fire Department pumped basements for three consecutive days following this event.



Looking North on Park Street towards Valley Mills St. Confluence of runoff from Route 46 and east side of valley.



Park Street looking South, runoff from hills on east side of valley.



Corner of Route 46 and Park St- 2 houses north of firehouse. Dimes and former Kern residence. Runoff from Route 46.



Backyard of the Kern residence, looking east towards farm field.



View of Don Dimes' backyard and farm field producing runoff, looking east.

August 29, 1976 – This flash flood resulted in severe damage to East Hill Road. Several cars and smaller structures were washed away.

June 11, 1917 – This flood occurred after a downpour of rain that followed weeks of incessant rain. One man was killed in nearby Pratts Hollow when a Mill Dam burst and swept him downstream.

Locations Subject to Hazard

Harold Thurston Residence

Dewitt Residence

These two residences suffer from flooding caused by the overflow of Oneida Creek as well as excess runoff from Route 46 and land on the east side of the Village.

Don Dimes residence – 5226 Park Street. This residence is the second house north of the Munnsville Fire Department on State Route 46. This house is subject to flooding from rain events that cause excess runoff from the south and east.

East Hill Road – Washouts to the road surface of this County Road occur during periods of peak runoff. These washouts occur because of lack of capacity of the road ditch and lack of capacity of a culvert under Valley Mills Road at the bottom of East Hill Road

Potential Losses

Don Dimes Residence – After the August 23, 2004 event, damages to the Dimes residence totaled \$6,000 because of the loss of a furnace and a hot water heater.

Mitigation Measures

Culvert for East Hill Road Creek

A box culvert under Valley Mills Road at the base of East Hill Road lacks capacity during times of peak flow. Valley Mills is a county owned road. SWCD staff will assist County Highway personnel in conducting runoff calculations and sizing an appropriate culvert. This is a Medium Priority for the Village.



Culvert Outletting Drainage Ditch

The Drainage Ditch behind the Dimes and former Kern residences lacks enough capacity to conduct runoff from a storm comparable to the August 30, 2004 event. This lack of capacity can be partially attributed to a culvert that begins under a chicken coop and then outlets into a road ditch on the east side of Park Street. In order to upgrade this culvert and not cause flooding on Park Street, a new culvert 340 foot long that outlets into Oneida Creek could be installed. At \$20 per lineal foot, cost for this project would be \$6,800. This is a Medium Priority for the Village.

Oneida Creek Bank Stabilization A stretch of stream bank on the east side of Oneida Creek north of East Hill Road needs to be stabilized in order to protect a house valued at \$80,000. This is a low priority for the Village.



View looking north of Oneida Creek. Streambank on right needs stabilization.

B. Fires

Mitigation Goals

Prevent damage to public and private property and lessen the risk of injury and death to the residents of the fire district.

Historical Events

March 6, 1947 Munnsville Hotel and Griff's Garage — These two buildings were connected at that time.

May 2, 1987 Munnsville Hotel — Located at the southeast corner of the Village center at the intersection of Route 46 and Williams/ East Hill Road.

January 16, 1996 Herb's Barber Shop – Located on the east side of Route 46 just north of the Village center.

Locations Subject to Hazard

Ferris Industries-welding shop, paint shop, oxygen tanks

Potential Losses

The average value of a house in Munnsville is \$80,000.

Mitigation Measures

Dry Hydrants-Munnsville Fire Department would like to install dry hydrants at 4 locations along Oneida Creek. Cost is approximately \$1000 dollars per hydrant. This is a medium priority. Work would be done by fire department. Funding is not yet available.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6-7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Culvert for East Hill Road Trib. under Valley Mills Road	+1	+1	-1	+1	-1	+1	+1	3
Culvert behind Don Dimes House	+1	+1	-1	+1	-1	+1	+1	3
Oneida Creek Bank Stabilization North of East Hill Road	+1	+1	-1	-1	-1	+1	+1	1
Dry Hydrants	+1	+1	-1	+1	+1	+1	+1	5

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Village of Munnsville Mayor and submit a copy of the evaluation form listed in appendix EF. The Mayor will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

A summary and analysis of all disasters that have struck Madison County during the previous calendar year.

A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year

A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report

A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year

Problems encountered in implementing the plan

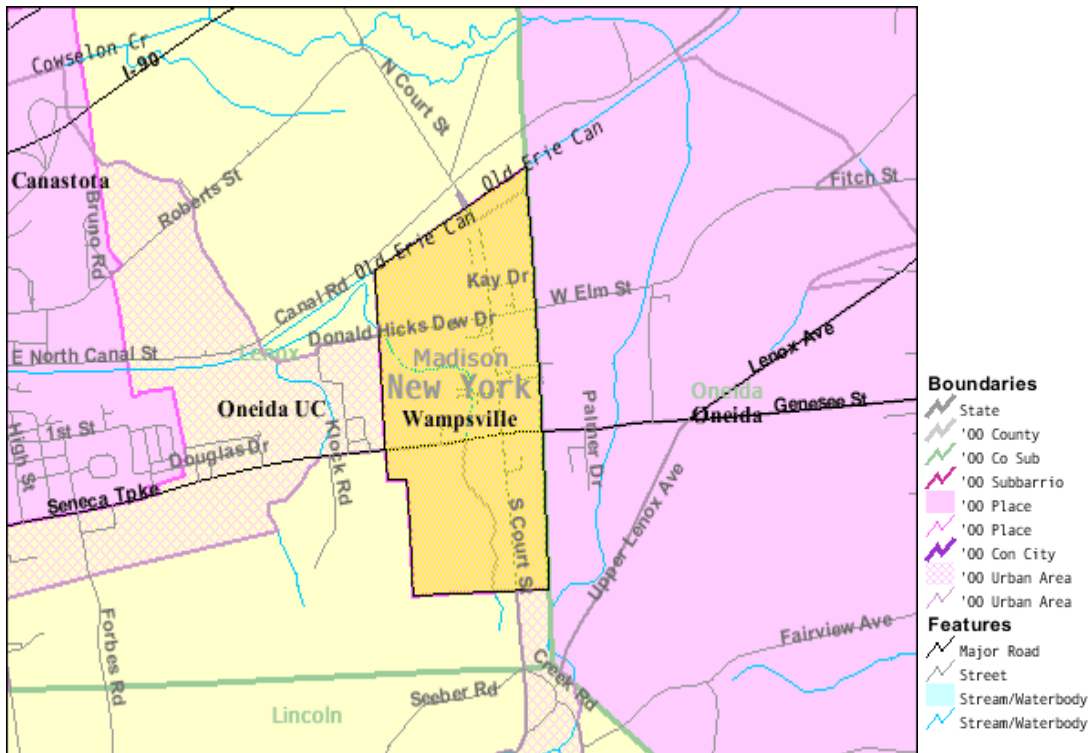
Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Mayor and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Munnsville Village Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Village of Munnsville subsection based on the reports supplied by the Mayor and other municipalities as well as input from the public. This updated plan will be submitted to the Village Board for approval before being forwarded to FEMA.

VILLAGE OF WAMPSVILLE

P.O. Box 51
Wampsville, NY 13163



Mayor: Sandy Eaton

Clerk: Barbara Butler 315-363-5810 (M, T, Th 5:15-8:15)

Background

The Village of Wampsville is a community of 561 residents located in the northern portion of the county. 68.4% of the residents are between the ages of 18 and 65, while only 12.3 % are over the age of 65 (residents). The village currently encompasses approximately 1 square mile. The village has an equalized assessed value of approximately \$40 million dollars, which is distributed across a variety of property classes. There are 158 single family occupied homes within the village.

Assets

Wampsville Fire Department, Court Street, Wampsville

This building has garages for fire equipment and a meeting area that can accommodate 50 people. It also houses the office for the Village of Wampsville. The building has an outside hook-up for a generator. In the event of a power failure, electricity is supplied by a generator on the Fire Department rescue truck.

Park Building, Court Street and Elm Street

Owned by Wampsville Fire Department. Capacity for 200 people. This building does not have a generator and is not wired for an outside hook-up to a generator.

County Office Buildings

This complex of five buildings is the seat of County government. The headquarters of the Wampsville Division of the County Highway Department is also here.

Local Organization and Regulations

The Village Board of Trustees meets the first Tuesday of every month.

The Fire Department is available for basement flooding during periods of high water table.

The Planning Process

Mike Johnston, Madison County SWCD, met with the Village Board at their regularly scheduled meeting on February 1, 2005 at the Wampsville Fire Department. The Board agreed to have a section written about the Village and directed Mr. Johnston, to work with John Albanese, Wampsville Fire Chief, and compile the necessary information about the Village. Mr. Johnston subsequently met with Mr. Albanese on Thursday, February 10. During this meeting, they discussed potential problems in Wampsville and located them on a map supplied by Mr. Johnston.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Village of Wampsville Probability Greater (G), Lesser (L) About Equal (E)	Village of Wampsville Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	L	N
Winter Storms	Mod. High	272.2	L	N
Fires	Mod. High	265.2	L	N
Ice Storms	Mod. Low	236.2	L	N
Flood	Mod. Low	222.8	E	Y
Utility Failure	Mod. Low	218.5	L	N
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	L	N
Extreme Temperatures	Mod. Low	169.8	L	N
Epidemic	Mod. Low	164.2	L	N
Drought	Mod. Low	164.2	L	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	L	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	L	N
Landslide	Not Rated		L	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Village of Wampsville.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Wampsville Program	State BOCA Codes	Minimum lot size according to zone	Planning Board	No	SEQR for large subdivisions	No 100 year floodplain	Flood damage prevention provisions in zoning

	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
No	No	No	Yes	State health Dept. Rules for Septic	Yes	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g. floodproofing)
Wampsville Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Wampsville Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Wampsville Program	Technical Assistance available through SWCD	No	State Regs for greater than 1 acre development	No	State Rules Apply	No	State & Federal Rules Apply	Oneida Lake Program

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Wampsville Program	No	Fire Police Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System	County Health Department Rules for minimum living standards and drinking water	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Wampsville Program	No	No	No	Red Cross Shelter at Otto Shortell School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Village of Wampsville subdivision rules.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Flooding

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

Because of seasonal high water tables, there is usually some degree of basement flooding every year especially in the Spring.

January '96 flood – Basement flooding was greater than normal seasonal flooding during this event.

Locations Subject to Hazard

Kay Drive – Basement flooding with damage to utilities was suffered by five houses during the January '96 flood.

Christina Court – Three single family houses and a two family town house suffer basement flooding on a repetitive basis.

Potential and Historical Losses

Kay Drive – Damage from the January '96 flood is estimated at \$3,000 per house for a total of \$15,000.

Christina Court - Value of damages requires further research.

Mitigation Measures

Kay Drive – A dry well is planned that would be used as an outlet for water that is pumped from flooded basements. Cost is estimated at \$3,500. This is a low priority for the Village.

Christina Drive – The County Highway Department is in the process of designing a project to excavate a stream located just west of Christina Drive. This project would serve to outlet water from the neighborhood and effectively lower water tables. Cost is based on 32 hours of excavator work at \$90 per hour and 96 hours of dump truck at \$60 per hour. Total cost = \$8,640. This is a high priority for the village of Wampsville. The project would be paid for by the county highway department from their existing budget. This is a high priority.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Kay Drive Dry Well	+1	-1	-1	+1	+1	+1	-1	1
Stream Channel Excavation behind Christina Drive	+1	+1	+1	+1	+1	+1	N	6

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Village of Wampsville Mayor and submit a copy of the evaluation form listed in appendix EF. The Mayor will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.

- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year

- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report

- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year

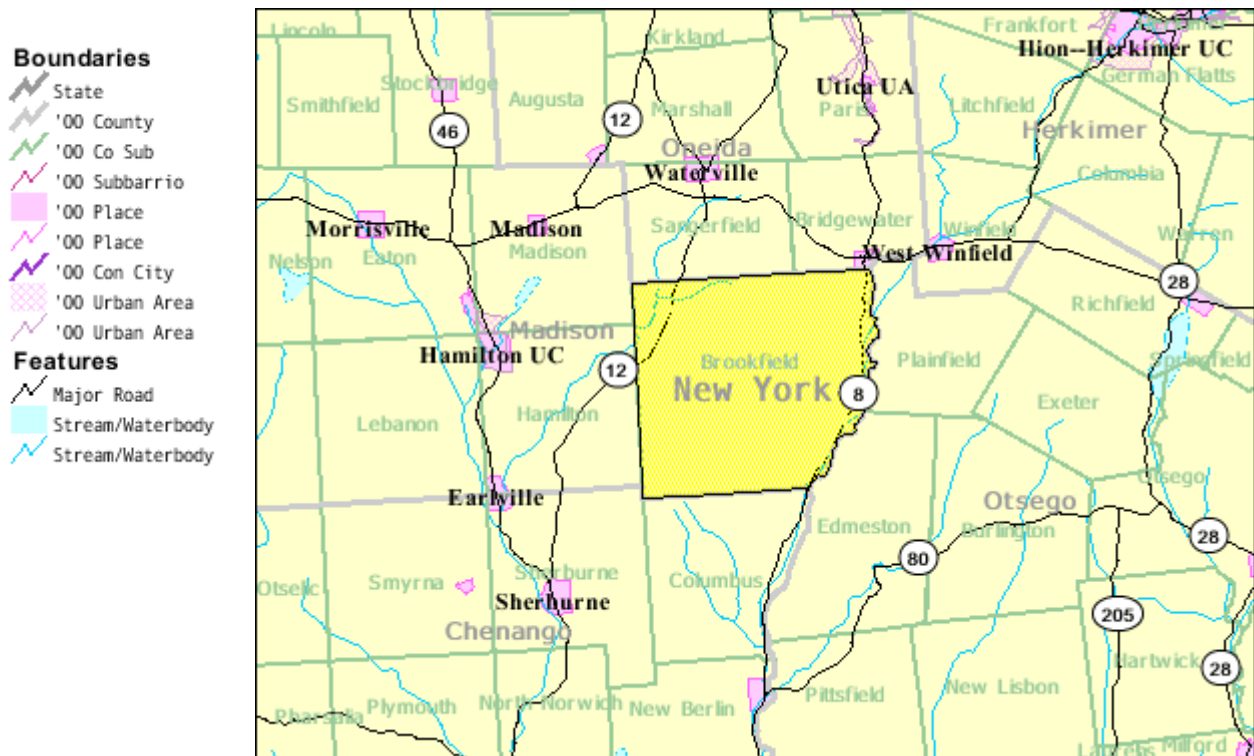
- Problems encountered in implementing the plan

- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Public Works Director and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Wampsville Village Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Village of Wampsville subsection based on the reports supplied by the Mayor and other municipalities as well as input from the public. This updated plan will be submitted to the Village Board for approval before being forwarded to FEMA.

Town of Brookfield



Supervisor: Loren Corbin, 899-3364

Highway Superintendent: Daniel Stetson, 861-7718

Justices of the Peace: Ernest Merrill, David Ray

Background

The Town of Brookfield is a community of 2,403 residents located on the south eastern corner of the county. 71% of the residents are between the ages of 18 and 65, while only 11% are over the age of 65 (257 residents). The town currently encompasses approximately 35 square miles – of which approximately 20 square miles is state owned forestry land. The town has an equalized assessed value of approximately 108 million dollars which is distributed across a variety of property classes. There are 315 single family occupied homes within the town.

Land Use and Development Trends There is no commercial development occurring in the Town at this time. Residential development is happening rapidly. Two developers, Land and Lakes Company out of Greene, NY and Christmas Associates, have been purchasing farms and subdividing them along existing roads. Development is occurring along Fairgrounds Road, Ouleout Road, Skaneateles turnpike, and Route 8.

Assets

The town offices are located on Beaver Creek Road in Brookfield. The office is not equipped with a back-up generator.

The town highway barn is located on south of the town offices on Beaver Creek Road. The Highway Department has a generator in case of a power failure.

There are fire houses located in North Brookfield, Brookfield and Leonardsville. All of these fire companies have back-up generators.

The County fairgrounds are located on Fairground Road in Brookfield.

The Brookfield School District is located in Brookfield and has an emergency backup generator.

The old Leonardsville school building located on Route 8 in Leonardsville also has an emergency backup generator.

Local Organization and Regulations

The Town Board meets on the second Monday of each month.

The Town Planning Board meets on the first Thursday of each month.

The Zoning Board of Appeals was to be established by April 2006 and will meet as needed.

The Planning Process

The Town Board held a public meeting on 2/9/04 to discuss the Hazard Mitigation Plan, what it entailed, what it is for and to determine with whom this plan should be discussed in its development. After a lengthy discussion it was decided that the town planning board should hold a meeting and invite the appropriate members of local government. This meeting was held on 2/2/05. The planning process was discussed as well as areas of concern around the town.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

A copy of this plan has been sent to the following organizations for comment:

Brookfield Fire Department

Town of Plainfield, Otsego County

Town of Bridgewater, Oneida County

Town of Columbus, Chenango County

Existing Plans, Studies, Reports, and Technical Information

Town of Brookfield Subdivision Ordinances was considered in assessing existing mitigation programs.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality..

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of Brookfield Probability Greater (G), Lesser (L) About Equal (E)	Town of Brookfield Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	G	N
Transportation Accidents	Mod. High	285.2	L	N
Winter Storms	Mod. High	272.2	G	Y
Fires	Mod. High	265.2	L	N
Ice Storms	Mod. Low	236.2	G	N
Flood	Mod. Low	222.8	E	Y
Utility Failure	Mod. Low	218.5	E	N
Tornado	Mod. Low	202.5	L	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	L	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	L	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	E	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	L	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Brookfield.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Brookfield Program	State BOCA Codes	No	State Health Codes Fire Codes	No	SEQR for subdivisions	Federal Flood Insurance Rules	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	No	State health Dept. rules for septic	Planning Board	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Brookfield Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Brookfield Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Brookfield Program	Technical Assistance available through SWCD	NYS DEC 480A program available	State Regs for greater than 1 acre development	No	State Rules Apply	No	State & Federal Rules Apply	Chesapeake Bay Tributary Strategy

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Brookfield Program	No	Fire West Winfield Ambulance State Police County Sheriff	MSDS Sheets on File with Fire Department	911 Center Alert System	County Health Department Rules for minimum living standards and drinking water	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Brookfield Program	No	No	No	Red Cross Shelter at Brookfield Central School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of Town of Brookfield subdivision ordinances.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. FLOODING

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

January '96 Flood – This was presidential disaster FEMA 1095 DR. This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

May 2000 Flood Event – This spring runoff event was declared disaster FEMA 1335 DR NY.

April 2-4, 2005 Severe Storms and Flood Event - This was declared disaster FEMA 1589 DR NY. Flooding was caused by rain in conjunction with snowmelt. Greater damage occurred at higher elevations in Madison County.

Locations Subject to Hazard

Moscow Road-A culvert at this location lacks capacity.

Quaker Hill Road-A culvert in this location lacks capacity.

Potential Losses

According to the Madison County Assessment office records, the Town of Brookfield has 248 parcels with at least some land in the 100 year flood plain. The vast majority of land in the floodplain is either agricultural, wooded, or fallow. By examining an overlay of aerial photography, parcel boundaries and the 100 year flood plain, it was found that 10 parcels had buildings in the flood plain. These included one Ag parcel, eight residential parcels, and one residential with a small improvement. Total assessed value for these parcels is \$543,600. It is estimated that these parcels could sustain an average of \$5,000 damage in the event of the 100 year flood. Total damage would be \$50,000.

Future Development in Hazard Area

Development in town is concentrated in other geographic areas.

Mitigation Measures

Shoulder Paving – Pave the shoulders of roads that are subject to washout. Costs are to be determined. Medium Priority.

Moscow Road and Quaker Hill Road-County SWCD will assist town highway in running runoff calculations for watershed contributing to this culvert. SWCD will also assist with sizing appropriate culvert. High priority.

B. WINTER STORMS

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

December 25 & 26, 2002 Snowstorm – This was presidential emergency FEMA 3173 EM-NY. Large amounts of snow were received during a 48 hour period in parts of Madison County.

March 1993 Blizzard – This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,500 feet vs. 300 feet), Brookfield sustained greater amounts of snowfall.

Blizzard of '66 – This was a three day storm during the month of January that was characterized by steady snow and continuous winds.

Locations Subject to Hazard

According to the Planning Board chairman the following locations are subject to icing:

- A. Skaneateles Turnpike
- B. Skaneateles Turnpike
- C. Moscow Road

Potential Losses

In the mid-1980's, Madison County Highway Department lost a lawsuit in which 1 fatality occurred because of a car accident that occurred on Swamp Road in the Town of Smithfield during freezing rain conditions. According to County Highway Superintendent Joe Slivinski's recollection, during the appeal process the lawsuit was settled out of court for approximately \$300,000.

Mitigation Measures

Tree Clearing-With assistance from county highway department tree crew, trees in vicinity of icing problem should be assessed. Trees causing excessive shading should be removed. Town highway superintendent is responsible. No additional resources needed. This is a medium priority.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6-7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Shoulder Paving	+1	+1	-1	+1	+1	+1	+1	5
Moscow Road Culvert Design Calculations	+1	+1	+1	+1	+1	+1	+1	7
Tree Clearing along Icy Road Segments	-1	+1	+1	+1	+1	+1	-1	3

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Brookfield Highway Superintendent and submit a copy of the evaluation form listed in appendix EF. The Town's Highway Superintendent will complete and return this form within 10 business days.

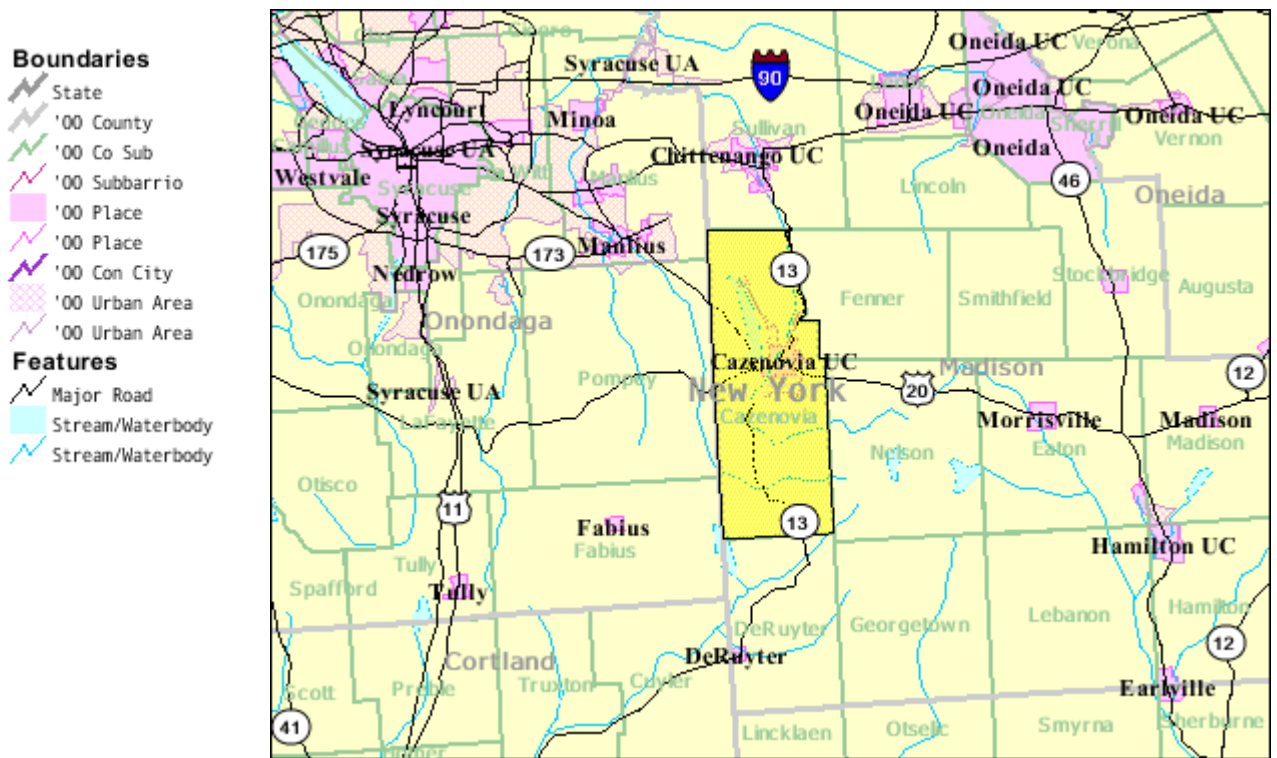
During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the City's Emergency Director and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Brookfield Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Brookfield subsection based on the reports supplied by the Highway Superintendent and other municipalities as well as input from the public. This updated plan will be submitted to the Town of Brookfield for approval before being forwarded to FEMA.

TOWN OF CAZENOVIA



Supervisor: Elizabeth Moran, 315-655-9213

Highway Superintendent: Gerald Stowell, 655-4852

Cazenovia Fire Department Chief: Thomas Tait, 655-2834 FAX 655-5418

Town Justices: Fred Palmer III, 662-3169, Timothy Moore, 655-8022

CAVAC – Gene Smith

Background

The Town of Cazenovia is a community of 6,481 residents located on the western border of the county between the towns of DeRuyter and Sullivan. The Village of Cazenovia is located within the township but will be addressed in its own section of this plan. The town's population consists of 76% between the ages of 18 and 65 and 15% over the age of 65 (937 residents). The town comprises approximately 31 square miles, with an equalized assessed value of approximately 416 million dollars spread across various property classes. There are 2567 housing units in the township with 1453 of them being single family owner occupied homes. Most of the commercial development is taking place along Route 20 east of the Village of Cazenovia.

Land Use and Development Trends

Building construction is occurring at a rate of around 22 houses per year.

Assets

The town offices are located on Albany Street in the Village of Cazenovia.

The Town highway barn is Located at 3425 Constine Bridge Road. This is a new building built in 2005 and has a back-up generation in case of a power failure. The Highway Department expects to begin construction on a sand and salt storage structure in 2007. The Highway Department has ten full-time employees and administers 61 miles of Town road and plows an additional 25 miles of County road in the winter.

The Cazenovia Police Department is located on Albany Street in the same building that houses the Village Office.

The Cazenovia Fire Department is located on Albany Street in the Village of Cazenovia.

CAVAC ambulance service is located on Route 20 in the village of Cazenovia.

The New Woodstock Fire Department is located on Route 13 in the Hamlet of New Woodstock.

The New York State Troopers have a trooper's barracks on Route 13 in New Woodstock.

The county landfill transfer station is located near the new highway barn on Constine Bridge Road.

The Cazenovia Central School located at 31 Emory Ave. This is the designated Red Cross emergency shelter for the community. This building has emergency backup power generation for lights and heat. It does not have an external hook-up for an additional generator. Capacity is for 330 people.

Madison County Landfill has a transfer station for refuse next to the Town Highway garage on Constine Bridge Road.

Local Organization and Regulations

The Town Board meets on the second Monday of each month.

There is a planning board and a zoning board already in place to review any new development proposed in the town.

The Zoning Board of Appeals meets monthly at the Town offices on Albany Street.

The Town has an active tree maintenance program.

The Town Highway Department will begin administering the water supply in 2006.

The Planning Process

The town board discussed the plan and its requirements with Steve Lorraine, SWCD Manager, at a public meeting on 3/8/04. On 3/16/04 the Town Supervisor Tom Dreisbach discussed with Steve Lorraine potential projects and problem areas in the town. On 2/24/05 Steve Lorraine met with Town Highway Superintendent Gerald Stowell and a representative from the Cazenovia Fire Department. Potential areas of

concern and mitigation projects were discussed. Mike Johnston, SWCD Technician, met with new Town Supervisor Liz Moran on 2/28/06. Mr. Johnston met with Supervisor Moran and Administrative Assistant Allison on 4/21/06 to review a draft of the plan.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

The following organizations will be contacted for comment on the Town of Cazenovia HMP.

Cazenovia Area Planning Project

Cazenovia College, Tim Carpenter, Head of Infrastructure

Cazenovia Lake Association

Cazenovia Preservation Foundation

Cazenovia Area Community Development Association, Barbara Henderson

Greater Cazenovia Area Chamber of Commerce, Karen Schai

Existing Plans, Studies, Reports, and Technical Information

Emergency Action Plan For The DeRuyter Dam on Limestone Creek in the County of Onondaga, New York State Department of Transportation Waterways Maintenance Division August 1990. This plan was considered in the writing of this report.

Flood Insurance Study Town of Cazenovia, New York Madison County, Federal Emergency Management Agency, December 19, 1984

Flood Insurance Study Village of Cazenovia, New York Madison County, Federal Emergency Management Agency, December 19, 1984

Town Zoning Ordinance is in effect.

The Town of Cazenovia published a Comprehensive Plan in 1991. The Town of Cazenovia and Fenner, the Village of Cazenovia, and the Cazenovia School District have submitted a grant application to update this plan as a multi-jurisdictional plan.

The Village of Cazenovia has an Emergency Response Plan but the Town does not have one. At this time, the Town is considering working with the Village on an updated plan.

Cazenovia Area Planning Project published a plan for the area on 3/12/02.

A Morrisville State College environmental planning class is currently conducting a study of the Cazenovia area using an EPA model.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of Cazenovia Probability Greater (G), Lesser (L) About Equal (E)	Town of Cazenovia Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	E	N
Winter Storms	Mod. High	272.2	E	Y
Fires	Mod. High	265.2	H	Y
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	L	Y
Utility Failure	Mod. Low	218.5	L	Y
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	E	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	H	Y
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	L	N
Landslide	Not Rated		H	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Cazenovia. Appendix D of this plan can be used as a guide as to what mitigation actions can mitigate different hazards.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Cazenovia Program	State BOCA Codes	Part of Zoning	State Health Codes Fire Codes	Caz. Preserv. Foundation for open space Local Gov. for Water, Sewer, & Utility	SEQR for major subdivisions Critical Environmental Area 500' around Caz. Lake	Federal Flood Insurance Rules apply	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag/ 1 active application	No	Cazenovia Preservation Association	Time Limit on Permits	State Health rules for septic systems	Zoning Board of Appeals	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Cazenovia Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Cazenovia Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education Headstart

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Lake Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Cazenovia Program	Technical Assistance from County SWCD; Region 7 Stormwater Working Group	Cazenovia Preservation Foundation has Forest Management Plans on larger parcels	State Regs for greater than 1 acre development; Town Impervious Surface Regulations	Critical Environmental Area 500 feet around lake shore	State Rules Apply	Site Plan Reviews by Planning Board	State & Federal Rules Apply	Oneida Lake Program; Cazenovia Lake Management Plan needs update

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Cazenovia Program	Fire Department; Senior Housing?	Caz. Fire Dept. CAVAC Caz. Police State Police County Sheriff	MSDS Sheets on File with Fire Department	911 Center Alert System: Fire Department Siren	County Health Department Plan	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Cazenovia Program	No	State Dam at DeRuyter Reservoir; State Canal Authority controls Cazenovia Lake elevation	Levee in Village between Chittenango Creek and Carpenter's Pond	Red Cross Shelter at Cazenovia School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the writing of the Town of Cazenovia Comprehensive Plan.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. FLOODING

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

April 3&4, 2005 – This was a spring runoff event that was accompanied by a rainstorm. Washouts occurred on a number of different roads in the Town of Cazenovia.

August 2003 - The Madison County Sewer District recorded 4.5 inches of rain in a 1 hour period during this thunderstorm event that affected the western part of Madison County. Damage was particularly severe to road culverts under Pompey Hollow Road on the western edge of the Township.

April 2001 - This was a Spring melt event and was not associated with a rainfall event.

Spring 2000 – This was presidential disaster FEMA 1335 DR-NY for storms that occurred between May 3 and June 30.

January '96 Flood – This was presidential disaster FEMA 1095 DR. This run-off event caused by rain and melting snow resulted in widespread flooding in the Town.

Potential Losses

According to the Madison County Assessment office records, the Town of Cazenovia has 444 parcels with at least some land in the 100 year flood plain, not including parcels in the Village of Cazenovia. An overlay of aerial photography, parcel boundaries and the 100 year flood plain was examined for the Town of Cazenovia. There are 17 parcels with houses in the flood plain in the immediate vicinity of Cazenovia Lake; flood levels here would be affected by the outlet structure controlled by the Canal Authority. The average value of the parcels with houses in the lake flood plain is \$443,000. If each of these lake area houses sustained an average of \$50,000 damage during a 100 year flood, total damage would be \$850,000. Another 13 parcels have structures in the flood plain outside of the lake watershed including 10 houses, 1 outbuilding, a dairy farm, and part of a lumber mill. The average value of the parcels with houses in the flood plain away from the lake is \$123,000. If each of these 13 parcels sustained \$20,000 damage during a 100 year flood, total damages outside of the lake watershed would be \$260,000.

Locations Subject to Hazard

The following locations are subject to shoulder washout in the Town of Cazenovia, in all cases, the solution to the problem is excavating the ditch and then lining the ditch with the proper sized rock.

Fairbanks Road 0.92 mile – Seasonal road, 2 new 18 inch culverts are needed to conduct water to the lower side of the road

Barrett Road 1.08 mile – this road also needs 2 new 18 inch culverts to move water to the lower side of the road

Temperance Road 1.01 mile

Maple Road 1.20 mile

Stanley Road 0.94 mile and 0.88 mile

Grassy Lane 0.58 mile

Upper Ferndell 0.16 mile (steep grade)

Kiley Road to Delphi Road 1.53 mile

Tucker Road 1.50 mile

Burlingame Road 2.73 mile – Larger Driveway culvert needed ¼ mile from Burlingame Road

Road Ditch Problems:

Owahgena Road

Wright Road

Stanton Road

Smith Road

Corkinsville Road

Kinney Road

Flooding Problems

Kinney Road to Route 80, Limestone Creek (Lewis Property problem) – water table is rising in this neighborhood and houses are experiencing basement flooding

Future Development in Hazard Area

There is no planned development in the floodplain in the Town of Cazenovia.

Mitigation Measures

Burlingame Road – 2 culverts, 18 inch x 40 feet would relieve flooding

Fairbanks Road – 2 culverts, 18 inch x 40 feet are needed.

Route 80 to Kinney Road – Channel needs to be excavated in this stretch of creek.

Town Highway Department staff would undertake these projects if funding can be found to pay for them.

Shoulder Washout- Based on a price of \$8 per ton or \$12 per cubic yard for man sized stone, armoring of the road shoulders subject to washout would cost \$5 per lineal foot. At this rate it would cost \$26,400 to armor one mile of road ditch. Accordingly each road would cost:

Fairbanks Road-\$24,288

Barrett Road-28, 512

Temperance Road- \$26,664

Maple Road-\$31,680

Stanley Road-\$48,048

Grassylane-\$15,312

Upper Ferndell-\$4,224

Kiley Road-\$40,392

Tucker Road-\$29,040

Under these circumstances, prioritization of problem road segments is a high priority mitigation measure for the town.

B. Winter Storms

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

December 25 & 26, 2002 Snowstorm – This was presidential emergency FEMA 3173 EM-NY. Large amounts of snow were received during a 48 hour period in parts of Madison County. Towns east of Cazenovia were more severely affected by this event.

March 1993 Blizzard – This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,300 feet vs. 300 feet), Cazenovia sustained greater amounts of snowfall. The Cazenovia Town Highway Department worked round the clock for three straight days during and immediately following this event.

Blizzard of '66 – This was a three day storm during the month of January that was characterized by steady snow and continuous winds.

Locations Subject to Hazard

Ridge Road

Linklaen Road

East Road

Corkinsville Road

Damon Road

Tucker Road

Stanton Road

Cobb Hill Road

Number Nine Road

Potential Losses

A normal plow run for the Cazenovia Highway Department usually takes around 3 ½ hours. A 6 inch snowfall requires about 5 hours work because of the extra time required to clear intersections. A plow run entails 5 ten wheel trucks and one six wheel truck with 6 drivers and ? wing men. Cost = 6 trucks @ \$60/ hour with 6 employees for 5 hours @ \$30/ hour (overtime) Total Cost = \$540

During a record snowfall season of 200 inches, the cost of plowing the 80 inches of snow that exceeds the seasonal average of 120 inches = $80/6 \times \$540$ / six inch storm = \$7,200

Mitigation Measures

Living snow fences consisting of evergreen trees could be installed at distances of at least 100 feet upwind of problem stretches of road. Snow fences cause snow to deposit on the aft side of the plantings. With 1,320 trees per mile and a cost of \$2 per tree installed, living snow fences could be installed at a cost of \$2,640 per mile. Portions of Ridge Road, Lincklaen Road, Number Nine Road, Damon Road, Corkinsville Road, and East Road could benefit from the installation of living snow fences. Road segments need prioritization and landowners identified and then contacted for participation. This is a High Priority for the Town.

GIS Mapping of Problem Road Segments – Mapping of road segments that present problems for snow clearing would be a low cost mitigation action. Because the Highway Superintendent is an elected official, every two years there is the possibility that there could be a new Superintendent. By mapping problem road segments, a new Highway Superintendent would be aware of the location of road segments that present problems. This is a High Priority. It has been accomplished with the publication of this report.

Public Education and Awareness - Guide to Winter Driving – A brochure similar to one published by Livingston County that advises drivers how to drive safely in winter conditions could be published. County Planning would be the lead agency on this publication. Cost would be \$1,000 for the first 1,000 copies published. This is a medium priority for the town.

Identify Vulnerable Populations – A group called the Madison County Citizen Corps Council is currently working on identifying vulnerable populations and formulating a plan to assist these people in case of an emergency. Membership of this Council includes Retired Senior Volunteer Program (RSVP), Madison County Office for the Aging, County Health Department, County Office of Disaster Preparedness, the Alzheimer's Association, The Red Cross, and the Salvation Army. The Council is having difficulty assembling a good list (database) of people who need this assistance because of confidentiality rules that apply to the agencies that have lists of clients. The current list has less than 100 names on it. The Council now plans to send out questionnaires with agency mailings that are already going out. This system will depend upon vulnerable

populations identifying themselves. RSVP has already delivered Disaster Preparedness Kits to the already identified vulnerable population and will continue this activity. In the event of a long-term power failure or other disaster, the County Office of Emergency Preparedness will contact local fire departments and request that they check on at-risk individuals. This project is a High Priority for the County.

C. Power Outages

The greatest problem caused by severe storms and ice storms in the Cazenovia area is the loss of electric power. Historical events for these two hazards are covered under this section on power outages.

Mitigation Goals

Minimize damage to private and public properties, maintain critical services, and provide services for vulnerable populations.

Historical Events

April 2003 Ice Storm – This was presidential disaster FEMA 1467 DR.

August 16, 2003 Northeast Power Failure – This was an event that affected the entire Northeastern United States.

September 7, 1998, Labor Day Storm – This microburst caused widespread damage from straight-line winds of 70-90 mph. Damage was greatest in the northern portion of the Town of Cazenovia. Power was out along Ridge Road for a full week. School opening for the Cazenovia School District was delayed by one week.

Locations Subject to Hazard

Town Hall (a.k.a. the Gothic Cottage) – This structure is on the National Register of Historic Places. This building is not equipped with a back-up generator or an external hook-up for an outside generator. The building does have battery operated emergency lighting.

Town Highway Garage – This building does not yet have an emergency generator.

Carriage Lane Apartments, Cazenovia Village Apartments – Both of these apartment complexes house Senior Citizens. Since these locations do not have back-up heat sources, a power failure would lead to a loss of heat.

Future Development in Hazard Area

New development is slightly less vulnerable to power failure than existing development since utilities for new development are buried in the Town of Cazenovia. However, lines bringing power to the development are still above ground.

Potential Losses

Town Hall - A power failure during the winter months could lead to \$5,000 - 10,000 worth of damage because of frozen pipes.

Town Highway Garage – Loss of power at this location would lead to lost workdays for the Highway Crew.

Senior Citizen Housing – Loss of heat to Senior Citizen Housing would lead to evacuation to an emergency shelter for senior citizens. Damage to either Carriage Lane Apartments or Cazenovia Village Apartments from frozen pipes could be \$50,000. If pipes were to freeze and burst, these facilities would not be inhabitable until the problem is repaired.

Mitigation Measures

Town Hall – To wire the Town Hall for an outside generator would cost \$1,000. To equip the building with an automatic generator would cost \$7,000. This is a high priority for the Town. Funding could be included in a future budget for the Town.

Tree Maintenance – Power companies that maintain the power line right-of-ways need to remove large hazard trees rather than just removing tree branches. This is a medium priority for the Town since it is not within their authority.

Senior Citizen Housing – To wire either Carriage Lane Apartments or Cazenovia Village Apartments for an outside generator to power the furnace would cost \$1,000 at either facility. This is a Medium Priority for the Town since it would be funded by the owners of these facilities.

Emergency Response Plan – The Village of Cazenovia has an Emergency Response Plan that needs updating. The Town of Cazenovia would like to participate with the Village in writing a plan that would be applicable to both units of government. This plan would address: the identification of vulnerable populations, and an evacuation plan for vulnerable populations. This is a High Priority for the Town. Costs would be associated with the time needed for Town and Village Officials to administer the writing of the plan.

D. Dam Failure

Mitigation Goals

Prevent injury or loss of life as well as damage to property and infrastructure in the town.

Historical Events

June 11, 1917 – According to the Madison County Leader newspaper, a downpour after weeks of incessant rain led to a number of dam failures in Madison County and the surrounding area. Three power dams went out between Eaton and West Eaton on Eaton Brook. A mill pond at Pratts Hollow in the Town of Eaton led to the death of Earl Roher. Two lives were lost in Oriskany Falls, Oneida County after 3 dams burst on Oriskany Creek near the border between Madison and Oneida Counties.

Locations Subject to Hazard

DeRuyter Reservoir encompasses portions of Town Of Cazenovia, Town of DeRuyter and Onondaga County. The dam on the northern end of the reservoir is located in the Town of Cazenovia. This dam is classified as a high risk dam by the Department of Environmental Conservation, Bureau of Dam Safety. An emergency action plan was developed by New York State Department of Transportation in 1990. Although the majority of damage would occur in Onondaga County, the dam is mentioned here as a result of its location.

Future Development in Hazard Area

No development is planned on the parcels in Madison County within the flood zone for DeRuyter Reservoir.

Potential Losses

The *Emergency Action Plan for DeRuyter Reservoir* lists in the Town of Cazenovia 3 houses at the intersection of Cardner Road and Delphi Falls Road and #3300 Pompey Hollow Road. Cardner Road is not in Madison County and there are no houses at #3300 Pompey Hollow Road.

Mitigation Measures

Flood Zone Overlay in GIS – A first step in addressing potential problems with a breach in the dam for DeRuyter Reservoir would be to digitize the flood zone map from the Emergency Action Plan that was written for DeRuyter Reservoir. Parcels in the floodway could then be more easily identified. Subsequent mitigation actions could then target these parcels. The County Planning Department would be the responsible agency. This project could be accomplished using already existing resources. This is a High Priority for the Town.

Local Official Education – Make sure that local officials are aware of the existence and the provisions of the *Emergency Action Plan for DeRuyter Reservoir*. There would be no cost for this mitigation action. This would be accomplished with the approval of this mitigation plan by the Town Board. This is a High Priority for the Town.

Comprehensive Plan – Include information for the flood zone in the proposed Comprehensive Plan that may be funded by a current grant application submitted to the N.Y. Department of State. High Priority.

E. Fire

Mitigation Goals

Prevent damage to public and private property and lessen the risk of injury and death to the residents of the fire district.

Historical Events

Agway Building, Route 13, 5 or 6 years ago

Locations Subject to Hazard

Areas with poor coverage for water sources –

Johnson Lumber Mill – Located at the intersection of Ballina and Stone Quarry Roads. This is a moderately large lumber mill with large stacks of lumber and large amounts of sawdust.

Potential Losses

Median House Value - According to Town Assessor Steve Harris the median value of a house in the Town of Cazenovia is \$200,000.

Mitigation Measures

Dry hydrant program - Under a dry hydrant construction program spearheaded by the Cazenovia Fire Department, 11 dry hydrants have been installed at various locations in the Fire District. The following locations are still targeted for dry hydrant installation:

- Route 92, ½ mile north of Route 20, pond at Charles Morgan Residence
- Route 13 North, across from Chittenango Fall State Park office
- East Lake Road, Cazenovia Lake between Glenwood and Ormonde Roads
- Fenner Road, 1/8 mile east of Moraine Rd, Mosely Farm Pond
- Route 20 East, ¼ mile east of Welsh Church Road, pond on south side of road

The cost for each dry hydrant is approximately \$1,000. The Cazenovia Fire Department is the responsible agency. Funding for this project has not yet been established. This is a Medium Priority for the Town.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Prioritization of Road Culvert and Shoulder Washout Problems	+1	+1	+1	+1	+1	+1	+1	7
Living Snow Fence Prioritization	+1	+1	+1	+1	+1	+1	+1	7
Guide to winter Driving Brochure	+1	+1	-1	+1	+1	+1	+1	5
GIS Mapping of Problem Road Segments	+1	+1	+1	+1	+1	+1	+1	7
Vulnerable Population Identification	+1	+1	+1	+1	+1	+1	+1	7
Back-up Generator for Town Hall	+1	+1	+1	+1	+1	+1	+1	7
Tree Removal along power Lines	N	+1	+1	+1	-1	+1	+1	4
Back-up Generator for Senior Housing	+1	+1	-1	+1	-1	+1	+1	3
Emergency Response Plan Update	+1	+1	+1	+1	+1	+1	+1	7
GIS Flood Zone Overlay	+1	+1	+1	+1	+1	+1	+1	7
Local Official Education for DeRuyter Reservoir EAP	+1	+1	+1	+1	+1	+1	+1	7
Flood Zone info in local Comprehensive Plan	+1	+1	+1	+1	+1	+1	+1	7
Dry Hydrant Program	+1	+1	-1	+1	+1	+1	+1	5

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Cazenovia's Highway Superintendent and submit a copy of the evaluation form listed in appendix EF. The Town's Highway Superintendent will complete and return this form within 10 business days.

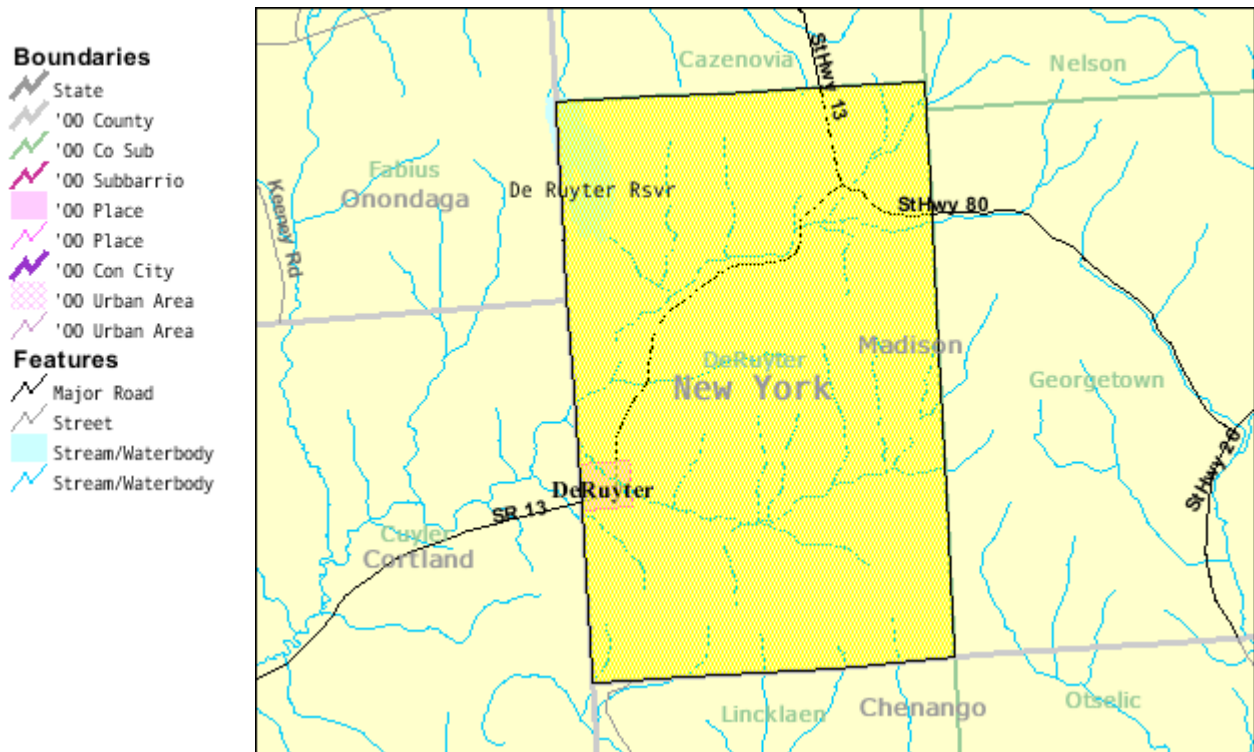
During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the City's Emergency Director and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Cazenovia Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Cazenovia subsection based on the reports supplied by the Town highway Superintendent and other municipalities as well as input from the public. This updated plan will be submitted to the Cazenovia Town Board for approval before being forwarded to FEMA.

TOWN OF DERUYTER



Supervisor: Timothy Winters, 852-9907

Highway Superintendent: Walter Cook, 852-6272

Town Justices: John Fox, Sammy D. Roller

Background

The Town of DeRuyter is a community of 1532 residents located in the south western corner of the county, south of the Town of Cazenovia and west of the Town of Georgetown. The Village of DeRuyter is located within the township but will have its own section in this plan. Seventy three percent of the population is between the ages of 18 and 65 while fifteen percent are over the age of 65 (223 residents). The town is comprised of approximately 20 square miles. The town has an equalized assessed value of approximately 65.6 million dollars. There are 867 housing units located in the town of which 273 are considered single family owner occupied units. There is no real commercial development taking place at this time. This remains a very heavily agricultural community with very productive agricultural lands.

Land Use and Development Trends

The town remains primarily rural with continuing trends away from farming on marginally productive land and slow but steady conversion of those parcels with highway access to large-lot residential development. The traditional high-density development area remains the shoreline around DeRuyter Lake (Tioughnioga Reservoir) where the

conversion process from rustic camps to larger seasonal and year-round capable residences continues with great rapidity. While land use regulations, designed primarily to regulate development in the lake watershed area, have been in place for approximately 15 years with significant success, the conversion and expansion of pre-existing, non-conforming houses remains a significant planning and development challenge. Lot coverage restrictions are now under discussion in order to potentially mitigate the effects of housing conversions.

Assets

The town offices are located in the Town Office Building (former school house) on Route 13 (Utica Street) in the Village of DeRuyter.

The DeRuyter Free Library is located in the Town Office Building.

The town highway barn is located on Route 13 at the north edge of the Village of DeRuyter.

The DeRuyter Fire Department is located on Division Street in the Village of DeRuyter.

The DeRuyter Central School located on Railroad Street is a Red Cross shelter but does not have backup power generation capabilities.

Local Organization and Regulations

The Town Board meets on the second Thursday of each month.

The Town Planning Board in place to review new development and proposed subdivisions. Meetings are on the second Wednesday of each month.

The Planning Process

The Town Board met with SWCD Manager Steve Lorraine and discussed the mitigation plan and the requirements of the plan at a public meeting on 3/11/04. They decided with whom to work in the development of this plan. Meetings were held with the town highway superintendent on 4/2/04 to discuss problem areas and potential projects in the township. A draft of the Town's plan was reviewed by Planning Board Chair Russ Oechsle on April 26, 2006.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

**Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits
and Other Parties**

DeRuyter Lake Association

Existing Plans, Studies, Reports, and Technical Information

Town of DeRuyter Land Use Plan

Town of DeRuyter Land Use Regulations

Town of DeRuyter Subdivision Ordinance

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality..

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of DeRuyter Probability Greater (G), Lesser (L) About Equal (E)	Town of DeRuyter Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	L	N
Winter Storms	Mod. High	272.2	E	Y
Fires	Mod. High	265.2	L	N
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	G	Y
Utility Failure	Mod. Low	218.5	E	N
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	E	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	L	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	E	N
Wave Action	Low	159.5	E	N
Dam Failure	Low	159.2	G	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of DeRuyter.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
DeRuyter Program	State BOCA Codes	Under consideration	State Health Codes Fire Codes	No	SEQR for major subdivisions Local subdivision ordinance	Federal Flood Insurance Rules apply	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	Time Limit on Permits	State Health rules for septic systems		State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
DeRuyter Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
DeRuyter Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education Headstart

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Lake Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
DeRuyter Program	Technical Assistance from County SWCD	Section 319 Program of Forest Tax Law available through DEC	State Regs for greater than 1 acre development	Lake Watershed Regulations	State Rules Apply	No	State & Federal Rules Apply	DeRuyterOneida Lake

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
DeRuyter Program	No	DeRuyter Fire Dept., Smith Ambulance Service, State Police, County Sheriff	MSDS Sheets on File with Fire Department	911 Center Alert System: Fire Department Siren	County Health Department Plan	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
DeRuyter Program	No	State Canal Authority Dam at DeRuyter Reservoir	No	Red Cross Shelter at DeRuyter Central School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Town of DeRuyter Land Use Plan.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Severe Winter Storms

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

December 25 & 26, 2002 Snowstorm – This was presidential emergency FEMA 3173 EM-NY. Large amounts of snow were received during a 48 hour period in parts of Madison County. .

March 1993 Blizzard – This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,300 feet vs. 300 feet), DeRuyter sustained greater amounts of snowfall. .

Blizzard of '66 – This was a three day storm during the month of January that was characterized by steady snow and continuous winds.

Locations Subject to Hazard

The following road segments are subject to drifting because of a lack of protection from prevailing winds.

- A. Middle Road
- B. State Route 13
- C. Mariposa Road

Potential Losses

The greatest potential loss from drifting would be a car accident involving a fatality. In the 1980's Madison County lost a lawsuit for \$300,000 because of a fatality due to weather conditions.

Mitigation Measures

Windbreaks - Living snow fences consisting of evergreen trees could be installed at distances of at least 100 feet upwind of problem stretches of road. Snow fences cause snow to deposit on the downwind side of the plantings. With 1,320 trees per mile and a cost of \$2 per tree installed, living snow fences could be installed at a cost of \$2,640 per mile. Landowners need to be identified and then contacted for participation. The initial identification of landowners is a High Priority for the Town Highway Department to perform.

Public Education and Awareness Guide to Winter Driving – A brochure similar to one published by Livingston County that advises drivers how to drive safely in winter conditions could be published. County Planning would be the lead agency on this publication. Cost would be \$1,000 for the first 1,000 copies published. This is a medium priority for the county.

Identify Vulnerable Populations – A group called the Madison County Citizen Corps Council is currently working on identifying vulnerable populations and formulating a plan to assist these people in case of an emergency. Membership of this Council includes Retired Senior Volunteer Program (RSVP), Madison County Office for the Aging, County Health Department, County Office of Disaster Preparedness, the Alzheimer's Association, The Red Cross, and the Salvation Army. The Council is having difficulty assembling a good list (database) of people who need this assistance because of confidentiality rules that apply to the agencies that have lists of clients. The current list has less than 100 names on it. The Council now plans to send out questionnaires with agency mailings that are already going out. This system will depend upon vulnerable populations identifying themselves. RSVP has already delivered Disaster Preparedness Kits to the already identified vulnerable population and will continue this activity. In the event of a long-term power failure or other disaster, the County Office of Emergency Preparedness will contact local fire departments and request that they check on at-risk individuals. This is a High Priority for the County.

B. Flooding

As a result of the topography of this area, DeRuyter is prone to recurring flash flooding incidents. The steep gradient of stream beds results in high flows of water during summer thunderstorm that carry large quantities of bed load gravel. This gravel is then deposited in culverts, plugging them and causing roads to be flooded and damage to private property.

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

January '96 Flood – This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

May 2000 Flood Event – This spring runoff event was declared disaster FEMA 1335 DR NY.

April 2-4, 2005 Severe Storms and Flood Event – This was declared disaster FEMA 1589 DR NY. Flooding was caused by a 1 to 4 inch rain in conjunction with snowmelt. Before this storm rivers and streams had high flows due to a previous rainstorm on March 28th. The Town of Lebanon was hardest hit of all of the Towns in Madison County.

There were some road closures and flooded basements in the towns of Lebanon and Hamilton. A few roads and a bridge were damaged. Creeks, streams, and the headwaters of the Chenango River were all out of their banks. According to NOAA, damage was \$100,000.

Potential Losses

According to the Madison County Assessment office records, the Town of DeRuyter has 272 parcels with at least some land in the 100 year flood plain, not including parcels in the Village of DeRuyter. An overlay of aerial photography, parcel boundaries and the 100 year flood plain was examined for the Town of DeRuyter. There are 41 parcels with structures in the flood plain in the immediate vicinity of DeRuyter Lake including 40 houses and 1 bar; flood levels here would be affected by the dam controlled by the Canal Authority. The average value of the parcels with structures in the lake flood plain is \$170,000. If each of these structures sustained an average of \$10,000 damage during a 100 year flood, total damage would be \$410,000. Another 4 parcels have structures in the flood plain outside of the lake watershed including 3 houses and a dairy farm. The average value of these parcels away from the lake is \$130,000. If each of these 4 parcels sustained \$5,000 damage during a 100 year flood, total damages outside of the lake watershed would be \$20,000.

Locations Subject to Hazard

1. West Cottage Lane- A number of lake cottages in this area suffer flooding because of inadequate drainage
2. State Route 13- Culvert lacks capacity
3. Cary Road- Culverts plug due to bed load
4. Williams Road- Culvert lacks capacity
5. Cary Road- Bank erosion
6. Arnold Road- Road washout
7. Crumb Hill Road- Culvert plugs with bed load
8. South Hill Road- Mystery culvert with unknown outlet sometimes plugs with gravel
9. Wood Road- Culvert lacks capacity

Mitigation Measures

1. West Cottage Lane- West Cottage Lane is a private road and the drainage is the responsibility of the landowner. Technical assistance is available from the county SWCD office. This is a low priority for the town.

2. State Route 13 Culvert- This culvert is the responsibility of NYS DOT. Resolution to this problem is a medium priority for the town because this is a highly traveled road.
3. Cary Road Culverts- This is not a well-traveled road. Solution to problem requires study. This is a medium priority.
4. Williams Road Culvert- SWCD will work with town highway to do runoff calculations and culvert sizing for this location. This is a high priority with no initial cost.
5. Cary Road Bank Erosion- A design needs to be done by SWCD staff to determine costs for this project. This is a medium priority.
6. Arnold Road- This is not a well-traveled road. Armoring the road bank would be expensive. This is a low priority.
7. Crumb Hill Road- This is a county road. A rock dam in front of the culvert would catch bed load but would require maintenance. Cost is about \$3,500 and this is a high priority.
8. South Hill Road Mystery Culvert- A plan needs to be formulated to determine length and direction of culvert. SWCD and town highway will work together on this. This is a high priority.
9. Wood Road-SWCD will do runoff calculations and size culvert. This is not a well-traveled road but access is needed for a milk truck to reach a large dairy. This is a medium priority.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
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	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
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Guide to winter Driving Brochure	+1	+1	+1	+1	+1	+1	-1	5
Vulnerable Population Identification	+1	+1	+1	+1	+1	+1	+1	7
Cottage Road Drainage	+1	N	-1	-1	-1	+1	+1	0
State Route 13 Culvert Upgrade	+1	+1	-1	+1	-1	+1	+1	3
Cary Road Culverts Upgrade	+1	N	-1	+1	+1	N	+1	3
Williams Road Culvert Design	+1	+1	+1	+1	+1	+1	+1	7
Cary Road Bank Stabilization	+1	+1	-1	+1	+1	+1	+1	5
Arnold Road Bank Stabilization	-1	+1	-1	-1	+1	-1	+1	-1
Crumb Hill Road Rock Dam for Bed Load	+1	+1	+1	+1	+1	+1	+1	7
South Hill Road Mystery Culvert	+1	+1	+1	+1	+1	+1	+1	7
Wood Road Culvert Sizing	+1	+1	-1	+1	+1	+1	+1	5

Plan Monitoring and Update

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- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
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Every five years after the plan receives its FEMA approval and adoption by the DeRuyter Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of DeRuyter subsection based on the reports supplied by the Town Highway Superintendent and other municipalities as well as input from the public. This updated plan will be submitted to the DeRuyter Town Board for approval before being forwarded to FEMA.

TOWN OF EATON



Supervisor: David Puddington, 315-495-6439, 684-9110 (h)

Town Clerk: Deb Clark, 315-684-9111

Highway Superintendent: Ray (Sonny) Simmons, 315-684-3118

Planning Board and ZBA Secretary: Karen Jacobs, 684-9111

Codes Enforcement Officer; John Fewer, 684-9179

Background

The Town of Eaton is a community of 4,826 residents located near the middle of the county, north of the Town of Lebanon, east of the Town of Nelson, south of the Town of Smithfield, and west of the Town of Madison. 80.0% of the residents are between the ages of 18 and 65, while only 11.6 % are over the age of 65 (residents). The town currently encompasses approximately 44 square miles. The town has an equalized assessed value of approximately \$263 million dollars, which is distributed across a variety of property classes. There are 607 single family occupied homes within the town. This remains a very heavily agricultural community with very productive agricultural lands.

Land Use and Development Trends

Individual house development along existing roads is occurring as farms are divided into smaller parcels. Tax Rolls are increasing. There have been no large subdivisions in the Town recently. No industry has moved into Town recently. Heritage Festival Park, to be located 0.2 miles north of U.S. 20 east of Route 46 is in the planning stage.

Assets

Town Hall – Located on Cedar Street, 0.2 miles north of Route 20 in the Village of Morrisville. Capacity for 40 people at meetings. This building contains the offices for Supervisor, Town Clerk, Town Justice, Assessor, and Codes Enforcement Officer. This building does not have a backup generator and is not wired for an outside generator.

Highway Department Garage – On same location as the Town Hall on Cedar St. The garage has eight parking bays. This building does not have electric back-up power and is not wired for a backup generator but does have manually operated overhead doors. The Eaton Town Highway Department is in charge of 55 miles of highway.

Highway Equipment: 10 wheel dump trucks with plows
1 6 wheel all wheel drive dump trucks with plows
1 one ton truck 4x4 with plow and dump box
1 ¾ ton truck 4x4 with plow
1 Front end loader
1 Gradall excavator on 10 rubber tires
1 Cat Grader
1 Cat D4 dozer
1 Pavement Roller
1 Vermeer Chipper
1 8 Wheel 10 ton capacity equipment trailer
1 Tractor with Mower
1 Tow-behind self propelled broom

Smithfield Eaton Volunteer Ambulance Corps (SEVAC) – Located at 23and 1/2 Cedar Street in the Village of Morrisville. This building is equipped with an automatic generator that kicks on in the event of a power failure.

Edward R. Andrews Elementary School is located at 55 Eaton Street in the Village of Morrisville. This is the official Red Cross shelter for the community. It has capacity for 160 people. This building does not have a generator or external hook-up for a generator.

Cooperative Extension Building is located at 100 Eaton Street in the Village of Morrisville. It has a meeting hall and a large kitchen that can accommodate 80 people. This building does not have a generator or an external hook-up for a generator.

Morrisville State College – this state-owned facility in the Village of Morrisville has an enrollment of 3,300 students. It has two dining halls and dormitories that house 1,800 students.

Local Organization and Regulations

The Town Board meets on the second Monday of each month.

The Planning Board meets on the third Monday of each month at 7 PM.

The Zoning Board of Appeals meets on the third Thursday of each month at 7 Pm as needed.

Zoning is in effect in the Town of Eaton.

Building permits are required for residential and commercial construction projects.

An emergency action plan has been written to address possible dam failure for Eaton Brook Reservoir.

The Planning Process

Michael Johnston, SWCD Sr. District Technician, met with the Eaton Town Board on 9/15/04. The Town Board directed Johnston to work with Highway Superintendent Ray Simmons to write up a first draft of a Mitigation Plan for the Town of Eaton. Johnston met with Ray Simmons on 12/10/04. Input from Madison County Highway Department, Madison County Sheriff, Madison County Planning Department, Madison/ Oneida Chapter of the American Red Cross, Madison County Fire Advisory Board, and Madison County Traffic Safety Board was considered in the writing of this plan. A first draft was written. Johnston met with Ray Simmons and Supervisor Dave Puddington on 1/27/06.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

A copy of the Town of Eaton Hazard Mitigation Plan has been sent to the following organizations:

Morrisville State College

Morrisville-Eaton Central School

Cornell Cooperative Extension Of Madison County

Existing Plans, Studies, Reports, and Technical Information

Morrisville Area Improvement Network Plan – This plan addresses future development along U.S. 20 in the Morrisville Area.

Route 20/ Route 46 Intersection Development – Representatives of Central New York Regional Planning and Development, NYS DOT, Town of Eaton, and Madison County Planning Department meet four times per year to consider improvements to this dangerous intersection.

Damage Survey Report (DSR) Town of Eaton FEMA 1335 DR-NY Spring 2000 Flood

DSR Town of Eaton FEMA 1095 DR January 1996 Flood

DSR Town of Eaton FEMA 3173 EM-NY December 25 & 26 Snowstorm

DSR Town of Eaton FEMA1467 DR April 2003 Ice Storm

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of Eaton Probability Greater (G), Lesser (L) About Equal (E)	Town of Eaton Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	G	N
Winter Storms	Mod. High	272.2	E	Y
Fires	Mod. High	265.2	E	N
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	L	Y
Utility Failure	Mod. Low	218.5	E	Y
Tornado	Mod. Low	202.5	L	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	E	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	E	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		L	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Eaton. Appendix D of this plan can be used as a guide as to what mitigation actions can mitigate different hazards.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Eaton Program	State BOCA Codes	No	State Health Codes Fire Codes	Local Gov. for Water, Sewer, & Utility	SEQR for major subdivisions	Federal Flood Insurance Rules apply	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	Time Limit on Permits	State Health rules for septic systems	Zoning Board of Appeals	State Regs Apply	No

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Eaton Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Eaton Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education Headstart

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Eaton Program	Technical Assistance from County SWCD;	NYS DEC 319 Program available	State Regs for greater than 1 acre development;	No	State Rules Apply	No	State & Federal Rules Apply	Chesapeake Bay Tributary Strategy

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Eaton Program	No	Morrisville & Eaton Fire Depts. SEVAC WEVAC State Police County Sheriff	MSDS Sheets on File with Fire Department	911 Center Alert System: Fire Department Siren	County Health Department Rules for Minimum Living Standards and Drinking Water Plan	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Eaton Program	No	State Dam at Eaton Brook Reservoir	No	Red Cross Shelter at E.R. Andrews Elementary School & M-E High School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Town of Eaton zoning rules.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. FLOODING

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

April 3&4, 2005 – This was a spring runoff event that was accompanied by a 1.9 inch rainfall. Washouts occurred on 21 different roads in the Town of Eaton.

August, 2002 – A very localized thunderstorm led to flooding in the hamlet of Eaton along Brooklyn Street. Debris also clogged a culvert in the Town of West Eaton and caused the shoulder of a County Highway to be washed out.

Spring 2000 – This was presidential disaster FEMA 1335 DR-NY for storms that occurred between May 3 and June 30. Damage in Eaton occurred during May. The Town received \$33,392.32 of federal funding to restore and reshape ditches, replace rip rap, replace culverts, and replace pavement. The Town also received \$2,576.66 for maintenance, protection of traffic, and debris removal.

January '96 Flood – This was presidential disaster FEMA 1095 DR. This run-off event caused by rain and melting snow resulted in widespread flooding in the Town. The Town of Eaton reported \$10,586.13 in damages at 6 locations.

Locations Subject to Hazard

Brooklyn Street, Hamlet of Eaton – All houses on Brooklyn Street suffer some degree of Basement flooding almost every Spring and after each major storm event.

South side of State Highway 26, Hamlet of Eaton – Houses here suffer flooded basements and water on property during high flow periods of Eaton Brook and the Chenango River. This flooding can also be caused by ice jam build-up on Eaton Brook.

House on River Road, south of Eaton Brook, east side of River Road – This house is subject to flooding.

Hatch Lake Road at Town line with Town of Nelson – Flooding occurs here because of beaver activity.

Old County Road and Callahan Brook – Flooding occurs in this location also because of beaver activity.

Morton Road – During the Spring 2000 disaster, 0.4 miles of gravel was washed out and 0.1 miles of road required major reconstruction.

Huntington Camp Road - During the Spring 2000 disaster, 0.97 miles of gravel road was washed out.

Westcott Road - During the Spring 2000 disaster, 0.25 mile of road base was washed out.

Williams Corner Road - During the Spring 2000 disaster, 0.25 mile of pavement was washed out. During the January '96 flood, the road suffered a 20' x 125' washout and required 20' x 15' of rip rap.

Hagmann Road - During the Spring 2000 disaster, 0.17 mile of gravel resurfacing was needed and a 36" x 20' steel culvert was replaced.

Evans Road – Just south of its terminus at Route 26, a culvert at this spot has a repetitive history of overflowing and washing out the shoulder.

Future Development in Hazard Area

Construction is not occurring in the 100 year flood plain in the Town

Potential Losses

Brooklyn Street, Hamlet of Eaton – 29 houses, estimated losses at \$2,000 per house for a major flood
Total loss = \$58,000

South side of State Highway 26, Hamlet of Eaton – 20 houses, estimated losses at \$5,000 per house
Total Loss = \$100,000

Hatch Lake Road at Town Line – Losses are associated with road closure and need for detours
Estimated loss = \$500

Old County Road and Callahan Brook – Losses are associated with road closure and need for detours
Estimated loss = \$500

Evans Road – In 1996, \$1,390 in damage was done to a 200' x 3' section of road shoulder.

Williams Corners Road – During the January '96 flood, \$2,513

Mitigation Measures

Brooklyn Street, Hamlet of Eaton

Elevation of Utilities in affected houses Cost = 29 houses at \$10,000 per house
Total Cost = \$290,000

South side of State Highway 26, Hamlet of Eaton

Elevation of Utilities in affected houses Cost = 20 houses at \$10,000 per house
Total Cost = \$200,000

No funding is presently available for these forgoing projects. These improvements would be the responsibility of the current landowners. These projects could be possibly funded under a HUD grant if the Town of Eaton submits an application. This is a low priority for the Town of Eaton.

B. Winter Storms

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

December 25 & 26, 2002 Snowstorm – This was presidential emergency FEMA 3173 EM-NY. During a 48 hour period the Town of Eaton reported 18 inches of snow while Towns to the south and east reported snowfalls of 27 to 39 inches. At 100% reimbursement, the Town of Eaton received \$7,503.64 from the federal government.

March 1993 Blizzard – This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,300 feet vs. 300 feet), Eaton probably sustained greater amounts of snowfall.

Blizzard of '66 – This was a three day storm during the month of January that was characterized by steady snow and continuous winds.

Locations Subject to Hazard

Of the 55 miles of road that the Town of Eaton Highway Department administers, 9 miles are the most severely affected by drifting snow during storm events because of prevailing winds and topography. These segments include:

Crow Hill Road – A 2 mile segment from 2,000 feet above Route 20 to the Eaton/Madison town line.

English Avenue – The entire 4 mile length between U.S. 20 and State Highway 26

Hamilton Hill Road – A 1.2 mile segment west of Smith Road.

Cramer Road – A 1.4 mile segment from Davis Corners Road past Fearon Road.

Leach Road – A 0.5 mile segment at the road's highest elevation.

Future Development in Hazard Area

There is not a lot of development along the 4 sections of road cited for snow hazard in the Town of Eaton.

Potential Losses

A 6 inch snow storm requires one plow run for the entire Town of Eaton. A plow run entails 4 trucks with 4 drivers and three wing men. Cost = 4 trucks @ \$60/ hour with 7 employees for 4 hours @ \$30/ hour (overtime) Total Cost = \$1,080

If 9 miles of Road need to be plowed a second time after each 6 inch snowstorm, the cost of this extra plowing can be estimated as 9 miles/ (55 mile + 9 mile) x \$1,080 = \$159.34
During an average snowfall season of 120 inches the extra cost of these 9 miles of plowing would be 120/ 6 x \$159.34 = \$3,187

During a record snowfall season of 200 inches, the extra cost of these 9 miles of extra plowing would be 200/ 6 x \$159.34 = \$5,311

Mitigation Measures

Living snow fences consisting of evergreen trees could be installed at distances of at least 100 feet upwind of problem stretches of road. Snow fences cause snow to deposit on the aft side of the plantings. With 1,320 trees per mile and a cost of \$2 per tree installed, living snow fences could be installed at a cost of \$2,640 per mile. With 9 miles of problem roadway, cost of planting snow fences would be \$23,760. At that rate, it would take 7 ½ average snow seasons for living snow fences to pay for themselves. This payoff would only begin at least 10 years after planting and growth of the trees. This is a medium priority for the town. Work could be done by the town highway in cooperation with Madison County SWCD.

C. Power Outages

Mitigation Goals

Minimize damage to private and public properties, maintain critical services, and provide services for vulnerable populations.

Historical Events

April 2003 Ice Storm – This was presidential disaster FEMA 1467 DR. The Town Highway Department had to remove and dispose of 2,000 cubic yards of woody debris from Town roads. Bartlett Tree Expert was hired to remove 31 maple trees from English Avenue and 1 red maple from Monitor Drive. Eligible costs were \$28,094.57. At 75% cost share, the Town received \$24,685.04 from the federal government.

August 16, 2003 Northeast Power Failure – This was an event that affected the entire Northeastern United States.

Locations Subject to Hazard

Town of Eaton Office

Morrisville-Eaton Jr./ Sr. High School

Potential Losses

Town of Eaton Office – In the case of a power failure, Town Government would not be able to function from this location.

Morrisville-Eaton Jr./ Sr. High School – In the event of a power failure, students from this school have to be sent home. This can cause problems since bus drivers are not always available during the middle of the day. In some cases students would be returning to houses without heat, light, or parental supervision.

Mitigation Measures

Town of Eaton Office – It is estimated that an automatic generator powered by liquid propane would cost \$9,000 installed. Installation could be done by the local propane distributor. Funding would have to come out of the Town budget. This is a medium priority for the town.

Morrisville-Eaton Jr./ Sr. High School – According to Doug Mennig, a local electrician and Village of Morrisville Trustee, back-up power for the high school would be expensive because the heating system requires three-phase power. An automatic generator would cost \$100,000 while an outside switch for a back-up generator would cost \$25,000. This is a low priority for the Town because they do not have jurisdiction.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6-7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Elevation of Utilities, Brooklyn St. Houses	+1	+1	-1	+1	+1	+1	+1	5
Elevation of Utilities, Rte 26 South Side, Eaton Hamlet	+1	+1	-1	+1	+1	+1	+1	5
Living Snow Fence Prioritization	+1	+1	+1	+1	+1	+1	+1	7
Back-up Generator for Town of Eaton Office	+1	+1	-1	+1	+1	+1	+1	5
Back-up Generator for M-E High School	+1	+1	-1	+1	-1	+1	+1	3

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Eaton's Highway Superintendent and submit a copy of the evaluation form listed in appendix EF. The Town's Highway Superintendent will complete and return this form within 10 business days.

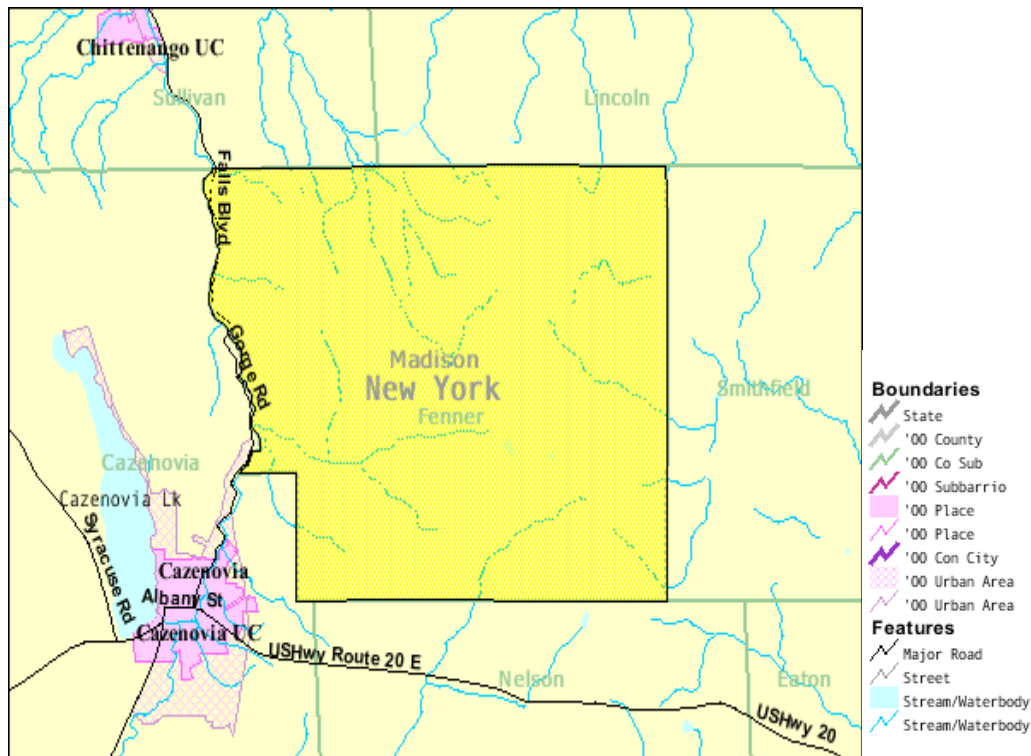
During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Town's Highway Superintendent and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Eaton Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Eaton subsection based on the reports supplied by the Town's Highway Superintendent and other municipalities as well as input from the public. This updated plan will be submitted to the Town Board for approval before being forwarded to FEMA.

TOWN OF FENNER



Population: 2000 census 1,680

Supervisor: Russell L. Cary, 315-655-2705

Town Clerk: Joanne E. Buyea, 315-655-2705

Highway Superintendent: Frank Hyatt, 315-655-8404

Background

The Town of Fenner is a community of 1,680 residents located in the western portion of the county. 72.3% of the residents are between the ages of 18 and 65, while only 8.7% are over the age of 65 (residents). The town currently encompasses approximately 31 square miles. The town has an equalized assessed value of approximately \$70 million dollars, which is distributed across a variety of property classes. There are 283 single family occupied homes within the town.

Land Use and Development Trends

The most significant development in Fenner is the conversion of large dairy farms to 10 to 20 acre farmettes along already existing roads. The Jeneroc Farm along Irish Ridge Road and Bingley Road has been divided in this manner. The Shephard Farm on Roberts and Shephard Roads was divided into 12 parcels, the smallest parcel was 20 acres. A four parcel subdivision with a road and cul-de-sac is being built along Cody Road just north of Moraine Road. 20 thirty megawatt wind turbines were constructed in 2001. Another 5 are being considered for construction. Construction has begun on a Fenner

Renewable Energy Education (FREE) Center on Bollinger Road. Signage will be placed throughout the windmill area in conjunction with the FREE Center construction.

Assets

Town Hall/ Town Highway Department – 3151 East Road, Cazenovia NY 13035
Located at the Intersection of Nelson Road and East Road in the middle of the Township. This facility is an office building/ highway department garage and office. A separate structure on site is used for salt and sand storage. The building has a backup generator that is capable of running everything except the welder in the Highway Department.

Highway Equipment:

- 2 All wheel drive V plows with double wings (no sanders) for opening roads after storms.
- 2 All wheel drive ten wheeler one way plows with a single wing and sanders.
- 2 Six wheeler plows, one with a wing and sander and one without a wing and sander.
- 1 Front end loader

Local Organization and Regulations

The Town Board meets on the first Tuesday of each month.

The Town planning Board meets on the third Wednesday of each month at 7:30 PM in the Town Hall.

The Zoning Board of Appeals meets as needed.

A local resident, a Mr. Tom Davis, who is located on Wyss Road records measurements of snow after every storm. Mr. Davis also serves as the unofficial Town Historian.

Part of the Town of Fenner is served by the Cazenovia Fire Department. Part is served by the Town of Smithfield Fire Department.

The Town Highway Department receives “Chips” money from the state. This money is dedicated funding for road maintenance. This money can be used for reconstruction including road sub-base, resurfacing, and culverts.

The Planning Process

Michael Johnston, Madison County SWCD, met with the Fenner Town Board at their regular monthly meeting on Tuesday February 10, 2004. The Town Board requested that Mr. Johnston meet with the Town Planning Board in order to further explain the mitigation program. Mr. Johnston and Steve Lorraine, Madison County SWCD, met with the Planning Board at their regular monthly meeting on February 18, 2004. Some time in March of 2004, Town Supervisor Russ Cary called Steve Lorraine told him to work with Frank Hyatt, Superintendent of Highways, to collect the information needed to prepare a section of the mitigation plan on the Town of Fenner.

Mr. Johnston met with Highway Superintendent Hyatt on Thursday, July 1, 2004 at his office in the Town Highway Garage. They reviewed a large map of the Town and plotted

areas of problems within the Town. Johnston returned on February 7, 2006 and reviewed a first draft of the plan for the Town with Superintendent Hyatt. Another draft of the plan was reviewed with Town Supervisor Russ Cary on June 20, 2006.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

Copies of this plan have been sent to:

Town Planning Board

Fenner Renewable Energy Education Center

Existing Plans, Studies, Reports, and Technical Information

Town of Fenner Land Use Regulations

Town of Fenner Subdivision Regulations

State Environmental Quality Review C.H.I. Energy Windfarm

Hazards:

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Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	G	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N

Types of Mitigation Measures This section is used to indicate the types of mitigation actions that already are in use in the Town of Fenner Appendix D of this plan can be used as a guide as to what mitigation actions can mitigate different hazards.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Fenner Program	State BOCA Codes	1 acre minimum lot size with 200 foot road frontage	State Health Codes Fire Codes	Easement for windmills on Town-owned land	SEQR for major subdivisions	Federal Flood Insurance Rules apply	Yes

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	Construction allowed up to a set % grade	No	Time Limit on Permits	State Health rules for septic systems	Through Planning Board	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Fenner Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Fenner Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fenner Renewable Energy Education (FREE) Center

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Fenner Program	Technical Assistance from County SWCD	NYS DEC 480A Program available	State Regs for greater than 1 acre development	No	State Rules Apply	No	State & Federal Rules Apply	Oneida lake Program; Chesapeake Bay Tributary Strategy

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Fenner Program	Emergency Generator for Town Building	Smiothfield, Cazenovia, & Chittenango Fire Depts.; SEVAC CAVAC State Police County Sheriff	MSDS Sheets on File with Fire Department	911 Center Alert System	County Health Department Plan	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Fenner Program	No	No	No	No

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Town of Fenner Land Use Regulations.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Winter Storms

The greatest hazard specific to the Town of Fenner is Winter Storms. Fenner is located 800 to 1,000 feet in elevation above the lakeplain of Lake Ontario with nothing to block the prevailing winds out of the northwest. Very large amounts of snow deposition occur on many of the roads in the Township, especially those that are orientated in a north-south direction.

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

Blizzard of 1966 – Almost all roads in the Town were closed for two weeks following this 2 day storm. Fenner Road was closed for one week. The first roads to open were Bingley Road and Nelson-Perryville Road, both County roads. Local dairy farmers were forced to dump milk because the milk truck was unable to get through.

March 1993 Blizzard – This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,200 to 1,800 feet vs. 300 feet), Fenner probably sustained greater amounts of snowfall. The Fenner Highway Department plowed roads for 18 hours straight during this storm just to keep one lane open on Town roads. 1993 was a record year for snowfall. During one stretch, Fenner Highway Department worked for 52 days without a day off.

December 25 & 26, 2002 Record Snowfall – This was declared disaster FEMA 3173 EM NY in Madison County. Project worksheets for the Fenner Highway Department documented \$14,346.33 in expenses. With administrative expenses, Fenner received \$14,776.72 for this emergency.

Locations Subject to Hazard

Nelson Road – 2.2 mile

Irish Ridge Road – 0.6 mile

Roberts Road – 0.6 mile

Bellinger Road – 0.9 mile, entire length, with 14 foot plowed-up snow banks in places

Buyea Road – 1.8 mile

Mile Strip Road – 0.2 mile

Larkin Road – 0.5 mile

Rouse Road – 0.9 mile

Francis Road – 0.2 mile

Mutton Hill Road – 0.7 mile

Future Development in Hazard Area

12 new parcels along Irish Ridge and Bingley Road have recently been subdivided from a larger parcel.

Potential Losses

According to the Highway Superintendent, recent winters have seen total snowfall accumulations of around 240 inches. A single 24 inch accumulation storm takes around 48 hours to clean up. Costs including wages, overtime, fuel, and vehicle wear run \$300 per hour. For an estimated six 24 inch storms during a winter, costs are \$86,400.

Existing Mitigation Measures

Road shoulders – According to Highway Superintendent Hyatt, broad road shoulders with plenty of room to store snow and that drain away from the road surface are an important mitigation measure. He feels that this has already been accomplished where it is needed along Town of Fenner roads.

Mitigation Measures

With the Highway Superintendent, roads with the worst snow deposition problems in Fenner were inventoried. 11 stretches of road totaling 8.6 miles were counted. The longest stretch was Nelson Road for 2.1 miles which is maintained by Madison County and not the Town of Fenner. Living snow fences (windbreaks) consisting of evergreen trees could be installed at distances of at least 100 feet upwind of problem stretches of road. Snow fences cause snow to deposit on the aft side of the plantings. With 1,320 trees per mile and a cost of \$2 per tree installed, living snow fences could be installed at a cost of \$2,640 per mile. Total cost for all of the problem stretches in the Town of Fenner would be \$22,704. If 6 of the forty eight hours involved in cleaning a 24 inch snowfall were saved, then the savings from installing snow fences would be \$10,800 annually or \$1,256 per mile. The first step in this program would be determining the ownership of candidate parcels. This could be done with the County's GIS program by comparing the information in this report with the parcel data in the program. Work could be done by the SWCD office at a very low cost. High Priority

Snowblower – Two types of large snowblowers are available and would help the Town deal with large piles of snow. A self propelled model would cost around \$100,000. A model that could be mounted on a front end loader would cost approximately \$50,000. Though the Town cannot presently afford this purchase, it would be seriously considered if any grant opportunities become available. Medium Priority

B. Flooding

The Town of Fenner is located at the headwaters of the Oneida Lake Watershed for most of the Town and the Chenango River Watershed in the southeast corner of the Town. Generally, flooding is less of a problem within this Township because small streams do not have large watersheds above them.

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

August '03 Flooding – This was presidential disaster FEMA 1486 DR for summer storms between 7/21 and 8/13/03.

Spring '00 – This was presidential disaster FEMA 1335 DR-NY for storms that occurred May 3 to June 30. The Town of Fenner sustained damage at 16 sites. The worst damage occurred at Shepard's Road where 50 foot x 12 foot of pavement was washed out.

January '96 Flood – This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

Locations Subject to Hazard

Hodge Road - During the January 96 runoff event, a section of Hodge Road was washed out because of a lack of culvert capacity. During repairs a 12 inch diameter culvert was replaced with a 15 inch culvert increasing capacity by around 56%. No new washouts have occurred since 1996.

Rouses Road – An undersized culvert just west of Mile Strip Road needs to be upgraded.

Shephard Road culvert for Munger Brook - The culvert at this location was upgraded during the early 1990's. On at least one occasion, this culvert has overflowed because it became clogged with debris.

Future Development in Hazard Area

Hodge Road is presently a gravel road but may be paved in the future with State CHIPS funding.

Shephard Road – With the subdivision of the Shephard Farm, new development of relatively large parcels is occurring along Shephard Road.

Potential or Historical Losses

August '03 Flooding – Damages in the Town of Fenner due to scour damage and debris town-wide amounted to \$59,276.37. At 75% cost-share the Town received \$44,457.22 for the disaster.

Mitigation Measures

Rouses Road – The undersized culvert at this location needs to be upgraded. SWCD staff will assist Town Highway with runoff calculations and culvert sizing. This is a High Priority for the Town.

Shepherd Road – A debris guard consisting of a slanting grate over the culvert entrance could be constructed at this location. A similar grate is planned for a culvert in Morrisville. The Town Highway Department will watch the Morrisville project before proceeding at Shepherd Road. Medium Priority.

C. Power Outages

Short term power outages are common in the Town of Fenner. Most of the Town is served by National Grid but a substantial number of customers (approximately 100 meters) are served by Oneida-Madison Electric Co-op.

Mitigation Goals

Minimize damage to private and public properties, maintain critical service.

Historical Events

September 6, 1998 Labor Day Storm – Following this intense thunderstorm with straight line winds, power was out in the Town of Fenner for 7 to 10 days.

April 2003 Ice Storm – This was presidential disaster FEMA 1467 DR. The Town Highway Department had to remove and dispose of 2,500 cubic yards of woody debris from all 47 miles of Town road. Eligible costs were \$38,282.12. At 75% cost share, the Town received \$28,711.59 from the federal government.

August 16, 2003 Northeast Power Failure – This was an event that affected the entire Northeastern United States.

Locations Subject to Hazard

Fenner Road - A power line located along Fenner Road to Nelson Road is particularly susceptible to damage from falling tree limbs.

Future Development in Hazard Area New subdivisions along Irish Ridge Road and Bingley Road are serviced by the power line along Fenner and Nelson Road.

Potential or Historical Losses Power outages are mainly an inconvenience but most families lost the contents of their refrigerators and freezers following the Labor Day Storm. Losses averaged around \$250.

Mitigation Measures

Tree Pruning Program – Maintenance of trees along power lines is the responsibility of

the power company. Good communication between Town officials and power company personnel can help facilitate the process. Medium Priority.

911 Center Mapping of Power Lines – Response time for power failures can be improved if the County’s 911 center has maps of power lines in the County. The 911 center is presently working with the power companies to produce these maps. This is a Medium Priority for the County and will be accomplished using existing resources.

D. Transportation Accidents

Mitigation Goals

Reduce the number of injuries and fatalities as well as the number of emergency calls caused by automobile accidents in the Town of Fenner.

Historical Events

Bingley Road and Roberts Road Intersection - 2 accidents have occurred at this intersection in recent years in which cars have slid off the road as they tried to avoid collisions with other vehicles.

Locations Subject to Hazard

Bingley Road and Roberts Road Intersection – Because of poor geometry at the intersection, a right turn from Roberts Road onto Bingley Road is nearly impossible. Visibility of Bingley Road to the east from Roberts Road is very difficult. Plow trucks also have a difficult time with this intersection.

Future Development in Hazard Area

There has been some new development along Bingley Road that will lead to an increase in traffic at the Bingley and Roberts intersection.

Potential Losses

Bingley Road and Roberts Road Intersection – A serious enough collision at this intersection could lead to \$20,000 worth of damage for two vehicles for a total of \$40,000. Injury or loss of life would be possible to passengers in vehicles entering Bingley Road from Roberts Road. The probability of an accident at this location is growing as population and traffic increases in the area. In recent years, 5 new houses have been built on Roberts Road.

Mitigation Measures

Bingley Road and Roberts Road Intersection – The Town of Fenner would like to purchase 1 ½ acres at this site and make this a right angle four corner intersection continuous with Emhoff Road to the north. Estimated cost is \$80,000-90,000. This project has slowed because some residents of Emhoff Road have opposed the project. Town Highway is responsible for the project. This is a Medium Priority for the Town.

E. Ice Storms

Mitigation Goals

Reduce the number of injuries and fatalities as well as the number of emergency calls caused by icing conditions on roads in the Town of Fenner.

Background

According to Supervisor Russ Cary, The Town of Fenner is susceptible to icing conditions on its roads. Oftentimes, rain will be observed on the lake plain area of northern Madison County and snow will be falling in the higher elevations in the southern part of the County; Fenner is located in a transition area between these two physiographic regions and will experience freezing rain during these times. Combined with the relatively steep grade to its roads, ice storms can create a very dangerous situation.

Locations Subject to Hazard

The following roads see a fair amount of traffic and are prone to icing conditions:

Oxbow Road

State Route 13

Nelson Road

Buyea Road

Old County Road

Future Development in Hazard Area

All of the preceding roads except for Old County Road serve as commuter routes for people living in southern Madison County but working in the more urbanized areas on the Lake Plain. Traffic continues to increase as land is developed in southern Madison County.

Potential or Historical Losses

In the mid-1980's, Madison County Highway Department lost a lawsuit in which 1 fatality occurred because of a car accident that occurred on Swamp Road in the Town of Smithfield during freezing rain conditions. According to County Highway Superintendent Joe Slivinski's recollection, during the appeal process the lawsuit was settled out of court for approximately \$300,000.

Mitigation Measures

The Fenner Highway Superintendent should have direct communication with the head of the Wampsville Division of the County Highway Department. The Fenner Highway Department is always on the scene in Fenner but County Highway based in Wampsville may not be aware of the development of icing conditions. High Priority.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

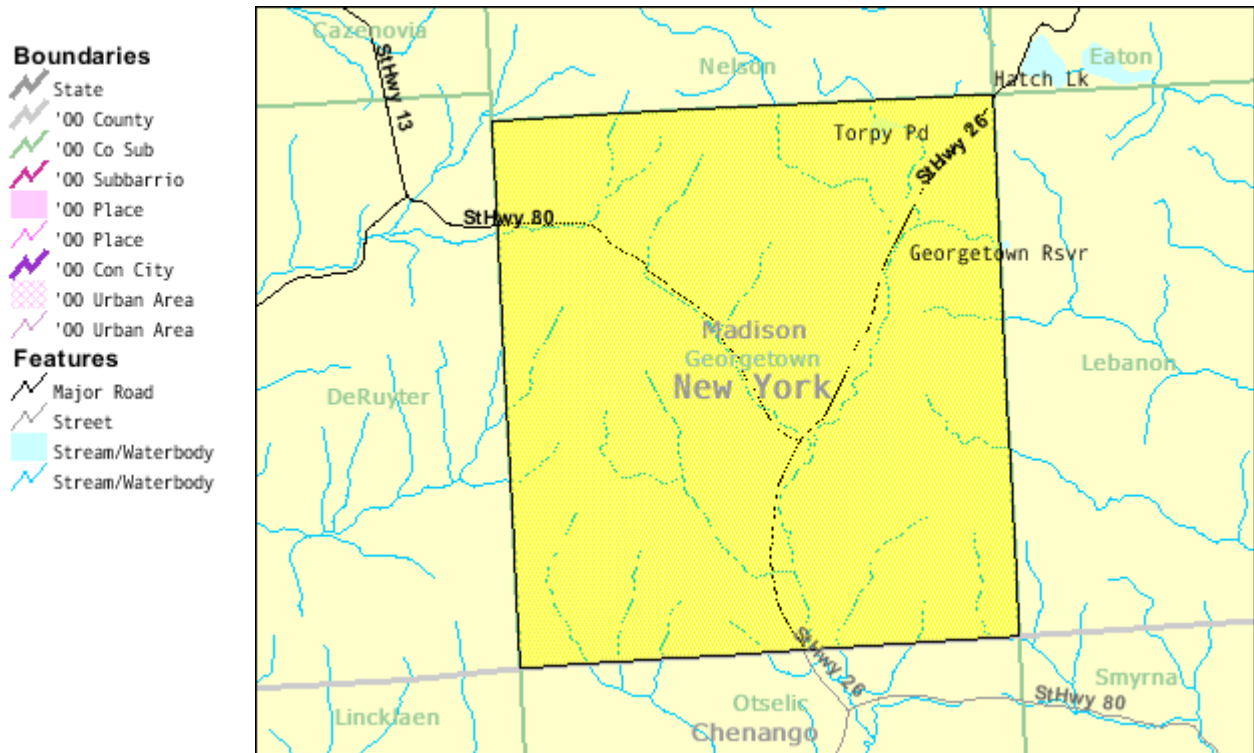
The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6-7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Living Snow Fence Parcel Ownership Survey	+1	+1	+1	+1	+1	+1	+1	7
Large Snowblower Purchase	+1	+1	-1	+1	+1	+1	+1	5
Power Line Tree Pruning	+1	+1	-1	+1	-1	+1	+1	3
911 Center Mapping of Power Lines	+1	+1	-1	+1	+1	+1	+1	5
Bingley Rd/ Roberts Road Intersection Realignment	-1	+1	-1	+1	+1	+1	+1	3
Improved Communication between Town Hwy. & County Hwy. Depts.	+1	+1	+1	+1	+1	+1	+1	7

TOWN OF GEORGETOWN



Supervisor: Russell Hammond Sr., 662-3782

Highway Superintendent: Leon Warlock, 837-4722

Town Justice: Ronald Hailston, 837-4795

Background

The Town of Georgetown is a community of 946 residents located on the southern border of the county between the towns of DeRuyter and Lebanon. Seventy eight percent of the town's population is between the ages of 18 and 65 with only eight percent of the population being over the age of 65. The town is currently comprised of approximately 20 square miles. The town has an equalized assessed value of approximately 88 million dollars spread across a variety of property classes. There are 315 housing units in the township, of which 108 are considered single family owner occupied homes. There is no commercial development taking place at this time. There is a shift in land use however from agricultural to residential. As fewer commercial agricultural operations remain in business, the land that was once farm land is being bought up and converted to residential housing.

Assets

The town offices are located on Route 26 in the hamlet of Georgetown.

The town highway barn is located at the same location as the town offices.

The Georgetown Fire Department is located on Route 26 in the hamlet of Georgetown.

Camp Georgetown, a minimum security state prison, is located off county route 58 and has emergency generator backup in place.

Local Organization and Regulations**The Planning Process**

The Town Board held a public meeting on 2/10/04 to discuss the Hazard Mitigation Plan. Discussion involved the requirements of the plan the benefits of the plan and with whom to work in the development of the plan. A meeting was held on 3/31/04 with Lyle Mason who represented the town board and the Georgetown Fire Department. We discussed areas of concern in the town and potential mitigation projects. A meeting was held with the fire department on June 17, 2005 to discuss the potential placement of dry hydrants in the town to reduce the risks associated with fire.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of Georgetown Probability Greater (G), Lesser (L) About Equal (E)	Town of Georgetown Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	L	N
Winter Storms	Mod. High	272.2	E	Y
Fires	Mod. High	265.2	E	N
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	E	Y
Utility Failure	Mod. Low	218.5	E	N
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	E	N
Infestation	Mod. Low	173.8	E	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	L	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	G	Y
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		L	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Georgetown.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Georgetown Program	State BOCA Codes	No	Planning Board	Water Supply	SEQR for large subdivisions	Federal flood insurance rules apply	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	No	State Health Dept. Rules for septic	No	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Georgetown Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Georgetown Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Georgetown Program	Technical Assistance available through SWCD	Nys DEC 480A program available	State Regs for greater than 1 acre development	No	State Rules Apply	No	State & Federal Rules Apply	Chesapeake Bay Tributary Strategy

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Georgetown Program	No	Fire Police Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System	County Health Dept. Rules for minimum living standards and drinking water	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Georgetown Program	No	No	No	Red Cross Shelter

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Georgetown subdivision and development regulations.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Winter Storms

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

December 25 & 26, 2002 Snowstorm – This was presidential emergency FEMA 3173 EM-NY. Large amounts of snow were received during a 48 hour period in parts of Madison County. .

March 1993 Blizzard – This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,300 feet vs. 300 feet), Georgetown sustained greater amounts of snowfall. .

Blizzard of '66 – This was a three day storm during the month of January that was characterized by steady snow and continuous winds.

Locations Subject to Hazard

The town highway superintendent cited no specific problem road segments.

Mitigation Measures

Living snow fences consisting of evergreen trees could be installed at distances of at least 100 feet upwind of problem stretches of road. Snow fences cause snow to deposit on the aft side of the plantings. With 1,320 trees per mile and a cost of \$2 per tree installed, living snow fences could be installed at a cost of \$2,640 per mile. Road segments need prioritized landowners identified and then contacted for participation. This is a Low Priority for the Town.

B. Forest Fires

The vast majority of land in the township is forested and there are no fire breaks being maintained at this time. The concern in the town is that if a forest fire was to get started they would have a difficult time in controlling the fire. There are homes scattered among this forest land and if the fire could not be controlled these houses would be lost in the fire. The median house value in the town is \$47,500. Since there are no fire hydrants outside the hamlet of Georgetown, controlling these fires could be very difficult.

Mitigation Goals

Prevent the spread of wildfire and damage to structures in forested areas.

Historical Events

According to the NOAA-National Climate Data Center, there were no cases of wild and forest fires in Madison County between 1950 and 2005.

Locations Subject to Hazard

These road segments have houses in close proximity to state forest land:

Fore Tower Road

Morrow Road

Muller Hill Road

Chapman Road

Davenport Road

Future Development in Hazard Area

Development is occurring along Chapman Road with subdivision to large parcels.

Potential Losses

The median house value in the town of Georgetown is \$47,500.

Mitigation Measures

Community Wildfire Protection Plan – Under a program sponsored by the U.S. Forest Service, a Community Wildfire Protection Plan can be written for the Town of Georgetown. The plan would address issues such as wildfire response, hazard mitigation including hazardous fuel reduction, and community preparedness in collaboration between agency personnel and community leaders. The Town Planning Board would need to contact NYS DEC Forestry personnel to begin the process. There would be no cost to the community. This is a medium priority for the community,

C. Flooding

Historical Events

January '96 Flood – This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

May 2000 Flood Event – This spring runoff event was declared disaster FEMA 1335 DR NY

April 2-4, 2005 Severe Storms and Flood Event – This was declared disaster FEMA 1589 DR NY. Flooding was caused by a 1 to 4 inch rain in conjunction with snowmelt. Before this storm rivers and streams had high flows due to a previous rainstorm on March 28th.

Locations Subject to Hazard

1. Otselic Creek and State Route 26
2. Fireman's Field
3. Lebanon Road and Otselic River

Potential Losses

1. Otselic Creek and State Route 26 – Flooding at this location could lead to the closure of a State Highway until floodwaters recede.
2. Fireman's Field – Flooding here would lead to loss of the usage of this recreational facility during a flood event.
3. Lebanon Road and Otselic River – One residence at this location could be flooded and would suffer approximately \$1,000 in damages.

Mitigation Measures

1. Otselic Creek and State Route 26- Clearing debris so that it does not cause ice jamming or debris buildup by bridge. This work is the responsibility of NYS DOT. A request needs to be sent from the Georgetown Supervisor to the Area Engineer for NYS DOT. This is a Medium Priority for the Town.
2. Fireman's Field - Maintain as open space. Do not build fences or structures that can catch debris or impede the flow of water. This is a Medium Priority recommendation from the Town to the Georgetown Fire Department.
3. Lebanon Road and Otselic River- This is a county owned road. SWCD and County Highway personnel can do runoff calculations and culvert sizing in anticipation of upgrading culvert. Medium priority for the town.

PRIORITIZATION

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- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6-7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Living Snow Fence Parcel Ownership Survey	-1	+1	-1	-1	+1	+1	+1	1
Community Wildfire Protection Program	+1	+1	-1	+1	+1	+1	+1	5
Otselick Creek/ Rte. 26 Debris Clearing	+1	+1	-1	-1	+1	+1	+1	3
Fireman's Field Open Space Retention	+1	+1	+1	+1	-1	+1	+1	5
Lebanon Road/ Otselick River Culvert Upgrade	+1	+1	-1	+1	-1	+1	+1	3

Town of Hamilton



Town Supervisor: Walter Jaquay, 824-2075
Superintendent of Highways: Walter Jones, 691-5121
Constable: Michael Donovan
Fire Chief: Russ Hoham
SOMAC Chief: Dave Snyder
Codes Enforcement Officer: Jeff Worden

Background

The Town of Hamilton is a community of 5,733 residents located in the southeastern portion of Madison County. The Village of Hamilton and a portion of the Village of Earlville lie within its boundaries but are not included in this section. The median age in the town is 21.8 years and 11% of the population is over the age of 65(631 residents). The town consists of approximately 21 square miles with an equalized assessed value of almost 88 million dollars, which is distributed across various property classes. There are 1,725 housing units in the township and there is minimal commercial development at this time.

Land Use and Development Trends

Rate of development in past two years has been increasing compared to previous years. The past two years has seen 7 or 8 subdivision applications (2 or more parcels) compared to 2 per year previously. Residential development is increasing as agricultural production is decreasing in the town. Commercial development is taking place along the Route 12B corridor.

Assets

The town offices are located on Route 12B in the Village of Hamilton and outside the 100 year flood plain. The Town Offices do not have back-up electric power.

The Town Highway barn is located on Cranston Road between Poolville Road and State Route 12. The Town Highway Garage does not have back-up electric power.

The SOMAC ambulance CORP. is located on Lebanon Street in the Village of Hamilton.

The Town is served by the Hamilton Fire Department, Earlville Fire Department, and Hubbardsville Fire Department. All of these Departments have back-up power at their fire houses.

Local Organization and Regulations

The Town Board meets on the second Thursday of each month at 5:30 PM.

The Planning Board meets on the second Monday of each month at 7:30 PM.

The Zoning Board of Appeals meets as needed.

One of the regulations already in place is a special flood hazard area section. This section lays out the requirements for any development that would occur in or near potential flooding areas.

There is an existing tree maintenance program in the township; however there is not sufficient funding to do the job adequately.

The Planning Process

The Town Board discussed the Hazard Mitigation Project on 1/8/04 and determined who the initial contacts for this plan would include. They consisted of the highway superintendent, the town supervisor and the chair of the planning board. On 3/25/04 a meeting was held with the town DPW to review areas concern and areas that are repetitive problem sites. A meeting was held on 4/12/04 with the Chair of the planning board to discuss zoning laws and areas of concern. On 8/12/04 the town board was apprised of the progress made to date and asked for their input in the process.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express

concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

The following academia and organization have been contacted for comment on this plan:

Colgate University

Partnership for Community Development

Existing Plans, Studies, Reports, and Technical Information

Town of Hamilton Comprehensive Plan

Town of Hamilton Zoning Law

Town of Hamilton Subdivision Law

The Town of Hamilton Zoning and Subdivision Laws are currently being updated with some input from a private consultant.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

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Transportation Accidents	Mod. High	285.2	L	N
Winter Storms	Mod. High	272.2	G	Y
Fires	Mod. High	265.2	E	N
Ice Storms	Mod. Low	236.2	G	N
Flood	Mod. Low	222.8	G	Y
Utility Failure	Mod. Low	218.5	E	N
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	G	N
Infestation	Mod. Low	173.8	E	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	G	Y
Wildfire	Low	160.5	E	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	G	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Hamilton.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Hamilton Program	State BOCA Codes	1 acre minimum lot size	State health Codes Fire Codes	No	SEQR	Federal Flood Insurance Rules	Special permit required

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	Special use permit required for construction on greater than 15% slope	Southern Madison Land Trust	Time Limit on Building permits	State rules for septic construction	Planning Board, Zoning Board of Appeals	State Regs Apply	Local Subdivision Law

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Hamilton Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Hamilton Program	Town Clerk provides County Health Dept. info on Radon and other hazards	Education of Elected Officials to NIMS Standards	State Rules Apply	Fire Safety Education

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Hamilton Program	Technical Assistance through SWCD office	DEC Foresters provide 480A program	State Regs for greater than 1 acre development	No	State Rules Apply	Town Hwy. Dept. maintains trees along roads	State & Federal Rules Apply	Chesapeake Bay Tributary Strategy

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Hamilton Program	No	Earlville, Hamilton, Hubbardsville Fire Depts., SOMAC Ambulance, County Sheriff, State Police, Hamilton Police, Colgate Security	MSDS Sheets on File with Fire Department	911 Center Alert System	County Health Dept. Rules for minimum living standards and drinking water	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Hamilton Program	No	Flood Hazard area for Lake Moraine	No	Red Cross Shelters

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the current revision to the Town of Hamilton Zoning and Subdivision Law.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

Winter Storms

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

December 25 & 26, 2002 Snowstorm – This was presidential emergency FEMA 3173 EM-NY. Large amounts of snow were received during a 48 hour period in parts of Madison County. The Town of Hamilton reported 36 inches.

March 1993 Blizzard This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,300 feet vs. 300 feet), Hamilton sustained greater amounts of snowfall.

Blizzard of '66 This was a three day storm during the month of January that was characterized by steady snow and continuous winds.

Locations Subject to Hazard

No specific locations in the Town were indicated by the Town Highway Department as having greater than average snow hazards.

Mitigation Measures

Public Education and Awareness

Guide to Winter Driving – A brochure similar to one published by Livingston County that advises drivers how to drive safely in winter conditions could be published. County Planning would be the lead agency on this publication. Cost would be \$1,000 for the first 1,000 copies published. This is a High Priority for the County.

Identify Vulnerable Populations – A group called the Madison County Citizen Corps Council is currently working on identifying vulnerable populations and formulating a plan to assist these people in case of an emergency. Membership of this Council includes Retired Senior Volunteer Program (RSVP), Madison County Office for the Aging, County Health Department, County Office of Disaster Preparedness, the Alzheimer's Association, The Red Cross, and the Salvation Army. The Council is having difficulty assembling a good list (database) of people who need this assistance because of confidentiality rules that apply to the agencies that have lists of clients. The current list has less than 100 names on it. The Council now plans to send out questionnaires with agency mailings that are already going out. This system will depend upon vulnerable populations identifying themselves. RSVP has already delivered Disaster Preparedness Kits to the already identified vulnerable population and will continue this activity. In the event of a long-term power failure or other disaster, the County Office of Emergency Preparedness will contact local fire departments and request that they check on at-risk individuals. This is a High Priority for Madison County.

B. Flooding

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

January '96 Flood – This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

May 2000 Flood Event – This spring runoff event was declared disaster FEMA 1335 DR NY

July 28, 2004 4 to 6 PM, A torrential downpour led to flash flooding. Roads were washed out. State Route 12B was temporarily closed. According to NOAA damage was \$10,000.

Locations Subject to Hazard

Poolville - Flooding in the Hamlet of Poolville during spring snow melt and summer thunderstorms is a recurring problem. Log jams in the Sangerfeild River restrict water flow and cause flooding of the residents along the river bottom.

This view shows trees that have fallen into the river, some taken out already and some not. The flat topography in the area makes it easy for the river to jump its banks and flood the houses along the river.



Williams Road and Pleasant Brook box culvert – This location is subject to overtopping during periods of peak runoff.

Borden Road and unnamed Sangerfield River tributary – A culvert at this location is undersized and overflows during periods of peak runoff.

Payne Street and Unnamed Tributary to Payne Brook – A culvert at this location becomes clogged with debris during storm events.

Bonney Hill Road – A section of this road is subject to washout during storm events.

Potential Losses

According to the Madison County Assessment office records, the Town of Hamilton has 158 parcels with at least some land in the 100 year flood plain outside of the Villages of Hamilton and Earlville. By examining an overlay of aerial photography, parcel boundaries and the 100 year flood plain, it was found that 12 parcels had buildings in the flood plain. These included ten houses and two outbuildings. The average assessed value of the parcels with houses was \$36,000. If each of the parcels with houses sustained \$5,000 worth of damage during a 100 year flood and the parcels with outbuildings sustained \$2,000 each, total damages would be \$54,000.

Future Development in Hazard Area

Poolville Road west of Sangerfield River – Other than isolated culverts and road segments in the Town, Poolville suffers the most serious flooding in the Town of Hamilton. There has not been any new development in the area where flooding is prevalent. Because this area of flooding is not located in the 100 year flood plain, there are no limits on development in the area subject to flooding.

Mitigation Measures

Poolville Road west of Sangerfield River – Planning Board member Mike Welshko has recommended that a special permit be required for construction the area of flooding in Poolville. Such a permit is already required for construction in the 100 year flood plain in the Town. This requirement could be added at this time while the zoning law in the Town of Hamilton is being rewritten. This is a Medium Priority for the Town of Hamilton.

C. Drought

Background

Concern has been expressed by Town officials regarding the ill effects of drought in the Town of Hamilton. Municipal water supplies for the Villages of Hamilton and Earlville draw water from very productive aquifers and are not easily threatened by drought conditions. Mitigation measures for drought in the Town of Hamilton are the same as mitigation measures for all of Madison County.

Mitigation Goals

Assist Town residents in counteracting the effects of dropping groundwater and assist farmers in dealing with moisture deficits in their crops and animal herds.

Historical Events

1999 Growing Season – From U.S. Department of Commerce, National Climatic Data Center - A very dry spring and summer caused major crop failures and some wells to run dry. Many streams and rivers were also brought to their lowest recorded levels. The crops most affected were corn and hay, which dealt a major blow to dairy farmers. September rains from the remnants of Hurricanes Dennis and Floyd helped the summertime drought conditions although they came too late to help the vegetable and grain crops.

Locations Subject to Hazard

Glacial Till Soils on Hills – Glacial till soils on hillsides generally have deeper wells are more prone to wells going dry than bottomland soils.

Gravel Soils on Bottomlands – These soils are more prone to soil moisture deficits for crops because of faster percolation rates for water draining through the soil.

Existing Mitigation Measures

State Emergency Management Office Equipment – An individual municipality can request and borrow equipment including water buffaloes and a portable water treatment system from SEMO in the case of an emergency.

Crop Insurance – A variety of coverage can be obtained from private agents. Among other things, coverage can be based on yields or expected revenues.

Rural Development Utilities Programs – This program provides direct and guaranteed loans as well as grants up to 75% for community water facilities in rural areas.

Proposed Mitigation Measures

Identify Vulnerable Populations – County residents with wells that are inadequate during drought could be identified. This work will be done by County Planning Department personnel through the use of their GIS system using already existing resources. This is a Medium Priority for Madison County.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Guide to Winter Driving	1	+1	-1	+1	+1	+1	+1	5
Identify Populations Vulnerable to Winter Storms	+1	+1	+1	+1	+1	+1	+1	7
Poolville Road/ Sangerfield River Special Building Permit	-1	+1	+1	+1	+1	+1	+1	5
Identify Populations Vulnerable to Drought	+1	+1	-1	+1	+1	+1	+1	5

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Hamilton's Highway Superintendent and submit a copy of the evaluation form listed in appendix EF. The Town's Highway Superintendent will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Town's Highway Superintendent and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Hamilton Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Hamilton subsection based on the reports supplied by the Hamilton Highway Superintendent and other municipalities as well as input from the public. This updated plan will be submitted to the Town Board for approval before being forwarded to FEMA.

Town of Lebanon



Supervisor: James S. Goldstein, 315-837-4152
Highway Superintendent: Alex Hodge, 315-837-4838
Town Clerk: Ashley Scott, 315-837-4220

Background

The Town of Lebanon is a community of 1329 (2000 census) residents located south of the Village of Morrisville and west of the Village of Hamilton. 72.5% of the residents are between the ages of 18 and 65, while only 12.6% are over the age of 65 (residents). The town currently encompasses approximately 43.75 square miles. The town has an equalized assessed value of approximately \$74 million dollars, which is distributed across a variety of property classes. There are 212 single family occupied homes within the town.

Land Use and Development Trends

There is no commercial development taking place in the Town at this time. Operating agricultural businesses in the town have been decreasing and the farm land is being developed to residential uses. In 2006, two Amish families purchased farms within the Town so it is hoped that this occurrence will help slow the disappearance of family farms. Since 1960, the Town has grown by an average of 112 residents every 10 years to its present 1,329 residents. In most cases, development involves the construction of single family homes on individual parcels. There have been at least six subdivisions of former farm parcels in the past ten years. Construction has occurred on at least two parcels as a result of these subdivisions.

Assets

Town Hall and Highway Garage – Located at the intersection of Lebanon Road and Bradley Brook Road. This multi-purpose building houses both the offices for Town Government and the garage for the Town Highway Department. This building is wired for an outside generator; the Town now owns a 13,000 watt generator.

The Highway Department administers 42 miles of road and through an intermunicipal agreement plows an additional 27 miles of County road in the winter.

Highway Equipment:

- 2 Two axle drive ten wheelers with plows and sanders
- 3 One axle drive ten wheelers with plows and sanders
- 2 All wheel drive ten wheelers with plows and sanders
- Front end loader with three yard bucket
- Rubber Tired Backhoe with all wheel drive
- Grader

Lebanon Community Center – Located a quarter mile west of the Town Hall on the south side of Lebanon Road. This public meeting building has capacity for 40. This building is not equipped with a generator.

Randallsville Community Center – Located on the southeast corner of the intersection of River Road and Middleport Road. This building is used for Town Government meetings and is equipped with kitchen facilities. It has capacity for 120. This building is not equipped with a generator.

Local Organization and Regulations

The Lebanon Town Board meets on the 2nd Monday of each month at 7:30 PM at the Town Hall.

The Town Planning Board meets on the 3rd Monday of each month at 7:30 PM at the Town Hall. Planning Board members attend 4 hour training sessions every year.

The Zoning Board of Appeals meets as needed.

The Town Highway Department has members who have been trained in how to take weather measurements in compliance with National Weather Service standards. Carl Guldy is Snow Spotter # NY3645 and reports to the National Weather Service in Binghamton.

The Planning Process

Michael Johnston, Madison County SWCD, met with the Lebanon Town Council at their regular monthly on Monday, April 12, 2004. The Town Council directed Mr. Johnston to work with Highway Superintendent Alex Hodge to collect the needed information to prepare a section of the mitigation plan on the Town of Lebanon. Mr. Johnston met with Highway Superintendent Hodge on September 1, 2004 at the Town offices. Potential problem areas for the Town were discussed and then located on a map supplied by Mr.

Johnston. Mr. Johnston subsequently met with Alex Hodge on 2/29/09 in order to update the plan. Mr. Johnston also met with Gary Will, the Town Planning Board chairman, on 3/19/09 to review updates that Gary had submitted.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

The Town of Lebanon is bordered by the Town of Eaton on the north, the Town of Hamilton on the east, the Town of Georgetown on the west, and Chenango County on the south. All three Madison County Towns are involved in Hazard Mitigation planning. Chenango County will be contacted for input on this plan.

Existing Plans, Studies, Reports, and Technical Information

The Town has a Land Management Law, a Subdivision Law, and a Windmill Law. The Town does not have zoning. A Codes Enforcement Officer is available to local citizens.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of Lebanon Probability Greater (G), Lesser (L) About Equal (E)	Town of Lebanon Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	L	N
Winter Storms	Mod. High	272.2	G	Y
Fires	Mod. High	265.2	L	N
Ice Storms	Mod. Low	236.2	G	N
Flood	Mod. Low	222.8	G	Y
Utility Failure	Mod. Low	218.5	G	Y
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	E	N
Extreme Temperatures	Mod. Low	169.8	G	N
Epidemic	Mod. Low	164.2	L	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	E	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	E	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N
Gas Well Fires & Explosions	Not Rated		G	Y

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Lebanon.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Lebanon Program	State BOCA Codes	Local Land Management Law limits number of residences per parcel	State health Codes Fire Codes	No	SEQR	Federal Flood Insurance Rules	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	NYS Health Dept. rules limit septic systems to maximum 15% slopes	No	Time Limit on Building permits	Yes	Planning Board of Appeals	State Regs Apply	Local Subdivision Law

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Lebanon Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Lebanon Program	Town Clerk provides County Health Dept. info on Radon and other hazards	Education of Elected to NIMS Standards	State Rules Apply	No

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Lebanon Program	Technical Assistance through SWCD office	DEC Foresters provide 480A program	State Regs for greater than 1 acre developmnt	NYS DEC Protection of Waters permits required for work disturbing	State Rules Apply	No	State & Federal Rules Apply	Chesapeake Bay Tributary Strategy

				bed or banks of streams				

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Lebanon Program	Emergency Generator hook-up for Town Hall & Highway Department; Town Hwy. Dept. Available for emergency	Earlville, Eaton, Georgetown, Hamilton Fire Depts. SOMAC, Eaton, Georgetown Ambulance, County Sheriff, State Police	MSDS Sheets on File with Fire Department	911 Center Alert System	Rules for drinking water and minimum living standards	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Lebanon Program	No	State Canal Authority Dam at Lebanon Reservoir	No	Red Cross Shelters

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Town of Lebanon Land Management Law.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Winter Storms

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

Blizzard of 1966

March 13 & 14, 1993 Blizzard – This event was declared disaster FEMA 1095 DR NY. This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,100 to 1,800 feet vs. 300 feet), Lebanon probably sustained greater amounts of snowfall.

December 25 & 26, 2002 Record Snowfall – This was declared disaster FEMA 3173 EM NY in Madison County. The Town of Lebanon recorded a 36 inch snowfall during a 48 hour period.

Locations Subject to Hazard

Winter Storm Trouble Spots – Drifting snow accumulates in the following road segments and forms large snow banks:

Bartlett Road

Reservoir Road

Fisk Road - a 0.9 mile stretch just south of Soule Road.

Lebanon Center Road – a 0.6 mile stretch of road starting 0.3 miles east of Bastian Road.

South Lebanon Road – a 0.9 mile stretch of this County road by the Sam Campbell Farm

Nilles Road – a 0.6 mile stretch of road just south of the intersection with Lebanon Road

State Route 12B – Entire Section of 12B within the Town of Lebanon is subject to blowing and drifting snow.

Potential Losses

A 6 inch snow fall requires 3 trucks working 3 1/2 hours with 2 people in each truck while the pick-up does dead end roads. On windy days, the pick-up deals with trouble spots for an additional 2 ½ hours. By using the County Highway Department standard of \$23 per mile, it would cost the Lebanon Town Highway Department \$1,587 to make one plow run for 69 miles of road.

Mitigation Measures

Living snow fences consisting of evergreen trees could be installed at distances of at least 100 feet upwind of problem stretches of road. Snow fences cause snow to deposit on the aft side of the plantings. With 1,320 trees per mile and a cost of \$2 per tree installed, living snow fences could be installed at a cost of \$2,640 per mile. Town Highway Department would be responsible for installing snow fences along with technical assistance from SWCD office. This is a Low Priority for the Town.

Conventional snow fences are a practice that was used by Madison County Highway Department in the past. The County Highway Department stopped installing them because putting them up in the fall and taking them down in the Spring is labor intensive;

fencing must be stored during the off-season; and purchase of the fencing is relatively expensive. Cost per \$100 feet of fencing is \$134. Conventional snow fences would be an effective practice for short sections of road with recurrent problems. They would also be effective in areas where the landowner is not agreeable to tree planting. This is a Medium Priority for the Town.

B. Flooding

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

January '96 Flood – This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

May 2000 Flood Event – This spring runoff event was declared disaster FEMA 1335 DR NY. The Town of Lebanon received \$24,782.44 in federal and state assistance for this event.

July 2004 – Constant rain led to washouts of S. Lebanon Road and Carncross Road. Town spent \$10,000 – 15,000 repairing damages. State of Emergency was declared by Town Supervisor.

April 2-4, 2005 Severe Storms and Flood Event – This was declared disaster FEMA 1589 DR NY. Flooding was caused by a 1 to 4 inch rain in conjunction with snowmelt. Before this storm rivers and streams had high flows due to a previous rainstorm on March 28th. The Town of Lebanon was hardest hit of all of the Towns in Madison County. There were some road closures and flooded basements in the towns of Lebanon and Hamilton. A few roads and a bridge were damaged. Creeks, streams, and the headwaters of the Chenango River were all out of their banks. According to NOAA, damage was \$100,000.

June 26 to July 10, 2006 Severe Storms and Flooding – This was declared FEMA 1650 DR NY. This event led to severe flooding along Stone Mill Creek and Lebanon Brook. The Town of Lebanon was the most severely affected town in Madison County. As of 12/29/06, 84.5 million dollars had been obligated to 12 counties in New York as the federal share (75%) of public assistance funds to repair flood damage and rebuild damage or destroyed infrastructure.

Locations Subject to Hazard

Stowell Road – Water runs down road surface during peak flow events. Larger culvert needed.

Potential Losses

Stowell Road – Flood Events can lead to the closure of this road.

Existing Mitigation Measures

Following the April, 2005 flooding, many culverts in the Town were upgraded by one

size under the FEMA disaster declaration. The culvert under Bisbee Road was upgraded from a 36” culvert and an 18” culvert to a single 60” culvert since another culvert downstream was already 60”.

In 2006, new headwalls were installed where Lebanon Brook flows under Carncross Road and where Stone Mill Creek flows under Deep Springs Road.

Following the June, 2006 flood, gabion baskets were installed upstream of the Stone Mill Brook culverts under Fisk Road; these baskets increased the capacity of these culverts and will reduce the likelihood of floods overtopping the road.

Mitigation Measures

Stowell Road- Road needs to be elevated with a larger culvert installed. There are no buildings on this road and the road can be bypassed. Road closure during flood events is the preferred action. Road upgrade by town highway department is a low priority.

C. Power Outages

Mitigation Goals

Provide needed services to Town residents in the case of a power failure.

Historical Events

April 2003 Ice Storm – This was an ice storm that struck the higher elevations of Madison County worse than the lower elevations of the County.

August 16, 2003 Northeast Power Failure – This was an event that affected the entire Northeastern United States.

Locations Subject to Hazard

Lebanon Community Center – Located a quarter mile west of the Town Hall on the south side of Lebanon Road. This building is not equipped with a generator.

Randallsville Community Center – Located on the southeast corner of the intersection of River Road and Middleport Road. This building is used for Town Government meetings and is equipped with kitchen facilities. It has capacity for approximately 60 people. This building is not equipped with a generator.

Potential Losses

In the event of a power failure, the Town would lose the use of Lebanon Community Center and Randallsville Community Center. If a power failure were to occur for an extended period during winter months, these buildings could sustain damage due to freezing pipes.

Mitigation Measures

To equip Lebanon Community Center and Randallsville Community Center with an outside hook-up for a supplemental generator would cost \$1,000 per building. Total cost would be \$2,000. This is a Medium priority for the Town.

Existing Mitigation Measures

The Town Hall and Highway Garage has been outfitted with an outside hook-up for a generator and a generator has been purchased. The generator is tested on a regular basis.

D. Gas Well Fires and Explosions

Mitigation Goals

Provide emergency services to site of gas well fire or explosion. Evacuate Town residents if necessary.

Historical Events

January 1, 2009 - Gas well fire: This fire occurred at a Nornew Company gas well in Smyrna, NY, located just south of the Town of Lebanon. In this incident a shard of rock broke a fluorescent bulb, igniting the fire that burned for about an hour.

March 19, 2009 - Gas well explosion and fire: This incident occurred at a Nornew Company gas well on Soule Road in the Town of Lebanon. The fire burned for around 10 hours. The fire ignited as two workers were pulling out pipe after they had finished drilling. One worker suffered first degree burns; the other worker suffered first and second degree burns. Eaton, Georgetown, and Smithfield Fire Departments responded to the blaze. Firefighters applied foam and then water to the blaze. (Source: Syracuse Post Standard 3/20/09)

Locations Subject to Hazard

250 gas wells are planned in the Towns of Lebanon and adjoining Smyrna, Chenango County.

Potential Losses The value of drilling equipment that could be damaged is currently unknown. The greatest danger is injury or death to workers on-site during an explosion and fire.

Mitigation Measures

Gas Well Incident Training for Local Fire Departments – Town officials have indicated that local fire departments do not have training necessary to deal with hazards specific to a gas well explosion or fire. Cost of this training and a source of this training needs to be investigated. Responsible agency would be the Madison County Office of Emergency Preparedness. This is a High Priority for the Town of Lebanon.

Town Highway Department Emergency Phone List – Town officials have indicated that the Town Highway Department should have a list of phone numbers for: Emergency Workers, Doctors, and Local Hospital Staff. Cost of compiling this list is \$0. Responsible agency would be the Town of Lebanon Planning Board. This is a High Priority for the Town of Lebanon.

Gas Well Location Mapping – Town officials have indicated that well locations should be indicated on the map that accompanies this Town of Lebanon section of the Hazard Mitigation Plan. This should be possible by contacting Professor Bruce Selleck at Colgate University. Cost of this work is \$0. Responsible agency is Madison County Soil and Water Conservation District. This is a High Priority for the Town of Lebanon.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Living Snow Fence Installation	-1	+1	-1	-1	+1	+1	+1	1
Conventional Snow Fence seasonal use	N	N	N	N	+1	+1	+1	3
Stowell Road Culvert Upgrade & Roadway Reconstruction	-1	+1	-1	-1	+1	-1	+1	-1
Back-up Generator Hook-up for Lebanon Community Hall & Randallsville Community Hall	+1	+1	-1	+1	+1	+1	+1	5
Gas Well Incident Training for Local Fire Departments	+1	+1	N	+1	+1	+1	+1	6
Town Highway Department Emergency Phone List	+1	+1	+1	+1	+1	+1	+1	7
Gas Well Location Mapping	+1	+1	+1	+1	+1	+1	+1	7

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Lebanon Supervisor and submit a copy of the evaluation form listed in appendix EF. The Town Supervisor will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Town of Lebanon and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Lebanon Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Lincoln subsection based on the reports supplied by the Town of Lebanon and other municipalities as well as input from the public. This updated plan will be submitted to the Town Board for approval before being forwarded to FEMA.

Town of Lenox

205 South Peterboro Street
Canastota, NY 13032



Supervisor: Rocco DiVeronica, 315-697-9291

Highway Superintendent: Tony Cesario, 315-697-2900

Town Clerk: Charlene Barres, 315-697-7547

Codes Enforcement Officer: Rick Stagnitti, 315-697-5575

Background

The Town of Lenox is a community of 8,665 residents located in the northern portion of the county. 74.3% of the residents are between the ages of 18 and 65, while only 14.8% are over the age of 65 (residents). The town currently encompasses approximately 32 square miles. The town has an equalized assessed value of approximately \$192 million dollars, which is distributed across a variety of property classes. There are 1,995 single family occupied homes within the town.

Land Use and Development Trends

Some major subdivisions are in preliminary stages. Minor subdivisions in which large parcels are divided along existing road frontage are occurring along Route 31, Lewis

point Road, and south of Route 5 to the Town line. The Lenox Industrial Park is continuing to expand.

Assets

Canastota Fire Department – This facility has two big rooms upstairs.

Wampsville Fire Department – Bingo hall (50' x 200') on Department property has capacity for 200 people.

Office of the Aging – Located at the Lenox Industrial Park. This building has full kitchen facilities but does not have a generator in case of a power failure.

Lenox Industrial Park – This facility also has a helicopter pad in case of emergency. Some of their unused industrial space may be available as needed.

Highway Department – Located northwest of the intersection of New Boston Road and Indian Opening Road. This building has four bays for repairing trucks and an office space. This building does not have a generator and is not wired for one in case of power failure. There is also a 30 foot by 50 foot building on site that is used to store equipment.

Equipment:

- 1 All Wheel Drive 10 wheel truck with plow and sander
- 6 Rear wheel drive 10 wheel trucks with plow and sander
- 1 Front end loader
- 1 Gradall
- 1 Rubber Tired backhoe ('68 Ford)
- 2 Six Wheel dump trucks
- 1 Grader
- 2 Paving Rollers
- 1 Paver
- 1 Single Ton Truck
- 3 Pick-ups

Town Hall – This facility is located at 205 S. Peterboro Street in the Village of Canastota. It is also the seat of Village Government. The downstairs courtroom is used for meetings and can accommodate 60 people.

Private Airfield – A grass landing strip belonging to Michael Bargabos is located at the intersection State Highway 13 and Pine Ridge Road.

Telephone Switching Center – This facility belongs to Verizon Company. It is located on the 100 block of East Hickory Street.

Water Tower – Off of Oxbow Road. This structure supplies water pressure to Onondaga County Water Authority (OCWA) customers. OCWA is the water source for most Town of Lenox residents.

TriValley Health Center – Located on Mount Pleasant Road. This facility has six small treatment rooms.

Health Center – Located on Center Street in Village. This facility has three examination rooms.

Church of the Nazarene parish center holds 300 to 400 people.

St. Agatha's Church has capacity for 300 in the church and 200 to 300 people in the parish center.

The American Legion has capacity for 200 people.

The VFW Hall holds 100 people.

Greystone Banquet hall has capacity for 250 people.

The Rusty Rail Restaurant on Route 5 has capacity for 1000 people.

Local Organization and Regulations

The Town Board meets on the second Monday of each month at 7:30 PM.

The Town Planning Board meets on the second Wednesday of each month and has input on all development occurring with the Township.

The Zoning Board of Appeals meets on the third Thursday of each month.

The Wampsville and Canastota Fire Departments pump basements in the event of flooding as a free service to the public.

The Town Highway Department provides sandbags for flood mitigation when flooding occurs due to high lake levels along Oneida Lake.

The Planning Process

Michael Johnston, Madison County SWCD, met with Town Council on January 12, 2004. The Town Council directed Mr. Johnston to contact Linda Richardson, Chair of the Planning Board, and subsequently work with the Planning Board to collect information needed for a Town of Lenox section of the mitigation plan. Mr. Johnston met with the Town Planning Board on July 14, 2004 at the Town Offices. Potential problems for the Town of Lenox were reviewed and then located on a map provided by Mr. Johnston. Mr. Johnston also met with Town of Lenox Highway Superintendent Tony Cesario and a Town Board on January 12, 2005 to inventory Town Highway Department assets and go over a rough draft of the Town of Lenox mitigation plan section.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

A copy of the Town of Lenox HMP has been submitted to:

Canastota School District

Saint Agatha's Church

Greater Canastota Chamber of Commerce

Existing Plans, Studies, Reports, and Technical Information

Code of the Town of Lenox

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality..

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of Lenox Probability Greater (G), Lesser (L) About Equal (E)	Town of Lenox Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	G	N
Winter Storms	Mod. High	272.2	E	N
Fires	Mod. High	265.2	E	Y
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	G	Y
Utility Failure	Mod. Low	218.5	E	N
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	E	N
Infestation	Mod. Low	173.8	E	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	E	N
Wave Action	Low	159.5	E	N
Dam Failure	Low	159.2	E	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Lenox.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Lenox Program	State BOCA Codes	No	Building Codes, Zoning	Yes	SEQR	Federal Insurance Rules	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	Building Lot Density Coverage Rules	Yes	State health Dept. Rules for Septic, NYS Canal Setback	Yes	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Lenox Program	No	No	Yes	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Lenox Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education, Fire Prevention Week

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Lenox Program	Technical assistance available through SWCD office	No	State Regs for greater than 1 acre development	No	State Rules Apply	No	State & Federal Rules Apply	Oneida Lake Program

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Lenox Program	No	Fire Police Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System	No	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Lenox Program	No	No	No	Red Cross Shelters, Safe Room in Town Hall

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Code of the Town of Lenox.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Flooding

Historical Events

April 1993 – Flooding occurred in many locations near Oneida Lake because of high lake levels that were associated peak runoff from a large snow pack that year.

January '96 Flood – This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

Locations Subject to Hazard

Arthur Jenkins Avenue – Flooding in this neighborhood has a number of causes. Land near the lakeshore is fairly flat and does not drain rapidly. If the lake level is raised as is apt to happen in the Spring, there is no suitable outlet for runoff. Landowners sometimes will fill in drainage ditches because they prefer a level lawn area but do not realize the consequences of their actions. Culverts on a tributary that flows from the south through the neighborhood are undersized.

Kaiser Beach – 60 houses in this area flood when Oneida Lake levels rise. Major flooding in Spring of 1993.

Old Orchard Road/ Lewis Point Road area – 50 houses in this area suffer flooding during periods of high water levels on Oneida Lake.

Duck Cove area – Located east of Arthur Jenkins Avenue. 6 houses in this area suffer lake level flooding.

Main Street & Warners Road – Box culvert under Main Street needs to be lowered. Any heavy rains cause repetitive flooding to houses upstream of this location (6 houses, 4 with basements).

Development in Hazard Area

Some new development is occurring in the Kaiser Beach, Old Orchard Road, and Arthur Jenkins avenue areas.

Potential Losses

Arthur Jenkins Avenue - Houses in this area are subject to flooding during periods of high lake level. Further study is needed to determine the dollar value of damages.

Kaiser Beach – Estimated damages in this area are \$2,000 per house. For 60 houses, estimated damages are \$120,000 per event.

Old Orchard Road/ Lewis Point Road - Estimated damages in this area are \$2,000 per house. For 50 houses, estimated damages are \$100,000 per event.

Duck Cove area - Estimated damages in this area are \$2,000 per house. For 6 houses, estimated damages are \$12,000 per event.

Main Street & Warners Road – Estimated damages for 2 houses without basements are \$500 per event; estimated damages for 4 houses with basements are \$5,000 per event. For all 6 houses, estimated damages are \$21,000 per event.

Mitigation Measures

Arthur Jenkins Avenue, Kaiser Beach, Old Orchard Road/ Lewis Point Ave., Duck Cove area – All of these areas are affected by high water levels in Oneida Lake. The best mitigation strategy is for the Town of Lenox to be active in discussions with the NYS Canal Authority on controlling lake levels. This is a high priority.

Main Street and Warners Road – Estimated cost of lowering the box culvert controlling water levels in this area is based on 3 days of labor and machinery time. At \$150 per hour, 24 hours work would cost \$3,600. Work would be done by the Town Highway Department using existing resources. This is a high priority.

B. Fire

Historical Events

Northeast Environmental Services – Located on Canal Road between the Villages of Canastota and Wampsville. This facility is no longer in operation. A fire here in the late 1980's led to an evacuation of the Village of Wampsville.

Locations Subject to Hazard

Patterson Liquid Propane, Lenox Industrial Park – This 30,000 gallon liquid propane bulk storage facility is located at the Lenox Industrial Park. Propane is transferred all day long during the workweek.

Welding Shop, Lenox Industrial Park – A welding shop is located in close proximity to the Patterson Propane Facility.

Office of the Aging, Lenox Industrial Park – The Office of the Aging facility has a snack program that accommodates up to 100 people at a time.

Owl Wire and Cable, Route 5 – Welding and fabrication occur at this facility.

Stoneleigh Housing – Located on Lamb Avenue. This is a senior citizen housing complex with 50 apartments in one structure.

Electrical Substation – Located on Route 13, 1/8 mile north of the Thruway.

Mitigation Measures

Evacuation Plan-An evacuation plan is needed for the village of Canastota in case of a large fire or chemical spill at the Lenox Industrial Park. The evacuation plan would address a possible train derailment on the CSX line through Canastota. Responsible parties would be the Town of Lenox Supervisor and Village of Canastota Mayor working with Canastota police and fire chiefs. This project would draw on already existing resources. This is a High Priority for both the Town of Lenox and the Village of Canastota.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Oneida Lake - Lake Level Planning	+1	+1	+1	+1	+1	+1	+1	7
Main St./ Warners Road Culvert Lowering	+1	+1	+1	+1	+1	+1	+1	7
Lenox Industrial Park/ Village of Canastota Evacuation Plan	+1	+1	+1	+1	+1	+1	+1	7

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Lenox Highway Superintendent and submit a copy of the evaluation form listed in appendix EF. The Town Highway Superintendent will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

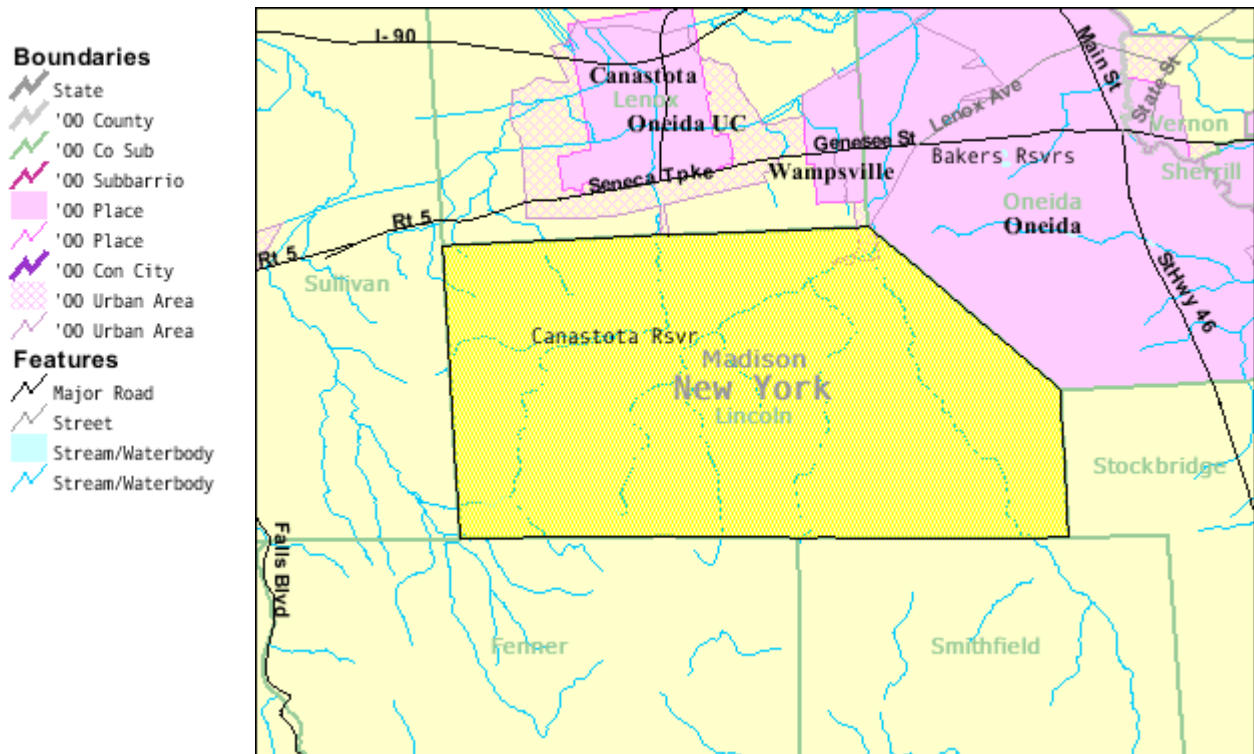
- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Town of Lenox and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Lenox Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Lenox subsection based on the reports supplied by the Lenox Highway Superintendent and other municipalities as well as input from the public. This updated plan will be submitted to the Town Board for approval before being forwarded to FEMA.

Town of Lincoln

P.O. Box 12
Clockville, NY 13043



Supervisor: Doug Holdridge, 697-8053

Highway Superintendent: Tony Domenicone, 697-7018

Town Justices: Herbert T. Kissel 363-1486, Robert B. Sturdevant 363-6518

Codes Enforcer: James Olden: 697-9915

Background

The Town of Lincoln is a community of 1818 residents located south of the Village of Canastota and north of the Village of Morrisville. The population of the town is made up of 74% falling within the 18-65 year olds and only 9% of the population is over the age of 65. The town currently occupies approximately 15.8 square miles. The equalized assessed value of the town is approximately 88 million dollars, and is spread across a variety of property classes. There are approximately 392 owner occupied housing units in the township. There is no commercial development taking place at this time. The

reduction of operating agricultural businesses in the town is decreasing and the farm land is being developed to residential uses. The county landfill is located in the township.

Land Use and Development Trends

The Town of Lincoln saw the highest percentage increase in Population of any Madison County town between the 1990 and 2000 census. Most development is in the form of farms being sold off for building lots. The Don New Farm along Seeber and Forbes Roads and the Dale Smith Farm in Clockville are two prominent examples. The Callahan Limestone Quarry is currently seeking to expand its operation towards Oxbow Road.

Assets

Town Hall is located on Timmerman Road. This building does not have an alternate generator and is not wired for an outside generator.

Town Highway barn is located on Old County Road in the center of Clockville. A new Highway Department garage is planned for Tuttle Road. Construction is expected to begin in 2006. The Town Highway Department administers 31 miles of road. The total crew for the Town of Lincoln is 3 full time employees.

Equipment includes:

- 3 10 wheel dumptrucks with plow and sander
- 1 six wheel dump truck
- 1 ¾ ton pickup with plow
- 1 front end loader
- 1 gradall
- 1 grader
- 1 wood chipper
- 1 2 drum roller
- 1 tractor with sickle bar and brush hog
- 1 shoulder machine shared with Smithfield

Town Highway does not own a generator.

The Lincoln Fire Department has two fire houses, one is located in Clockville and the other is on Creek Road.

The County Landfill is located on Buyea Road.

Local Organization and Regulations

The Town Board meets on the second Wednesday of each month.

The Town Planning Board is in place to review new development and sub-division requests. The Planning Board meets on the first Monday of each month.

The Zoning Board of appeals meets as needed.

Town Highway Department will receive \$41,202.80 in State chips funding for highway maintenance during 2006.

The Planning Process

The Town Board discussed the Hazard mitigation Project at a board meeting on 2/11/04, and determined who the initial contacts for the planning process would be. It was determined that the next step would be to discuss this plan with the planning board. That meeting was held on 3/1/04 at the town offices. Potential areas of concern, areas of historical problems and potential projects for the future were discussed. A meeting was held with the town supervisor on 3/18/04. The topics from the planning board meeting were discussed and additional areas of concern were considered. A meeting took place on 8/12/04 with a member of the planning board where a potential project was discussed.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

The following organizations and companies have been contacted for input into this plan:
Lincoln Fire Department
Callahan Quarry

Existing Plans, Studies, Reports, and Technical Information

Callahan Quarry is currently having a study of groundwater done in the Oxbow Road area in anticipation of expanding their quarry.

Hazards:

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of Lincoln Probability Greater (G), Lesser (L) About Equal (E)	Town of Lincoln Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	L	N
Winter Storms	Mod. High	272.2	E	Y
Fires	Mod. High	265.2	E	N
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	E	Y
Utility Failure	Mod. Low	218.5	L	Y
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	E	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Lincoln. Appendix D of this plan can be used as a guide as to what mitigation actions can mitigate different hazards.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Lincoln Program	State BOCA Codes	1 acre minimum lot size with 150 foot road frontage	State Health Codes Fire Codes	National Grid power co. has easement with Hwy.. Dept.	SEQR for major subdivisions	Federal Flood Insurance Rules apply	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	Construction allowed up to a set % grade	Construction not permitted on portions of some spaghetti lots	Time Limit on Permits 1 year	State Health rules for septic systems	Through Planning Board	State Regs Apply	Local subdivision rules

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Lincoln Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Lincoln Program	No	Education of Elected to NIMS Standards	State Rules Apply	No

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Lincoln Program	Technical Assistance from County SWCD	NYS DEC 480A Program available	State Regs for greater than 1 acre development;	No	State Rules Apply	No	State & Federal Rules Apply	Oneida lake Program;

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Lincoln Program	Emergency Generator for Fire Department	Lincoln Fire Dept., Greater Lenox Ambulance, State Police County Sheriff	MSDS Sheets on File with Fire Department	911 Center Alert System:	County Health Department Rules for drinking water and minimum living standards	Red Cross, Opportunity Shop for St. Agnes Church

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Lincoln Program	No	No	No	No

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms.

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Town Zoning Regulations.

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Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Winter Storms

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

March 13 & 14, 1993 Blizzard – This event was declared disaster FEMA 1095 DR NY. This storm dumped 43 inches of snow in Syracuse during a 36 hour period.

December 25 & 26, 2002 Record Snowfall – This was declared disaster FEMA 3173 EM NY in Madison County.

Locations Subject to Hazard

The following sections of road are subject to drifting during and following snowstorms:

Jennings Road 0.9 mile

Bruce Road 1.2 mile

Harp Road 0.9 mile

Nelson Road 1.2 mile

Ray Road 0.3 mile

Colgrove Road 1.6 mile

Palmer Road 0.4 mile

Forbes Road 1.0 mile

Seeber Road 1.1 mile

Tuttle Road 1.0 mile

Future Development in Hazard Area

Parcels are being developed on Forbes, Seeber, and Timmerman Roads.

Potential Losses

For a six inch snowfall, a three person crew manning 2 ten wheel plow trucks and a $\frac{3}{4}$ ton plow will take three hours to clear the Town's 32 miles of road. On a windy day after a snowfall, the $\frac{3}{4}$ ton truck will spend an additional 3 hours clearing drifts from problem sections of road.

By utilizing the Madison County Highway estimate of \$23 per mile for plowing, including sand and salt, it would cost the town \$713 to clear, sand and salt its 31 miles of road

Existing Mitigation Measures

Intermunicipal Agreement - The Towns of Lincoln, Eaton, Smithfield, Stockbridge, Fenner, and Lenox have intermunicipal agreements for the use of shared highway equipment such as the shoulder machine and exchange of labor and use of trucks.

Proposed Mitigation Measures

Living snow fences consisting of evergreen trees could be installed at distances of at least 100 feet upwind of problem stretches of road. Snow fences cause snow to deposit on the downwind side of the plantings. With 1,320 trees per mile and a cost of \$2 per tree installed, living snow fences could be installed at a cost of \$2,640 per mile. Total cost for all 10.8 miles of the problem stretches in the Town of Lincoln would be \$28,512. If additional road work on 20 days per year was avoided, total savings would be based on 20 days x \$50 per hour (truck and driver) x 3 hours = \$3,000 per year. On a per mile basis, savings would be \$277.78 per mile per year. Once living snow fences are established, it would take 9.5 years for them to pay for themselves in savings to the Highway Department. Town Highway Department will work with SWCD to prioritize problem sections of road in the town. Landowners will then be identified and approached regarding their willingness to participate. There would be no cost for this initial phase of the project. This is a High Priority for the town.

Tuttle Road – Snow deposition occurs at this location because of a row of trees located next to the road. To remove these trees from 0.4 mile of road it would take a three-man crew three weeks to complete the work. This is a High Priority for the Town and will be accomplished using existing resources starting.

Snowblower – Two types of large snowblowers are available and would help the Town deal with large piles of snow. A self propelled model would cost around \$100,000. A model that could be mounted on a front end loader would cost approximately \$50,000. One of these snowblowers could be shared among County Highway and the Towns of Fenner, Lebanon, and Lincoln. This is a medium priority for the town. Funding is not yet available.

Road Shoulder Improvements – Harp Road, Bruce Road, and Jennings Road need shoulder widening in problem snow areas. In the current condition, trucks sink off the side of the road when the ground is not frozen and the Highway Department tries to push snow back from the road. There are a total of 3.0 miles of road in these problem areas. At \$3 per foot, shoulder improvements would cost \$47,520. This is a high priority for the town. Town highway will make these improvements during their regular field season.

B. Flooding

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

January '96 Flood – This was presidential disaster FEMA 1095 DR. This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

May 2000 Flood Event – This spring runoff event was declared disaster FEMA 1335 DR NY. The Town of Lincoln received \$24,782.44 in federal and state assistance for this event.

April 2-4, 2005 Severe Storms and Flood Event - This was declared disaster FEMA 1589 DR NY. Flooding was caused by rain in conjunction with snowmelt. The Town of Lincoln did not sustain severe damage from this event. Greater damage occurred at higher elevations in Madison County.

Locations Subject to Hazard

Clockville Road – Two houses on Clockville Road have suffered repetitive flood damages because of their proximity to Clockville. Money is available to purchase houses at this location.

Creek Road – This County Road has had recurring problems during spring snow melt and summer thunderstorms. As a result of stream gradient, high flows carry large amounts of bed load that tend to plug culverts and result in the flooding of the roads and private property. Since Creek Road is a County Highway this problem was discussed in more depth in the County Highway section of the plan..

Cottons Road - A culvert under Cottons Road located between the Oster Farm and the Harlow Smith Farm is often submerged and backs water up occasionally flooding the road. A runoff estimate and culvert sizing will be performed by SWCD personnel.

Nelson Road - A culvert under Nelson Road located between Cottons Road and Nelson Road is sometimes overwhelmed by storm water or snow melt. Culvert capacity becomes reduces because of soil deposition from farmland erosion. Culvert diameter was recently increased to 18 inches from 12 inches. A runoff estimate and culvert sizing will be performed by SWCD personnel.

Seeber Road – Runoff to the South has occurred in the past. Ditch, shoulder, and road surface damage noted in Spring 2000 flood. Work done since the 2000 flood has probably resolved this problem.

Clockville Road – Bend in Creek east of Crandall Road has overflowed.

Old County Road – South of Ingalls Corner Road, runoff during Spring melt has caused road damage during past events.

Watson Road – Runoff in Spring or during heavy summer rains has caused washout of the road shoulder and undermining of the road surface.

Forest Avenue – Runoff during heavy rainstorms.

Additionally, runoff in storm events has in the past caused damage to roads by washing out roads and road shoulders.

Future Development in Hazard Area

Development has been occurring along Seeber Road but hopefully problems in this area have been resolved.

Potential Losses

Clockville Road – One house at this location suffers basement flooding on a regular basis when the creek level rises. Another house has more intermittent problems with creek flooding. Damage is estimated at \$1,500 per event.

Chapman Road - **In** the January '96 flood, this road sustained \$3,667.00 in damage because of 500' of shoulder washout and 1000 square foot of chip seal replacement. In the Spring 2000 flood, this road sustained approximately \$2,500 in damage because of 150' of road ditch and 160' of 18" pipe washout.

Forbes Road - In the Spring 2000 flood, this road sustained approximately \$3,700 in damage because of 1200' of road ditch, 600' of shoulder, and 70' of 15' pipe washout.

Nelson Road - In the January '96 flood, this road sustained \$5,527 in damage because of 1395' of shoulder washout.

Watson Road - In the January '96 flood, this road sustained \$7,259 in damage. Because of 500' of sub base, 250' of shoulder, 130' of ditch washout.

Forest Ave. - In the Spring 2000 flood, this road was listed as damaged because of an 18" x 50' culvert washout.

Mitigation Measures

Cottons Road – The culvert at this location should be upgraded. A runoff estimate and culvert sizing will be done by SWCD staff. There will be no cost to the Town. This is a High Priority for the Town. .

Nelson Road – The culvert at this location should be upgraded. A runoff estimate and culvert sizing will be done by SWCD staff. There will be no cost to the Town. This is a High Priority for the Town.

Clockville Road- Money is unavailable to purchase houses at this location. This is a Medium Priority for the Town.

C. Power Outages

Mitigation Goals

Provide needed services to Village residents in the case of a power failure.

Historical Events

August 16, 2003 Northeast Power Failure – This was an event that affected the entire Northeastern United States.

April 2003 Ice Storm – This was an ice storm that struck the higher elevations of Madison County worse than the lower elevations of the County.

Labor Day Storm. September 7, 1998 – This was presidential disaster FEMA 1244-DR-NY. This was a thunderstorm accompanied by intense straight-line winds. The Town of Lincoln sustained \$14,949 in damages on public land consisting of debris and hazard tree removal.

Locations Subject to Hazard

Lincoln Town Hall

Lincoln Highway Department

Potential Losses

A power failure under the present circumstances would disrupt the normal function of the Town highway Department. The Lincoln Highway Department needs to continue functioning in the event of a disaster.

Existing Mitigation Programs

National Grid Power Company had a tree crew from Reese Tree Trimming working on clearing power lines for nearly all summer during 2005.

The Lincoln Fire Department has an emergency generator and an outside hook-up. The Lincoln Fire Department would serve as an emergency shelter in case of a power failure.

Mitigation Measures

To equip the Lincoln Town Hall with an outside hook-up for a supplemental generator would cost \$1,000. This is a medium priority for the town.

The new Highway Garage on Timmerman Road will have a portable generator and an outside hook-up. Money has not yet been appropriated but will be included in a future. This is a high priority for the town.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Living Snow Fence Prioritization	+1	+1	+1	+1	+1	+1	+1	7
Tuttle Road Tree Removal	+1	+1	+1	+1	+1	+1	+1	7
Large Snowblower Multi-jurisdictional Purchase	+1	+1	-1	+1	+1	+1	+1	5
Road Shoulder Improvements	+1	+1	+1	+1	+1	+1	+1	7
Cottons Road Culvert Sizing	+1	+1	+1	+1	+1	+1	+1	7
Nelson Road Culvert Sizing	+1	+1	+1	+1	+1	+1	+1	7
Clockville Road House Purchase	N	+1	-1	+1	+1	+1	+1	4
Town Hall Outside Generator Hook-up	+1	+1	-1	+1	+1	+1	+1	5
Highway Garage Back-up Generator	+1	+1	+1	+1	+1	+1	+1	7

Plan Monitoring and Update

County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Lincoln Supervisor and submit a copy of the evaluation form listed in appendix EF. The Town Supervisor will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Town of Lincoln and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Lincoln Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Lincoln subsection based on the reports supplied by the Town Supervisor and other municipalities as well as input from the public. This updated plan will be submitted to the Town Board for approval before being forwarded to FEMA.

Town of Madison



Supervisor: George Turner, 893-7896
 Highway Superintendent: Gordon Reed

Background

The Town of Madison is a community of 2,801 residents located north east of the Village of Hamilton. The Village of Madison is located within the boundaries of the township but they will have their own section in the mitigation plan. Nearly 75% of the residents are between the ages of 18 and 65 with only 12% over the age of 65(394 residents). The town is comprised of approximately 23 square miles. The Town has an assessed value of over 142.5 million dollars distributed across a variety of property classes. There are approximately 548 single family homes located within the township. The town is comprised of just over 26,000 acres.

Land Use and Development Trends In past five years, subdivisions have occurred in the southern part of the Town near Lake Moraine. These include the Warren Baker farm, the Gerald Rockwell farm, and the Rodney Pierson farm. These farms have been divided into 10 to 20 acre parcels along already existing roads. Commercial development is occurring along Route 12B north of the Village of Hamilton.

Assets

The Town highway barn is located on Solsville Rd. just outside the Village of Madison.

The Town Hall is located on Route 20 in the Village.

The Madison Fire Department is located on Route 20 next to the Town offices.

The Madison Central School is located in the Village.

Local Organization and Regulations

The Town Board meets on the second Thursday of each month at the Town Hall on Route 20.

There is a planning board in place in the township. They review plans for any new development.

The Planning Process

The Town Board discussed the Hazard Mitigation plan at a public meeting on 2/12/04 and discussed who would be the contacts in the town for plan development. It was determined to review the plan with the planning board to get their input on plan development. This meeting took place on 3/1/04. Then we met with the superintendent of highways, Gordon Reed. This meeting took place on 3/25/04 and we reviewed maps of the township and drove to trouble sites to review them. On 8/31/04 a discussion with the Town Superintendent took place with regards to flooding that occurred as a result of heavy rains that took place over the weekend and how they might relate to the plan. Meet with highway superintendent to discuss the plan and potential projects again on 2/22/05.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

The following organizations have been contacted for input to the town of Madison HMP, comment has not yet been received.

Lake Moraine Association

Madison Lake Association

NYS Department of Transportation

Oneida Madison Electric Company

Existing Plans, Studies, Reports, and Technical Information

Emergency Action Plan For Lake Moraine

The Town is currently considering a zoning plan.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of Madison Probability Greater (G), Lesser (L) About Equal (E)	Town of Madison Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	E	Y
Winter Storms	Mod. High	272.2	E	Y
Fires	Mod. High	265.2	L	N
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	L	Y
Utility Failure	Mod. Low	218.5	G	Y
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	L	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	G	Y
Hurricane	Low	158.8	L	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		L	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Madison.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Madison Program	State BOCA Codes	No	State Health Codes Fire Codes	No	SEQR for major subdivisions	Federal Flood Insurance Rules apply	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	Southern Madison Land Trust	No	No	No	State Regs Apply	Planning Board Regulations

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Madison Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Madison Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Madison Program	Technical Assistance available from County SWCD	NYS DEC 480A Program available	State Regs for greater than 1 acre development;	No	State Rules Apply	No	State & Federal Rules Apply	No

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Madison Program	Emergency Generator for Fire Department	Madison Fire Dept., Madison Ambulance, State Police County Sheriff	MSDS Sheets on File with Fire Department	911 Center Alert System:	County Health Department Rules for drinking water and minimum living standards	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Madison Program	No	State Owned Dam at Lake Moraine	No	Red Cross Shelter at Madison Central School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the writing of zoning regulations for the Town of Madison.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Severe Winter Storms:

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

March 13 & 14, 1993 Blizzard – This event was declared disaster FEMA 1095 DR NY. This storm dumped 43 inches of snow in Syracuse during a 36 hour period.

December 25 & 26, 2002 Record Snowfall – This was declared disaster FEMA 3173 EM NY in Madison County.

Locations Subject to Hazard

The town highway superintendent identified no specific road segments as having problems with snow hazards.

Mitigation Measures

Identify Vulnerable Populations – A group called the Madison County Citizen Corps Council is currently working on identifying vulnerable populations and formulating a plan to assist these people in case of an emergency. Membership of this Council includes Retired Senior Volunteer Program (RSVP), Madison County Office for the Aging, County Health Department, County Office of Disaster Preparedness, the Alzheimer's Association, The Red Cross, and the Salvation Army. The Council is having difficulty assembling a good list (database) of people who need this assistance because of confidentiality rules that apply to the agencies that have lists of clients. The current list has less than 100 names on it. The Council now plans to send out questionnaires with agency mailings that are already going out. This system will depend upon vulnerable populations identifying themselves. RSVP has already delivered Disaster Preparedness Kits to the already identified vulnerable population and will continue this activity. In the event of a long-term power failure or other disaster, the County Office of Emergency Preparedness will contact local fire departments and request that they check on at-risk individuals. This is a High Priority for the County.

B. Dam Failure

Mitigation Goals

Prevent injury or loss of life as well as damage to property and infrastructure in the town.

Historical Events

June 11, 1917 – According to the Madison County Leader newspaper, a downpour after weeks of incessant rain led to a number of dam failures in Madison County and the surrounding area. Three power dams went out between Eaton and West Eaton on Eaton Brook. A mill pond at Pratts Hollow in the Town of Eaton led to the death of Earl Roher. Two lives were lost in Oriskany Falls, Oneida County after 3 dams burst on Oriskany Creek near the border between Madison and Oneida Counties.

Locations Subject to Hazard

Lake Moraine is a man made reservoir built in the late 1800's to act as a water supply for the Chenango Canal system. Today it still supplies the portion of the Chenango Canal that is still in existence as well as acts as a recreational lake.

Future Development in Hazard Area

Though there has been development in the Lake Moraine area, this development has not occurred in the projected flood zone.

Potential Losses

In the event of dam failure as many as 20 homes in the town could receive flood damage. These homes are the closest to the dam structure, much greater damage would occur in the Village of Hamilton as is explained in their section. At 30,000 dollars per house, damage would be \$600,000.

Existing Mitigation Measures

An inspection schedule for the dam and its spillway is set up and maintained by NYS DOT.

The spillway was enlarged in the mid 1980's to reduce the possibilities of the dam overtopping during a severe storm event.

Ongoing Mitigation Measure

An emergency evacuation plan for Lake Moraine was developed in 1981 by the Town of Madison, Town of Hamilton, Village of Hamilton, NYS DOT and NYS DEC. This plan was scheduled to be updated every 5 years. It spells out what to do in the case of emergency and who is responsible for what actions. This plan should be updated as soon as possible. This is a High Priority.

C. Flooding:

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

January '96 Flood – This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

May 2000 Flood Event – This spring runoff event was declared disaster FEMA 1335 DR NY.

April 2-4, 2005 Severe Storms and Flood Event – This was declared disaster FEMA 1589 DR NY. Flooding was caused by a 1 to 4 inch rain in conjunction with snowmelt. Before this storm rivers and streams had high flows due to a previous rainstorm on March 28th.

Locations Subject to Hazard

Lakeview Court-Poor road drainage

Carter Road-Shoulder washout

Lake Moraine Road - House in floodplain suffers flooding

Bonney Hill Road-Shoulder washout

Whalen Hill Road - Bridge problems

Potential Losses

According to the Madison County Assessment office records, the Town of Madison has 199 parcels with at least some land in the 100 year flood plain. The vast majority of land in the floodplain is either agricultural, wooded, or fallow. By examining an overlay of aerial photography, parcel boundaries and the 100 year flood plain, it was found that 6 parcels had buildings in the flood plain. These included one dairy farm, one restaurant, one outbuilding, and three houses. The dairy parcel had an assessed value of \$523,000, the restaurant had an assessed value of \$566,600, the house parcels had an average assessed value of \$70,000, and the parcel with the outbuilding had an assessed value of \$21,400. By estimating \$20,000 damage each to the two commercial parcels, \$5,000 each to the houses, and \$2,000 to the outbuilding, total damage from a 100 year flood is estimated to be \$57,000.

Mitigation Measures

1. Lakeview Court-SWCD staff has already designed a waterway (swale) for this location that will solve drainage problems. Implementation by town highway department will involve one day of dozer work and seeding. The estimated cost is \$500.00. This is a high priority.
2. Carter Road- Based on Town of Cazenovia data, armoring of shoulders costs \$5.00 per lineal foot. Footage for this road segment needs to be measured. This is a High Priority.
3. Lake Moraine Road - House in floodplain-Purchase of this house in a floodplain would cost approximately \$60,000. Town does not have funding available. This is a medium priority.
4. Bonney Hill Road- Based on Town of Cazenovia data, armoring of shoulders costs \$5.00 per lineal foot. Footage for this road segment needs to be measured. This is a High Priority.
5. Whalen Hill Road - Bridge Problems-Replacement of this bridge with a precast concrete box would cost a minimum of \$20,000 for materials alone. Town does not have money available. This is a Medium Priority.

D. Transportation Accidents

Mitigation Goal

Prevent environmental damage to Madison Lake in event of a chemical spill.

Locations Subject to Hazard

The Town Planning Board expressed concern that a chemical spill on Route 20 could cause serious degradation to the water quality of Madison Lake.

Potential Losses

A serious chemical spill on Route 20 would lead to the loss of Madison Lake as a recreational resource. Since this lake does not have a surface outlet, damage to this resource could last a long time.

Mitigation Measures

Route 20 Spill Prevention - The town supervisor with assistance from the planning board chair should request a meeting with NYS DOT regional Engineer to discuss possible solutions, structural and preventative. This is a Medium Priority.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
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+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

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Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Identify Vulnerable Populations	+1	+1	+1	+1	+1	+1	+1	7
Lake Moraine Emergency Evacuation Plan Update	+1	+1	+1	+1	+1	+1	+1	7
Lakeview Court Waterway Construction	+1	+1	+1	+1	+1	+1	+1	7
Carter Road Shoulder Estimate	+1	+1	+1	+1	+1	+1	+1	7
Purchase of House in Floodplain	+1	+1	-1	+1	+1	+1	+1	5
Bonney Hill Road Shoulder Estimate	+1	+1	+1	+1	+1	+1	+1	7
Whalen Hill Road Bridge Replacement	+1	+1	-1	+1	+1	+1	+1	5
Route 20 Spill Prevention Plan	+1	+1	-1	+1	+1	+1	+1	5

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Madison Highway Superintendent and submit a copy of the evaluation form listed in appendix EF. The Town Highway Superintendent will complete and return this form within 10 business days.

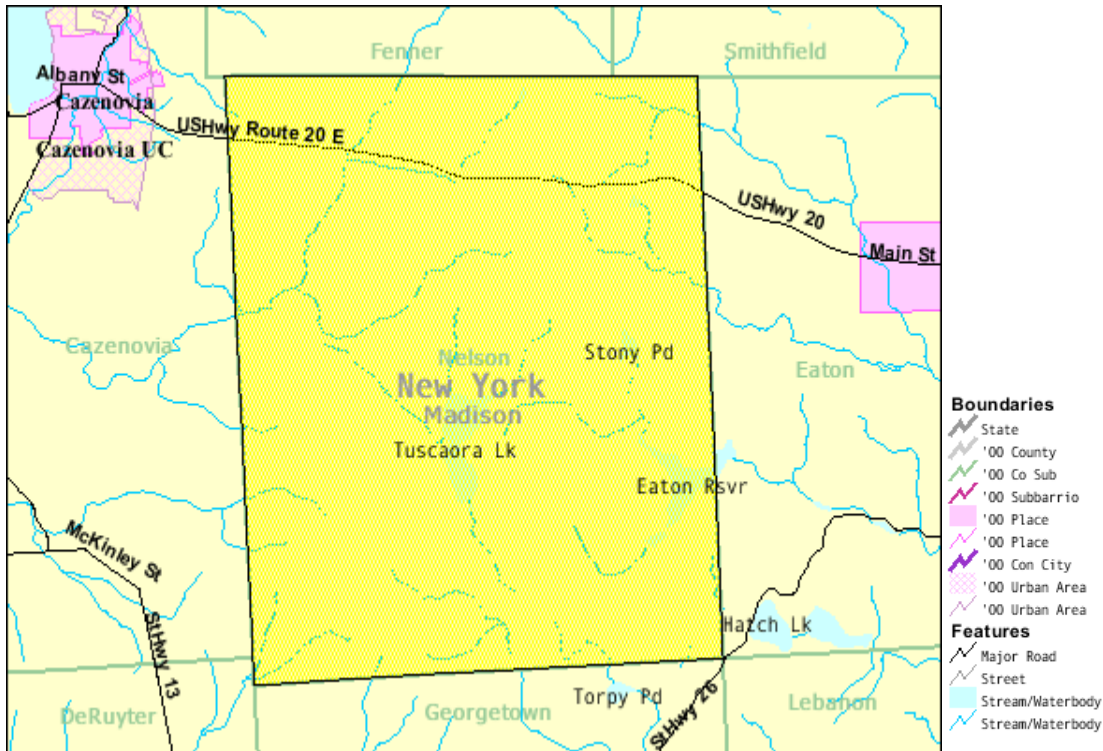
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- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Town of Madison and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Madison Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Madison subsection based on the reports supplied by the Madison Highway Superintendent and other municipalities as well as input from the public. This updated plan will be submitted to the Town Board for approval before being forwarded to FEMA.

Town of Nelson
4085 Nelson Road
Cazenovia, NY 13035



Supervisor: Richard Williams, 315-655-2914
Highway Superintendent: John Sevier, 315-662-7942
Town Clerk: Christabell Westcott, 315-655-8582
Codes Enforcement Officer: Roger Cook
Planning Board Chair: Gary McSweeney, 315-662-3950

Background

The Town of Nelson is a community of 1,964 residents located in the central portion of the county. 71.7% of the residents are between the ages of 18 and 65, while only 9.6% are over the age of 65 (residents). The town currently encompasses approximately 44 square miles. The town has an equalized assessed value of approximately \$144 million dollars, which is distributed across a variety of property classes. There are 409 single family occupied homes within the town.

Land Use and Development Trends

The Town has a long-range plan to remain rural ag-residential. There have not been many multi-lot subdivisions in the Town recently because of the NYS requirement for a fairly involved Stormwater Plan. Most construction is in the form of single family

homes. A waterfront zone around Eaton Brook and Tuscarora Reservoirs encourages an increase in the size of lots around the lakes.

Assets

Town Hall: Located at 4085 Nelson Road

This building houses the office of the Supervisor and Town Clerk and has a meeting area that can accommodate up to 70 people. This building does not have a generator and is not wired for an outside generator in case of a power failure.

Highway Department: Located at 3985 Dugway Road, Erieville

This location includes a garage for truck storage and repair as well as a salt storage structure. This garage is equipped with a manual throw switch for an outside generator in the event of a power failure. Their generator is strong enough to power a welder.

Equipment includes:

- 1 F550 all-wheel drive dump truck
- 1 6 wheel truck with plow and sander
- 1 10 wheel dumptruck
- 2 10 wheel trucks with plow and sander
- 1 10 wheel all wheel drive truck with plow and sander
- 1 ¾ ton 4 x 4 pick-up
- 1 Front end loader
- 1 rubber tired backhoe
- 1 Grader
- 1 Roller
- 1 Tractor with boom mower

Erieville Fire Department – Located on Eatonbrook Road just west of Nelson Road. This building is equipped with a gas powered generator that kicks on automatically in case of a power failure.

Local Organization and Regulations

Town Board meets on the 2nd Thursday of each month at 7 PM.

Most of the Town of Nelson is protected by the Erieville Fire Department. A portion of the Town on the east is protected by the Morrisville Fire Department while a portion on the west is protected by the Cazenovia Fire Department.

The Town Highway Department will receive approximately \$70,000 in State Chips money for road maintenance in 2006.

Currently, the Town is looking for a local citizen who is interested in collecting weather data.

The Planning Process

Michael Johnston, Madison County SWCD, met with the Nelson Town Council at their regular monthly meeting on Monday, March 8, 2004. The Town Council directed Mr.

Johnston to work with Highway Superintendent John Sevier to collect the information needed to prepare a section of the mitigation plan on the Town of Nelson. Mr. Johnston met with Highway Superintendent Sevier on August 4, 2004 at the Town Highway garage. Potential problem areas in the Town were discussed and then located on a map supplied by Mr. Johnston. Mr. Johnston then met with Highway Superintendent Sevier on April 20, 2005 to discuss possible mitigation projects. After writing a first draft, Johnston again met with Superintendent Sevier on 2/14/06.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of Nelson Probability Greater (G), Lesser (L) About Equal (E)	Town of Nelson Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	G	N
Transportation Accidents	Mod. High	285.2	L	Y
Winter Storms	Mod. High	272.2	E	Y
Fires	Mod. High	265.2	L	N
Ice Storms	Mod. Low	236.2	G	N
Flood	Mod. Low	222.8	L	Y
Utility Failure	Mod. Low	218.5	G	Y
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	L	N
Infestation	Mod. Low	173.8	L	N
Extreme Temperatures	Mod. Low	169.8	G	N
Epidemic	Mod. Low	164.2	L	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	E	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Nelson.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Nelson Program	State BOCA Codes	Subdivision Rules	Local Ordinance State Health Codes Fire Codes	To Stormwater basins for maintenance	SEQR for major subdivisions	Federal Flood Insurance Rules apply	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	Construction allowed up to a set % grade	Subdivision Rules	Penalties under zoning rules	State Health rules for septic systems	Yes	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g. floodproofing)
Nelson Program	On occasion under tax sale	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Nelson Program	Town Clerk distributes Health Dept. information	Education of Elected to NIMS Standards	State Rules Apply	No

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Nelson Program	Technical Assistance from County SWCD	NYS DEC 480A Program available	State Regs for greater than 1 acre development;	No	State Rules Apply	No	State & Federal Rules Apply	Oneida lake Program;

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Nelson Program	Emergency Generator hook-up for Town Highway Department	Fire Dept., Ambulance, State Police, County Sheriff	MSDS Sheets on File with Fire Department	911 Center Alert System:	County Health Department Rules for drinking water and minimum living standards	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Nelson Program	No	State Dam at Tuscarora Reservoir	No	Red Cross Shelters in Cazenovia and Morrisville

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Town of Nelson Master Plan.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Winter Storms

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

March 13 & 14, 1993 Blizzard – This event was declared disaster FEMA 1095 DR NY. This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,500 to 1,800 feet vs. 300 feet), Nelson probably sustained greater amounts of snowfall.

December 25 & 26, 2002 Record Snowfall - This was declared disaster FEMA 3173 EM NY in Madison County. The Town of Nelson reported 18 inches of snow fro this two day event. The Town of Nelson reported \$5,547.73 in expenses and received \$4,160.80 in federal assistance.

Locations Subject to Hazard

Irish Hill Road – This location suffers from drifting snow problems and a lack of areas where snow can be stored during storm events.

Eden Hollow Road – This location also suffers from drifting snow and a lack of storage areas. Snow often fills the road ditch and leads to a washout of the road shoulder.

Hall Road – This road has problems because of a lack of room to store snow. As snow melts, the large volume of runoff causes the shoulder to wash out.

Potential Losses

A six inch snowfall takes 3 hours of work for clearing by the Town Highway Department. This requires the use of 5 trucks manned by 6 crew members to clear the 53 miles of Town road. During a big winter, the Town can expect around 200 inches total snowfall. At \$60.00 per hour per truck and \$25.00 per hour per man, the cost of a 6” snowfall is \$1050.00.

Existing Mitigation Projects

Irish Hill Road – Shoulders were broadened on the east side of Irish Hill Road in 2005. So far, there have not been bad snow deposition problems on this road during the winter of 05/ 06.

Mitigation Measures

Living snow fences consisting of evergreen trees could be installed at distances of at least 100 feet upwind of problem stretches of road. Snow fences cause snow to deposit on the aft side of the plantings. With 1,320 trees per mile and a cost of \$2 per tree installed, living snow fences could be installed at a cost of \$2,640 per mile. This is a Medium Priority for the Town of Nelson.

Eden Hollow Road - Roadwork consisting of cutting back a road bank for 1,000 feet and broadening a road shoulder for 1,000 feet would help alleviate snow deposition problems in this stretch of road. At \$6.00 per foot, cost of this project would be \$6000.00. This project will be performed as part of the highway departments normal work season. This is a high priority for the Town of Nelson.

B. Flooding

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

April 2-4, 2005 Severe Storms and Flood Event - This was declared disaster FEMA 1589 DR NY. Flooding was caused by rain in conjunction with snowmelt.

May 2000 Flood Event – This spring runoff event was declared disaster FEMA 1335 DR NY. The Town of Nelson reported \$15,863.03 in damages and received \$12,012.78 in federal assistance for this event.

January '96 Flood – This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

Locations Subject to Hazard

North Lake Road Jones Road and Old State Road – During the January '96 event, flooding was caused by a lack of capacity for a large culvert under North Lake Road by the Tuscarora Inn.

Hall Road – ¼ mile section at top of hill had road shoulder washed out during January '96 flood. Top of hill is bowl-shaped and water is unable to outlet. Icing is a common problem.

Irish Hill Road – Development in this area has led to an increase in stormwater runoff to road ditches that outlet into an intermittent stream that flows towards Hardscrabble Road. This increase in runoff has led to bank erosion on this intermittent stream and deposition of sediment in a pond located just south of Hardscrabble Road.

Lyons Road – This location was inundated with water during the January '96 flood. This road is surrounded by swamp land on both sides.

Sanderson Road – This location reported road ditch damage following the Spring 2000 flood. Additional damage reported after the April 2005 flood event.

Flooding Associated with Beaver Activities

Francis Road – A 45 foot culvert pipe at this location overflowed in July, 2004.

Willowvale Road – Grates placed across the culvert inlet prevent the culvert from being plugged. Regular cleaning of these grates maintains water flow through the culvert.

Old State Road

Sanderson and Eden Hollow Roads

Torpy Road

Hall Road – This location has a history of beaver activity but none are present at this time.

Tuscarora Road

Nelson Road

Potential and/ or Historical Losses

North Lake Road – During the January 96 flood, water ran through the restaurant, Rosie's Tuscarora Inn, and washed out the parking lot. It is estimated that there was \$60,000 in damage.

Jones Road and old State Road – For the April 2005 flood, 80 feet of road shoulder was washed out and a 24 inch x 40 foot culvert required replacement. Total damage was listed as \$3,300.80. a 24 inch x 40 foot culvert required replacement. Total damage was listed as \$3,300.80.

Old State Road – For the April 2005 flood, 300 feet of road shoulder and one driveway culvert was damaged by erosion. Total damage was \$1,641.65.

Hall Road - More research is needed to assess losses.

Irish Hill Road - For the April 2005 flood, 800 feet of road shoulder and 500 feet of ditch was damaged by erosion.

Lyons Road – During floods, not much physical damage occurs at this location because slow moving water does not wash out the road or shoulder. Losses for this location would be associated with the loss of use of the road for 2 days during a major flood event.

Sunrise Boulevard - For the April 2005 flood, 180 feet of road shoulder and ditch was damaged by erosion.

Davis Hill Road - For the April 2005 flood, 650 feet of road shoulder was damaged by erosion.

Eden Hollow Road - For the April 2005 flood, 170 feet of road shoulder was damaged by erosion.

Stone Bridge Road - For the April 2005 flood, 120 feet of road shoulder was damaged by erosion.

Sanderson Road - For the April 2005 flood, 700 feet of road shoulder and 1100 feet of road surface was damaged by erosion. Total damage was \$21,641.71.

Green Road - For the April 2005 flood, 150 feet of road shoulder and two 15 inch x 40 foot culverts were damaged by erosion. Culverts were upgraded to 18 inch diameter. Total damage was \$3,920.

Westcott Road - For the April 2005 flood, a 12 inch x 40 foot culvert was damaged by erosion. This culvert was upgraded to a 15 inch diameter culvert. Total loss was \$1,373.24.

Flooding Associated with Beaver Activities

Eight locations were cited by Highway Superintendent Sevier as having problems with beaver activity. Generally the greatest damage would be the washout of the road suffered during a peak runoff event or after the collapse of a beaver dam. From the County wide flooding section losses at a similar site were:

Repair of damages involves 1 day of work by a County Highway crew.	\$1,000
Materials: 16 ton #5 rock @ \$9/ ton =	\$144
24 yards of gravel @ \$9/ yard =	\$216
Total =	\$1,360

Existing Mitigation Projects

North Lake Road – Following the January '96 flood, a pipe culvert at this location was increased in size. No flooding has been observed at this location since then.

Irish Hill Road – Road ditch water has now been diverted to a detention pond on the east side of the road. No new problems have been observed.

Mitigation Measures

Jones Road and Old State Road – An existing culvert pipe at this location needs replacement. Existing culvert is reportedly 45 inch diameter at each end with a concrete pipe arch under the center of the road. Culvert needs to be upgraded to a 60 inch x 50 foot corrugated plastic pipe. 500 feet of road shoulder needs to be armored to prevent scouring at a cost of \$15 per lineal foot. Total cost of improvements would be \$8500.00. This is a medium priority for the town until money becomes available.

Hall Road – In order to solve shoulder washout and icing problems at this location, the Highway Department has proposed installing 1,320 feet of 18 inch pipe and 2 catch basins. 18 inch smooth bore plastic pipe currently costs \$5.22 per foot; catch basins are estimated as costing \$400 each; ditching would cost \$1 per foot. Total cost for this project would be \$9,010. This is a medium priority for the town until money becomes available.

Lyon Road – Solving the problem in this area would require increasing the size of the bridge at this location and raising the elevation of the road. Because no physical damage is occurring at this location, this fix can wait until the bridge reaches the end of its usefulness. Until then, the road can be closed during flood events. Road improvements at Lyons Road are a low priority for the town.

Flooding Associated with Beaver Activities

Two options are available for the control of beaver problems:

- Beavers can be removed through the use of trapping. A NYS DEC permit is required. The permit is issued to the landowner where the damage is occurring but permission is still needed. If it is necessary to go onto another landowners property for the removal of nuisance beavers, permission is needed from the other landowner.
- Water Level Control Devices – A variety of water level control devices are available. Costs for these devices will need to be assessed on site by site basis.

Beaver Control is a Medium Priority for the Town at this time.

C. Power Outages

Background

Part of the Town of Nelson is covered by the Oneida-Madison Electric and part is covered by National Grid Company. Coverage is in a checkerboard pattern.

Mitigation Goals

Minimize damage to private and public properties, maintain critical services, and provide services for vulnerable populations.

Historical Events

April 2003 Ice Storm – This was presidential disaster FEMA 1467 DR. The Town Highway Department had to remove and dispose of 250 cubic yards of woody debris from Town roads. Eligible costs were \$16,898.51. At 75% cost share, the Town received \$12,796.93 from the federal government. This was an ice storm that struck the higher elevations of Madison County worse than the lower elevations of the County.

August 16, 2003 Northeast Power Failure – This was an event that affected the entire Northeastern United States.

Locations Subject to Hazard

Some of the power lines owned by Oneida-Madison Electric go across lots instead of following the roads. These lines tend to be more prone to power outages from falling tree limbs.

Potential Losses

A long term power outage during summer will result in \$250.00 loss per household.

A long term power outage at the same time as extreme cold could lead to \$10,000.00 damage for 30% of the houses in the town.

Mitigation Measures

Town Hall – It is estimated that it would cost approximately \$1,000 to equip the Town Hall with a manual switch for an outside generator. This is a medium priority for the town.

D. Transportation Accidents

Mitigation Goals Reduce the number of injuries and fatalities as well as the number of emergency calls caused by automobile accidents in the Town of Nelson.

Historical Events

In 2002, a 2 car motor vehicle accident with one fatality occurred at the intersection of Pleasant Valley Road and Route 20.

Locations Subject to Hazard

Nelson Road and U.S. Route 20

Local residents have requested a flashing warning light at this location where a county road intersects a U.S. Highway. Both roads have a reduced speed limit at this location.

Roberts/ Bliss Road and U.S. Route 20

Roberts Road is north of Route 20 and Bliss Road is south at this intersection. This location has short sight distance for cars entering Route 20. Roberts Road is too narrow for snowplows getting onto Route 20.

Stone Bridge Road and Argiss Road

There is limited sight distance at this location.

Potential Losses

Three locations were cited by Highway Superintendent Sevier as having problems associated with traffic and road hazards. Losses for a traffic accident were cited in the county wide transportation accident as follows:

Transportation accidents with fatalities will usually involve 7 police personnel for an average of 7 hours each at the scene. A computerized survey is conducted of the accident scene. After the accident, accident reconstruction and investigation involves two police personnel an average of 40 hours each. Total costs are accrued from 129 hours of police work at an average of \$30 per hour and equal \$3870.

Mitigation Measures

Route 20 Improvements- Improvements involving Route 20 would require studies by NYS DOT. The town supervisor should submit an official request to the DOT Regional Engineer in Utica. This is a medium priority.

Stone Bridge and Argiss Road- Requires further study.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Living Snow Fence Installation	-1	+1	-1	+1	+1	+1	+1	3
Eden Hollow Road Bank Improvement	+1	+1	+1	+1	+1	+1	+1	7
Jones Rd./ Old State Rd. Culvert Upgrade	+1	+1	-1	+1	+1	+1	+1	5
Hall Road Drainage System	+1	+1	-1	+1	+1	+1	+1	5
Lyon Road Bridge Replacement & Road Upgrade	+1	+1	-1	-1	+1	-1	+1	1
Beaver Control Program	N	+1	-1	+1	+1	+1	+1	4
Town Hall Outside Generator Hook-up	+1	+1	-1	+1	+1	+1	+1	5
Route 20/ Bliss Road Improvement Study	+1	N	+1	+1	-1	+1	+1	4

Plan Monitoring and Update

County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Nelson Highway Superintendent and submit a copy of the evaluation form listed in appendix EF. The Town Highway Superintendent will complete and return this form within 10 business days.

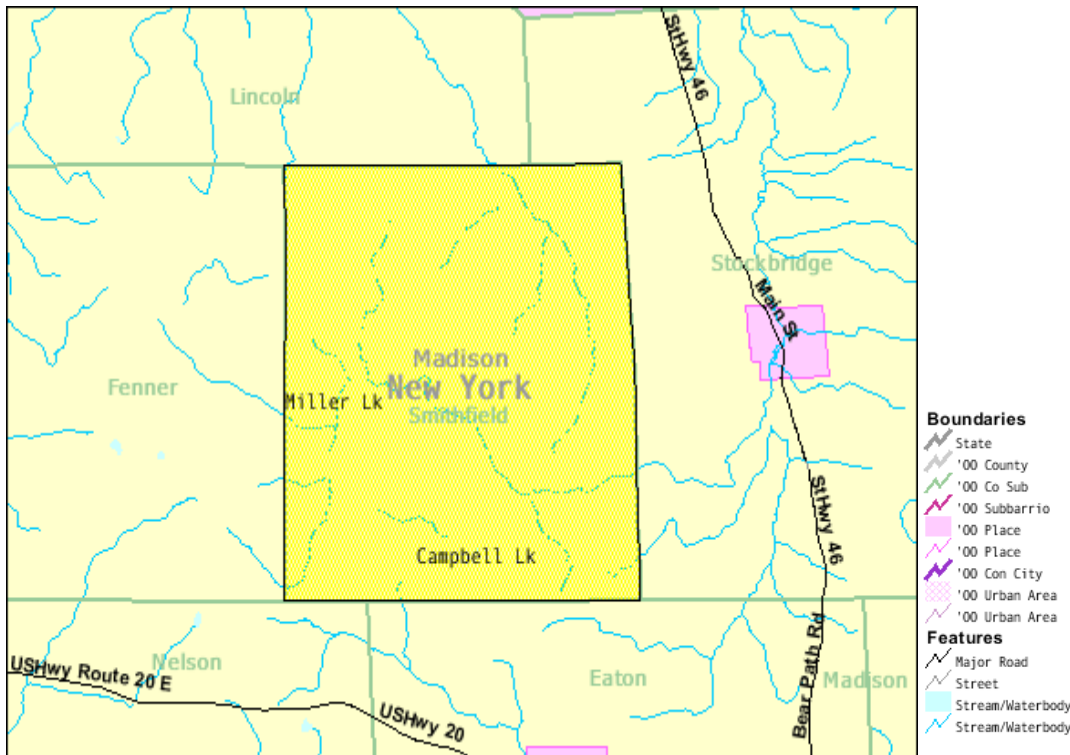
During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Town of Nelson and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Nelson Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Nelson subsection based on the reports supplied by the Town Highway Superintendent and other municipalities as well as input from the public. This updated plan will be submitted to the Town Board for approval before being forwarded to FEMA.

Town of Smithfield



Town Supervisor: Richard Bargabos, 315-684-7485

Highway Superintendent: Gary Tucker

Town Clerk: Mary Benedict, 315-684-9293

Background

The Town of Smithfield is a community of 1,205 residents located in the central portion of the county. 68.8% of the residents are between the ages of 18 and 65, while only 7.9% are over the age of 65 (residents). The town currently encompasses approximately 24.25 square miles. The town has an equalized assessed value of approximately \$58 million dollars, which is distributed across a variety of property classes. There are 153 single family occupied homes within the town.

Land Use and Development Trends

Town is seeing development on an individual lot by lot basis. There have been no major subdivisions so far. The greatest development occurs when a 200 plus acre farm is purchased and lots with frontage on existing roads are sold. Development has occurred on Old County Road, Fearon Road, Roher Road, Goff Road, and Glass Factory Road. Windmill construction for energy generation is being considered for land along Peterboro Road in the northeast corner of the Township.

Assets

Town Hall: Located at 5255 Pleasant Valley Road. The Town Hall has kitchen facilities and can accommodate up to ____ individuals per meal. The Town Hall does not have a generator and could not be used in the case of a power failure.

Town Highway Department: The Smithfield Highway Department maintains 27 miles of roadway. The Highway Department garage is located southeast of the intersection of Peterboro and Swamp Roads in the Hamlet of Peterboro. The Highway Department has enough generator capacity to supply the heating system and power the fuel pumps. The Town Highway Department supplies fuel to the Smithfield Fire Department through a cooperative agreement.

Highway Equipment

- 1 Large Front-end Loader
- 1 Wood Chipper
- 3 Ten Wheel Dump Trucks
- 1 Six Wheel Dump Truck
- 1 Ten Wheel All Wheel Drive Plow
- 1 4 x 4 Plow
- 1 Gradall
- 1 Tractor with Broom

Local Organization and Regulations

The Town Board meets on the 2nd Monday of each month at the Town Hall at 7 PM.

The Town Planning Board meets on the third Monday of each month at the Town Hall at 7 PM.

The Zoning Board of Appeals meets as needed.

The Planning Process

Michael Johnston, Madison County SWCD, met with Smithfield Town Council at their regular monthly meeting on Monday March 8, 2004. The Town Council directed Mr. Johnston to meet with Highway Superintendent Gary Tucker and Fire Chief Chet Reeves to collect the information needed to prepare a section of the mitigation plan the Town of Smithfield. Mr. Johnston met with Highway Superintendent Tucker on September 9, 2004 at the Town Highway garage. Potential problem areas for the Town of Smithfield were discussed and then located on a map supplied by Mr. Johnston. Mr. Johnston met with Richard Davis, Chairperson for the Town Planning Board, on April 4, 2006 and reviewed a draft of the Smithfield Mitigation Plan.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

All of the Towns surrounding the Town of Smithfield are participating in the hazard mitigation process for the Madison County Hazard Mitigation Plan.

Smithfield Fire Department

Existing Plans, Studies, Reports, and Technical Information

Smithfield Planning Board Rules

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

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Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		L	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Smithfield.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Smithfield Program	State BOCA Codes	No	State Health Codes Fire Codes	No	SEQR for major subdivisions	Federal flood insurance rules apply	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	No	No	Yes	State Regs Apply	No

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g. floodproofing)
Smithfield Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Smithfield Program	No	Education of Elected to NIMS Standards	State Rules Apply	No

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Smithfield Program	Assistance available through County SWCD	No	State Regs for greater than 1 acre development	No	State Rules Apply	No	State & Federal Rules Apply	Oneida Lake Program

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Smithfield Program	No	Smithfield Fire Department SEVAC Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System	No	Yes

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Smithfield Program	No	No	No	Red Cross Shelters

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Town of Smithfield Planning Board Rules.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. FLOODING

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

January '96 Flood – This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

May 2000 Flood Event – This spring runoff event was declared disaster FEMA 1335 DR NY.

April 2-4, 2005 Severe Storms and Flood Event.- This was declared disaster FEMA 1589 DR NY

Locations Subject to Hazard

North Butler Road – A 0.6 mile section of road is prone to road shoulder washout.

Northrup Road - Culvert capacity is good but both roads can suffer road shoulder washouts.

East Mile Strip Road – This road also suffers washouts of its road shoulders.

Old County Road – During large storm events, the road surface is submerged under water.

South Butler Road – Because of increased flows from development, the road ditch on the west side of the road will erode towards the road base.

Fearon Road – Road culvert southeast of North Butler Road intersection lacks adequate capacity. Road washout is a possibility

Mitigation Measures

North Butler, Northrup, East Mile Strip, South Butler Road- Armoring these ditches with rip rap stone could be accomplished at a cost of \$20.00 per lineal foot. If the average problem area is 0.3 miles the cost per segment is \$31,680.00. The town highway department would contribute machinery time. Money is not yet available. This is a Medium Priority for the town until money becomes available.

B. Winter Storms

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

December 25 & 26, 2002 Snowstorm – This was presidential emergency FEMA 3173 EM-NY. Large amounts of snow were received during a 48 hour period in parts of Madison County. The Town of Smithfield reported 20 inches of snow during this event.

March 1993 Blizzard – This storm dumped 43 inches of snow in Syracuse during a 36 hour period. Because of its higher elevation (1,300 feet vs. 300 feet), Smithfield sustained greater amounts of snowfall.

Blizzard of '66 – This was a three day storm during the month of January that was characterized by steady snow and continuous winds.

Locations Subject to Hazard

Some roads are more susceptible to closures from large snowstorms, including:

Mile Strip Road – 1.1 mile section by top of hill due to drifting.

Intersection of Goff and Northrup Road – 0.6 mile section of Goff Road and 0.9 mile section of Northrup road due to drifting snow.

Johnson Road – 0.7 mile section north of the intersection with Fearon Road due to drifting snow.

Goff Road – 0.4 mile section west of intersection with Swamp Road and 0.5 mile section east of intersection with Old County Road due to drifting.

Glass Factory Road – 1.7 mile section west of town line.

Old County Road – 0.3 mile section south of intersection with Mile Strip Road.

Old County Road – 0.7 mile section north of intersection with Oxbow Road.

Old County Road – 0.4 mile section between Goff road and town Line to the south.

Howard Road – 0.3 mile length of road.

Swamp School Road – 1.1 mile length of road.

Brooks Road – 0.7 mile section between Pleasant Valley Road and Town Line.

Williams Road – (County Owned Road) 0.7 mile section south of intersection with Peterboro Road.

South Butler Road – 0.3 mile section north of intersection with Fearon Road.

South Butler Road – 0.4 mile section at intersection with Williams Road.

South Butler Road – 0.5 mile section south of intersection with Peterboro Road.

North Butler Road – 1.4 mile section south of intersection with Creek Road.

Future Development in Hazard Area

Development has occurred in the Goff Road and the Galss Factory Road areas.

Potential Losses

At \$23.00 per mile for plowing, a 6" storm would cost the Town \$621.00 to clear.

Mitigation Measures

Living snow fences consisting of evergreen trees could be installed at distances of at least 100 feet upwind of problem stretches of road. Snow fences cause snow to deposit on the aft side of the plantings. With 1,320 trees per mile and a cost of \$2 per tree installed, living snow fences could be installed at a cost of \$2,640 per mile. With 9 miles of problem roadway, cost of planting snow fences would be \$23,760. At that rate, it would take 7 ½ average snow seasons for living snow fences to pay for themselves. This payoff would only begin at least 10 years after planting and growth of the trees. This project could begin with prioritization of problem road segments, identification of landowners, and determination of willingness to participate. This is a medium priority for the town. It would be done by the town highway department.

Guide to Winter Driving – A brochure similar to one published by Livingston County that advises drivers how to drive safely in winter conditions could be published. County Planning would be the lead agency on this publication. Cost would be \$1,000 for the first 1,000 copies published. This is a Medium Priority for Madison County.

Vulnerable Populations – A group called the Madison County Citizen Corps Council is currently working on identifying vulnerable populations and formulating a plan to assist these people in case of an emergency. Membership of this Council includes Retired Senior Volunteer Program (RSVP), Madison County Office for the Aging, County Health Department, County Office of Disaster Preparedness, the Alzheimer's Association, The Red Cross, and the Salvation Army. The Council is having difficulty assembling a good list (database) of people who need this assistance because of confidentiality rules that apply to the agencies that have lists of clients. The current list has less than 100 names on it. The Council now plans to send out questionnaires with agency mailings that are already going out. This system will depend upon vulnerable populations identifying themselves. RSVP has already delivered Disaster Preparedness Kits to the already identified vulnerable population and will continue this activity. In the event of a long-term power failure or other disaster, the County Office of Emergency Preparedness will contact local fire departments and request that they check on at-risk individuals. This is a High Priority for Madison County.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Armoring of Problem Road Ditches	+1	+1	-1	+1	+1	+1	+1	5
Living Snow Fence Installation	+1	+1	-1	+1	+1	+1	+1	5
Guide to Winter Driving	+1	+1	-1	+1	+1	+1	+1	5
Vulnerable Population Identification	+1	+1	+1	+1	+1	+1	+1	7

Plan Monitoring and Update

County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Smithfield Highway Superintendent and submit a copy of the evaluation form listed in appendix EF. The Town Highway Superintendent will complete and return this form within 10 business days.

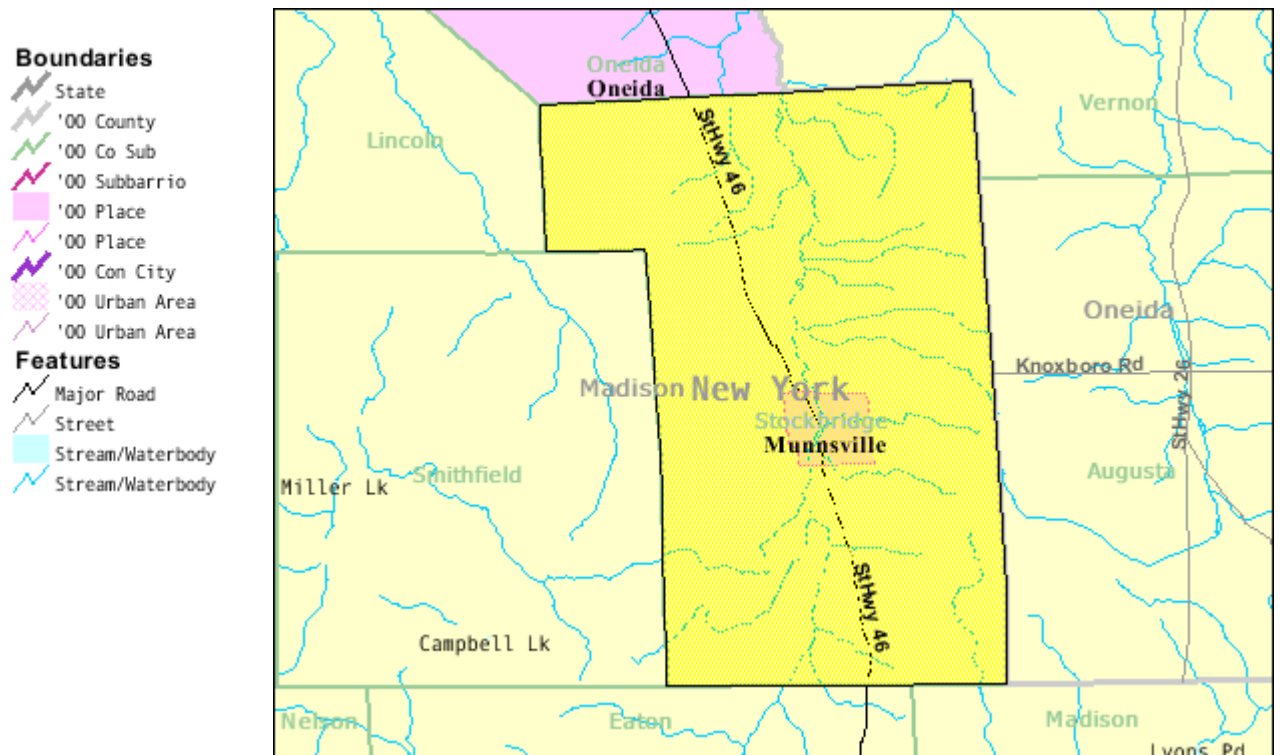
During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Town of Smithfield and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Smithfield Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Smithfield subsection based on the reports supplied by the Town Highway Superintendent and other municipalities as well as input from the public. This updated plan will be submitted to the Town Board for approval before being forwarded to FEMA.

Town of Stockbridge



Supervisor: Alexander Stepanski, 495-6752

Highway Superintendant: Peter Kiehn, 495-2405

Code Enforcement Officer: David Fort, 495-5451

Planning Board Chair: Larry Fisher, 495-2451

Codes Officer: Dave Forte

Stockbridge Central School Superintendent: Dr. Randy Richards

Stockbridge Central School Business Administrator: Beth Lamb

Background

The Town of Stockbridge is a community of 2080 residents located just south of the City of Oneida. Seventy one percent of the population in the town is between the ages of 18 and 65, with eleven percent over the age of 65 (224 residents). The town encompasses approximately 27 square miles. The Village of Munnsville is located within the town limits and will be addressed in its own section of this mitigation plan. The town has an equalized assessed value of approximately 67 million dollars distributed across a variety of property classes. There are 802 housing units in the town of which 332 are considered single family owner occupied homes. Commercial development is sporadic at this time. The conversion of agricultural lands to residential lands is occurring as a result of the reduction of active agricultural enterprises in the town.

Land Use and Development Trends

The Town is experiencing scattered individual development and steady growth but no large subdivisions outside of Oneida Indian Nation property.

In the northern part of the Town, the Oneida Indian Nation owns large pieces of land. The Seven Pines subdivision was built there in the early 1990's. The Indian Nation is seeking to have City of Oneida water lines extended down West Road. The Indian Nation is planning to build another three houses on Middle Road.

Ferris Industries, a manufacturer of large lawnmowers, has moved into the old school on Route 46.

A new Stockbridge Central School that includes the Stockbridge Library has been built west of the old school site.

Planning is progressing on two wind power projects that are partly in the Town of Stockbridge. 22 new wind turbines will be built in Stockbridge as part of a 25 turbine project that also includes the Town of Smithfield. 5 new wind turbines will be built in Stockbridge as part of a project that includes the Town of Eaton

Assets

The town offices are located on Route 46 in the Village of Munnsville.

The town highway barn is located at the same location as the town offices on Route 46. The highway barn has an outside hook-up for a generator and also owns a portable generator.

The Munnsville Fire Department is located on Route 46 in the Village of Munnsville.

The Stockbridge Valley School located in Munnsville is a Red Cross Shelter but does not have backup power generating capabilities.

Local Organization and Regulations

The Town Board meets on the first Monday of each month.

There is a planning board in place to review new development and proposed subdivisions.

The Zoning Board of Appeals meets as needed.

There are zoning ordinances in effect in the town.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

A copy of the Town of Stockbridge Hazard Mitigation plan has been sent to:

Munnsville Fire Department

Stockbridge Valley Central School

Existing Plans, Studies, Reports, and Technical Information

Land Use Law of the Town of Stockbridge was referenced for existing mitigation programs in the Town.

Environmental Studies completed for two new wind power projects:

Airtricity on Crow Hill Road

West Hill Wind Development on Peterboro Road

The Planning Process

The Town Board held a public meeting on 3/2/04 at which the planning process was discussed. A discussion with regards to the requirements of the plan and what potential benefits the town might see from being included in the plan ensued. The board determined it would be beneficial and determined with whom to work in developing the plan. A meeting was held on 9/29/04 with the highway superintendent to discuss flooding issues in the town. On 12/6/04 a public meeting of the town board took place were discussion on a potential project took place.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of Stockbridge Probability Greater (G), Lesser (L) About Equal (E)	Town of Stockbridge Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	N
Transportation Accidents	Mod. High	285.2	L	N
Winter Storms	Mod. High	272.2	G	Y
Fires	Mod. High	265.2	L	N
Ice Storms	Mod. Low	236.2	E	N
Flood	Mod. Low	222.8	E	Y
Utility Failure	Mod. Low	218.5	E	Y
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	G	Y
Infestation	Mod. Low	173.8	G	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	L	N
Drought	Mod. Low	164.2	E	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Stockbridge.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Stockbridge Program	State BOCA Codes	Minimum lot size	State Health Codes Fire Codes	Water Supply	SEQR for major subdivisions	Federal flood insurance rules apply	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	Yes	State Health Dept. Rules for septic	Planning Board	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Stockbridge Program	No	No	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Stockbridge Program	No	Education of Elected to NIMS Standards	State Rules Apply	Fire Safety Education

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Stockbridge Program	Assistance available through County SWCD	NYS DEC 480A program available	State Regs for greater than 1 acre development	No	State Rules Apply	No	State & Federal Rules Apply	Town Aquifer Protection Zone, Oneida Lake Program

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Stockbridge Program	No	Fire Police Ambulance	MSDS Sheets on File with Fire Department	911 Center Alert System	County Health Dept, rules for Minimum Living Standards and Drinking Water	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Stockbridge Program	No	No	No	Red Cross Shelter at Stockbridge Valley Central School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the Land Use Law of the Town of Stockbridge

.Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Flooding

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

January '96 Flood – This was a region wide event in which a warm rain fall melted an accumulated snowpack. It was believed to be comparable to the 50 year frequency storm of 4.9 inches in a 24 hour period.

May 2000 Flood Event – This spring runoff event was declared disaster FEMA 1335 DR NY.

April 2-4, 2005 Severe Storms and Flood Event.- This was declared disaster FEMA 1589 DR NY

August 2005 – A sudden summer downpour deposited large amounts of gravel on Bishopp Road

Locations Subject to Hazard

Haslauer Road – Flooding occurs here to a trailer home located on the west side of Oneida Creek.

Sullivan Road – Corner of Tiller – Repeated Flooding

Stockbridge Falls Road – Lady with Art Studio “Wilson Residence”

State Route 46 – From Morris Road south to Town of Eaton Line (This Section of Highway is known as the “Bear Path”), Sections of this Highway suffers shoulder washouts during storm events.

East Hill Road – Driveways have suffered washouts during some summer storms.

Future Development in Hazard Area

Valley Mills Road - A subdivision has been proposed along Valley Mills Road. Part of this subdivision would be in the 100 year flood plain. The proposal is under current consideration by the Town Planning Board.

Potential Losses

Haslauer Road – Two houses on the south side of Haslauer Road and west of Oneida Creek have suffered basement flooding during summer thunderstorms. Damage is estimated at \$200 per house for a total of \$4,000.

East Hill Road – Summer downpours have led to driveway washouts along East Hill Road.

Mitigation Measures

Oneida Creek Debris Removal – Trees that have been washed into Oneida Creek need to be removed above bridges so that they do not become lodged under the bridges and cause road flooding. This could be done under the County-wide stream clearing project proposed as part of the County-wide mitigation plan. This is a high priority for Madison County. The Town of Stockbridge considers it a high priority to participate. Cost to the town would involve the use of dump trucks and disposal of debris. This would be covered under the existing highway department budget. This is a High Priority for the Town.

B. Ice Jams**Historical Events**

Winter 2003 – Significant flooding occurred along Stockbridge Falls Road after a tree fell into Oneida Creek caused an ice jam to form.

Locations Subject to Hazard

Wilson Residence, Stockbridge Falls Road – This location has suffered flooding on a number of occasions because of the formation of ice jams.

Future Development in Hazard Area

None

Potential Losses

It is estimated that the damage at the Wilson Residence is 2,000.00 per event.

Mitigation Measures

Channel Maintenance – Removal of tree debris from Oneida Creek where repetitive ice jamming has occurred would reduce the incidence of ice jams. This could be part of the County-wide stream maintenance program being proposed in the full County Mitigation plan. This is a High Priority for the town.

Wilson Residence- a levee could be constructed along Oneida Creek to protect this residence from rising water. This would be the responsibility of the landowner and would require a permit from the Town of Stockbridge. This is a low priority for the town.

C. Power Outages

Historical Events

Labor Day Storm, September 1998 – Power was out in the Munnsville area for seven days following this intense thunderstorm accompanied by high winds.

April 2003 Ice Storm – This was an ice storm that struck the higher elevations of Madison County worse than the lower elevations of the County.

August 16, 2003 Northeast Power Failure – This was an event that affected the entire Northeastern United States.

Locations Subject to Hazard

Main Street, Munnsville – Power was out here for seven days in September 1998 after the Labor Day storm.

West Hill – Some sections on the west side are more prone to power outages because power lines pass through wooded areas. 6 houses along Stockbridge Falls Road are most prone to power outages.

Future Development in Hazard Area

Some individual house development is occurring in the West Hill area.

Potential and Historical Losses Short term power outages – Most short-term power outages are more of an inconvenience than a financial loss. Most power outages do not lead to insurance claims. Labor Day Storm – After the Labor Day Storm around half of the houses suffered approximately \$250 damage to spoiled food.

Existing Mitigation Measures

Tree Maintenance Program – Tree maintenance along the power lines is the responsibility of the power company. Maintenance has been better during the last few years.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Debris Removal in Creeks above Bridges	+1	+1	+1	+1	+1	+1	+1	7
Debris Removal in Repetitive Ice Jam Areas of Creeks	+1	+1	+1	+1	+1	+1	+1	7

Plan Monitoring and Update

County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Stockbridge Highway Superintendent and submit a copy of the evaluation form listed in appendix EF. The Town Highway Superintendent will complete and return this form within 10 business days.

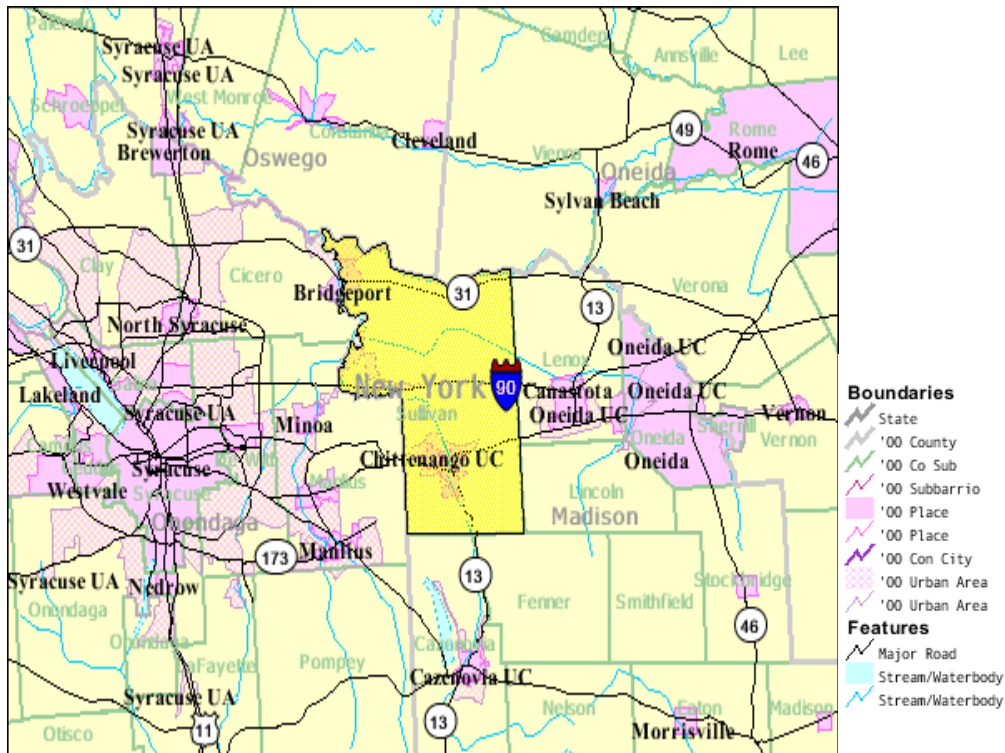
During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
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- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Town of Stockbridge and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Stockbridge Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Stockbridge subsection based on the reports supplied by the Town Highway Superintendent and other municipalities as well as input from the public. This updated plan will be submitted to the Town Board for approval before being forwarded to FEMA.

TOWN OF SULLIVAN



Supervisor: John Becker 315-687-9190

Highway Superintendent: Elwin Centner, Jr., 315-687-6031

Fire Administrative Officer: William Prindle, 315-633-9333

Chittenango Central School Superintendent: Thomas Marjesky 315-687-2669

Attorney for the Town: Don Collela, 315-474-7541

Planning Board Chair: Frank Park, 315-687-6132

Background

According to the Year 2000 census, the Town of Sullivan is a community of 14,991 residents located just south of Oneida Lake and just east of the Madison County border with Onondaga County. 72.9% of the residents are between the ages of 18 and 65, while only 11.1% are over the age of 65 (residents). There are 6,209 housing units in the town of which 3,464 are considered single-family owner occupied homes. The village in Chittenango is located within the town limits and will be addressed in its own section of the mitigation plan. The town of Chittenango has an equalized assessed value of 540,358,433. Outside of the Village of Chittenango, the town has an equalized assessed value of 392,950,604.

Land Use and Development Trends

The Town is seeing a decline in agriculture and an increase in residential construction. As of May 2006, 300 new housing units were planned and construction was active on 90

units. 2 subdivisions were in progress including a 90 unit project by Oot Construction. In 2004, there were 50 housing starts. Though residential use is increasing in the Town, the number of students in the School District is actually decreasing which would infer that older people without young children are moving into the Town.

Assets

Town Hall: located at 7507 Lakeport Road. A New York State Police substation is located at the north end of this building. An automatic back-up generator was recently installed.

North Chittenango Fire Department: located at 417 Genessee Street. An automatic back-up generator was recently installed.

Bridgeport Fire Company: located on Route 31 east of Bridgeport Kirkville Road. The fire house has an automatic back-up generator in case of a power failure.

Town Highway Garage: located at 700 Bolivar Road. An automatic back-up generator is currently being installed at this building.

The Town Highway Department administers 100 miles of Town Road. The Town owns 9 dump trucks equipped with snowplows.

Chittenango Jr./ Sr. High School 150 East Genessee St., Chittenango 13037-1789 – This is the designated Red Cross shelter for the community. The Red Cross lists it as having capacity for 470 and states that it does not have a back-up generator or an external hook-up for a generator.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

The following organizations and businesses have been contacted for input:

Chittenango School District

Gray Syracuse

Manth Brownell

Central New York Coach

Cowaselon Creek Watershed Association

Chittenango Landing Canal Boat Museum

Existing Plans, Studies, Reports, and Technical Information

Town of Sullivan Comprehensive Plan

Municipal Separate Stormwater Sewer System Plan for the Town of Sullivan

Studies and Reports for the West Sullivan and East Sullivan Sewer Districts

Flood Insurance Study Town of Sullivan, New York Madison County, FEMA published October 3, 1984

Local Organization and Regulations:

The Town Board meets on the first Wednesday of each month at 7 PM.

The Town Planning Board meets on the second Monday of each month at 7:30 PM.

The Zoning Board of Appeals meets on the second Thursday of each month at 7:30 PM.

Chittenango Creek Logjam Clearing - The Towns of Sullivan, Cicero (Onondaga County), and Manlius (Onondaga County) have been participating in a cooperative agreement with Madison County Soil and Water Conservation District for the removal of logjams from Chittenango Creek between the New York State Thruway and Bridgeport. The purpose of this program is to increase the water carrying capacity of the creek and thereby reduce flooding. The Towns contribute a total of \$10,000 per year while the District organizes the program and hires contractors. Assemblyman Bill Magee's office contributed an additional \$10,000 at the start of the program in 1997. When the program began, there were 25 logjams in this section of the creek; 4 logjams now remain. It is estimated that, on average, one new logjam forms each year in this section of creek. The current agreement concludes in 2006.

Tree Maintenance is performed by the Town Highway Department. Highway Superintendent Elwin Centner serves as inspector and determines which trees require pruning or removal.

The Planning Process

Michael Johnston, Madison County SWCD, met with the Sullivan Town Council at their regular monthly meeting on February 4, 2004. The Town Council requested a further clarification of FEMA programs. Steve Lorriane and Mr. Johnston, Madison County SWCD, and Ron Raymond and Kerry Maloney, N.Y.S. Emergency Management Office attended the next regular monthly meeting of the Town Board on Wednesday, March 3. Ms. Maloney gave a powerpoint presentation on FEMA mitigation programs; SEMO and SWCD personnel fielded questions from the Town Board. The Board then approved preparing a section of the mitigation plan on the Town of Sullivan. Don Collella, Town Attorney, was directed to organize a committee Town Officials to work with Mr. Johnston on collecting the needed information. On April 13, 2004, Mr. Johnston met with Attorney Collella, Supervisor John Gladney, Codes Enforcement Officer Phil Costanza, and Highway Superintendent Sonny Centner at the Town Offices. The group reviewed potential problems and located them on a map supplied by Mr. Johnston. Mr. Johnston subsequently met with new Supervisor John Becker and Planning Board Frank Park to review the plan and include additional concerns.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality.

Hazard	Madison Co. Class.	Madison Co. Ranking	Town Of Sullivan Probability Greater (G), Lesser (L) About Equal (E)	Town of Sullivan Issues Beyond County-wide Plan Yes (y), No (n)
Severe Storms	Mod. High	312.2	E	Y
Transportation Accidents	Mod. High	285.2	E	Y
Winter Storms	Mod. High	272.2	E	N
Fires	Mod. High	265.2	E	N
Ice Storms	Mod. Low	236.2	E	Y
Flood	Mod. Low	222.8	G	N
Utility Failure	Mod. Low	218.5	E	N
Tornado	Mod. Low	202.5	E	N
Ice Jam	Mod. Low	180.5	E	N
Infestation	Mod. Low	173.8	E	N
Extreme Temperatures	Mod. Low	169.8	E	N
Epidemic	Mod. Low	164.2	E	N
Drought	Mod. Low	164.2	L	N
Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	G	N
Dam Failure	Low	159.2	L	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	E	N
Landslide	Not Rated		E	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the Town of Sullivan.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Sullivan Program	State BOCA Codes	No	State Health Codes Fire Codes	No	SEQR for major subdivisions	Federal flood insurance rules apply	No

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	Under Subdivision Rules	No	State Health Department Rules for Septic Systems	With Palnning Board Approval	State Regs Apply	Planning Board Rules

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Sullivan Program	Condemnation in Rare Cases	No	Yes Under development Regulations	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Sullivan Program	No	Education of Elected Officials to NIMS Standards	State Rules Apply	No

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Sullivan Program	Assistance available through County SWCD	Section 319 of Forest Tax Law available through NYS DEC	State Regs for greater than 1 acre development	Logjam Clearing Program for Chittenango Creek	State Rules Apply	Town Highway Department	State & Federal Rules Apply	Oneida Lake Program

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Sullivan Program	No	Chittenango, North Chittenango, and Bridgeport Fire Departments; Rural Metro Ambulance; State Police, County Sheriff	MSDS Sheets on File with Fire Department	911 Center Alert System	No	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Sullivan Program	No	No	No	Red Cross Shelters

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the writing of the Town of Sullivan Disaster Plan.

All-Hazard Mitigation Actions

Disaster Plan – During interviews with Town Supervisor John Becker and Planning Board Chair Frank Park, the need for a Town Disaster Plan was expressed. Though a Comprehensive Plan was written for the Town and approved in January 2006, this plan does not include a section on how the Town would react in the face of a disaster. The proposed Disaster Plan could be written as a supplement to the Comprehensive Plan. Work would be done by an outside consultant. The first step would be for the Town Planning Board to draw up specifications for a disaster plan and request bids from private consultants. This is a High Priority for the Town.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. FLOODING

Background

Because of its low lying topography, most of the hazards cited by local officials were associated with dangers from flooding. A large portion of the Town lies within the 100 year or 500 year floodplain.

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

April 29, 1840 - Village of Chittenango completely inundated. Dams and bridges destroyed. “Immense Damage”. (Madison County Times March 28, 1958)

March 16, 1865- This was a major flood. Twenty bridges were swept away between Cazenovia and Chittenango. Lowlands remained flooded for days afterward. (Cazenovia Republican March 22, 1865)

July 1897 - Farmers of Sullivan, Manlius, and Cicero were the greatest sufferers. Roads were made impassable, bridges wrecked in the Town of Manlius. Damage estimated in the hundreds of thousands of dollars. (Madison County Times July 30, 1897)

August, 1897 - a number of farmers banded together to sue the State of New York for \$5,690, claiming that damages were due to overflow from the Erie Canal.

December 14 & 15, 1901 - Water came through the Village of Chittenango at a depth of 2 to 3 foot and gave the flatlands north of the Village the appearance of a vast lake. (Madison County Times December 20, 1901)

Following this flood, 18 claims were filed against the State from the Towns of Manlius and Chittenango for flooding caused by overflow of the Erie Canal. (Madison County Times January 24, 1902)

July, 1905 - Fields of produce washed out, cellars filled with water. Damage to Village streets \$500. (Madison County Times July 7, 1905)

June 11, 1917 - Water 18 inches deep on School Street in Chittenango. Most cellars in village filled with water. (Madison County Times June 15, 1917)

March 17, 1936 - Local Roads in Bridgeport, Kirkville, Chittenango Station, and Lakeport were closed. Some farms submerged. Cellars flooded. (Madison County Times March 20, 1936)

February 28, 1945 - Local mail carrier reported that there was deep water over Kirkville Road. (Madison County Times March 28, 1958)

February 1951 - Basement flooding in Chittenango left approximately 50 homes without heat. (Madison County Times February 12, 1951)

March 16, 1971 - Water over roads of the Kirkville Bridgeport area. Black Creek, which enters Chittenango Creek about two and one half miles south of Bridgeport, was over its banks. (Madison County Times March 18, 1971)

June 23, 1972 - \$91,000 worth of damage done to the Village of Chittenango Sewage Treatment Plant.

April 14, 1974 - Flooding led to road closings and the flooding of many properties along Chittenango Creek. (Madison County Times April 11, 1974)

October 17, 1977 - This flood led to the evacuation of a nursing home in Chittenango and 10 to 15 families in the village. (Oneida Daily Dispatch October 18, 1977)

October 28, 1981 - Madison County in state of emergency. Routes 290, 173, and 5 were closed. (Syracuse Herald Journal October 29, 1981)

April, 1993 – Because of an increase in Oneida Lake elevation, flooding occurred to residences along Hitchcock Point Road.

January 19, 1996 - This was a large flood caused by a rain event coupled with melting snow. Damages were reported by the Madison County Highway Department, New York State Thruway Authority, Chittenango Volunteer Fire Department, and local farmers. Bridgeport-Kirkville Road was closed for a number of days because of water over the road. Residents along Marsh Mill

Locations Subject to Hazard

Chittenango Creek Outlet - There is a substantial number of houses located along Chittenango Creek near its confluence with Oneida Lake. These properties are located within the 100 year floodplain and are influenced by high lake levels, especially during spring runoff. Some houses are located within the actual floodway for Chittenango

Creek. Houses in this are not allowed to build fences or other structures that will obstruct the creek's flow.

McGraw Road - McGraw Road is located just north of the Village of Chittenango and is almost entirely within the 100 year floodplain. This road is closed during periods of peak runoff. No residences are affected. The road shoulder gets washed out in 3 locations during peak runoff events. The Town considers the present policy of road closure and maintenance to be satisfactory.

Marsh Mill Road - Marsh Mill Road is also almost entirely within the 100-year floodplain. There are many small parcels and a large amount of residential development on this road.

Fisher Bay, Woods Road, Damon Point Road, Tyler Road – All of these locations would benefit from the construction of sanitary sewers. Engineering studies on the cost of these sewers between Bridgeport and Lakeport and south along Bridgeport Kirkville Road have been conducted. Costs would be 15 million. This is a high priority for the Town of Sullivan.

Shackleton Point Road

Poor drainage in this area leads to flooding during peak runoff periods.

Bridgeport - State Highway 31 impedes the flow of water to the north. Flooding occurs because tributaries flowing do not have adequate capacity.

Future Development in Hazard Area

Fisher Bay Road – A proposed 100 unit development along Fisher Bay Road has been brought to the Planning Board but has not yet been approved.

Potential Losses

Hitchcock Point Road – First Floor of some houses under water during flood events.

Marsh Mills Road -

Fisher Bay Road – Septic systems at some houses are non-functional and overflow during flood events.

Mitigation Measures

Marsh Mills Road - Houses in this area need to be raised so that flood waters can not affect utilities and living quarters. Cost would average approximately \$15,000 per house. Responsibility rests with the home owner unless new funding becomes available. This is a Low Priority for the Town.

Bridgeport; Shackleton Point Road - A tributary that flows north and west towards its outlet in Chittenango Creek needs to be excavated. This creek serves as an outlet for drainage systems in both Bridgeport and the Shackleton Point Road area. This tributary crosses 11 parcels and flows 16,000 feet in the section that needs improvement. At \$3 per foot, this project would cost \$48,000. There is some resistance from one landowner

who would need to grant permission. Money has not been appropriated. Work would be done by a private contractor. This is a Low Priority for the Town.

Fisher Bay, Woods Road, Damon Point Road, Tyler Road - All of these locations would benefit from the construction of sanitary sewers. Engineering studies on the cost of these sewers between Bridgeport and Lakeport and south along Bridgeport-Kirkville Road have been conducted. Cost would be \$15 million. The project will be conducted in phases utilizing a combination of local taxes and State grants. This is a High Priority for the Town.

Chittenango Creek Outlet - Houses in this area would benefit from having their utilities elevated above the 100 year flood elevation. Estimated cost is \$5,000 per house. This is the responsibility of the homeowner. This is a Low Priority for the Town.

B. SEVERE STORM

Mitigation Goals

Protect members of the public, infrastructure, and maintain services during and after a severe storm.

Historical Events

Labor Day Storm, September 1998 - This intense thunderstorm was accompanied by intense downdrafts. Many locations in the Town of Sullivan did not have electricity for 10 days.

Locations Subject to Hazard

Lakeport - This locale is prone to damage from windstorms coming from the northwest over the open expanse of Oneida Lake.

Future Development in Hazard Area

A housing development, marina, and business park are currently under construction in Lakeport.

Existing Mitigation Measures

Tree Maintenance Program - The Town Highway Superintendant evaluates hazard trees with town highway right of ways.

Mitigation Measures

Underground Utilities – As part of future zoning, the town could require burial of utilities for new subdivisions. This would be a high priority for the town.

C. WINTER STORMS

Mitigation Goals

Minimize risk to the public and maintain critical infrastructure and services.

Historical Events

March 13 & 14, 1993 Blizzard – This event was declared disaster FEMA 1095 DR NY. This storm dumped 43 inches of snow in Syracuse during a 36 hour period.

December 25 & 26, 2002 Record Snowfall – This was declared disaster FEMA 3173 EM NY in Madison County.

Locations Subject to Hazard

North of Rte. 31, West of Lakeport – This is an area where many summer cottages are being converted to year-round residences. Small, narrow roads in this area make it difficult for snowplows to service the area.

Future Development in Hazard Area

No large subdivisions are occurring in the problem areas north of 31. Individual house development occurs at a moderate pace.

Potential Losses

At \$23.00 per mile, it costs the town \$2,300 to clear a 6” snowfall from its 100 miles of roads.

Mitigation Measures

North of Rte. 31, West of Lakeport – Roads in this area need to be improved and widened so that snow can be pushed away from the road. Some roads could be extended so that a circuit can be made and trucks would no longer have to back up and turn around. Work would be done by town highway under already existing budgets. This is a High Priority for the town.

D. TRAFFIC

Mitigation Goals

Reduce the number of injuries and fatalities as well as the number of emergency calls caused by automobile accidents in the Town of Sullivan..

Locations Subject to Hazard

State Route 31 - This east-west highway is prone to serious accidents. Traffic moves at a high rate of speed. There are many side roads. There are many car-deer accidents. Telephone poles are near the road shoulder. A traffic light is needed at the intersection with Lakeport Road where sight distance is obscured by telephone poles and a building on the southeast corner of the intersection.

Future Development in Hazard Area

Traffic on Route 31 continues to increase due to population increase and daily commuting.

Potential Losses

Losses for a traffic accident were cited in the county wide transportation accident as follows:

Transportation accidents with fatalities will usually involve 7 police personnel for an average of 7 hours each at the scene. A computerized survey is conducted of the accident scene. After the accident, accident reconstruction and investigation involves two police personnel an average of 40 hours each. Total costs are accrued from 129 hours of police work at an average of \$30 per hour and equal \$3870.

Mitigation Measures

Lakeport Road and Route 31 Intersection

A utility pole for the flashing light at this location obscures sight distance. This pole needs to be moved in order to reduce the risk of a collision. Cost of this project is unknown. As an alternative, a traffic light could be installed at the intersection. This is the responsibility of NYS DOT. This is a Medium Priority for the Town of Sullivan.

Route 31

According to Town Attorney Don Collella, a Thruway entrance on Lakeport Road would reduce the amount of through-traffic on Route 31 and thereby reduce the danger of traffic accidents. At one time this was considered by the New York State Thruway Authority. Estimated cost is \$75 million. A new study of this proposal has been authorized by the NYS Legislature. This is a Low Priority.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6 -7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Town of Sullivan Disaster Plan	+1	+1	+1	+1	+1	+1	+1	7
Raise Elevation of Houses above Flood Elevation, Marsh Mills Road	+1	+1	-1	-1	-1	+1	+1	1
Tributary Excavation in Bridgeport/ Shackleton Point Area	-1	+1	-1	+1	-1	+1	+1	1
Sanitary Sewer Extensions	+1	+1	+1	+1	+1	+1	+1	7
Elevation of Utilities for Houses along Chittenango Creek	+1	+1	-1	-1	-1	+1	+1	1
Underground Utilities for New Subdivisions	+1	+1	+1	+1	+1	+1	+1	7
Road Improvements to Facilitate Snow Removal NW of Lakeport	+1	+1	+1	+1	+1	+1	+1	7

Flashing Light Improvement Rte. 31/ Lakeport Rd.	+1	+1	+1	+1	-1	+1	+1	5
Thruway Entrance Construction at Lakeport Rd.	+1	+1	-1	+1	-1	N	+1	2

Plan Monitoring and Update

County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the Town of Sullivan Planning Board Chairman and submit a copy of the evaluation form listed in appendix EF. The Planning Board Chairman will complete and return this form within 10 business days.

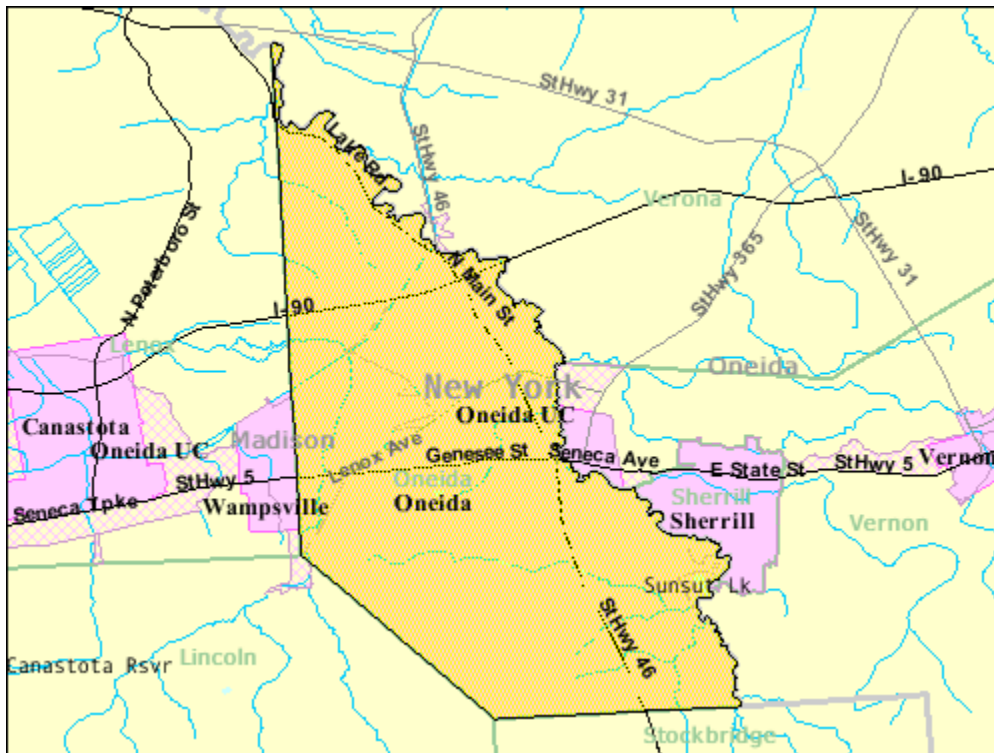
During the second quarter of the year, the County Emergency Preparedness Director, will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

A copy of this report will be sent to the Town of Sullivan and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Sullivan Town Board, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the Town of Sullivan subsection based on the reports supplied by the Town Planning Board Chairman and other municipalities as well as input from the public. This updated plan will be submitted to the Town Board for approval before being forwarded to FEMA.

CITY OF ONEIDA



Mayor: Leo Matzke

City Clerk: Jane Mariani, 315-363-7378

Commissioner of Public Safety: Michael Romano

Chief of Police: David Meeker

Fire Chief: Thomas Laurin

Planning Department Director: Cassie Rose

City Engineer: James Bacher, 315-363-7222

Background:

The City of Oneida is a community of 10,987 residents located on the northeastern corner of Madison County, bordering Oneida County. Seventy five percent of the population is between the ages of 18 and 65, with fifteen percent over the age of 65 (1,646 residents). The city consists of approximately 21 square miles. The equalized assessed value of the city is approximately \$583.3 million dollars, spread across a variety of property classes. There are 4,672 housing units in the city with 2,140 of them being single family owner occupied homes. Commercial and residential development is sporadic at this time.

Land Use and Development Trends

The population of Oneida increased by 1.3% from 10,810 to 10,850 between 1980 and 1990. The population increased by 1.6% from 10,850 to 10,987 between 1990 and 2000.

With 10,987 residents, the City of Oneida has a population density of 499 people per square mile. In 2000, the Census Bureau reported that there were 4,430 households in Oneida, an increase of 4.5% since 1990. In comparison, households increased 7.2% in Madison County overall.

Assets

City Hall located at 109 North Main Street in the center of downtown houses offices for city government as well as the City of Oneida Police Department, and City of Oneida Fire Department.

Department of Parks and Recreation

Headquarters is at the former Armory Building located at 217 Cedar Street in downtown. This facility is capable of housing 240 people.

The city water system draws water from a surface reservoir located in Oneida County. Two 7.5 million gallon tanks located on the uplands in the southern part of the city provide pressure and storage for the system. Baker Reservoir in the southern part of the city is available in case of emergency.

Oneida Healthcare Center –This is a 101-bed hospital and 160 bed skilled nursing facility for senior citizens located on Route 5.

The City of Oneida Public works Garage is located at 409 Sconondoa Street.

Equipment includes

2 10 wheel dump trucks with plow, wing, and sander

6 10 wheel dump trucks with plow and wing

1 10 wheel all wheel drive dump truck with plow and double wings

1 rubber tired backhoe

2 bull dozers

1 roller

2 tractors with mowers

1 4000 watt (AC) generator

Local Organization and Regulations

During heavy snow storms a Public Works Department snow plow is stationed at the City Fire Department in case it is needed to clear the way for emergency equipment.

An Emergency Response Plan is being written for the Higinbotham Dam Project by City Engineer Jim Bacher.

The City has an existing Disaster Plan.

The City has a Flood Plain ordinance. This law mandates that new construction within the 100 year floodplain cannot have basements and that first floor of the building should be above the elevation of the 100 year flood. Any development within the floodway cannot cause an increase in water elevations during a flood event.

The City employs an arborist who is called whenever damage to City owned trees is observed to reduce the instances of power outages and potential damage to private and public property.

The Fire Department pumps basements and yards during flood events to reduce damages.

Sandbags are provided by the Public Works Department to Stoddard Street residents during flooding.

There is a Planning Board and a Zoning Board in place to review any proposed new development.

The Planning Process

Steve Lorraine and Mike Johnston, Madison County SWCD, met with the City Council on January 17, 2004. The Mayor directed them to work with Jim Bacher, City Engineer, to gather the necessary information to write a Mitigation Plan section on the City. Mike Johnston and Steve Lorraine met with Mr. Bacher and Thomas Laurin, City Fire Chief, on December 9, 2004. On 2/17/05 we spoke with Mr. Bacher regarding potential mitigation projects for the city's section.

Public Involvement

Two meetings were held at which members of the public were invited to provide input on the hazard mitigation planning process. These meetings were publicized in the Syracuse Post Standard, Oneida Daily Dispatch, Canastota Bee Journal, and Cazenovia Republican. No members of the public attended these meetings. One citizen did call Madison County Soil and Water Conservation District from the City of Oneida to express concerns about flooding there. As soon as the first draft of the entire plan for Madison County is finished, it will be posted on the Madison County website. All members of the public will be provided a means of providing input at that time.

Input from Neighboring Communities, Agencies, Businesses, Academia, Nonprofits and Other Parties

The following organizations have been contacted for input to the City of Oneida Hazard Mitigation Plan:

Madison/ Oneida Red Cross
WMCR Radio
Oneida Healthcare Center
H.P. Hood Company
National Grid Company

Existing Plans, Studies, Reports, and Technical Information

City of Oneida Comprehensive Plan was considered in writing this document.

Flood Insurance Study City of Oneida, New York Madison County FEMA Revised 8/3/1989 was considered in writing this document.

City of Oneida Disaster Plan

A study by O'Brien and Gere has been commissioned by the City of Oneida to study additional sources for the Oneida water supply. There has been increased need from the Oneida Indian Nation and many surrounding small communities. The system's filtration plant has capacity for 4 million gallons per day but could be expanded to 7 million gallons per day.

Hazards

As part of the Madison County Comprehensive Emergency Management Plan, a Hazard Analysis was conducted using the HAZNY program with data supplied by the National Oceanic & Atmospheric Administration, and ESRI Hazards data. This HAZNY analysis identified Moderately High Danger in order from Severe Storms, Transportation Accidents, Winter Storms, Fires, and HAZMAT (in Transit). The HAZNY analysis identified Moderately Low Danger in order from Ice Storm, Terrorism, Flood, Utility Failure, Water Supply Contamination, Tornado, Oil Spill, HAZMAT (Fixed Site), Ice Jam, Infestation, Radiological (Fixed Site), Extreme Temperatures, Epidemic, Drought, and Explosion. The Madison County Hazard Mitigation Plan is required by FEMA to address natural disasters. Sections of this plan have been written on a County-wide basis for Severe Storms, Transportation Accidents, Winter Storms, Fire, Ice Storm/ Utility Failure, Flood/ Hurricane, and Tornado. The following table is used to determine whether or not the local community's hazard danger differs from the County as a whole for natural disasters and a few chosen man-made disasters. The local community can also decide whether or not a section on a particular hazard should be written specifically for that municipality..

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Wildfire	Low	160.5	L	N
Wave Action	Low	159.5	L	N
Dam Failure	Low	159.2	G	N
Hurricane	Low	158.8	E	N
Earthquake	Low	150.5	E	N
Blight	Low	96.2	L	N
Landslide	Not Rated		L	N

Types of Mitigation Measures

This section is used to indicate the types of mitigation actions that already are in use in the City of Oneida.

Prevention - Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses.

	Building Code	Density Controls	Design Review Standards	Easements	Environmental Review Standards	Flood plain Development Regulations	Floodplain zoning
Oneida Program	State BOCA Codes	No	City Standards State Health Codes Fire Codes	City Infrastructure	SEQR above 2 family, NEPA for Federal funding	City ordinance based on Federal flood insurance rules	Conservation overlay district by 5/06

Transfer of Development Rights	Hillside Development Regulations	Open Space Preservation	Performance Standards	Streambank Setback Regulations	Special Use Permits	Stormwater Management Regulations	Subdivision & Development Regulations
State & Federal Programs Available for Ag	No	No	No	State Health Department Rules for Septic Systems	Part of Zoning	State Regs Apply	Yes

Property Protection - Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.

	Acquisition of Hazard Prone Structures	Construction of Barriers Around Structures	Elevation of Structures	Relocation Out of Hazard Areas	Structural Retrofits (e.g.floodproofing)
Oneida Program	No	Levees	No	No	No

Public Education and Awareness - Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them.

	Hazard Information Centers	Outreach Programs	Real Estate Disclosure	School-age and Adult Education Programs
Oneida Program	No	Education of Elected Officials to NIMS Standards	State Rules Apply	Fire Safety Education by City Fire Dept.

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.

	Best Management Practices	Forest & Vegetation Management	Sediment & Erosion Control Regulations	Stream Corridor Management	Stream Dumping Regulations	Urban Forestry & Landscape Management	Wetlands Development Regulations & Restoration	Watershed Management
Oneida Program	City Engineer designs practices	Section 480A of Forest Tax Law available through NYS DEC	State Regs for greater than 1 acre development	Logjam Clearing for Oneida Creek by City Engineer and DPW	State Rules Apply	City Arborist evaluates hazard trees in parks and ROW's	State & Federal Rules Apply	Oneida Lake Program

Emergency Services - Actions that protect people and property during and immediately after a disaster or hazard event.

	Critical Facilities Protection	Emergency Response Services	Hazard Threat Recognition	Hazard Warning Systems	Health & Safety Maintenance	Post Disaster Mitigation
Oneida Program	No (but needed for water supply and electrical to City Hall)	Manned Fire Dept.	MSDS Sheets for chemical or biological hazards on file with Fire Department	911 Center Alert System	County Health Dept. rules for minimum living standards and drinking water	Red Cross

Structural Projects - Actions that involve the construction of structures to reduce the impact of a hazard.

	Channel Maintenance	Dams/ Reservoirs	Levees & Floodwalls	Safe Room/ Shelter
Oneida Program	Higginbottom Flood Control Channel, Removal of trees from Oneida Creek	Higginbottom Reservoir	Levees along Oneida Creek	Red Cross Shelter at Oneida High School

Incorporation of Hazard Mitigation Plan requirements into local planning mechanisms

The foregoing list of existing mitigation measures and the proposed mitigation actions that follow will be considered during the next rewrite of the City of Oneida Disaster Plan.

Mitigation Actions by Hazard

Appendix d provides a matrix that lists by category the possible mitigation actions and projects applicable to specific hazards. The community should consider this matrix when deciding a course of action in mitigating a particular hazard.

A. Flooding

Mitigation Goals

Minimize loss of property, risk of injury, damage to the environment, and loss of infrastructure from flood waters.

Historical Events

Hurricane Agnes, June, 1972

January, 1996 Flood – This was presidential disaster FEMA 1095 DR. This run-off event caused by rain and melting snow resulted in widespread flooding. Runoff for this event was believed to be equivalent to the 50 year flood.

August 30, 2004 Flooding – Heavy rains caused flash flooding. Numerous roads were flooded and creeks were over their banks. Parts of the City of Oneida were flooded with streets impassable. Numerous homes had flooded basements. Power was shut off to reduce the risk of electrical fire until the basements were pumped out by the fire department. Rainfall was 3 to 5 inches. According to NOAA, damage in Madison County was \$500,000.

Locations Subject to Hazard

Higinbotham Brook – This waterway originates in the uplands on the south side of the City and flows through the central residential area before outletting into Oneida Creek. Flooding is caused by undersized culverts at four locations and the lack of channel capacity.

Tar Creek Outlet Area – Located in the northeast portion of the city. A levee protects the City from Oneida Creek flooding and a flap gate prevents flood waters from backflowing into Tar Creek. Flooding is caused when the flap gate is closed and Tar creek is unable to outlet into Oneida Creek. A 58 acre residential and commercial area can be flooded by the 25 year-24 hour rainfall event.

Cowaselon Creek

- Flood plain south of W. Elm Street – Part of a development along Palmer south of Genesee Street is built within the flood plain. Other properties north of Genesee Street are also in the flood plain.
- Sullivan Residence – At this location on the west side of Upper Lenox Avenue, Cowaselon Creek has moved 130 feet to the east and is currently undermining the garage for the residence.

Oneida Creek – Logjams in this large creek reduce the creek’s water carrying capacity and cause bank erosion by diverting flows.

Sunset Lake – This large bypass pond diverts water from Oneida Creek into a mill pond. It has a long embankment that shows erosion in places and has large numbers of trees growing on it.

Potential Losses

Higinbotham Brook – 48 single family or double family homes and one elementary school are affected by the potential for flooding. At \$10,000 per house and \$40,000 for the elementary school, potential losses total \$520,000.

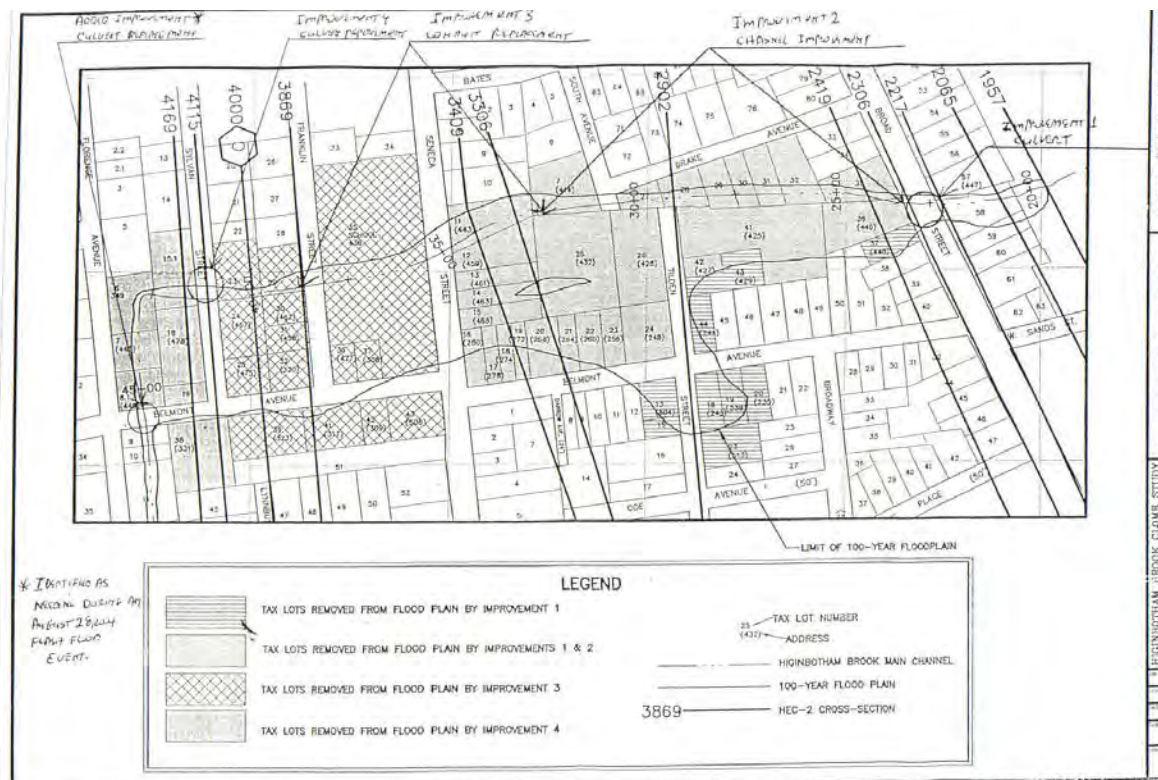
Tar Creek Outlet – According to Assessment Records supplied by City Engineer Jim Bacher, within the “Flats” there are 202 residential buildings of which 148 have full basements, 23 commercial buildings of which 4 have basements, 1 nonprofit with a basement, and 3 government buildings of which 1 has a basement. Estimating that that the residential buildings with basements could sustain \$5,000 damage and that other categories with basements could sustain \$10,000 damage, Total damages for a large flood in the flats would equal \$800,000.

Cowaselon Creek (Palmer Drive) – According to assessment records supplied by City Engineer Jim Bacher, within the floodplain south of West Elm Street, there are 24 residential properties of which 19 have basements and 4 commercial properties without basements. Estimating that each residence with a basement could sustain \$5,000 damage during a flood, total damages would equal \$95,000.

Sunset Lake – Damage to houses in Kenwood would total \$600,000 based on 12 houses and \$50,000 damage per house.

Mitigation Measures

Higinbotham Brook – A preliminary engineering report prepared by Leonard Jackson Associates (LJA), Pomona, NY used HEC-2 modeling to confirm that if undersized culverts & conduits were replaced, and channel improvements undertaken, that would eliminate backwater effects having the potential to cause property damage due to flooding. Additionally, a majority of homes in the target area would benefit by the elimination of the floodplain, and the rest could likely qualify for LOMAs. The estimated cost for all improvements is approximately \$1M with professional engineering services at about \$175K. Total project cost estimate is \$1.175M. This is a Medium Priority for the city until a source of possible funding can be identified.



Tar Creek – A 4.2 MGD pump station has been proposed to pump water during peak flow periods for Oneida Creek. The pump station would be located on the inland side of a flood control levee at approximately 43 degree 06'01"N latitude and 73 degree 38'43"W longitude. Cost of the project equals \$600,000. This is a Medium Priority for the city until a source of funding can be identified.

Cowaselon Creek — Floodplain south of W. Elm Street – City Engineer Jim Bacher proposes removing a “water stop” constructed where Cowaselon Creek crosses W. Elm Street. This structure artificially raises the level of Cowaselon Creek by approximately 8 feet. No cost estimates are available at this time for this project. An engineering study is required. This is a Low Priority for the City.

Sunset Lake – At this location trees need to be cleared from the embankment. A new core trench needs to be dug through the embankment in order to prevent piping along rotting roots. A request to DEC Dam Safety Division for inspection should be made by City Government. This is a Medium Priority for the City.

B. Power Outages

Mitigation Goals

Minimize damage to private and public properties, maintain critical services, and provide services for vulnerable populations.

Historical Events

Labor Day Storm, 1998 – The City of Oneida sustained large amounts of damage from this lightning storm that was accompanied by strong winds.

April 2003 Ice Storm – This was an ice storm that struck the higher elevations of Madison County worse than the lower elevations of the County.

August 16, 2003 Northeast Power Failure – This was an event that affected the entire Northeastern United States.

Locations Subject to Hazard

City Hall – Heat source is natural gas but heating system requires electric power.

Oneida Healthcare Center – This hospital has backup electric power but generators have failed on some occasions.

WMCR Radio – This facility has no backup electric power.

Potential Losses

City Hall – This facility is subject to freezing during winter months if there is a loss electric power. The facility only has one valve that can be used to shut off water flow. The Oneida City Fire Department has good emergency power generation but the Oneida City Police does not have good emergency backup power.

Serious damage to businesses, homes, and restaurants occur after approximately 8 hours because of food spoilage and loss of business.

Mitigation Measures

City Hall – The City is currently studying the cost of emergency generation for City Hall. This study is a High Priority for the City.

PRIORITIZATION

The STAPLEE process is the means by which proposed mitigation actions are prioritized for a community. The STAPLEE process utilizes the following criteria:

- **Social:** Will this action be acceptable to the community and individuals affected?
- **Technical:** Is the action a long term technically feasible solution with little or no secondary impacts?
- **Administrative:** Are the staff and funding available to implement and maintain the action? NOTE: Inadequate resource did not eliminate consideration of an action.
- **Political:** Is the action supported by political leaders and the public?
- **Legal:** Does the municipality have the legal authority to implement the proposed action?
- **Economic:** Is this action a cost effective method for providing hazard mitigation and community benefits?
- **Environmental:** Is this action consistent with community environmental goals?

The following table uses the STAPLEE System to rate proposed mitigation actions.

+ 1 is Favorable, -1 is Unfavorable, N is Neutral or Not Applicable

A Score of 6-7 is a high priority, 3-5 is a medium priority, 2 or less is a low priority

Proposed Mitigation Action								
	Soc	Tech	Admin	Polit	Legal	Econ	Enviro	Score
Higinbotham Brook Channel Improvements	+1	+1	-1	+1	+1	+1	+1	5
Tar Creek Pump Station	+1	+1	-1	+1	+1	+1	+1	5
Cowaselon Creek/ Elm St. "Water Stop" Removal	N	N	-1	+1	+1	N	+1	2
Sunset Lake Dam Rehabilitation	+1	+1	-1	+1	-1	+1	+1	3
City Hall Emergency Generator Study	+1	+1	+1	+1	+1	+1	+1	7

Plan Monitoring and Update

The Madison County Office of Emergency Preparedness will be responsible for monitoring the status of the County Hazard Mitigation Plan and all of the subsections of the plan specific to local municipalities. During the first quarter of every calendar year, the Emergency Preparedness Director will (most likely by e-mail) contact the City of Oneida's Emergency Director and submit a copy of the evaluation form listed in appendix EF. The City's Emergency Director will complete and return this form within 10 business days.

During the second quarter of the year, the County Emergency Preparedness Director will prepare an annual summary report for progress in implementing the County Hazard Mitigation Plan. Included in this plan will be the following:

- A summary and analysis of all disasters that have struck Madison County during the previous calendar year.
- A gap analysis for the hazard mitigation plan for any disasters that occurred during the previous calendar year
- A listing of funding opportunities made available from FEMA and SEMO during the 12 months prior to the annual summary report
- A summary of the progress that has been made towards accomplishing mitigation measures during the previous calendar year
- Problems encountered in implementing the plan
- Recommendations for changes to the Hazard Mitigation plan.

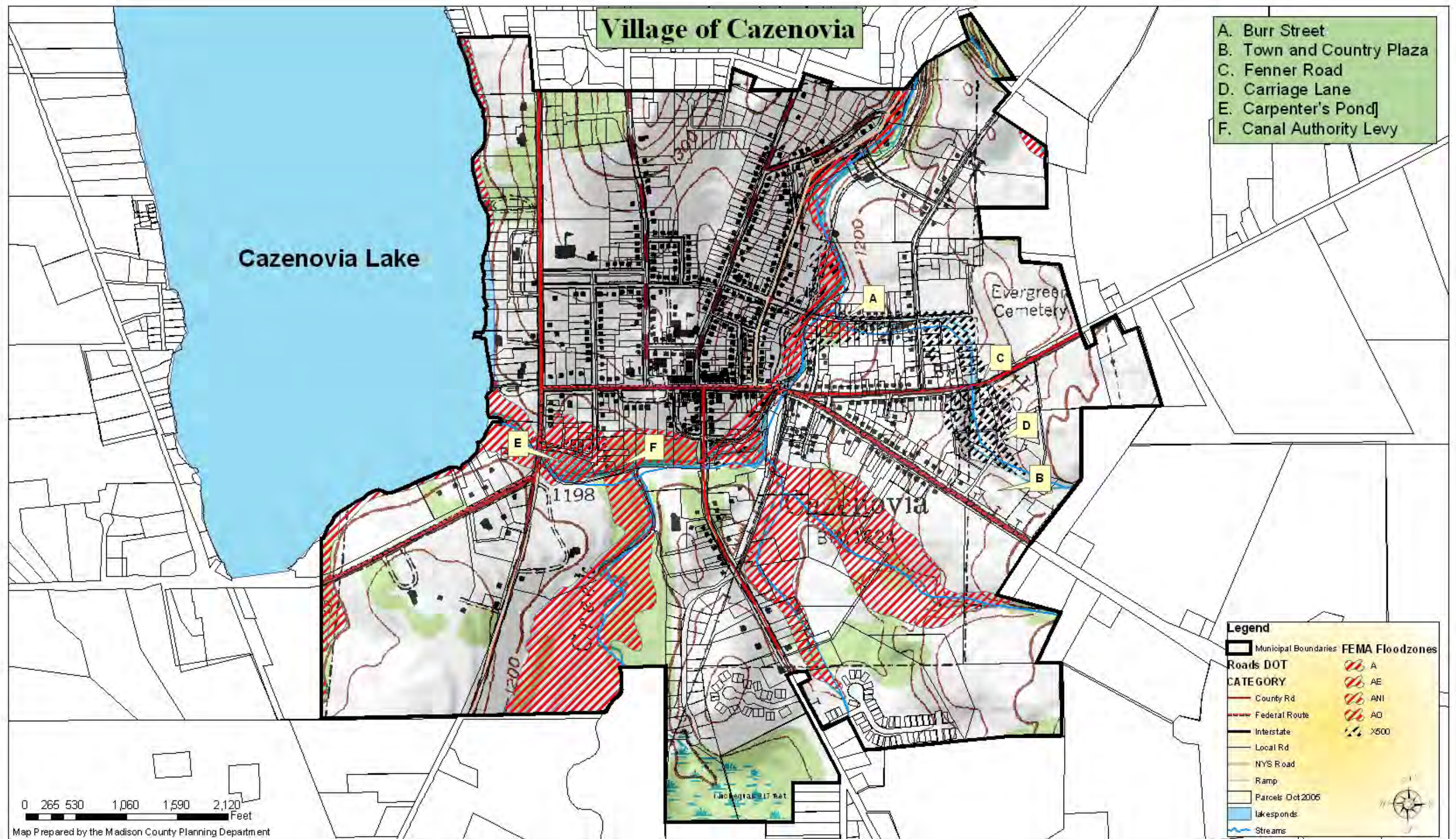
A copy of this report will be sent to the City's Emergency Director and will be posted on the Madison County Website. Public Comment will be accepted based on review of these reports and the County's Plan available on this web site.

Every five years after the plan receives its FEMA approval and adoption by the Oneida City Council, the County's Emergency Preparedness Director will update the County Hazard Mitigation Plan and the City of Oneida subsection based on the reports supplied by the City's Emergency Director and other municipalities as well as input from the public. This updated plan will be submitted to the City Council for approval before being forwarded to FEMA.

Village of Canastota

- A. Kimes Hardware
- B. Lewis and Chapel Streets
- C. Culvert Under James Street
- D. Culvert Under Main Street
- E. Culvert on Private Land





Village of Chittenango

1. Sullivan Park
2. Chittenango Landing Canal Museum
3. Tuscarora Road and Manor Drive
4. Seneca Street
5. Nursing Home
6. Downtown Area
7. Virginia Lane
8. Perryville Road
9. Valley Acres

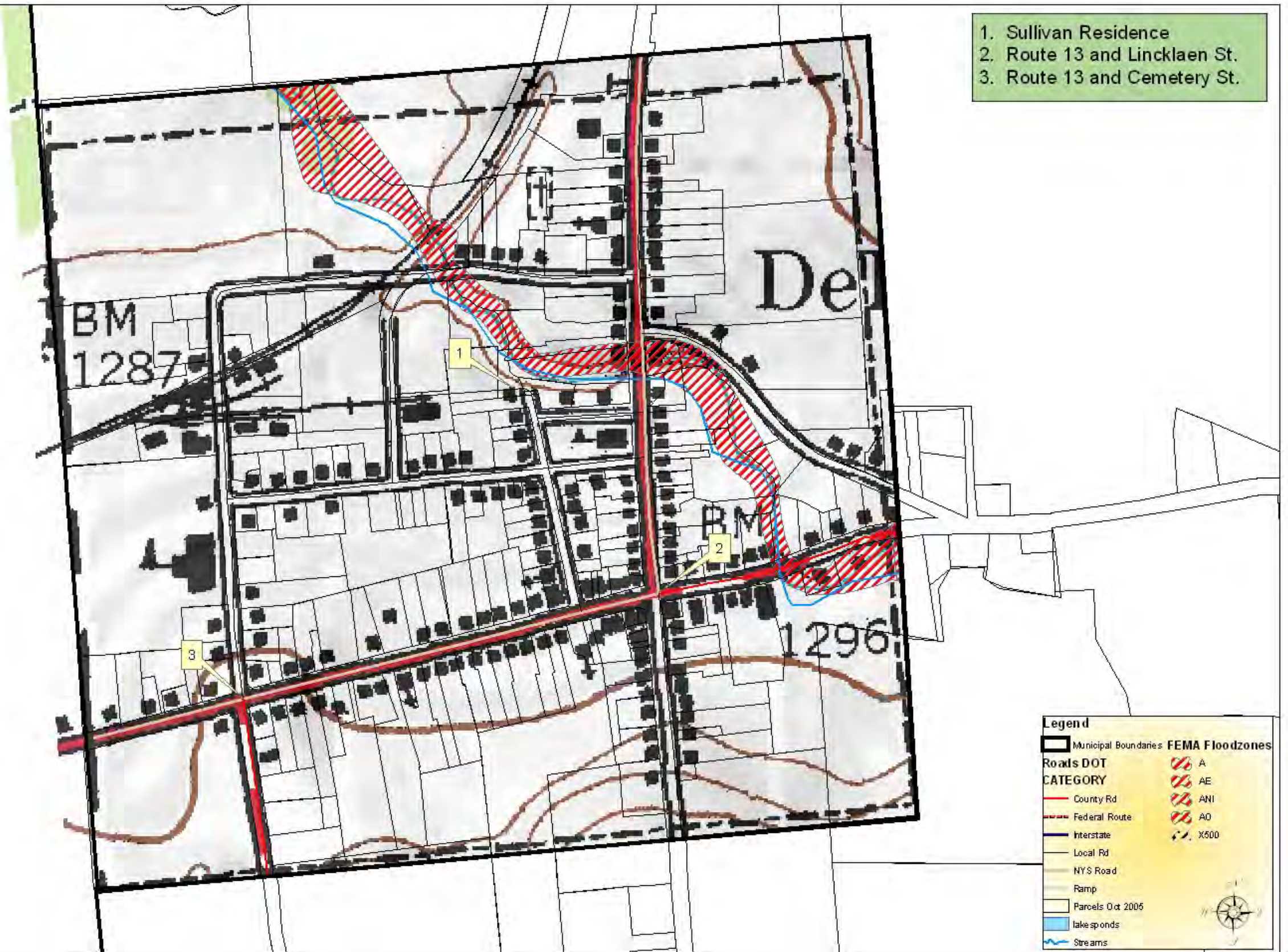
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Map Prepared by the Madison County Planning Department



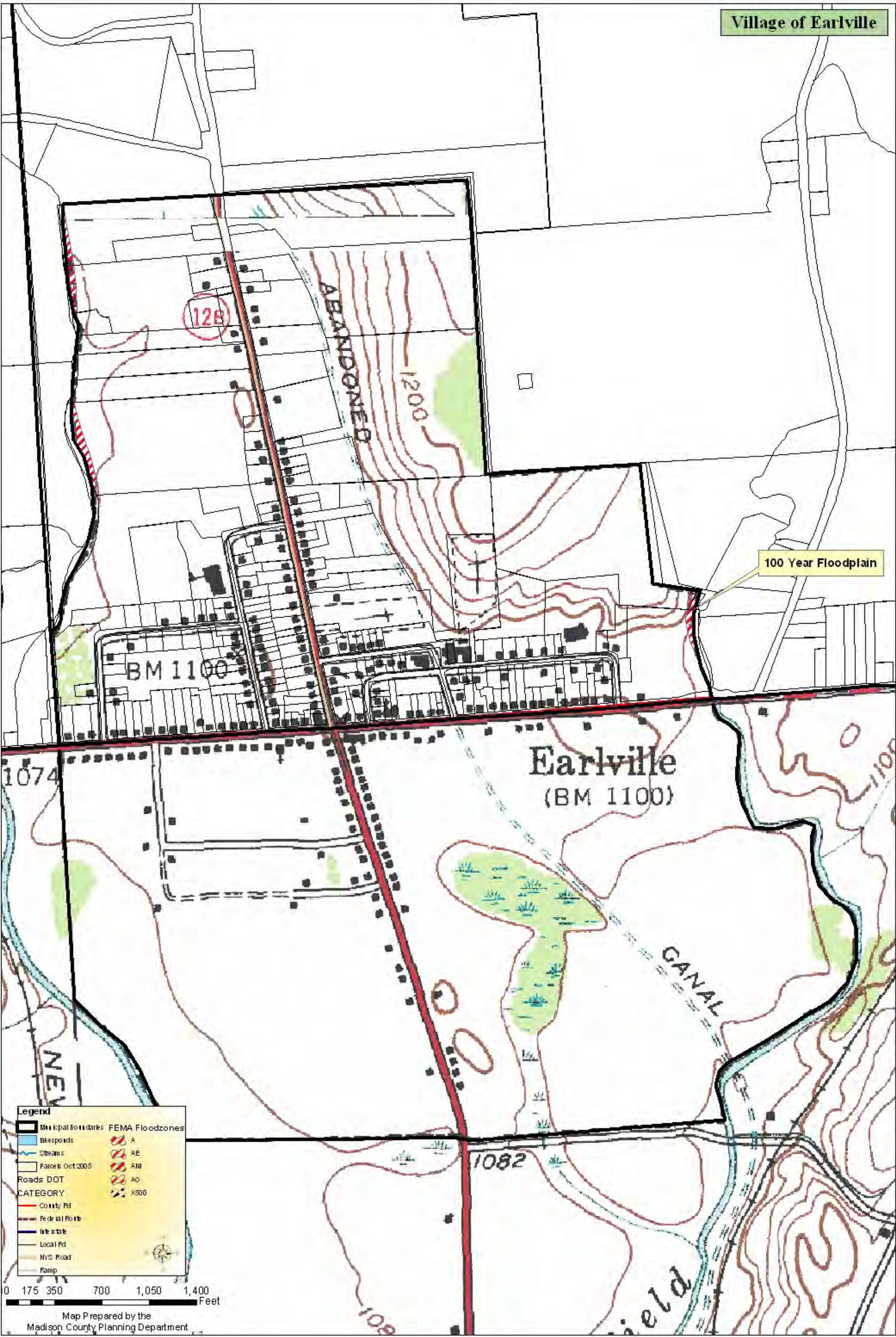
Village of DeRuyter

1. Sullivan Residence
2. Route 13 and Lincklaen St.
3. Route 13 and Cemetery St.



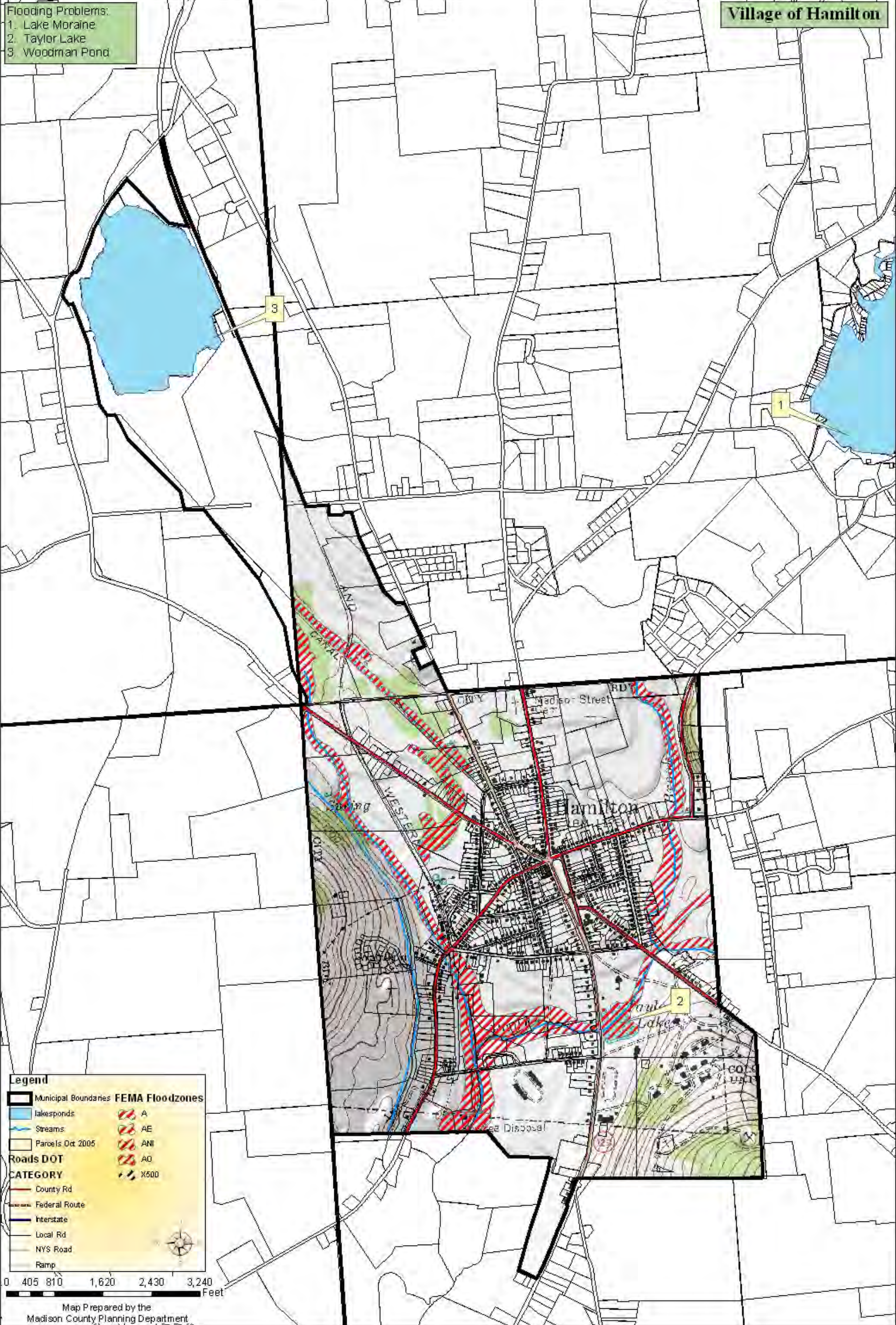
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Map Prepared by the Madison County Planning Department



Flooding Problems:
 1. Lake Moraine
 2. Taylor Lake
 3. Woodman Pond

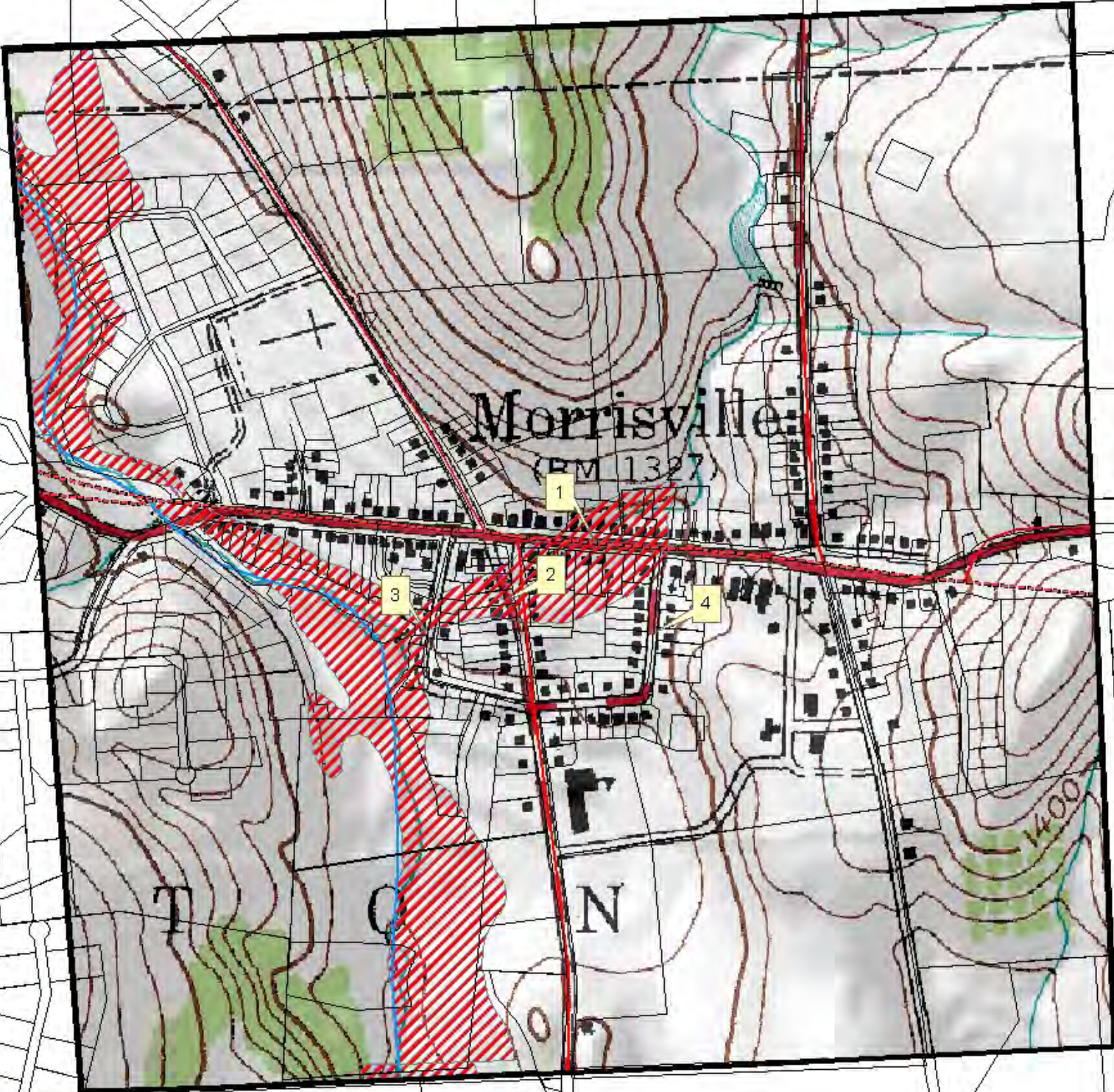
Village of Hamilton





Village of Morrisville

- Flooding Problems:
- 1. Culvert under Route 20
 - 2. Culvert under Eaton St.
 - 3. Culvert under Mill St.
 - 4. Culvert along Union St.



Legend

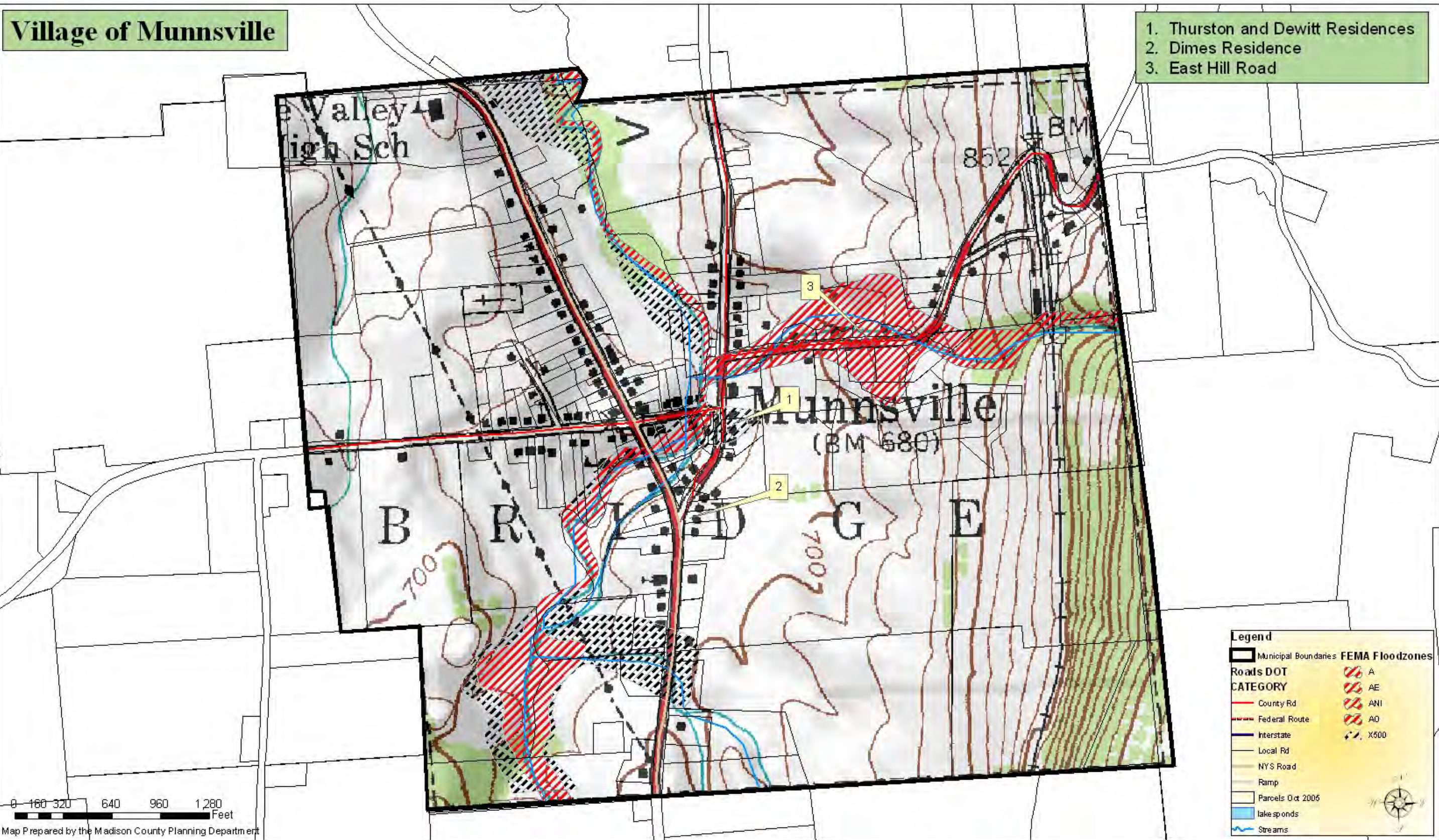
Municipal Boundaries	FEMA Floodzones
Lake/ponds	AE
Streams	ANI
Parcels Oct 2005	AO
Roads DOT CATEGORY	X500
County Rd	
Federal Route	
Interstate	
Local Rd	
NYS Road	
Ramp	

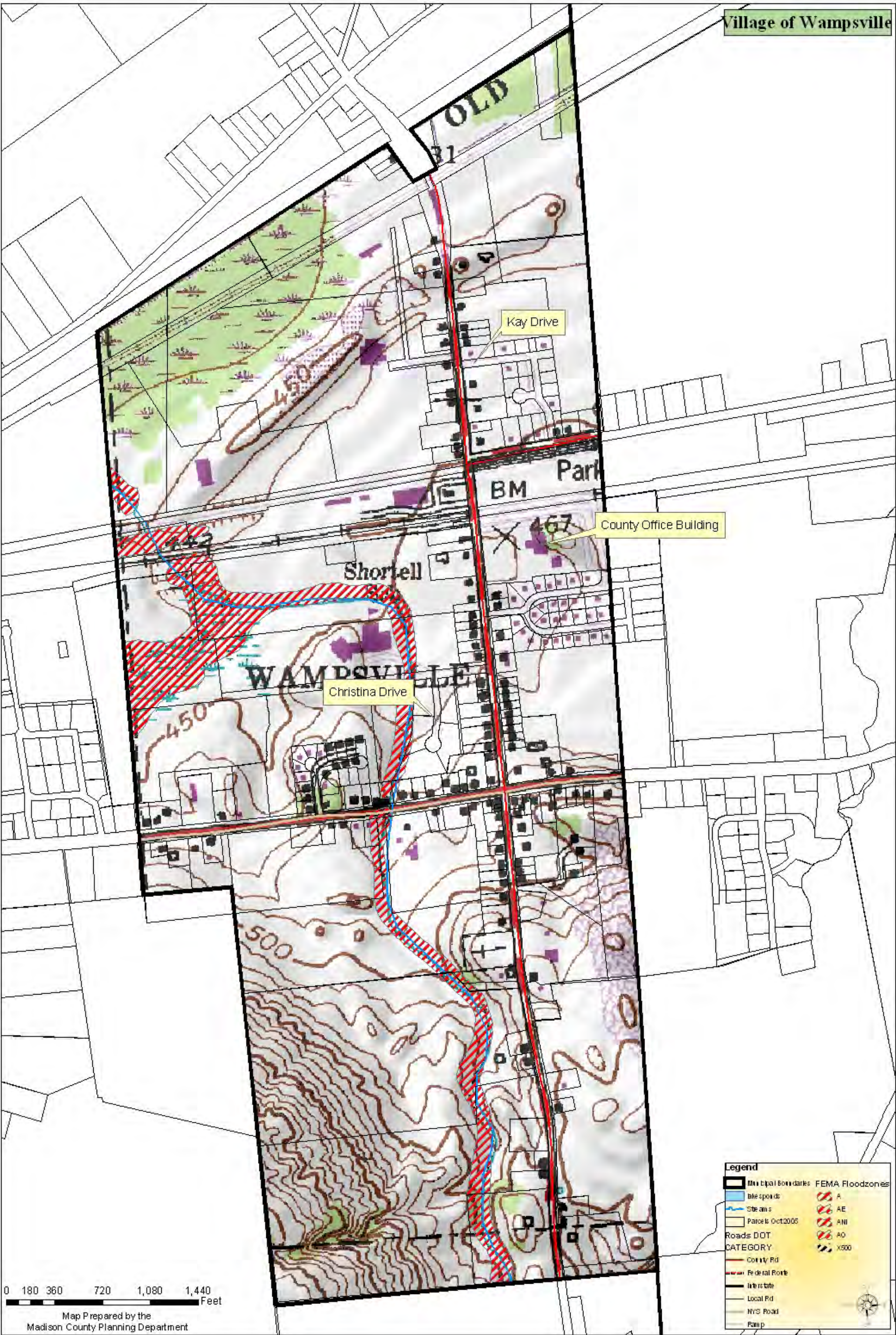
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Map Prepared by the
Madison County Planning Department

Village of Munnsville

1. Thurston and Dewitt Residences
2. Dimes Residence
3. East Hill Road





Village of Wampsville

Kay Drive

BM Park

County Office Building

Shortell

WAMPVILLE

Christina Drive

0 180 360 720 1,080 1,440 Feet

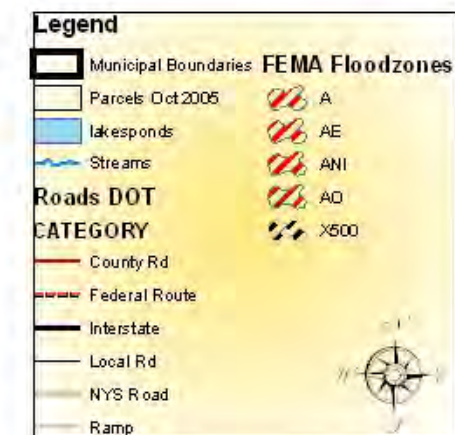
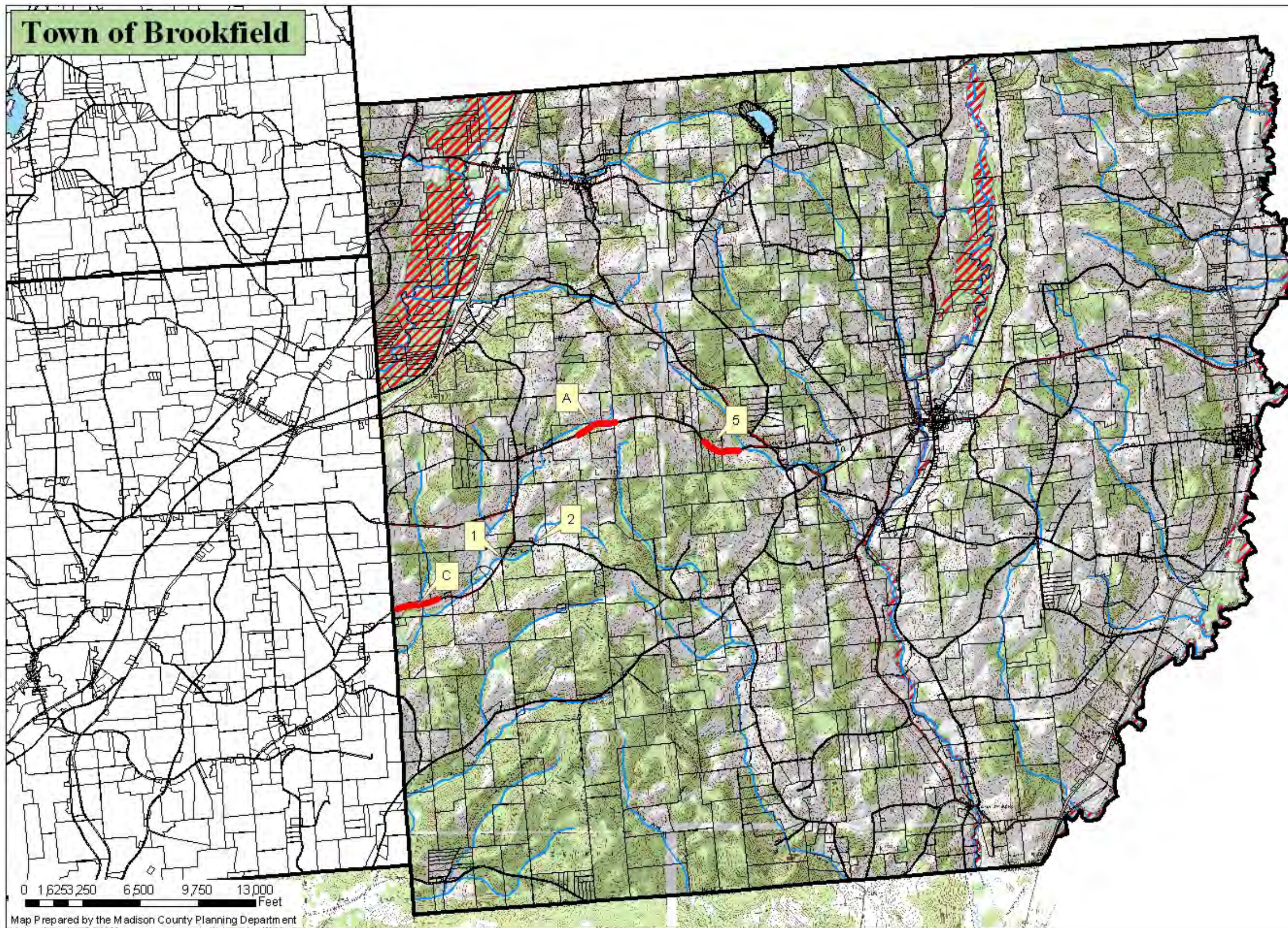
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Madison County Planning Department

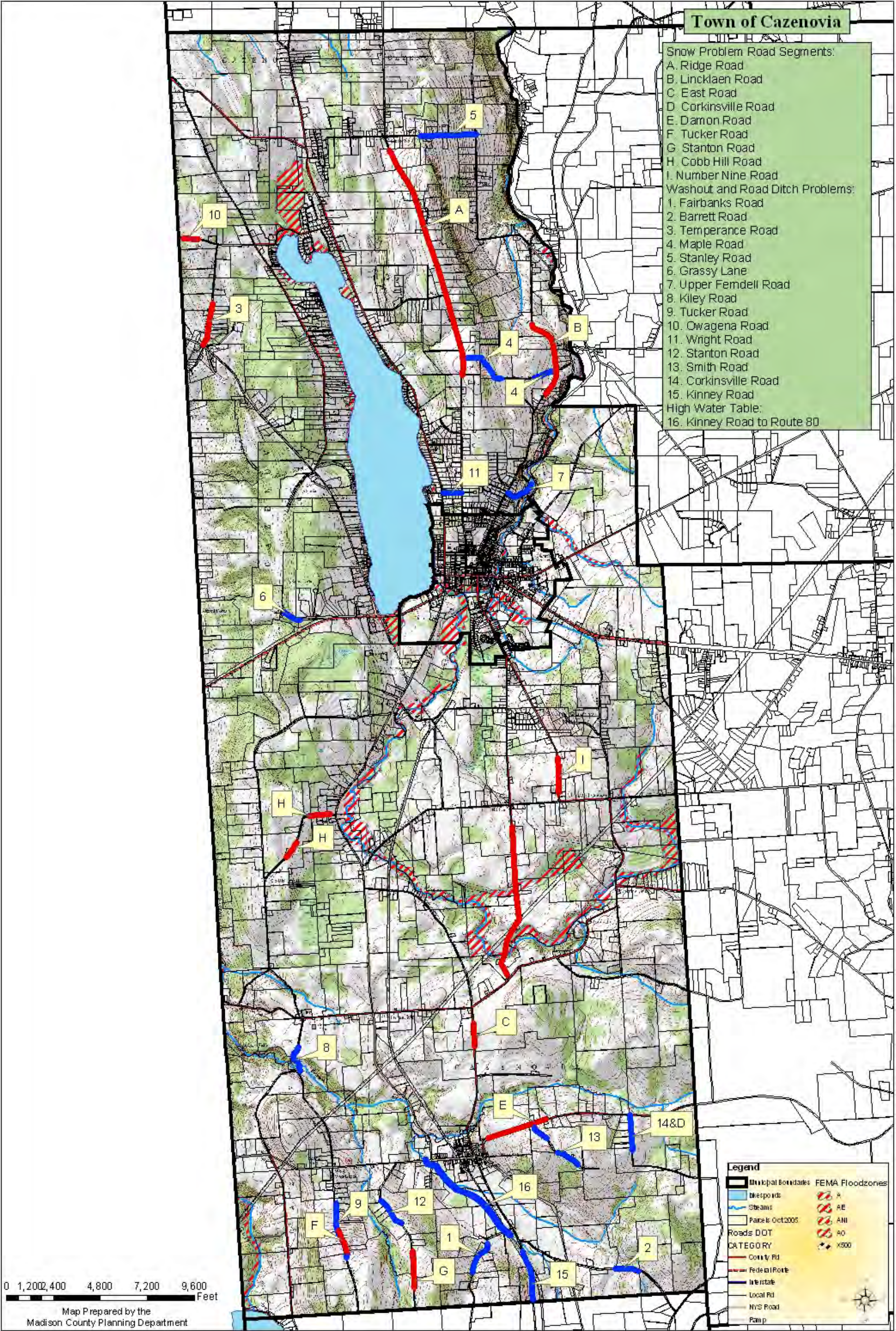
Legend

Municipal Boundary	FEMA Floodzones
Blue Spots	AE
Water	ANI
Parcel to Oct 2005	AO
Roads DOT	X500
County Rd	
Federal Route	
Interstate	
Local Rd	
NYS Road	
Ramp	

Town of Brookfield

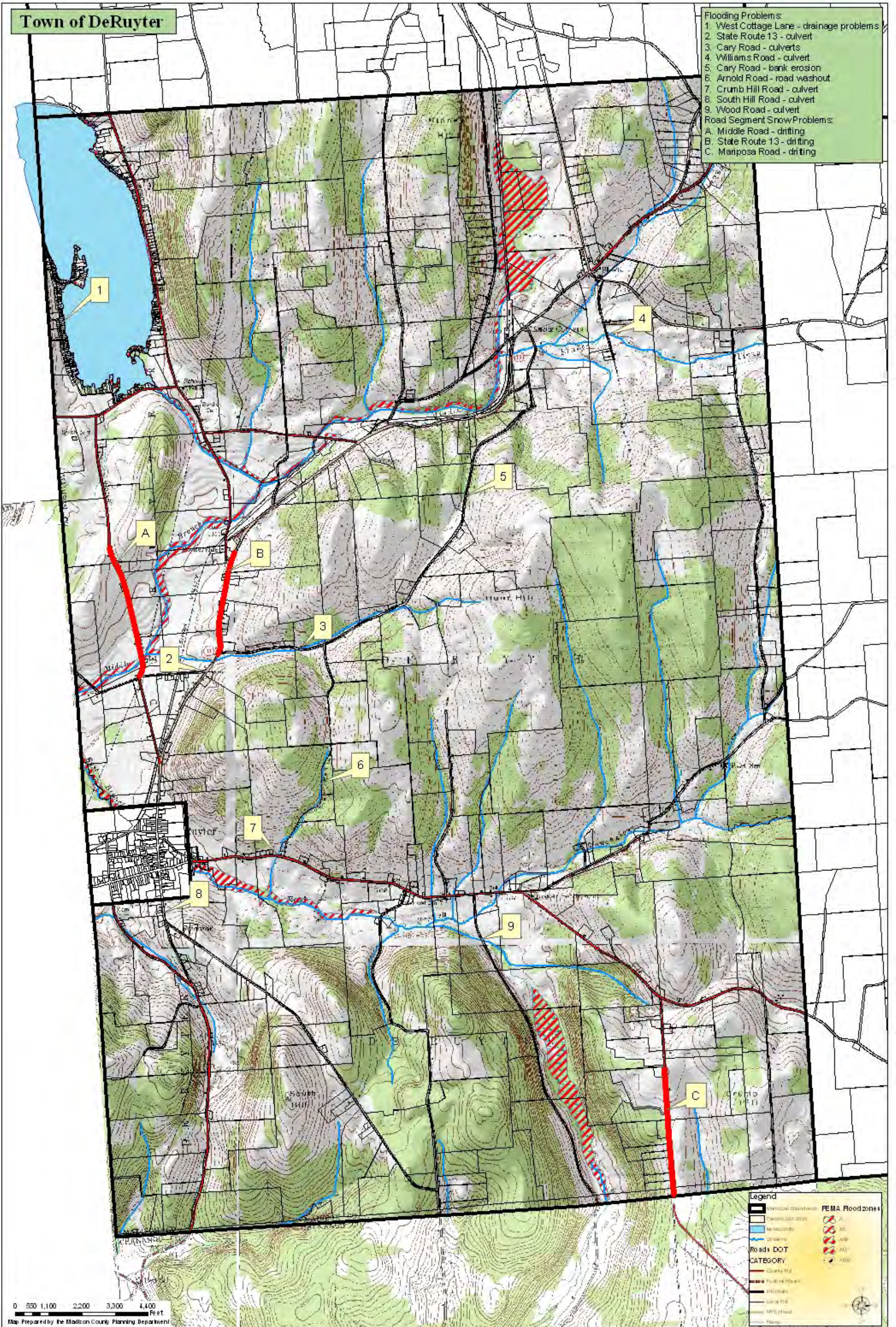
Road Icing:
 A. Skaneateles Turnpike
 B. Skaneateles Turnpike
 C. Moscow Road
 Flooding Problems:
 1. Moscow Road
 2. Quaker Hill Road





Town of DeRuyter

- Flooding Problems:**
1. West Cottage Lane - drainage problems
 2. State Route 13 - culvert
 3. Cary Road - culverts
 4. Williams Road - culvert
 5. Cary Road - bank erosion
 6. Arnold Road - road washout
 7. Crumb Hill Road - culvert
 8. South Hill Road - culvert
 9. Wood Road - culvert
- Road Segment Snow Problems:**
- A. Middle Road - drifting
 - B. State Route 13 - drifting
 - C. Mariposa Road - drifting



Town of Eaton

Snow Problem Road Segments:

- A. Crow Hill Road
- B. English Avenue
- C. Hamilton Hill Road
- D. Cramer Road
- E. Leach Road

Flooding Problems:

- 1. Brooklyn St, Hamlet of Eaton
- 2. South side of STHWY 26, Hamlet of Eaton
- 3. House on River Road south of Eaton Brook
- 4. Hatch Lake Road
- 5. Old County Road and Callahan Brook
- 6. Morton Road
- 7. Huntington Camp Road
- 8. Westcott Road
- 9. Williams Comer Road
- 10. Hagmann Road
- 11. Evans Road

Legend

	Municipal Boundaries		FEMA Floodzones
	Parcels Oct 2005		AE
	Lakes and Ponds		ANI
	Streams		AO
	Roads DOT		X500
	ROAD CATEGORY		
	County Rd		
	Federal Route		
	Interstate		
	Local Rd		
	NYS Road		
	Ramp		

0 1,150 2,300 4,600 6,900 9,200 Feet

Map Prepared by the Madison County Planning Department

Town of Fenner

- Snow Problem Road Segments:**
- A. Nelson Road
 - B. Irish Ridge Road
 - C. Shephards Road
 - D. Roberts Road
 - E. Bellinger Road
 - F. Buyea Road
 - G. Mile Strip Road
 - H. Larkin Road
 - I. Rouse Road
 - J. Francis Road
 - K. Mutton Hill Road
- Flooding Problems:**
- 1. Hodge Road culvert
 - 2. Rouse Road culvert

Bingley Road Intersection Reconstruction

Legend

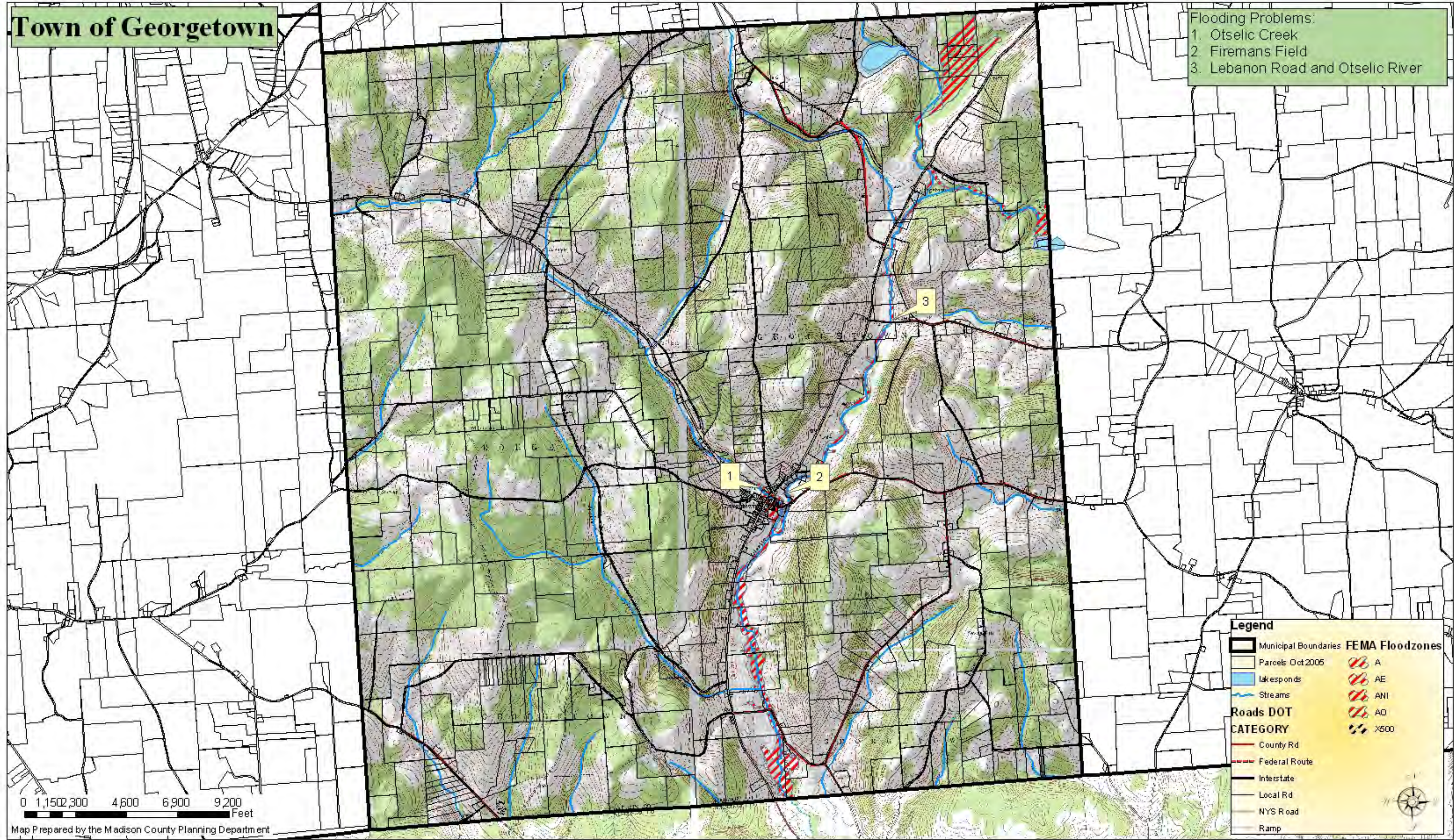
Municipal Boundaries	FEMA Floodzones
Parcels Oct 2005	AE
Lakesponds	ANI
Streams	AO
Roads DOT CATEGORY	X500
County Rd	
Federal Route	
Interstate	
Local Rd	
NYS Road	
Ramp	

0 900 1,800 3,600 5,400 7,200 Feet

Map Prepared by the Madison County Planning Department

Town of Georgetown

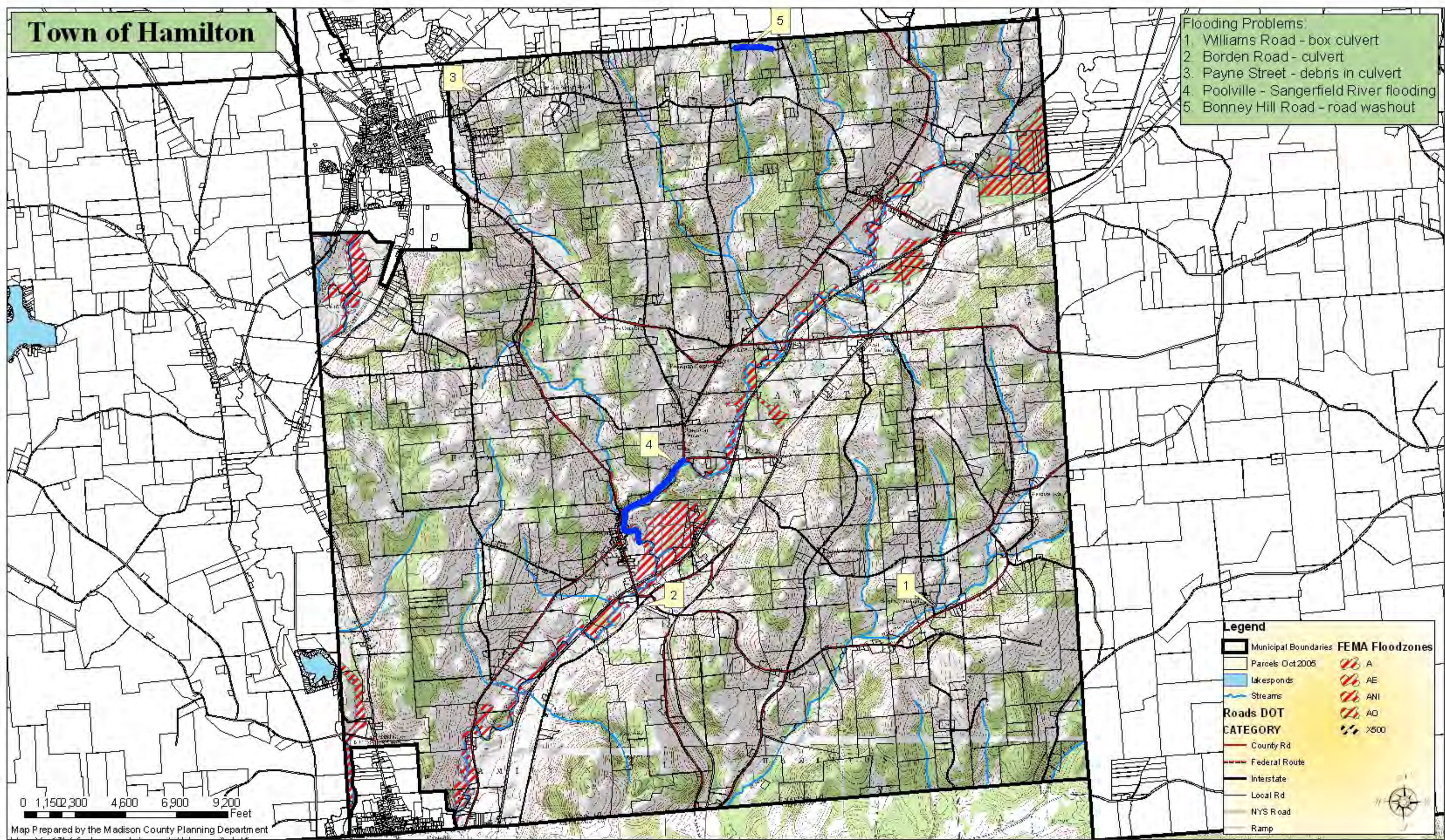
- Flooding Problems:
1. Otselic Creek
 2. Firemans Field
 3. Lebanon Road and Otselic River



Map Prepared by the Madison County Planning Department

Town of Hamilton

- Flooding Problems:**
1. Williams Road - box culvert
 2. Borden Road - culvert
 3. Payne Street - debris in culvert
 4. Poolville - Sangerfield River flooding
 5. Bonney Hill Road - road washout



Legend

Municipal Boundaries	FEMA Floodzones
Parcels Oct 2005	A
Lakes/ponds	AE
Streams	ANI
Roads DOT CATEGORY	AO
County Rd	X500
Federal Route	
Interstate	
Local Rd	
NYS Road	
Ramp	

0 1,150 2,300 4,600 6,900 9,200 Feet
 Map Prepared by the Madison County Planning Department

Town of Lebanon

1. Bartlett Road
2. Reservoir Road
3. Fisk Road
4. Lebanon Center Road
5. South Lebanon Road
6. Nilles Road
7. State Route 12B
- A. Carncross Road
- B. Stowell Road
- C. Deep Springs Road

Legend

	Municipal Boundaries		FEMA Floodzones
	Lakesponds		AE
	Parcels Oct 2005		ANI
	Streams		AO
	Roads DOT		X500
	County Rd		
	Federal Route		
	Interstate		
	Local Rd		
	NYS Road		
	Ramp		

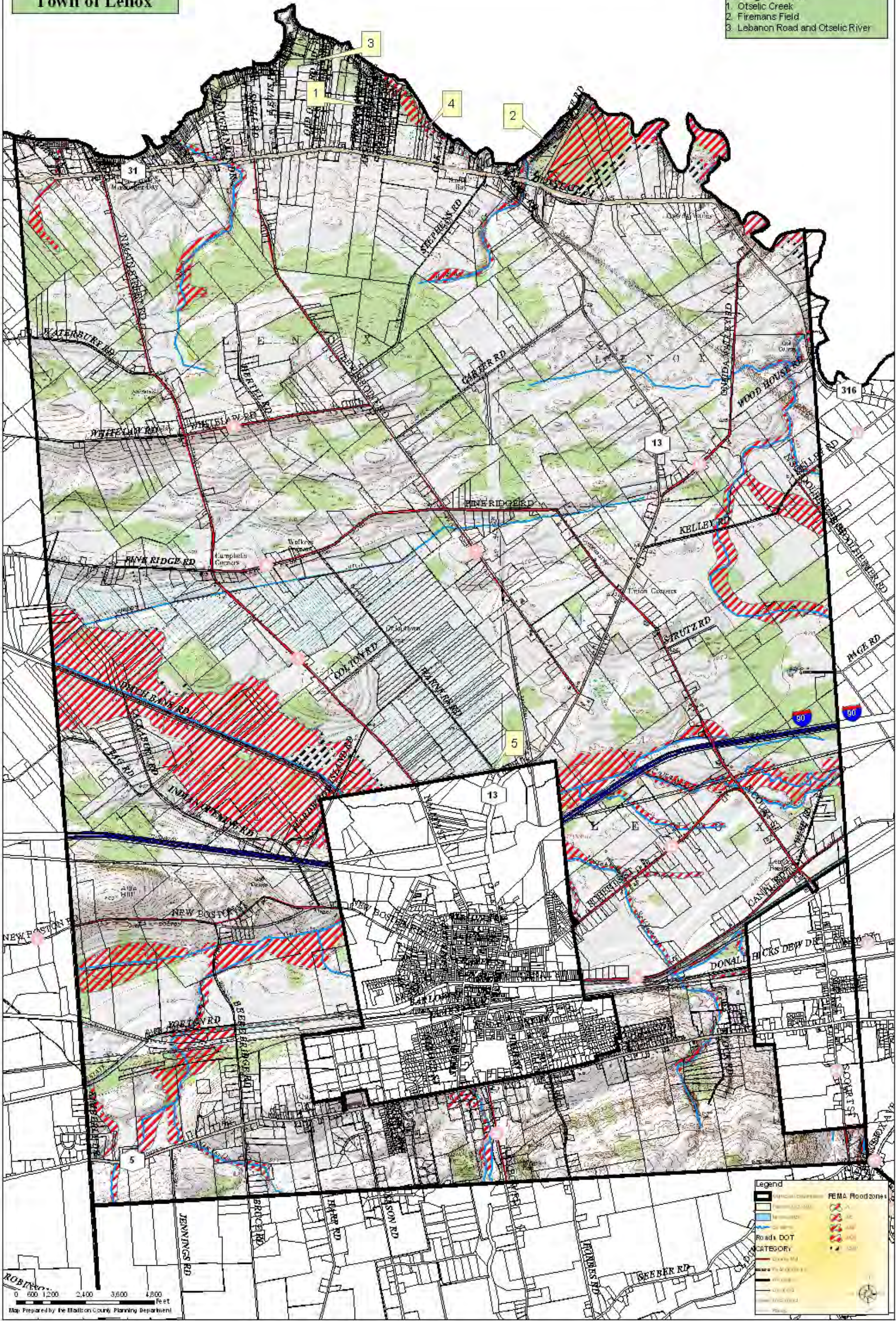
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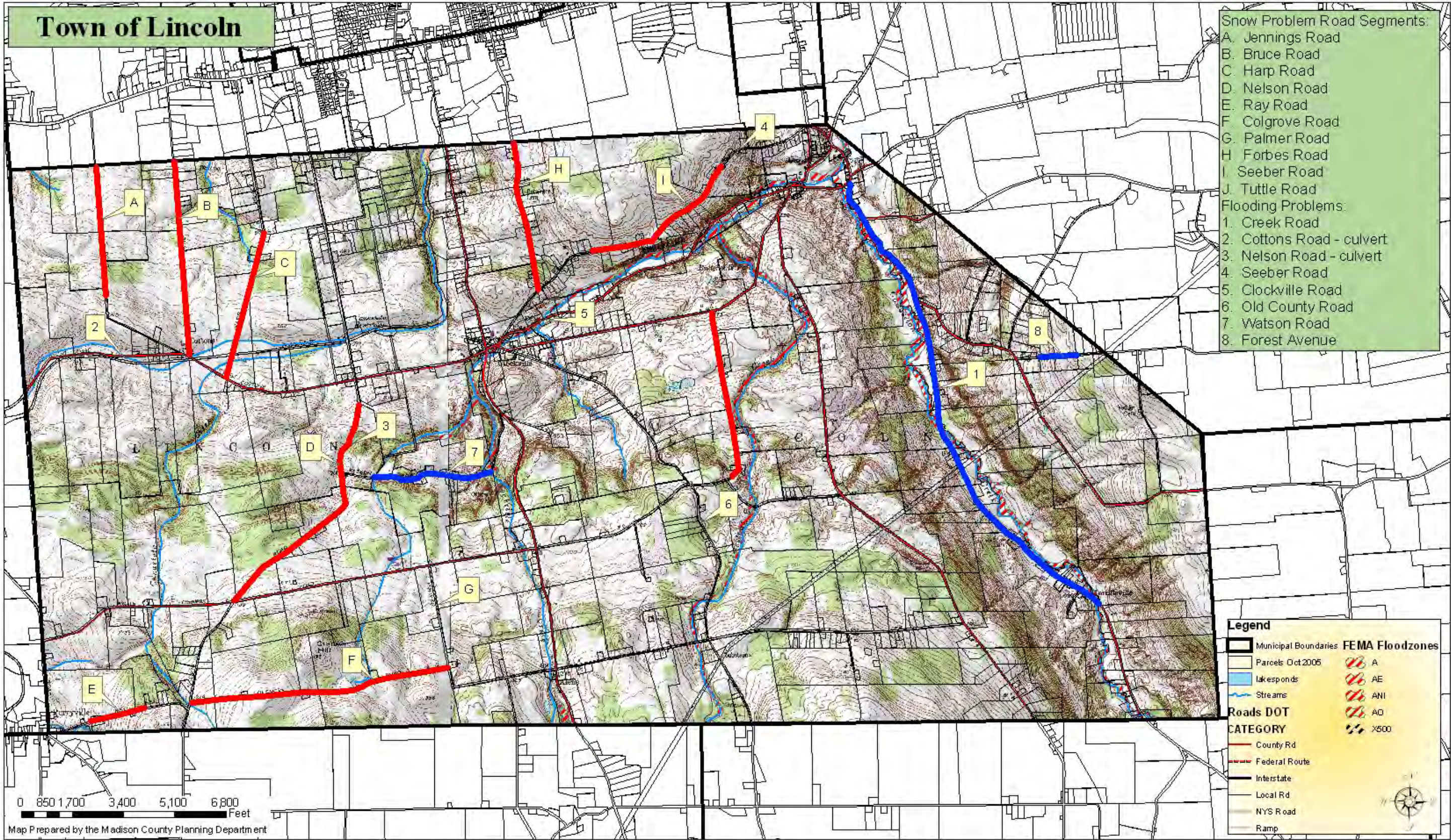
Map Prepared by the Madison County Planning Department

Town of Lenox

Flooding Problems:

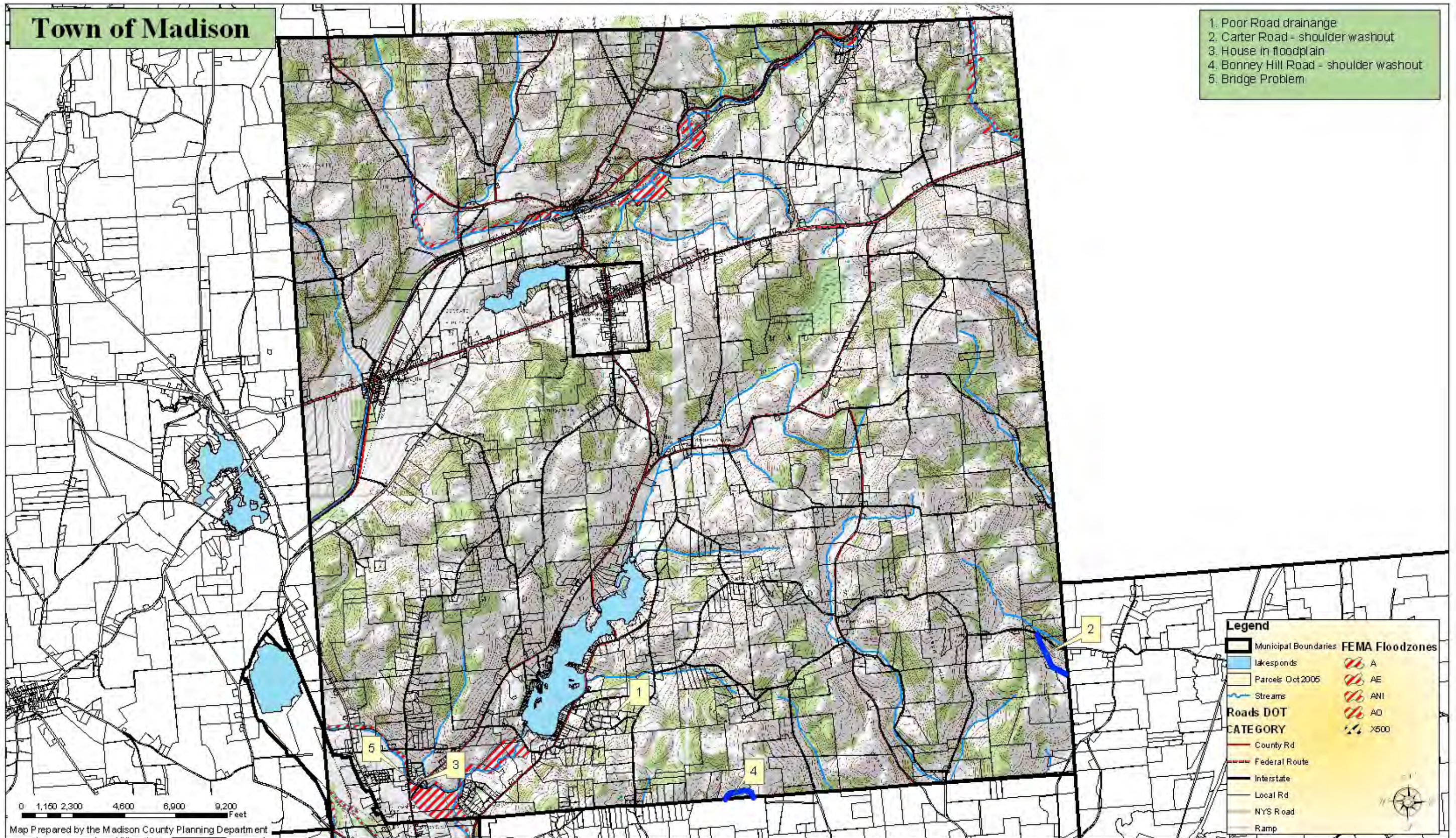
1. Otselic Creek
2. Firemans Field
3. Lebanon Road and Otselic River





Town of Madison

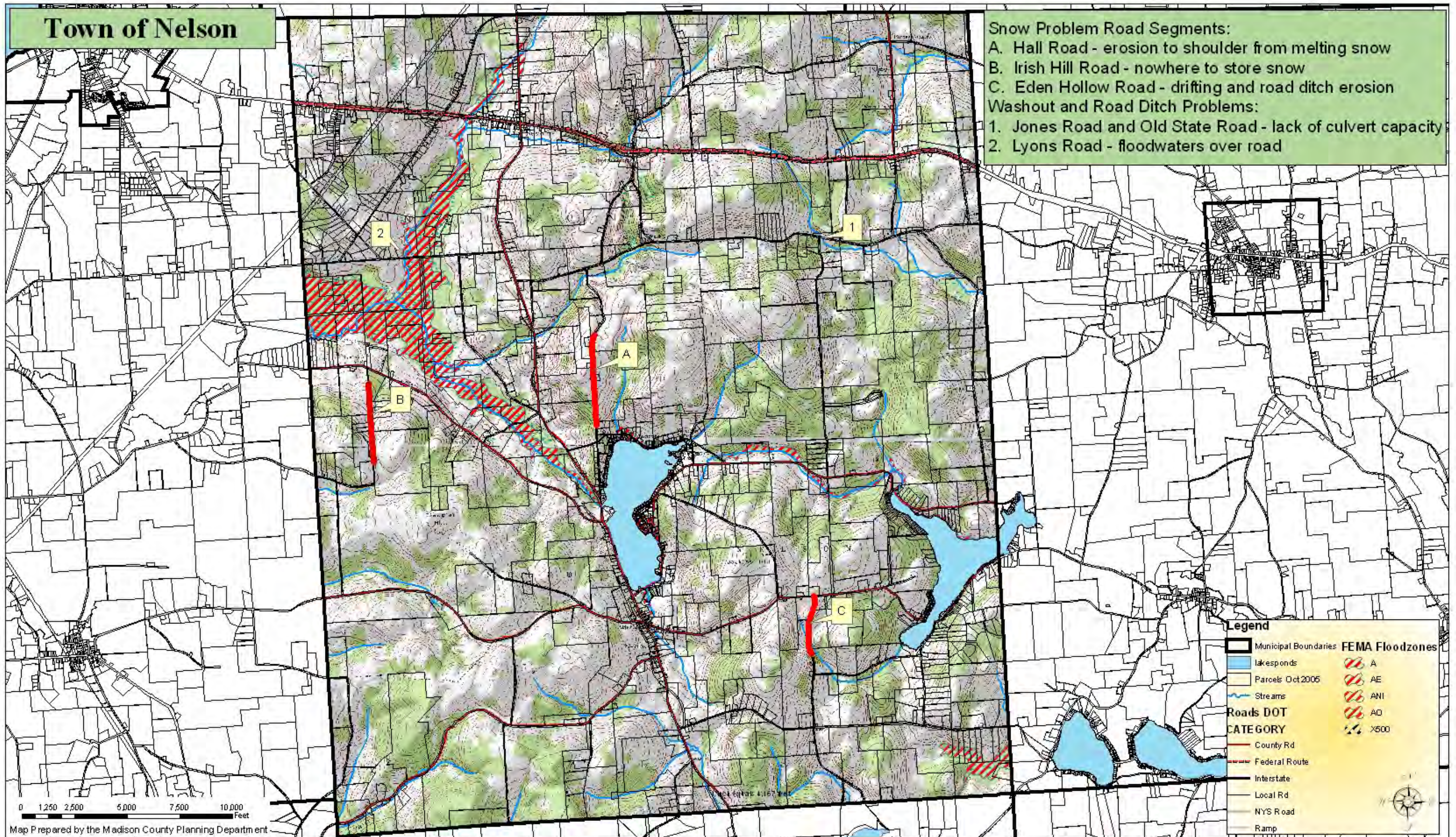
1. Poor Road drainage
2. Carter Road - shoulder washout
3. House in floodplain
4. Bonney Hill Road - shoulder washout
5. Bridge Problem



Map Prepared by the Madison County Planning Department

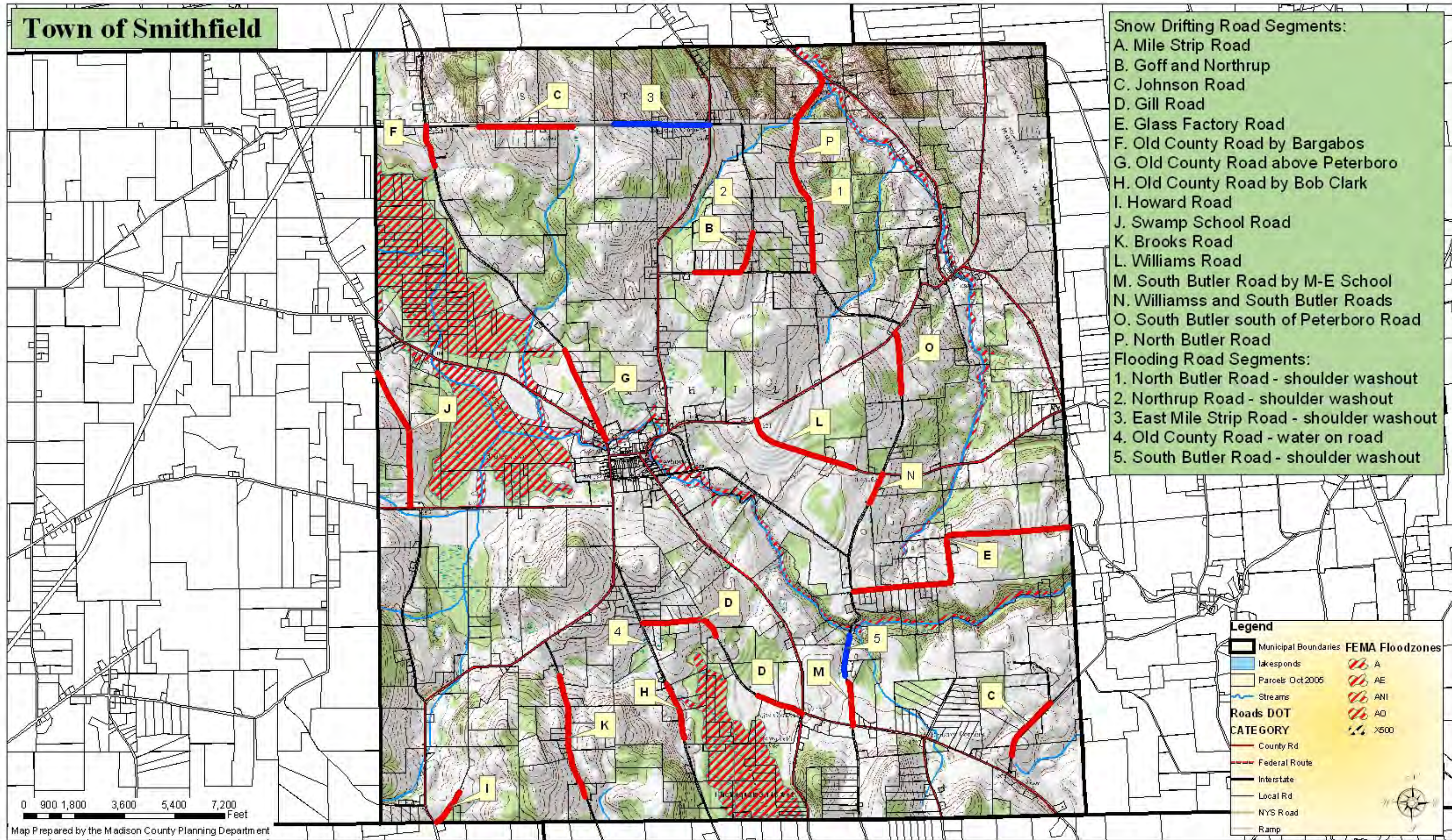
Town of Nelson

Snow Problem Road Segments:
 A. Hall Road - erosion to shoulder from melting snow
 B. Irish Hill Road - nowhere to store snow
 C. Eden Hollow Road - drifting and road ditch erosion
Washout and Road Ditch Problems:
 1. Jones Road and Old State Road - lack of culvert capacity
 2. Lyons Road - floodwaters over road



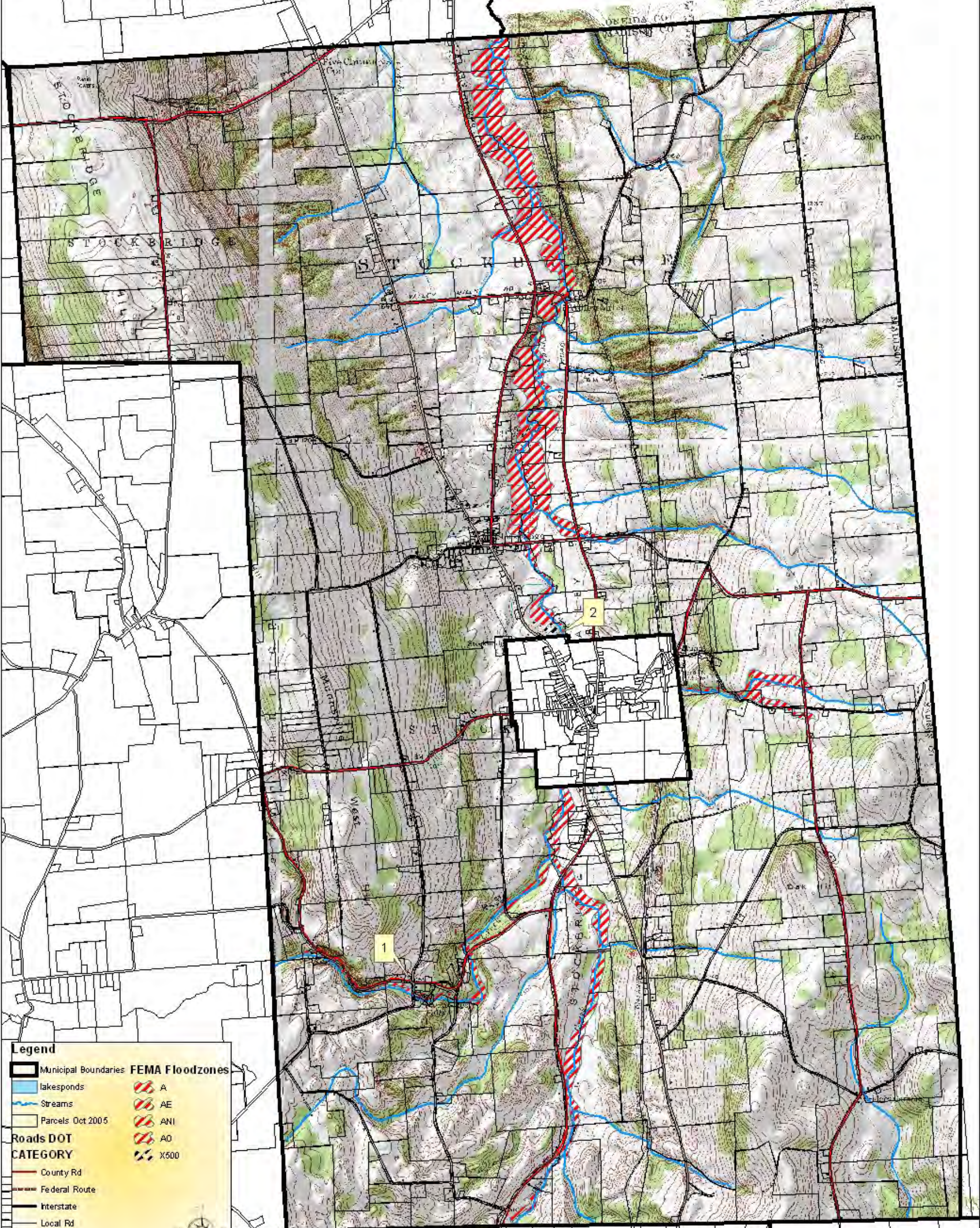
Town of Smithfield

- Snow Drifting Road Segments:**
- A. Mile Strip Road
 - B. Goff and Northrup
 - C. Johnson Road
 - D. Gill Road
 - E. Glass Factory Road
 - F. Old County Road by Bargabos
 - G. Old County Road above Peterboro
 - H. Old County Road by Bob Clark
 - I. Howard Road
 - J. Swamp School Road
 - K. Brooks Road
 - L. Williams Road
 - M. South Butler Road by M-E School
 - N. Williamss and South Butler Roads
 - O. South Butler south of Peterboro Road
 - P. North Butler Road
- Flooding Road Segments:**
- 1. North Butler Road - shoulder washout
 - 2. Northrup Road - shoulder washout
 - 3. East Mile Strip Road - shoulder washout
 - 4. Old County Road - water on road
 - 5. South Butler Road - shoulder washout



Flooding Problems:
 1. Flooding to residents from ice jams
 2. Bank erosion on Oneida Creek

Town of Stockbridge



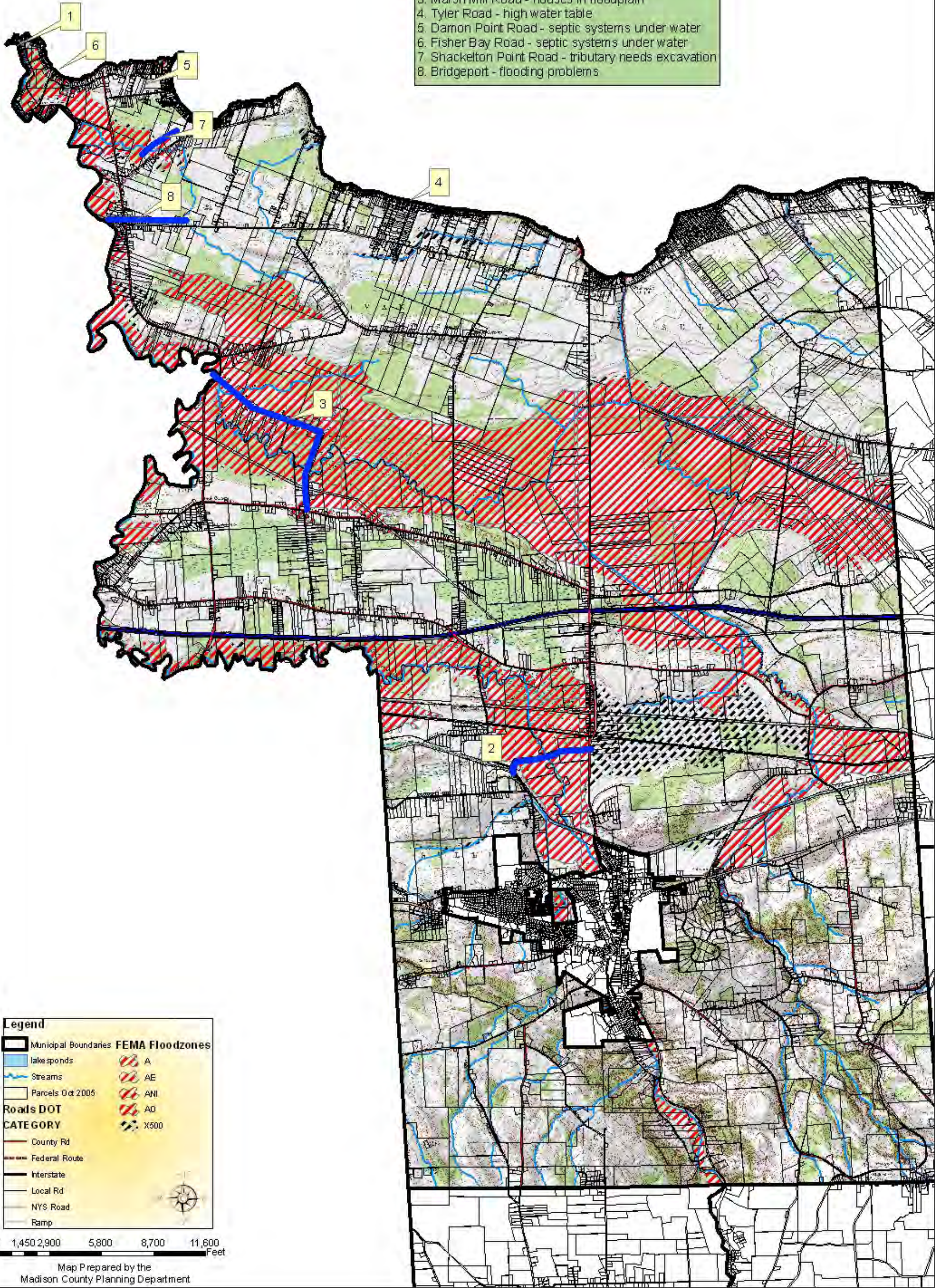
Legend

Municipal Boundaries	FEMA Floodzones
Lakesponds	AE
Streams	ANI
Parcels Oct 2005	AO
Roads DOT CATEGORY	X500
County Rd	
Federal Route	
Interstate	
Local Rd	
NYS Road	
Ramp	

0 850 1,700 3,400 5,100 6,800 Feet

Map Prepared by the
Madison County Planning Department

- 1 Houses in the Floodway
- 2 McGraw Road - chronic flooding
- 3 Marsh Mill Road - houses in floodplain
- 4 Tyler Road - high water table
- 5 Damon Point Road - septic systems under water
- 6 Fisher Bay Road - septic systems under water
- 7 Shackleton Point Road - tributary needs excavation
- 8 Bridgeport - flooding problems

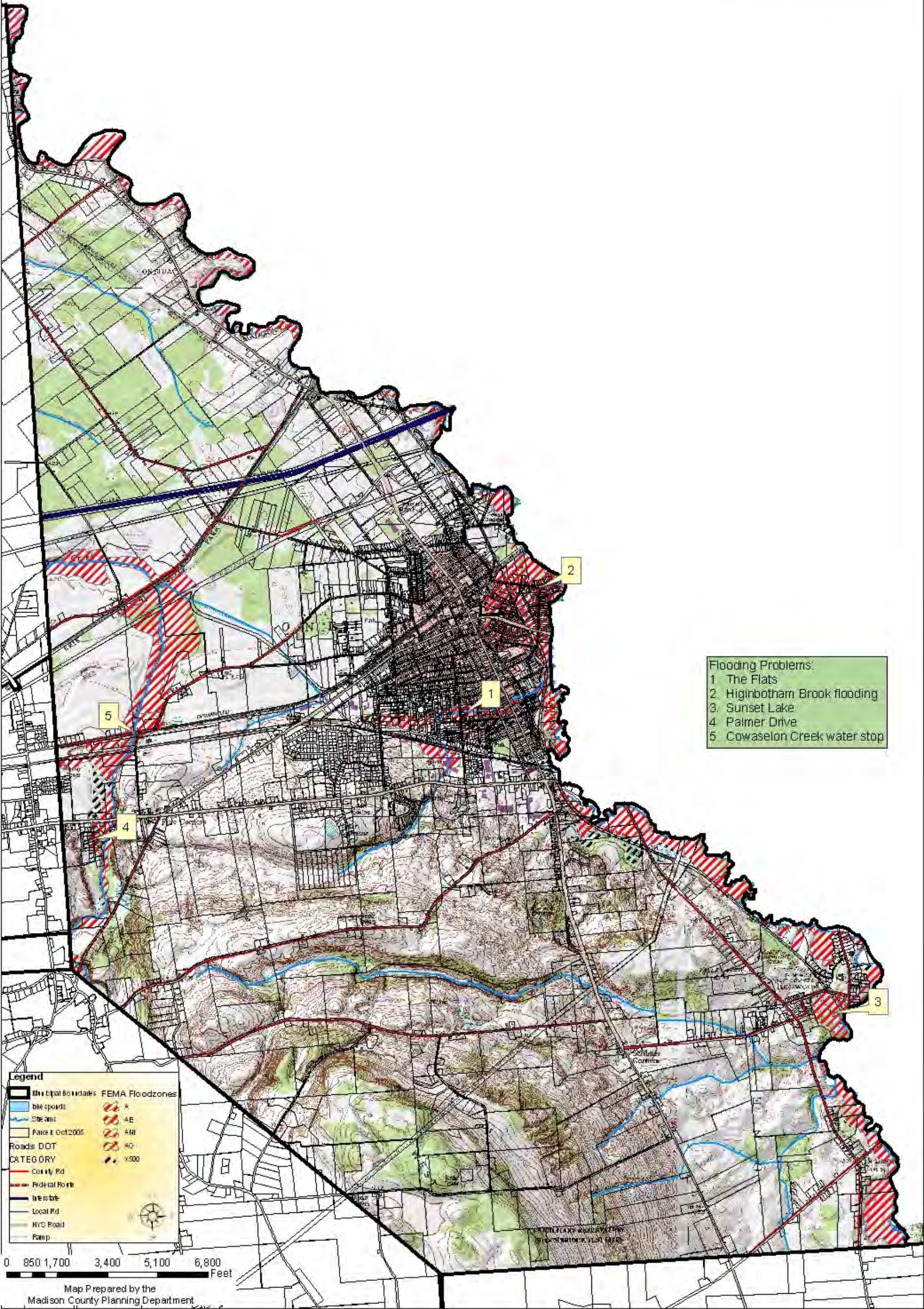


Legend

Municipal Boundaries	FEMA Floodzones
Lakes/Ponds	AE
Streams	ANI
Parcels Oct 2005	AO
Roads DOT	X500
CATEGORY	
County Rd	
Federal Route	
Interstate	
Local Rd	
NYS Road	
Ramp	

0 1,450 2,900 5,800 8,700 11,600 Feet

Map Prepared by the
Madison County Planning Department



appendix d worksheet job aids

Worksheet Job Aid #1: Alternative Mitigation Actions by Hazard

You can use this job aid when filling out Worksheet #1. This job aid shows you at a quick glance the type of actions that can address the selected seven hazards. A description of each action is included in the glossary in Appendix A.

Alternative Mitigation Actions	Prevention													
	Building codes	Coastal zone management regulations	Denial controls	Design review standards	Easements	Environmental review standards	Floodplain development regulations	Floodplain zoning	Forest fire fuel reduction	Hillside development regulations	Open space preservation	Performance standards	Shoreline setback regulations	Special use permits
Floods	■	■	■	■	■	■	■	■			■	■	■	■
Earthquakes	■		■	■	■	■				■	■	■		■
Tsunamis	■	■	■	■		■					■	■	■	■
Tornadoes	■			■		■						■		■
Coastal Storms	■	■	■	■	■	■	■	■			■	■	■	■
Landslides	■		■	■	■	■			■	■	■	■	■	■
Wildfires	■		■	■	■	■			■	■	■	■		■

Alternative Mitigation Actions	Property Protection					Public Education & Awareness		
	Acquisition of hazard-prone structures	Construction of barriers around structures	Elevation of structures	Relocation out of hazard areas	Structural retrofits (e.g., reinforcement, flood-proofing, storm shutters, bracing, etc.)	Hazard information centers	Public education and outreach programs	Real estate disclosure
Floods	■	■	■	■	■	■	■	■
Earthquakes	■			■	■	■	■	■
Tsunamis	■	■	■	■	■	■	■	■
Tornadoes					■	■	■	■
Coastal Storms	■	■	■	■	■	■	■	■
Landslides	■			■		■	■	■
Wildfires	■			■		■	■	■

Alternative Mitigation Actions	Natural Resource Protection							
	Best Management Practices (BMPs)	Dune and beach restoration	Forest and vegetation management	Sediment and erosion control regulations	Stream corridor restoration	Stream dumping regulations	Urban forestry and landscape management	Wetlands development regulations
Floods	■		■	■	■	■	■	■
Earthquakes	■							
Tsunamis		■		■				
Tornadoes								
Coastal Storms	■	■		■				■
Landslides	■		■	■	■		■	■
Wildfires	■		■				■	■



Alternative Mitigation Actions	Emergency Services						Structural Projects				
	Critical facilities protection	Emergency response services	Hazard threat recognition	Hazard warning systems (community sirens, NOAA weather radio)	Health and safety maintenance	Post-disaster mitigation	Channel maintenance	Dams/reservoirs ¹	Levees and floodwalls	Safe room/shelter	Seawall/bulkheads
Floods	■	■	■	■	■	■	■	■	■		
Earthquakes	■	■	■	■	■	■					
Tsunamis	■	■	■	■	■	■			■		■
Tornadoes	■	■	■	■	■	■				■	
Coastal Storms	■	■	■	■	■	■	■		■	■	■
Landslides	■	■	■	■	■	■					
Wildfires	■	■	■	■	■	■					



APPEDIX EF
Annual Evaluation of Hazard Mitigation Efforts

Name of Municipality: _____

Emergency Coordinator: _____

Date: _____

Disasters that Occurred During Previous Year: _____

Mitigation Measures Needed but not Covered for Disaster _____

Mitigation Measures Implemented During the Previous Year _____

Changes Needed to Mitigation Plan (Attach Pages of Plan with Edited Remarks if
Needed): _____
