

Chapter 8: *Mitigation Strategy*

SECTION 8.1: INTRODUCTION

According to the Federal Emergency Management Agency (FEMA), mitigation is the cornerstone of emergency management planning. Mitigation involves long-term actions taken to reduce and/or eliminate the impact of disasters on people's lives and the built environment. Pre-disaster planning saves lives, protects property, and lessens the cost of disaster response and recovery.

Chapter 5 identified and prioritized potential hazards that could occur in Orleans County. Chapter 6 detailed major past incidents of hazard events and future probabilities. Chapter 7 identified critical facilities and community assets in the County and assessed the vulnerability of these facilities to specific hazards.

Chapter 8 outlines the methodology used in developing the plan's Mitigation Strategy, the Goals and Objectives that structure the Mitigation Strategy, and the proposed Mitigation Measures that provide specific suggestions aimed at reducing and/or eliminating the risks associated with the county's vulnerability to various hazard events.

SECTION 8.2: METHODOLOGY

The Mitigation Strategy was developed with direct input from the Orleans County All-Hazard Mitigation Planning Committee. The strategy was developed in several phases which are described below.

In September 2006, at a regular meeting of the Orleans County All-Hazard Mitigation Planning Committee, work on the Mitigation Strategy got underway. G/FLRPC staff distributed a document to the committee members that outlined the procedures of developing the Mitigation Strategy. This document was based on FEMA guidelines, such as those found in the FEMA publication "Developing the Mitigation Plan: Identifying Mitigation Actions and Implementation Strategies," FEMA 386-3. The attendees then discussed and developed draft goals and objectives for the plan. These five goals (listed below, see pages 130-131) serve to structure the Mitigation Strategy.

At the October 2006 Planning Committee meeting the attendees approved the draft goals and their accompanying objectives. The committee members also began discussing some potential mitigation measures. Based on the handouts and drawing on their ideas for mitigation projects, the attendees developed a list of potential projects. This list was distributed to town and village officials to give them an idea of what hazard mitigation projects the Planning Committee is considering as well as to help them generate their own project ideas.

In early December 2006 a series of Regional (Municipal) meetings and a County Agency meeting were held to give municipal and county officials the opportunity to discuss their mitigation concerns in depth with G/FLRPC staff and to develop specific mitigation measures. Many mitigation measures included in this report were generated at these meetings.

A schedule of these meetings follows:

Region	Municipalities:	Dates/Times:	Locations:
1	Towns of Yates, Carlton, Kendall; Village of Lyndonville.	December 6 th , 2006 2:00 – 4:00 PM	Carlton Town Hall

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2	Towns of Ridgeway, Gaines, Albion, Murray; Villages of Medina, Albion, Holley.	December 7 th , 2006 10:00 AM – Noon	Albion Town Hall
3	Towns of Shelby, Barre, Clarendon.	December 7 th , 2006 2:00 – 4:00 PM	Albion Town Hall
County Agency Meeting		December 6 th , 2006 10:00 AM - Noon	Orleans County Emergency Management Office

The result of these meetings was a comprehensive list of specific mitigation measures that addressed the highest ranked hazard events in the Hazard Analysis Report (see Chapter 5 for more information). Following these meetings, the mitigation measures were ranked at the December Planning Committee Meeting. The committee members used the STAPLEE criteria (explained below, pages 131-132) to prioritize the mitigation measures.

Municipal officials who were unable to attend their Regional meetings were offered the opportunity to attend the December Planning Committee meeting, discuss potential mitigation measures with the full Committee, and submit their project ideas to the Committee as well.

After the ranking activity, G/FLRPC staff completed a draft of Chapter 8, the *Mitigation Strategy*. This draft was presented to the Committee at the January 26th, 2007 Planning Committee meeting.

The mitigation actions outlined in the following pages will be integrated into county and municipal planning programs. The approved and adopted All-Hazard Mitigation Plan will be used when developing and revising municipal comprehensive plans, subdivision regulations, zoning codes, and other land use regulations. When existing county or municipal plans are reviewed and updated, they will be revised to reflect the goals and objectives, as well as specific projects where appropriate, of the All-Hazard Mitigation Plan. When new county or municipal plans are created, they will also incorporate the goals and objectives of this plan.

SECTION 8.3: MITIGATION GOALS AND OBJECTIVES

Mitigation Goals and Objectives, as defined below, were identified by the Planning Committee to help guide the development of mitigation measures. The five goals are overarching concepts that provide a framework for the intentions of the Mitigation Strategy. The objectives are measurable actions intended to support each goal. The goals and objectives were developed in the process described in the previous section.

Goal 1 Protect life and property from the impacts of natural, technological and human-caused disasters.

- Objective 1.1 Set the priority on hazards that cause repetitive damage and/or pose severe risk.
- Objective 1.2 Develop and implement strategies that make critical facilities and community assets, as well as private homes and businesses, more resistant to the impact of hazard events.
- Objective 1.3 Encourage preventative measures for existing and new development in areas vulnerable to hazards, and develop strategies that support municipal officials working towards responsible development in hazard-prone areas.

Goal 2 Enhance awareness and education of the risks associated with natural, technological, and human-caused hazards.

- Objective 2.1 Recognize what issues the public needs to understand about hazard mitigation.

Objective 2.2 Develop and execute education and outreach programs to increase public awareness of both the risks associated with hazards, and strategies that can be adopted to lessen the impact of hazard events.

Objective 2.3 Provide information on resources available for implementing mitigation strategies.

Goal 3 Build a hazard mitigation infrastructure and promote pre-disaster mitigation as the most effective means to reduce future disaster losses.

Objective 3.1 Utilize the All-Hazard Mitigation Plan effectively by clearly communicating about plan implementation, plan maintenance and plan updates. This includes helping people to understand what their role is in both disaster response and pre-disaster mitigation.

Objective 3.2 Identify agencies, personnel and resources available to implement pre-disaster mitigation activities and initiatives.

Objective 3.3 Track and/or recommend Federal, State and local legislation related to hazard mitigation.

Goal 4 Reduce barriers to implementing coordinated hazard mitigation strategies across Federal, State, Regional, County and Municipal agencies.

Objective 4.1 Foster an awareness of the efforts and practices already in place through the efforts of various agencies and organizations, and develop a coordinated way to work together.

Objective 4.2 Coordinate participation and encourage communication among various stakeholders in order to effectively implement mitigation strategies and respond to hazard events.

Objective 4.3 Encourage leadership within public and private sector organizations to prioritize and implement local, county, regional and state hazard mitigation strategies.

Goal 5 Encourage the development and implementation of long-term, cost-effective and environmentally sound local mitigation projects.

Objective 5.1 Balance watershed planning, natural resource management, and land use planning with hazard mitigation to protect life, property, and the environment.

Objective 5.2 Consider other long-term regional, county and municipal plans, and mesh the implementation of the hazard mitigation strategies into these long-term visions for the future.

SECTION 8.4: ANALYSIS OF MITIGATION MEASURES

A detailed cost-benefit analysis of each mitigation measure was beyond the scope and intent of this plan. However, during the Mitigation Strategy development phase, the Planning Committee used the FEMA “STAPLEE” criteria as a guide for developing and prioritizing the mitigation measures.

STAPLEE is an acronym that stands for the following:

S – Social: Consider public acceptance and support of the mitigation measure.

T – Technical: Evaluate whether the proposed action is technically feasible.

A – Administrative: Evaluate the anticipated staffing, funding, and maintenance requirements of the mitigation measure.

P – Political: Determine the local political leadership’s support of the mitigation measure.

L – Legal: Evaluate the community’s legal authority to implement a mitigation measure.

E – Economic: Consider the cost-effectiveness of the action, potential funding sources, and the potential impact on local economic conditions.

E – Environmental: Evaluate how the action affects local environmental concerns.

STAPLEE is a widely accepted evaluation process used throughout the country in hazard mitigation planning. It provides a systematic procedure for assessing the practicality of proposed mitigation measures.

Each mitigation measure was initially prioritized by the Planning Committee members. The Committee used the STAPLEE categories to *qualitatively* assess the ability of each mitigation measure to effectively address a potential hazard. After this initial assessment was complete, G/FLRPC staff prepared a *quantitative* assessment of each mitigation measure by assigning a numerical value to each of the seven STAPLEE criteria. This numerical value was based on the Planning Committee’s feedback obtained at the December 2006 Planning Committee meeting as described above (see page 130). This assessment resulted in the assignment of High, Medium, or Low priorities to each mitigation measure. Please refer to Appendix C, *Mitigation Measure Cost-Benefit Reviews and Priority Assessments*, for detailed information on the prioritization of each individual mitigation measure.

High priority actions were determined to be actions that would solve the most pressing hazard issues in the county, have the greatest long term mitigation benefits, enjoy broad public and political backing, be technically feasible and environmentally sound, and be easily implemented through existing administrative and legal channels once support for the action is put in place.

Medium priority actions met all the above criteria, except that they addressed less pressing potential hazard issues and less hazard-prone conditions.

Low priority actions also met the above criteria, except that they address the least pressing potential hazards and the least hazard-prone conditions.

The municipal prioritization process also used the STAPLEE criteria, but at a different scale. Municipal officials were asked to select a number of mitigation measures from the countywide master list that they considered particularly important for their towns and villages. Municipalities will act in a supporting role to County departments and agencies in carrying out these mitigation measures. In addition, municipal officials were asked to identify specific projects unique to their communities. Not every municipality identified specific projects at this stage, but future revisions of the Orleans County All-Hazard Mitigation Plan will include additional mitigation projects that are specific to individual municipalities. All municipalities will actively participate in the implementation of countywide hazard mitigation projects.

Mitigation projects that are related to flooding/drainage problems are included in Appendix E, which provides a list identifying flooding/drainage problem sites within each municipality. The municipalities will work with the Orleans County Soil and Water Conservation District to remediate these problem sites.

The county and municipal mitigation measure tables (see **Section 8.7** on page 138) include additional information for each mitigation measure. An estimated timeframe, potential funding sources, potential lead agencies, potential supporting agencies, and an estimated cost are identified for all mitigation measures.

SECTION 8.5: MITIGATION MEASURE CATEGORIES

This section aims to identify potential mitigation actions based on the Hazard Assessment that can be used to lessen the impacts of hazard events in Orleans County communities. The Mitigation Strategy is based on the input provided by the All-Hazard Mitigation Planning Committee.

All mitigation actions can be grouped into six key categories:

Prevention. Government administrative or regulatory actions or processes that influence the way land and building are developed or built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and storm water management regulations.

Example: Review and update floodplain local laws

Property Protection. Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Example: Town Board will encourage property owners to consider flood proofing their properties, and attempt to procure funding to defray the costs

Public Education and Awareness. Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers and school-age and adult education programs.

Example: Disclosure of flood hazards to potential property owners

Natural Resource Protection. Actions that, in addition to minimizing hazard loss also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Example: Implement erosion and sediment control projects

Emergency Services. Actions that protect people and property during and immediately after a disaster or hazard event. Services include warning systems, emergency response services, and protection of critical facilities.

Example: Develop a flood warning system that includes installation of a rain gauge and marking bridges with critical flood elevations

Structural Projects. Actions that involve the construction of structures to reduce the impact of a hazard. Structures include dams, levees, floodwalls, seawalls, retaining walls, and safe rooms.

Example: Village DPW will work with appropriate parties to ensure that storm sewers are installed at certain locations

SECTION 8.6: HAZARD MITIGATION MEASURES – MASTER LIST

This section identifies potential mitigation actions based on the Hazard Assessment that can be used to lessen the impacts of hazard events in Orleans County communities. The mitigation measures are based on the input provided by municipal officials, county agency representatives, the Orleans County Flood Mitigation Prioritization Plan, the Genesee/Finger Lakes Regional Planning Council, and the All-Hazard Mitigation Planning Committee.

The following master list of mitigation measures is organized according to the six categories that are explained on the previous page.

Prevention:

1. Digitalize and update all Flood Insurance Rate Maps (FIRMs). This process is currently underway at the state level and county/local officials should coordinate where necessary to ensure their communities are accurately mapped. Updated FIRMs will be used by Orleans County municipalities to revise their zoning codes in order to steer new development away from flood prone areas.
2. All municipalities should consider participating in the Community Rating System (CRS). The CRS is a voluntary program that provides reduced flood insurance premiums (ranging from 5% to 45%) to municipalities that exceed the NFIP's minimum floodplain management requirements.
3. Develop a county-wide drainage district to minimize the impact of flooding and remediate drainage problems. The Orleans County Drainage District (OCDD) will identify specific flooding and drainage problem sites, determine the best means of eliminating them, and coordinate the remediation work. The Orleans County Soil & Water Conservation District will spearhead this initiative and oversee all flood/drainage remediation projects in the county. The *Orleans County Flood Mitigation Prioritization Plan* will constitute the official document that guides the OCDD's projects.

The OCDD will begin implementing flood mitigation projects identified in the *Orleans County Flood Mitigation Prioritization Plan*, which provides a detailed overview of flooding and drainage problem areas throughout the County. Specific flood problem sites in Orleans County are listed in *Appendix E* of this Plan.

4. Develop a central GIS clearinghouse to provide county and municipal officials with detailed and accurate maps depicting all utility lines, infrastructure, critical facilities, land uses and covers, for use in emergency situations.
5. The Orleans County Emergency Management Office, Highway Department, Planning Department, and Soil & Water Conservation District should regularly communicate with the NYS Canal Corporation, specifically the Buffalo Division and Albion Section, regarding maintenance projects along the canal.

Property Protection:

6. Where necessary, install/upgrade back-up power sources at key installations, including:
 - Town highway garages/fuel farms.
 - Village DPW garages/fuel farms.
 - Fire halls.
 - Nursing/senior living facilities.
 - Emergency shelters.
 - Water treatment plants.
 - Wastewater treatment plants.
 - Sewer lift stations.
7. Assess the safety of three critical dams: the Waterport/Lake Alice, Glenwood, and Lyndonville dams. The Lyndonville dam's flood gates are leaking and there are erosion problems around the structure.

The Waterport/Lake Alice dam is visibly in need of maintenance work. This dam is the most critical to assess because a dam failure could cause significant property damage/loss of life if it were to occur during the sports fishing season. If the safety assessments determine there are serious problems with the dams, the State DEC Dam Safety Section should be alerted.

8. Upgrade security at the lakeshore water supply plants for Yates and Albion. New security features would include fencing, cameras, and tighter control over access to the facilities.
9. Water plant intakes on Lake Ontario should be regularly patrolled to keep people away from them. During the navigation season, buoys could be anchored over the intakes warning people to avoid them. The County should coordinate with the U.S. Coast Guard to safeguard the water intakes.
10. Revise local laws to mandate the use of backflow preventers for municipal water systems.
11. Install a camera on top of the new lighthouse at the mouth of the Oak Orchard Creek to provide information on weather and for surveillance.
12. When revising local zoning laws and ordinances, subdivision regulations, and site plan review ordinances, municipal officials will collaborate with local fire departments to ensure that adequate provisions for addressing wildfires are included within such local laws, ordinances and codes.
13. The Office of Emergency Management will have a countywide seismic vulnerability survey prepared (to be known as the Orleans County Seismic Vulnerability Survey). This survey will assess the vulnerability of key dams; bridges; and public, institutional, and utility buildings and facilities to earthquakes.
14. Based on the Orleans County Seismic Vulnerability Survey, a seismic protection plan for each of the critical facilities identified by the survey will be prepared by the agency responsible for overseeing the maintenance and operation of the facility.
15. All municipalities will enforce the New York State Building Code for all new, remodeled, repaired, and expanded buildings with the aim of making such buildings more resistant to earthquakes. In general, all new construction and reconstruction of existing buildings in the County should be designed to withstand a magnitude 6.5 earthquake.
16. Tree limbs should be trimmed away from buildings and structures that could be damaged if the limbs fall due to high winds or ice build up. Municipal officials will oversee the trimming of branches away from public buildings and facilities, but private landowners should ensure their properties are sufficiently protected as well.
17. Develop a countywide tree trimming program aimed at safeguarding utility infrastructure from falling tree limbs due to ice storms, severe storms, and other high wind events such as tornadoes.
18. All community/municipal buildings, such as town halls, highway and public works garages, community centers, libraries, schools, and other such buildings, will be renovated to ensure they are wind-resistant and meet design wind speeds.
19. Municipal governing boards and code enforcement officers will consider upgrading their building codes and code enforcement procedures to ensure that all new construction, and all reconstruction of existing buildings, is designed and built to be wind-resistant and able to withstand design wind speeds.

Public Education and Awareness:

20. Develop and print brochures about hazard awareness and preparation. These brochures should demonstrate how citizens can prepare for specific hazards. The brochures can be distributed through tax bills, utility bills, public information sessions, and at town and village halls. Specific topics that should be covered include:
 - Property maintenance activities aimed at safeguarding private residences from the effects of severe storms, high wind events, and ice storms, such as tree-trimming practices, the use of plantings that are resistant to ice build-up, stockpiling of food and medicine for at least three days, and other actions that can help citizens protect their property and survive severe storm events.
 - Information on how to cope with prolonged periods of extreme heat and cold and the location of emergency shelters that can provide relief from these events.
 - Information on how to help prevent and cope with epidemics should they occur.
 - The threat posed by earthquakes to the County.
 - Information on how to reduce/prevent property damage as a result of flooding.
21. Periodically hold public information sessions to inform and educate interested citizens about disaster preparation activities, such as how to prepare ahead of time for a disaster event and what to do during a disaster. These sessions should be regularly scheduled over the course of a year and publicized through flyers, local papers, and County websites. Different County departments and agencies can take turns running these sessions.

Natural Resource Protection:

22. Develop a countywide tree planting program to replace trees lost in storms. Ensure that all newly planted trees are more resistant to severe weather events, especially ice storms.
23. Purchase/lease a tub grinder for the use of county agencies and all municipalities. Identify and prepare a central location where this grinder will be located and where all debris can be dropped off for grinding.
24. Develop a countywide mosquito control program. This program should be coordinated with the OCDD's projects to ensure that areas of stagnant water are drained or prevented from forming.
25. Encourage the protection of wetlands and aquifers through municipal zoning regulations wherever possible. Wetlands are capable of absorbing large amounts of flood water, slowing and reducing downstream flow, and filtering water of both sediment and pollutants, and many people are not aware of the critical role that wetlands play in the natural system.

Emergency Services:

26. Create an official Orleans County disaster preparedness website. This site should be overseen by the emergency management office, but be developed with input from a broad range of county and municipal officials, as well as from entities such as the Orleans County Red Cross. It will serve as a "clearinghouse" of information for the public about hazard preparation activities.

27. The county will develop a reverse 911 call system to notify inhabitants of upcoming dangers. This system should be designed to function on either a countywide or municipal scale depending on the hazard and the expected geographic extent of that hazard.
28. Develop a hotline for people to call to find out about emergency response information, such as the locations of clinics and shelters. The Emergency Management Office should oversee this hotline, which could be an automated voice system.
29. Develop a low band radio broadcast system for the public to tune into in the event of a disaster. This system can be modeled on the NYSDOT highway radio notification system. Carry out a public outreach program to inform citizens of this system.
30. Develop a flood warning system for the Oak Orchard and Johnson Creeks downstream of the Glenwood and Lyndonville dams.
31. Carry out a countywide equipment review of all Fire Departments to ensure they are equipped with 800 megahertz radios.
32. Revise/update local emergency response plans to include provisions for operating emergency heating/cooling centers, especially for vulnerable population groups such as the disabled, elderly, and young children.

Structural Projects:

33. Upgrade the County’s emergency management office to improve the facility’s capabilities as both a training center and a command center. Key upgrades will include a new radio tower and a GIS system that can track real-time changes in utility outages.
34. Remediate scour problems on key bridges before the bridges are damaged. The following bridges are currently affected by scour problems:

BIN:	Road:	Feature Crossed:
3318800	Yates/Carlton T.L. Road	Johnson Creek
3318830	Angling Road	Johnson Creek
3318840	Marshall Road	Johnson Creek
3318860	Mill Road	Jeddo Creek
3318950	Kenyonville Road	Oak Orchard Creek
3319110	Kent Road	Marsh Creek
3319410	Orleans-Monroe Co. Line Road	Sandy Creek
3361990	Hall Road	Marsh Creek

The Orleans County Highway Department and the Orleans County Soil and Water Conservation District, working with municipal highway and public works departments and private landowners, will periodically identify bridges, culverts, embankments, and other structures that require remediation work aimed at preventing major damage.

35. Municipalities should consider enacting a local law or ordinance that will require a tornado shelter to be built in all mobile home parks.

SECTION 8.7: MITIGATION MEASURES – ACTION PLAN

The following table provides additional details for each of the mitigation measures included in the Master List. Orleans County departments and agencies will work to implement these measures in order to reduce and/or eliminate hazard threats.

The headings and contents of each column in this table should be interpreted as follows:

– Refers to the number assigned to each mitigation measure in the above Master List. Mitigation Measure Number 1 on the Master List is also Number 1 in the table, and so on.

Category – Refers to one of the six categories laid out by FEMA into which mitigation measures can be grouped. Each mitigation measure in this plan is assigned to one of these categories.

Hazard – Refers to the hazard/s that the mitigation measure is intended to address. When “All” appears under this heading, the mitigation measure applies to all potential natural hazards, including: Winter Storms, Ice Storms, Severe Storms, Tornados, Extreme Temperatures, Wildfires, Flooding, Ice Jams, and Earthquakes.

Mitigation Measure – The abbreviated Mitigation Measure from the Master List.

Priority – Refers to the order in which the mitigation measures will be implemented on a *county-wide* scale. High priority mitigation measures will be carried out first, followed by Medium and then Low priority measures. This prioritization does not apply to the municipalities; each municipality has its own customized list of prioritized mitigation measures (see municipal tables beginning on page 141).

Estimated Time Frame – Refers to the estimated time period during which the mitigation measure should ideally be implemented.

Potential Funding Sources – The Department, Agency, Municipality, or organization from which funding to carry out a mitigation measure may be obtained.

Potential Lead Agency – The Department, Agency, Municipality, or organization that will take the lead in implementing the mitigation measure.

Involved Agencies – Any Department, Agency, Municipality, or organization that has a supporting role in implementing the mitigation measure.

Approximate Cost – The estimated cost of carrying out the mitigation measures. This figure is a suggested *estimate* and should be interpreted as a guide, rather than as a definitive cost statement.

Where insufficient information was available to provide a reasonable cost estimate, the cost was listed as “To Be Determined” (TBD). Additional data on costs will be included in future versions of this Plan as it becomes available.

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
1	Prevention	Flooding	Digitalize and update all Flood Insurance Rate Maps (FIRMs).	Med.	2008-2010	FEMA, SEMO	Emergency Management	County Planning, Soil & Water Conservation	TBD

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2	Prevention	Flooding	Municipalities should consider participating in the Community Rating System (CRS)	Med.	2008 - Ongoing	Local Resources	Municipalities	Emergency Management	Staff Time
3	Prevention	Flooding	Develop a county-wide drainage district to minimize the impact of flooding and remediate drainage problems.	High	2008-2010	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time
4	Prevention	All	Develop a central GIS clearinghouse	Med.	2008-2010	SARA Grants, NYS Quality Communities	County Planning	Emergency Management	\$25,000
5	Prevention	Flooding, Ice Jam	Regularly communicate with the NYS Canal Corporation	Low	2008-Ongoing	Local Resources	Emergency Management	County Planning, County Sheriff	Staff Time
6	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Install/upgrade back-up power sources at key county installations.	High	2008-2010	FEMA, SEMO, US Dept. of Interior	County Agencies, Municipalities	Emergency Management	TBD
7	Property Protection	Dam Failure, Flooding	Assess the safety of three critical dams: <ul style="list-style-type: none"> • Waterport/Lake Alice • Glenwood • Lyndonville 	High	2008-2010	NYSDEC, USEPA	Emergency Management	County Planning, T. Ridgeway, T. Yates, T. Carlton, V. Lyndonville, Brookfield Power	\$150,000
8	Property Protection	Terrorism, Water Supply Contamination	Upgrade security at the lakeshore water supply plants.	Med.	2008-2010	USCG, NYSOHS	County Sheriff	U.S. Coast Guard	\$250,000
9	Property Protection	Terrorism, Water Supply Contamination	Regularly patrol water plant intakes on Lake Ontario.	Low	2008-Ongoing	Local Resources	County Sheriff	U.S. Coast Guard	Staff Time
10	Property Protection	Terrorism, Water Supply Contamination	Mandate the use of backflow preventers on municipal water systems	Med.	2008-2010	Local Resources	Municipalities	N/A	Staff Time
11	Property Protection	Terrorism	Install a camera on top of the new lighthouse at the mouth of the Oak Orchard Creek	Med.	2008-2010	NYSOHS, USCG	County Sheriff	U.S. Coast Guard	\$25,000
12	Property Protection	Wildfires	Address wildfires in local zoning, site plan review, and subdivision laws.	Low	2008-2012	Local Resources	Municipalities	N/A	Staff Time
13	Property Protection	Earthquakes	Develop countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
14	Property Protection	Earthquakes	Develop seismic protection plans.	Med.	2008-2016	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time

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17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Develop a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
20	Public Education & Awareness	All	Develop and print brochures about hazard awareness/preparation.	Med.	2008-Ongoing	NYSOHS, Emergency Management	Emergency Management	OC Red Cross, County Health	\$25,000
21	Public Education & Awareness	All	Periodically hold public information sessions to inform and educate interested citizens about disaster preparation activities	Med.	2008-Ongoing	Local Resources	Emergency Management	Any Interested Agencies	Staff Time
22	Natural Resource Protection	Ice Storms, Severe Storms, Tornadoes	Develop a countywide tree planting program	Med.	2008-Ongoing	USEPA, NYSDEC	Soil & Water Conservation District	Municipalities	\$25,000
23	Natural Resource Protection	Ice Storms, Severe Storms, Tornadoes	Purchase/lease a tub grinder for the use of county agencies and all municipalities.	High	2008-2010	US Dept. of Interior	Soil & Water Conservation District	County Highway, Municipalities	\$600,000
24	Natural Resource Protection	Epidemic	Develop a countywide mosquito control program.	Med.	2008-Ongoing	NYSDOH, NYSDEC, USEPA	County Health	OC Red Cross, Soil & Water CD	TBD
25	Natural Resource Protection	Flooding	Encourage the protection of wetlands and aquifers.	Med.	2008-Ongoing	Local Resources	County Planning	Municipalities	Staff Time
26	Emergency Services	All	Create an official Orleans County disaster preparedness website.	Med.	2008-2010	FEMA, SEMO	Emergency Management	OC Red Cross, County Health	\$25,000
27	Emergency Services	All	The county will develop a reverse 911 call system	High	2008-2010	FEMA, SEMO	Emergency Management	County Sheriff	\$50,000
28	Emergency Services	All	Develop an emergency response information hotline.	Med.	2008-2010	FEMA, SEMO	Emergency Management	County Sheriff	\$50,000
29	Emergency Services	All	Develop a low band radio broadcast system.	Med.	2008-2010	FEMA, SEMO	Emergency Management	County Sheriff	\$50,000
30	Emergency Services	Flooding	Develop a flood warming system for the Oak Orchard and Johnson Creeks	High	2008-2012	FEMA, SEMO	Emergency Management, County Health	T. Ridgeway, T. Yates, T. Carlton, V. Lyndonville	\$100,000
31	Emergency Services	All	Carry out a countywide equipment review of all Fire Departments to ensure they are equipped with 800 megahertz radios.	Med.	2008-2010	Local Resources	Emergency Management	Local Fire Departments	Staff Time
32	Emergency Services	Ice Storms, Severe Winter Storms, Tornadoes	Include plans for heating/cooling shelters for vulnerable segments of the population	Med.	2008-2010	Local Resources	Emergency Management	Local Fire Departments, Local Police	Staff Time

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33	Structural Projects	All	Upgrade the county's emergency management office	Med.	2008-2012	FEMA, SEMO	Emergency Management	Local Fire Departments	\$500,000
34	Structural Projects	Flooding	Remediate scour problems on key bridges	Med.	2008-2012	FEMA, SEMO, NYSDOT	County Highway	Town Highway, Village Public Works	TBD
35	Structural Projects	Severe Storms, Tornadoes	Enact local laws requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time

SECTION 8.8: MUNICIPAL MITIGATION MEASURES

The following tables provide additional information for municipal hazard mitigation projects. Each of Orleans County's fourteen municipalities was asked to identify projects from the countywide list that the municipality would actively participate with a lead county entity to accomplish. Mitigation projects that the municipalities will collaborate with county leads to realize are included in the following tables under the "Countywide projects (Municipality) will participate in" heading.

In addition, municipal officials were asked to identify hazard mitigation projects that address concerns that are unique to their municipalities and are not reflected on the countywide project list. Not every municipality chose to include additional projects, but those that did have their projects listed under the "Specific Municipal Projects" heading. Specific municipal projects are numbered with Roman numerals and letters to differentiate them from the countywide projects. Future revisions of the All-Hazard Mitigation Plan will include additional specific projects for each municipality.

The headings and contents of each column in this table should be understood as follows:

– Refers to the number assigned to each mitigation measure in the above Master List. Mitigation Measure Number 1 on the Master List is also Number 1 in the table, and so on.

Projects that are unique to individual municipalities are numbered differently. Each municipality has a Letter Code assigned to it based on an alphabetized list of municipalities within the County:

Municipality:	Letter Code:
Albion, Town	A
Albion, Village	B
Barre, Town	C
Carlton, Town	D
Clarendon, Town	E
Gaines, Town	F
Holley, Village	G
Kendall, Town	H
Lyndonville, Village	I
Medina, Village	J
Murray, Town	K
Ridgeway, Town	L
Shelby, Town	M
Yates, Town	N

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Category – Refers to one of the six categories laid out by FEMA into which mitigation measures can be grouped. Each mitigation measure in this plan is assigned to one of these categories.

Hazard – Refers to the hazard/s that the mitigation measure is intended to address. When “All” appears under this heading, the mitigation measure applies to all potential hazards.

Mitigation Measure – The abbreviated Mitigation Measure from the Master List.

Priority – Refers to the order in which the mitigation measures will be implemented on a *municipal* scale. High priority mitigation measures will be carried out first, followed by Medium and then Low priority measures.

Estimated Time Frame – Refers to the estimated time period during which the mitigation measure should ideally be implemented.

Potential Funding Sources – The Department, Agency, Municipality, or organization from which funding to carry out a mitigation measure may be obtained.

Approximate Cost – The estimated cost of carrying out the mitigation measures. This figure is a suggested *estimate* and should be interpreted as a guide, rather than as a definitive cost statement.

Where insufficient information was available to provide a reasonable estimate, costs will be included in future revisions of this plan as additional information becomes available.

Albion, Town

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects the Town of Albion will participate in:									
2	Prevention	Flooding	The town will consider participating in the CRS.	Med.	2007-2009	Local Resources	Town of Albion	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008- Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter	Participate in the development of a	High	2008- Ongoing	Local Resources	Emergency Management	N/A	Staff Time

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		Storms, Tornadoes	countywide tree trimming program.						
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time

Specific Municipal Projects:

The Town of Albion is not proposing any specific municipal hazard mitigation projects at this time.

Albion, Village

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects the Village of Albion will participate in:									
2	Prevention	Flooding	The village will consider participating in the CRS.	Med.	2007-2009	Local Resources	Village of Albion	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural	Severe	Enact a local law requiring	Low	2008-2010	Local	Municipalities	N/A	Staff

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Projects	Storms, Tornadoes	tornado shelters in mobile home parks.			Resources			Time
Specific Municipal Projects:								
The Village of Albion is not proposing any specific municipal hazard mitigation projects at this time.								

Barre, Town

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Barre will participate in:									
2	Prevention	Flooding	The town will consider participating in the CRS.	Med.	2007-2009	Local Resources	Town of Barre	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time
6	Property Protection	All	Install back-up power generator at town buildings	High	2007-2010	FEMA, SEMO, US Dept. of Interior	Town of Barre	Emergency Management	\$10,000
12	Property Protection	Wildfires	Address wildfires in local zoning, site plan review, and subdivision laws.	Low	2008-2012	Local Resources	Municipalities	N/A	Staff Time
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time
Specific Municipal Projects:									
The Town of Barre is not proposing any specific municipal hazard mitigation projects at this time.									

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Carlton, Town

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Carlton will participate in:									
2	Prevention	Flooding	The town will consider participating in the CRS.	Med.	2007-2009	Local Resources	Town of Carlton	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time
6	Property Protection	All	Install/upgrade back-up power sources at town highway garage, Recreation Hall, and local fire halls	High	2007-2010	FEMA, SEMO, US Dept. of Interior	Town of Carlton		\$50,000 per project
7	Property Protection	Dam Failure, Flooding	Assess the safety of the Waterport Reservoir/Lake Alice dam	High	2007-2009	NYSDEC, USEPA	Emergency Management	County Planning, T. Carlton, Brookfield Power	\$50,000
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time
Specific Municipal Projects:									
The Town of Carlton is not proposing any specific municipal hazard mitigation projects at this time.									

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Clarendon, Town

#	Category	Hazard(s)	Mitigation Measure	Muni. Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Clarendon will participate in:									
2	Prevention	Flooding	The town will consider participating in the CRS.	Med.	2007-2009	Local Resources	Town of Clarendon	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time
12	Property Protection	Wildfires	Address wildfires in local zoning, site plan review, and subdivision laws.	Low	2008-2012	Local Resources	Municipalities	N/A	Staff Time
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time
Specific Municipal Projects:									
The Town of Clarendon is not proposing any specific municipal hazard mitigation projects at this time.									

Gaines, Town

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Gaines will participate in:									
2	Prevention	Flooding	The town will consider participating in the CRS.	Med.	2007-2009	Local Resources	Town of Gaines	Emergency Management	Staff Time

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3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time
6	Property Protection	All	Install/upgrade back-up power sources at town highway garage.	High	2007-2010	FEMA, SEMO, US Dept. of Interior	Town of Gaines		\$50,000
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time

Specific Municipal Projects:

The Town of Gaines is not proposing any specific municipal hazard mitigation projects at this time.

Holley, Village

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Holley will participate in:									
2	Prevention	Flooding	Municipalities should consider participating in the Community Rating System (CRS)	Med.	2007-2009	Local Resources	Village of Holley	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE,	Staff Time

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			Please refer to Appendix E for specific sites that require remediation.					Municipalities	
6	Property Protection	All	Install/upgrade back-up power sources at the village's sewer lift station and wastewater treatment plant.	High	2007-2010	FEMA, SEMO, US Dept. of Interior	Village of Holley		\$50,000
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time

Specific Municipal Projects:

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
G-1	Property Protection	Water Supply Contamination	Carry out a detailed assessment of the village's sanitary sewer system to determine where upgrades are needed. Corroding pipe sections threaten the integrity of the system and could cause significant environmental problems if not replaced.	High	2007-2010	FEMA, SEMO, Small Cities Community Development Program			\$50,000

Kendall, Town

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Kendall will participate in:									
2	Prevention	Flooding	The town will consider participating in the CRS.	Med.	2007-2009	Local Resources	Town of Kendall	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway,	Staff Time

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			identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.					NYSDEC, USACE, Municipalities	
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time

Specific Municipal Projects:

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Approx. Cost
H-1	Property Protection	Flooding	Relocate a section of Mill Road to the north away from Sandy Creek, which is undermining the road	Med.	2007-2010	SEMO, FEMA	\$100,000

Lyndonville, Village

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Lyndonville will participate in:									
2	Prevention	Flooding	Municipalities should consider participating in the Community Rating System (CRS)	Med.	2007-2009	Local Resources	Village of Lyndonville	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time

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			require remediation.						
7	Property Protection	Dam Failure, Flooding	Assess the safety of the Lyndonville dam.	High	2007-2009	NYSDEC, USEPA	Emergency Management	County Planning, V. Lyndonville, Brookfield Power	\$150,000
8	Property Protection	Terrorism, Water Supply Contamination	Upgrade security at the lakeshore water supply plants.	Med.	2007-2010	USCG, NYSOHS	County Sheriff	U.S. Coast Guard	\$250,000
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time
Specific Municipal Projects:									
The Village of Lyndonville is not proposing any specific municipal hazard mitigation projects at this time.									

Medina, Village

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Medina will participate in:									
2	Prevention	Flooding	Municipalities should consider participating in the Community Rating System (CRS)	Med.	2007-2009	Local Resources	Village of Medina	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time

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6	Property Protection	All	Install/upgrade back-up power sources at the village's DPW facility, sewer lift stations, and traffic lights.	High	2007-2010	FEMA, SEMO, US Dept. of Interior	Village of Medina		\$50,000
7	Property Protection	Dam Failure, Flooding	Assess the safety of the Glenwood Lake dam	High	2007-2009	NYSDEC, USEPA	Emergency Management	County Planning, V. Medina, Brookfield Power	\$50,000
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time

Specific Municipal Projects:

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Approx. Cost
J-1	Prevention	All	Digitize records and store them in a secure facility offsite, outside the village.	Med.	2007-2009	SARA Grants	\$50,000
J-2	Prevention	Flooding	Prepare a comprehensive study to address flooding/drainage problems in the southwest area of the village.	Med.	2007-2009	FEMA, SEMO	\$25,000
J-3	Property Protection	Terrorism, Civil Unrest	Install a security alarm and video monitoring system at the village's wastewater treatment plant, the booster/water tank, and the Department of Public Works facility.	Med.	2007-2009	NYSOHS	\$200,000
J-4	Property Protection	Water Supply Contamination	Install a 3 million gallon capacity water tank as a back-up in the case of a failure in the water distribution system.	High	2007-2009	FEMA, SEMO	\$250,000
J-5	Property Protection	Terrorism, HAZMAT (in transit), Civil Unrest	Install blast resistant windows at City Hall due to the building's proximity to the railroad tracks and the danger of a hazardous materials accident/explosion on the tracks.	Med.	2007-2009	FEMA, SEMO	\$100,000
J-6	Property Protection	Terrorism, Civil Unrest	Install closed-circuit TV for Main Street and the Canal Basin Marina.	Low	2007-2009	FEMA, SEMO	\$50,000

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J-7	Emergency Services	Terrorism, Water Supply Contamination HAZMAT (in transit)	Prepare a disaster response plan specifically for a potential HAZMAT spill in the village, either along the railroad tracks or one of the major roads that passes through the village.	High	2007-2010	FEMA, SEMO	\$30,000
J-8	Emergency Services	Terrorism, HAZMAT (in transit)	Reassess and upgrade the village's evacuation plan.	High	2007-2010	FEMA, SEMO	\$30,000
J-9	Emergency Services	Flooding, Ice Jam	Purchase a large capacity pump for relieving low lying areas during high water events.	Med.	2007-2009	FEMA, SEMO	\$50,000
J-10	Emergency Services	All	Update the village's Digital Towpath website to include a section with information on hazard preparation.	Med.	2007-2009	Local Resources	Staff Time

Murray, Town

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Murray will participate in:									
2	Prevention	Flooding	The town will consider participating in the CRS.	Med.	2007-2009	Local Resources	Town of Murray	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural	Severe	Enact a local law requiring	Low	2008-2010	Local	Municipalities	N/A	Staff

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Projects	Storms, Tornadoes	tornado shelters in mobile home parks.			Resources			Time
Specific Municipal Projects:								
The Town of Murray is not proposing any specific municipal hazard mitigation projects at this time.								

Ridgeway, Town

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Ridgeway will participate in:									
2	Prevention	Flooding	The town will consider participating in the CRS.	Med.	2007-2009	Local Resources	Town of Ridgeway	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time
7	Property Protection	Dam Failure, Flooding	Assess the safety of the Glenwood Lake dam	High	2007-2009	NYSDEC, USEPA	Emergency Management	County Planning, T. Ridgeway, Brookfield Power	\$50,000
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time
Specific Municipal Projects:									
The Town of Ridgeway is not proposing any specific municipal hazard mitigation projects at this time.									

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Shelby, Town

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Shelby will participate in:									
2	Prevention	Flooding	The town will consider participating in the CRS.	Med.	2007-2009	Local Resources	Town of Shelby	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time
12	Property Protection	Wildfires	Address wildfires in local zoning, site plan review, and subdivision laws.	Low	2008-2012	Local Resources	Municipalities	N/A	Staff Time
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time
Specific Municipal Projects:									
The Town of Shelby is not proposing any specific municipal hazard mitigation projects at this time.									

Orleans County Multi-Jurisdictional All-Hazard Mitigation Plan

Yates, Town

#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Potential Lead Agency	Involved Agencies	Approx. Cost
Countywide projects Yates will participate in:									
2	Prevention	Flooding	The town will consider participating in the CRS.	Med.	2007-2009	Local Resources	Town of Yates	Emergency Management	Staff Time
3	Prevention	Flooding	The town will participate in the countywide drainage district and will work with Soil & Water to identify and remediate drainage problem sites. Please refer to Appendix E for specific sites that require remediation.	Med.	2007 - Ongoing	Local Resources	Soil & Water Conservation District	County Planning, County Highway, NYSDEC, USACE, Municipalities	Staff Time
7	Property Protection	Dam Failure, Flooding	Assess the safety of the Lyndonville dam	High	2007-2009	NYSDEC, USEPA	Emergency Management	County Planning, Brookfield Power	\$50,000
13	Property Protection	Earthquakes	Participate in the development of a countywide seismic vulnerability survey.	Med.	2008-2012	FEMA, SEMO	Emergency Management	Municipalities	TBD
15	Property Protection	Earthquakes	Mandate all construction/reconstruction withstand up to a 6.5 magnitude event.	Med.	2008-2010	Local Resources	Municipalities	N/A	TBD
16	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Trim tree limbs away from public/municipal buildings	High	2008-Ongoing	Local Resources	Municipalities	N/A	Staff Time
17	Property Protection	Ice Storms, Severe Winter Storms, Tornadoes	Participate in the development of a countywide tree trimming program.	High	2008-Ongoing	Local Resources	Emergency Management	N/A	Staff Time
18	Property Protection	Severe Storms, Tornadoes	Renovate community/municipal buildings to meet wind speed design standards.	High	2008-Ongoing	FEMA, SEMO	Municipalities	N/A	TBD
19	Property Protection	Severe Storms, Tornadoes	Upgrade local building codes to ensure that all construction can withstand wind speed design standards.	High	2008-2010	Local Resources	Municipalities	N/A	Staff Time
35	Structural Projects	Severe Storms, Tornadoes	Enact a local law requiring tornado shelters in mobile home parks.	Low	2008-2010	Local Resources	Municipalities	N/A	Staff Time
Specific Municipal Projects:									
#	Category	Hazard(s)	Mitigation Measure	Priority	Estimated Time Frame	Potential Funding Sources	Approx. Cost		
N-1	Property Protection	All	The town will acquire a mini-track excavator to access areas with wet soil conditions for water main repair work.	Med.	2007-2009	FEMA, SEMO	\$40,000		

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