

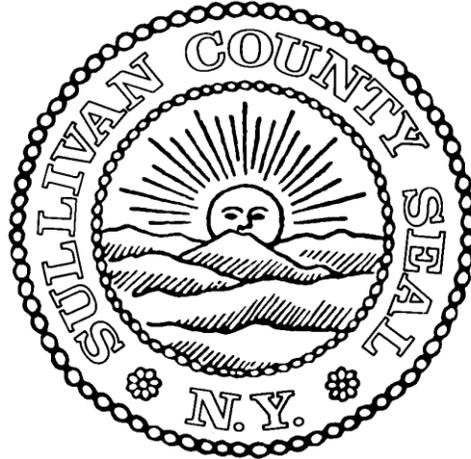
Sullivan County

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**Comprehensive Emergency  
Management Plan**

Revised October 2007

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# Article I

## Executive Summary

### §1-01 Advisory

This plan represents general guidelines that can be modified by emergency personnel as appropriate. This plan does not create any right or duty that is enforceable in a court of law.

### §1-02 Acronyms

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DPC	New York State Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYSDOH	New York State Department of Health
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDFS	Sullivan County Department of Family Services
SCDPEM	Sullivan County Division of Planning & Environmental Management Development
SCDPW	Sullivan County Division of Public Works
SCMIS	Sullivan County Management Information Services
SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPHS	Sullivan County Public Health Services
SCPIO	Sullivan County Public Information Officer
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan

SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

### **§1-03 Introduction**

This plan results from the recognition on the part of local government and state officials that a comprehensive plan is needed to enhance the County's ability to manage emergency/disaster situations. It was prepared by County officials working as a team in a planning effort recommended by the New York State Emergency Management Office (SEMO). This plan constitutes an integral part of a statewide emergency management program and contributes to its effectiveness. Authority to undertake this effort is provided by both Article 2-B of State Executive Law and New York State Defense Emergency Act.

The development of this plan included an analysis of potential hazards that could affect the county and an assessment of the capabilities existing in the county to deal with potential problems.

### **§1-04 Comprehensive Approach**

Dealing with disasters is an ongoing and complex undertaking. Through implementation of risk reduction measures before a disaster or emergency occurs, timely and effective response during an actual occurrence, and provision of both short and long term recovery assistance after the occurrence of a disaster, lives can be saved and property damage minimized.

This process is called Comprehensive Emergency Management to emphasize the interrelationship of activities, functions, and expertise necessary to deal with emergencies. The plan contains three sections to deal separately with each part of this ongoing process.

### **§1-05 Management Responsibilities**

Emergency management responsibilities of County departments and agencies are outlined in this plan. Assignments are made within the framework of the present County capability and existing organizational responsibilities. The Sullivan County Office of Emergency Management/Homeland Security (SCOEM/HS) is designated to coordinate all emergency management activities of the County.

Sullivan County has adopted the National Interagency Incident Management System (NIIMS) along with the Incident Command System (ICS) to respond to emergencies. NIIMS/ICS is a management tool for the command, control, and coordination of resources and personnel in an emergency.

County responsibilities are closely related to the responsibility of the local levels of government within the County (towns and villages) to manage all phases of an emergency. The County has the responsibility to assist the local governments in the event that they have fully committed their resources and are still unable to cope with any disaster. Similarly, New York State is obligated to provide assistance to the county after resources have been exhausted and the County is unable to cope with the disaster.

The plan describes in detail the centralized direction of requests for assistance and the understanding that the governmental jurisdiction most affected by an emergency is required to involve itself prior to requesting assistance.

Specific emergency management guidance for situations requiring special knowledge, technical expertise, and resources may be addressed in separate chapters attached to the plan. Examples of this type of situation are emergencies resulting from hazardous chemical releases, dam failure, and power outage.

## **§1-06 Conclusion**

The plan provides general all-hazards management guidance, using existing organizations, to allow the County to meet its responsibilities before, during, and after an emergency.

## **Article II General Considerations and Planning Guidelines**

### **§1-07 Policy Regarding Comprehensive Emergency Management**

A wide variety of emergencies, caused by nature or technology, result in loss of life, property and income, and disrupts the normal functions of government, communities, and families, and cause human suffering. County government must provide leadership and direction to prevent, mitigate, respond to, and recover from dangers and problems arising from emergencies in the County.

Under authority of Section 23 of the New York State Executive Law, a county is authorized to develop a Comprehensive Emergency Management Plan to risk reduction (prevention and mitigation), respond to and recover from emergencies and disasters. To meet this responsibility, Sullivan County has developed this Sullivan County Comprehensive Emergency Management Plan (SCEMP). This concept of Comprehensive Emergency Management includes three phases:

#### **A. Risk Reduction (Prevention and Mitigation)**

Prevention refers to those short or long-term activities that eliminate or reduce the number of occurrences of disasters. Mitigation refers to all activities which reduce the effects of disasters when they do occur. Article III of this Chapter, Risk Reduction, describes activities to prevent or minimize the impact of hazards in Sullivan County.

#### **B. Response**

Response operations may start before the emergency materializes, for example, on receipt of advisories that floods, blizzards, or ice storms could impact the jurisdiction. This increased readiness response phase may include such pre-impact operations as:

1. Detecting, monitoring, and assessment of the hazard;
2. Alerting and warning of endangered populations;
3. Protective actions for the public;
4. Allocating/distributing of equipment/resources.

Most response activities follow the immediate impact of an emergency. Generally, they are designed to minimize casualties and protect property to the extent possible through emergency assistance.

They seek to reduce the probability of secondary damage and speed recovery operations.

Response operations in the affected area are the responsibility of and controlled by the local municipalities, supported by the county emergency operations as appropriate. If a municipality is unable to adequately respond, County response operations may be asked to assume a leadership role.

### C. Recovery

Activities are those following a disaster to restore the community to its pre emergency state, to correct adverse conditions that may have led to the damage, and to protect and improve the quality of life in the community. It includes risk reduction actions to prevent or mitigate a recurrence of the emergency.

## **§1-08 Purpose and Objective of the Plan**

This plan sets forth the basic requirements for managing emergencies in Sullivan County. The objectives of the SCEMP are:

1. To identify, assess and prioritize local and regional vulnerabilities to emergencies or disasters and the resources available to prevent or mitigate, respond to, and recover from them.
2. To outline short, medium, and long range measures to improve the County's capability to manage hazards.
3. To provide that County and local governments will take appropriate actions to prevent or mitigate effects of hazards and be prepared to respond to and recover from them when an emergency or disaster occurs.
4. To provide for the efficient utilization of all available resources during an emergency.
5. To provide for the utilization and coordination of local government, state and federal programs to assist disaster victims, and to prioritize the response to the needs of the elderly, disabled, low income, and other groups which may be inordinately affected.
6. Provide for the utilization and coordination of state and federal programs for recovery from a disaster with attention to the development of mitigative programs.

## **§1-09 Legal Authority**

This Plan, in whole or in part, may rely upon the following laws for the power necessary for its development and implementation:

1. New York State Executive Law, Article 2-B
2. New York State Defense Emergency Act, as amended
3. Sullivan County Resolutions 92-02, 92-17
4. Federal Robert T. Stafford Disaster Relief and Emergency Assistance Act
5. Federal Civil Defense Act of 1950, as amended

## **§1-10 Concept of Operations**

The primary responsibility for responding to emergencies rests with the local governments of towns and villages, and with their Chief Executive. Local governments and the emergency service organizations play an essential role as the first line of defense. Responding to a disaster, local jurisdictions are required to utilize their own facilities, equipment, supplies, personnel and resources first.

The local Chief Executive has the authority to direct and coordinate disaster operations and may delegate this authority to a local coordinator. When local resources are inadequate, the Chief Executive of a town or village may obtain assistance from other political subdivisions and the County government.

The County Manager may coordinate responses for requests for assistance for the local governments. The County Manager has the authority to direct and coordinate County disaster operations. The County Manager may obtain assistance from other counties or the State when the emergency disaster is beyond the resources of Sullivan County. The County Manager has assigned to the Director of SCOEM/HS the responsibility to coordinate County Emergency Management Activities.

Sullivan County will utilize the NIIMS/ICS to manage all emergencies requiring multi-agency response. Sullivan County recommends and encourages all local governments in Sullivan County to utilize NIIMS/ICS.

A request for assistance to the State will be submitted through the Region 2 Office of the SEMO and presupposed the utilization and expenditure of personnel and resources at the local level. State assistance is supplemental to local emergency efforts. Direction and control of State risk reduction, response and recovery actions is exercised by New York State Disaster Preparedness Commission (DPC), coordinated by SEMO.

Upon the occurrence of an emergency or disaster clearly beyond the management capability and emergency resources of State and local governments, the Governor may find that federal assistance is required and may request assistance from the President by requesting a declaration of a major disaster or emergency.

#### **§1-11 Plan Maintenance and Updating**

The SC LEPC is responsible for maintaining and updating this Plan and it should be reviewed and updated annually.

All County Departments and agencies are responsible for annual review of their response and procedures, and provide any changes to the SCOEM/HS by February 1 of each year. The Plan should be reviewed and updated annually with revised pages distributed by March 1 of each year.

### **Article III Risk Reduction**

#### **§1-12 County Hazard Mitigation Coordinator**

The County Hazard Mitigation Coordinator is responsible for coordinating County efforts in reducing hazards in Sullivan County. All County agencies will participate in risk reduction activities with the County Hazard Mitigation Coordinator. The Hazard Mitigation Coordinator will participate as a member of the LEPC.

#### **§1-13 Identification and Analysis of Potential Hazards**

A. The LEPC will:

1. Identify potential hazards in the County.
2. Determine the probable impact each of those hazards could have on people and property.
3. Delineate the geographic areas affected by potential hazards, plot them on maps, and designate them as hazard areas.

- B. Significant potential hazards to be identified and analyzed include natural, technological, and human-caused hazards.
- C. To comply with the above, hazards that pose a potential threat have been identified and analyzed by the LEPC. This hazard analysis:
  1. provides a basic method for analyzing and ranking the identified hazards, including identification of geographic areas and populations at risk to specific hazards
  2. establishes priorities for planning for those hazards receiving a high ranking of significance
  3. was conducted in accordance with guidance from SEMO
  4. after completion was submitted to the Region 2 Office of SEMO
  5. will be reviewed and updated every three years
- D. The rating and ranking results of the hazard analysis are found in Attachment 1. Paper and computerized maps identifying the location of hazard areas are located in SCOEM/HS. The complete Hazard Analysis results are located in the SCOEM/HS.

### **§1-14 Risk Reduction Policies Programs and Reports**

- A. County agencies are authorized to promote policies, programs, and activities to reduce hazard risks in their area of responsibility. Examples of the above are:
  1. Encourage municipalities the adoption of comprehensive community development plans, zoning ordinances, subdivision regulations, and building codes that are cognizant of and take into account significant hazards in the county.
  2. Promote compliance with and enforcement of existing laws, regulations, and codes that are related to hazard risks, e.g. building and fire codes, flood plain regulations.
  3. Encourage and assist water and wastewater treatment plants to replace chlorine use with a safer disinfectant.
  4. Encourage and participate in municipal stream channel maintenance programs.
  5. Encourage state and local DOT's to address dangerous conditions of roads used by hazardous materials carriers.
- B. The SCDPEM is responsible for land use management of county owned land and the review of land use management actions throughout the county, including:
  1. Authorizing County land use management programs.
  2. Advising and assisting local governments in the county in developing and adopting comprehensive master plans for community development, zoning ordinances, subdivision regulations, and building codes.
  3. Assisting and advising local Planning Boards in the review process of local zoning and subdivision actions.
  4. Participation on the Hudson Valley Regional Counsel.
  5. Participation in SEQR review of proposed projects in the County.

In all of the above activities, the SCDPEM will take into account the significant hazards in Sullivan County.

- C. The LEPC will conduct risk reduction workshops for municipalities to encourage their involvement in the county risk reduction program.
- D. The LEPC will meet tri-annually to identify specific hazard reduction actions that could be taken for

those hazards determined by the hazard analysis to be most significant.

- E. The LEPC will identify specific hazard reduction actions that could be taken for those hazards determined by the hazard analysis to be most significant. For each hazard reduction action identified, the following information is to be included by the Planning Team:
1. a description of the action
  2. a statement on the technical feasibility of the action
  3. the estimated cost of the action
  4. the expected benefits of the action and the monetary value of each benefit
  5. an estimate of the level of community support for the action
- F. The information obtained in (E) above will be consolidated into a Risk Reduction Report. The Risk Reduction Report will prioritize and make recommendations concerning the identified actions. The Risk Reduction Report will be presented to the County Manager for review, revision, and approval or disapproval, bi-annually. An approved Risk Reduction Report will be presented to the County Manager and County Legislature via the SCOEM/HS for consideration and funding.

### **§1-15 Emergency Response Capability Assessment**

- A. Periodic assessment of the County's capability to manage the emergencies that could be caused by the hazards identified in the County is a critical part of Risk Reduction. The LEPC will, on a tri-annual basis:
1. Assess the County's current capability for dealing with those significant hazards that have been identified and analyzed, including but not limited to:
    - a. the likely time of onset of the hazard
    - b. the impacted communities preparedness levels
    - c. the existence of effective warning systems
    - d. the communities' means to respond to anticipated casualties and damage
- B. To assist the LEPC in its assessment, the Director of SCOEM/HS will conduct tabletop exercises based upon specific hazards and hazard areas identified by the LEPC. The LEPC will identify emergency response shortfalls and make recommendations for implementing corrective actions to the County Manager, local governments, and the SEMO Region 2 Office.

### **§1-16 Training of Emergency Personnel**

- A. The Sullivan County Director of Personnel, in coordination with the Director of SCOEM/HS, has the responsibility to:
1. Arrange and provide, with the assistance of the SEMO, the conduct of training programs for County emergency response personnel as designated by the Emergency Manager.
  2. Encourage and support training for town and village emergency response personnel, including volunteers. Such training programs will:
    - a. Include information on the characteristics of hazards and their consequences and the implementation of emergency response actions including protective measures, notification procedures, and available resources.
    - b. Include NIIMS/ICS training, focusing on individual roles.
    - c. Conduct meetings as needed, but no less than yearly, with appropriate personnel from county municipal governments concerning disaster interface with county government, including the NIIMS/ICS for Executives training.

- d. Provide emergency personnel with the variety of skills necessary to help reduce or eliminate hazards and increase their effectiveness to respond to and recover from emergencies of all types.
  - e. Be provided in crisis situations, which require additional specialized training and refresher training.
3. Conduct periodic exercises and drills to evaluate local capabilities and preparedness, including a full scale operational exercise that tests a major portion of the elements and responsibilities in the SCEMP, and regular drills to test readiness of warning and communication equipment.
  4. Consult with the County departments and agencies, in developing training courses and exercises.
  5. Work with the local response community and education agencies to identify or develop and implement training programs specific to mitigation, response, and recovery from the identified hazards.
  6. Receive technical guidance on latest techniques from State and Federal sources as appropriate and request assistance as needed.
- B. All county departments and agencies assigned emergency functions are responsible for developing an in-house training capability in order that departments and agencies further train their employees in their duties and procedures.
- C. Volunteers participating in emergency services such as fire and rescue operations, ambulance services, first aid and other emergency medical services, American Red Cross, RACES, CAP, will be trained by these services in accordance with established procedures and standards.

### **§1-17 Public Education and Awareness**

- A. The LEPC, in cooperation with the Director of SCOEM/HS, is responsible for:
1. providing education on hazards to the young adult and adult public in the county,
  2. making the public aware of existing hazards in their communities,
  3. familiarizing the public with the kind of protective measures the county has developed to respond to any emergency arising from the hazard,
  4. This education will:
    - a. Cover all significant hazards.
    - b. Be available free of charge
    - c. Be provided by the existing school systems in the county through arrangements with the superintendent of schools.
- B. Federal Emergency Management Agency (FEMA) pamphlets, books, and kits dealing with all aspects of emergency management and materials developed by SEMO and other State departments, as appropriate, will be made available for use in the program.

### **§1-18 Monitoring of Identified Hazard Areas**

The SCDPEM will develop, with the necessary assistance of other county agencies, divisions and/or departments, the capability to monitor identified hazard areas, in order to detect hazardous situations in their earliest stages.

As a hazard's emergency is detected, this information is to be immediately provided to the Sullivan County 911 Communication Center (SC911), as appropriate, and disseminated per protocol. Monitoring stations maybe established regarding specific hazard areas where individuals responsible to perform the

monitoring tasks can be stationed, when appropriate.

Monitoring tasks include detecting the hazard potential and taking measurements or observations of the hazard. Examples of such are:

- 1) rising water levels
- 2) toxic exposure levels
- 3) slope and ground movement
- 4) mass gatherings
- 5) the formation and breakup of ice jams, shore erosion, dam conditions
- 6) National Weather Service's Skywarn program.

All County hazard monitoring activity will be coordinated with, and makes use of where available, local governments, private industry, school districts, utility companies, and volunteer agencies and individuals, as appropriate.

## **Article IV**

### **Response Organization and Assignment of Responsibilities**

#### **§1-19 County Manager Responsibilities Powers and Succession**

- A. The County Manager is ultimately responsible for County emergency response activities and:
1. may assume personal oversight of the County emergency response organization if the scope and magnitude of the emergency indicates the necessity of personal management and direction of the response and recovery operations,
  2. controls the use of all County owned resources and facilities for disaster response,
  3. may declare a local state of emergency in consultation with the Sheriff and Chairman of the Sullivan County Legislature and may promulgate emergency orders and waive local laws, ordinances, and regulations,
  4. may request assistance from other counties and the State when it appears that they will escalate beyond the capability of County resources,
  5. may provide assistance at the request of other local governments both within and outside Sullivan County.
- B. If the County Manager is unable, due to absence or incapacitation, to perform the functions described in the preceding section. The following line of command and succession has been established by a Sullivan County Resolution to ensure continuity of government and the direction of emergency operations:
1. The Sheriff will be in command until the County Manager is available.
  2. The Chairman of the Sullivan County Legislature will be in command until the County Manager or Sheriff is available.
  3. The Commissioner of SCDPW will be in command until the County Manager, Sheriff, or Chairman of the Sullivan County Legislature is available.

#### **§1-20 Role of the Director of SCOEM/HS**

- A. The Director of SCOEM/HS coordinates County emergency response activities for the County Manager and recommends to the County Manager to declare a local state of emergency based on the severity of the situation and the necessity to use additional executive power to respond effectively to

the emergency:

1. activates the county's response organization and initiates county response activities.
2. maintains and manages an EOC.
3. recommends to the County Manager, Sheriff, and Chairman of the Sullivan County Legislature to declare a local state of emergency based on the severity of the situation and the necessity to use additional executive power to respond effectively to the emergency
4. notifies and briefs county departments, agencies and other organizations involved in an emergency response
5. facilitates coordination between the county and:
  - a. the Incident Commander (IC)
  - b. towns and villages in the county
  - c. local governments outside the county
  - d. the State of New York
  - e. private emergency support organizations.

### **§1-21 County Emergency Response Organization**

- A. The National Interagency Incident Management System (NIIMS)/Incident Command System (ICS)
1. Sullivan County endorses the use of the NIIMS/ICS, as developed by the National Interagency Incident Management System (NIIMS), and formally adopted by the State of New York, for emergencies requiring multi-agency response. NIIMS/ICS allows flexibility in its implementation so that its structure can be tailored to the specific situation at hand. The emergency forces first responding to an incident should initiate NIIMS/ICS. NIIMS/ICS are organized by functions and there are five:
    - a. Command
    - b. Operations
    - c. Planning
    - d. Logistics
    - e. Finance
  2. Under NIIMS/ICS, an IC has the overall responsibility for the effective on-scene management of the incident, and must ensure that an adequate organization is in place to carry out all emergency functions. The IC directs emergency operations from an Incident Command Center, the **only** command post at the emergency scene.
  3. In minor incidents, the five NIIMS/ICS functions may all be managed directly by the IC. Larger incidents usually require that one or more of the functions be set up as separate sections under the IC.
  4. Within the command function, the IC has additional responsibilities for Safety, Public Information, and Liaison. These activities can be assigned to staff under the IC.
  5. During an emergency, County response personnel must be cognizant of the NIIMS/ICS in place and their role in it. Some County personnel may be responders to the scene and part of the on-scene NIIMS/ICS structure in a functional or staff role. Other County personnel may be assigned to the EOC or other locations where they will provide support to the responders at the scene. All County response personnel not assigned to the on-scene NIIMS/ICS will be coordinated by or through the Director of SCOEM/HS.
  6. County response personnel operating at the EOC will be organized by NIIMS/ICS function and interface with their on-scene counterparts, as appropriate.
  7. The IC is usually selected due to his/her position as the highest ranking responding officer at the scene. The IC must be fully qualified to manage the incident. As an incident grows in size or

becomes more complex, a more highly qualified IC may be assigned by the responsible jurisdiction. Thus, a County official could be designated as the IC.

8. A major emergency encompassing a large geographic area may have more than one emergency scene. In this situation, separate IC's may set up command at multiple locations. In this case, a Unified Command may be established. The Unified Command is structured similar to a normal NIIMS/ICS with one exception; the IC is called the Incident Manager to whom all Incident Commanders report. A County official could be designated as an Incident Manager and numerous County response personnel assigned to the Area NIIMS/ICS.
9. Whenever the NIIMS/ICS is established, the County response forces should be assigned to specific ICS functions wherever they are needed including at the scene, at the EOC in a support role, or at an Area Command, if established. See Attachment 2 for NIIMS/ICS functional assignments by agency.

#### B. Emergency Response Not Utilizing NIIMS/ICS

Whenever there is an emergency response involving County personnel and, for whatever reason, an NIIMS/ICS has not been established, the Director of SCOEM/HS, under the authority of the County Manager, will coordinate the County response with the various agencies as needed.

#### C. Agency Responsibilities

Attachment 2 and 3 lists each County agency with its NIIMS/ICS function(s) and the major role each is expected to play.

### **§1-22 Managing Emergency Response**

#### A. Incident Command Post and Emergency Operations Center

1. On-scene emergency response operations will be directed and controlled by the IC from the Command Post. There will be a Command Post established under the direction of the IC. All other facilities at the scene used by agencies for decision-making should not be identified as a command post.
2. The EOC will be used to support the Incident Command Post activities and to coordinate County resources and assistance. The EOC can also be used as an Area Command Post when Area Command is instituted.
3. The Command Post should be based upon the logistical needs of the situation and located at a safe distance from the emergency site. If a suitable building or structure cannot be identified and secured for use as an Incident Command Post, the Sullivan County Emergency Services Communication Mobile Command Trailer may be used for this purpose.
4. The Sullivan County EOC is located at the Sullivan County 911 Communications Center (SC911), Sullivan County International Airport, CR 183A, White Lake, NY. If a disaster situation renders the EOC inoperable, another location will be designated at the time.
5. The EOC can provide for the centralized coordination of county and private agencies' activities from a secure and functional location. County agencies and other organizations represented at the EOC will be organized according to NIIMS/ICS function under the direction of the Director of SCOEM/HS.
6. Though organized by NIIMS/ICS function, each agency's senior representative at the EOC will be responsible for directing or coordinating their agency's personnel and resources. Where the agency is also represented at the scene in an NIIMS/ICS structure, the EOC representative will coordinate the application of resources with the agency's representative at the scene.
7. The Director of SCOEM/HS is responsible for managing the EOC or an auxiliary EOC during emergencies.

8. If required, the EOC will be staffed to operate continuously on a twenty-four hour a day basis. In the event of a 24-hour operation, two 12 1/2-hour shifts will be utilized. (The additional 1/2-hour is for shift change briefings.) Designation of shifts will be established as conditions warrant by the Director of SCOEM/HS.
9. Each agency will routinely identify its personnel assigned to the EOC. This identification is to be provided to the Director of SCOEM/HS and updated as changes occur, no less than yearly. Work areas will be assigned to each agency represented at the EOC.
10. Internal security at the EOC during an emergency will be provided by the SCSO. Only personnel assigned and approved, by the County Manager, will be admitted into the EOC.
11. EOC space should be maintained in an emergency operating mode by the Director of SCOEM/HS at all times. During non-emergency periods, the EOC can be used for meetings, training and conferences.
12. The NIIMS/ICS Planning function is responsible for emergency situation reporting at the EOC and has established procedures and forms to be used. The Director of SCOEM/HS maintains Standard Operating Guides (SOG) for activating, staffing, and managing the EOC. These SOG's can be found in Chapter 2 to this plan.

#### B. Notification and Activation

1. As described in Chapter 2, upon initial notification of an emergency to the SC911, the SC911 will immediately alert the Director of SCOEM/HS and he/she will notify the appropriate officials. This initial notification sets into motion the activation of County emergency response personnel.
2. Each emergency is to be classified into one of three response levels according to the scope and magnitude of the incident.
  - a. Response Level 0: Non-emergency situation, facility readiness status maintained through planning sessions, training, drills, and exercises.
  - b. Response Level 1: Controlled emergency situations without serious threats to life, health, or property, which requires no assistance beyond initial first responders.
  - c. Response Level 2: Limited emergency situations with some threat to life, health, or property, but confined to limited area, usually within one municipality or involving small population.
  - d. Response Level 3: Full emergency situations with major threats to life, health, or property, involving large population and/or multiple municipalities.
3. Emergency response personnel will be activated according to the Response Level classification.
  - a. For Response Level 0: No response is required.
  - b. For Response Level 1: Only the staff of the SCOEM/HS are notified and activated as appropriate.
  - c. For Response Level 2: The staff of the SCOEM/HS is activated and augmented by select members of the County response organization as determined by the Director of SCOEM/HS at that time.
  - d. For Response Level 3: Classification of a full EOC staffing is achieved as soon as possible. Except for first responders already at the scene, assignment of County response personnel to other locations including the emergency scene will be made through the EOC. See Chapter 2 for further details.

#### C. Assessment and Evaluation

1. As a result of information provided by the Operations and Planning Sections, the Command Section will, as appropriate, in coordination with the on-scene IC:
  - a. develop policies by evaluating the safety, health, economic, environmental, social, humanitarian, legal and political implications of a disaster or threat;

- b. analyze the best available data and information on the emergency;
- c. explore alternative actions and consequences;
- d. identify and direct specific response actions.

D. Declaration of Local State of Emergency and Promulgation of Local Emergency Orders

1. In response to an emergency, or its likelihood, upon a finding that public safety is imperiled, the County Manager, after consulting with the Sheriff, the Director of SCOEM/HS and/or the Chairman of the Sullivan County Legislature may proclaim a State of Emergency pursuant to Section 24 of the State Executive Law.
2. Such a proclamation authorizes the County Manager to deal with the emergency situation with the full executive and legislative powers of county government.
3. This power is realized only through the promulgation of Local Emergency Orders. For example, emergency orders can be issued for actions such as:
  - a. establishing curfews
  - b. restrictions on travel
  - c. evacuation of facilities and areas
  - d. closing of places of amusement or assembly
4. Chapter 3 describes the requirements for proclaiming a State of Emergency and promulgating Emergency Orders.
5. Chief Executives of towns and villages in Sullivan County have the same authority to proclaim states of emergency and issue emergency orders within their jurisdiction. Whenever a State of Emergency is declared in Sullivan County or Emergency Orders issued, such action will be coordinated, beforehand, with the affected municipality.
6. Emergency responders have implicit authority and powers to take reasonable immediate action to protect lives and property absent an emergency declaration or emergency orders.

E. Public Warning and Emergency Information

1. In order to implement public protective actions there should be a timely, reliable, and effective method to warn and inform the public. Activation and implementation of public warning are an Operations Section responsibility and should be coordinated with the SCPIO, if established.
2. Information and warnings to the public that a threatening condition is imminent or exists can be accomplished through the use of the following resources. Though public warning may, in many cases, be implemented solely by on-scene personnel, the use of the systems in (a), (b), and (c) below, require strict coordination with the EOC:
  - a. Emergency Alert System (EAS) - formerly known as Emergency Broadcast System, involves the use of the broadcast media including television, radio, and cable TV, to issue emergency warnings. Can be activated by means of a telephone or encoder by select County officials including the Fire Coordinator. (See Chapter 4, Sullivan County EAS)
  - b. NOAA Weather Radio (NWR) - is the "Voice of the National Weather Service" providing continuous 24-hour radio broadcasts of the latest weather information including severe weather warnings directly from the Weather Service office in Binghamton, New York. The NWR will also broadcast non-weather-related emergency warnings. NWR broadcasts on select high-band FM frequencies, not available on normal AM-FM radios. Radios with NWR frequencies and automated alarm capabilities are generally available. NWR broadcast signal can be received Countywide. NWR is also a component of EAS. Select County officials can also initiate emergency broadcasts on the NWR. (See Chapter 4)
  - c. Fire sirens - Located at fire stations throughout the County for alerting volunteer firefighters. They can be activated, individually or in combination, from the SC911. (See Chapter 4)

- d. Emergency service vehicles with siren and public address capabilities - Many police and fire vehicles in the County are equipped with siren and public address capabilities. These vehicles may be available, in part, during an emergency for "route alerting" of the public. This capability exist Countywide but should not be relied upon for public warning.
  - e. Door-to-door public warning can be accomplished in some situations by the individual alerting of each residence/business in a particular area. This can be undertaken by any designated group such as auxiliary police, regular police, fire police, and firefighters visiting each dwelling in the affected area and relating the emergency information to the building occupants. To achieve maximum effectiveness, the individual delivering the warning message should be in official uniform.
3. County officials will advocate, as part of their normal dealing with special institutions such as schools, hospitals, nursing homes, major industries and places of public assembly, that they obtain and use tone-activated receivers/monitors with the capability to receive NWR with same reception.
  4. Special arrangements may be made for providing warning information to the hearing impaired and, where appropriate, non-English speaking population groups.
  5. The Sullivan County Public Information Officer (SCPIO), if established, or its function, may, in coordination with on-scene IC:
    - a. establish and manage a Joint News Center (JNC) from where to respond to inquiries from the news media and coordinate all official announcements and media briefings,
    - b. authenticate all sources of information being received and verify accuracy,
    - c. provide essential information and instructions including the appropriate protective actions to be taken by the public, to the broadcast media and press,
    - d. coordinate the release of all information with the key departments and agencies involved both at the EOC and on-scene,
    - e. check and control the spreading of rumors,
    - f. arrange and approve interviews with the news media and press by emergency personnel involved in the Response Operation,
    - g. arrange any media tours of emergency sites
  6. The JNC may be established at the EOC or at any location where information flow can be maintained without interfering with emergency operations.

#### F. Emergency Medical and Public Health

A high impact disaster can cause injury and death to large numbers of people. In addition, damage to and destruction of homes, special facilities, and vital utilities may place the public at substantial risk of food and water contamination, communicable diseases, and exposure to extreme temperatures. There may be established within the Operations Section an Emergency Medical/Public Health Group to ensure that health and medical problems are being addressed.

#### G. Meeting Human Needs

The Planning and Operations functions are responsible for ascertaining what human needs have been particularly affected by an emergency and responding to those unmet needs with the available resources of County and local government and with the assistance of volunteer agencies and the private sector. There may be established within the Operations Section a human needs group to perform the tasks associated with the above.

There is a Sullivan County Human Needs Group consisting of representatives from County and local agencies, volunteer groups and the private sector, whose purpose is to assist in the coordination of the delivery of human services in Sullivan County and to advise the County Manager on human

needs issues. The Sullivan County Human Needs Group will serve as the Human Needs Branch whenever such a Branch is utilized. Whenever a Human Needs Branch is not established by the Operations Section, the Operations Section will confer with the Chairperson of the Sullivan County Human Needs Group on human needs issues.

#### H. Restoring Public Services

The Operations Section is responsible for ascertaining the emergency's effect on the infrastructure and the resultant impact on public services including transportation, electric power, fuel distribution, public water, telephone, and sewage treatment and ensuring that restoration of services is accomplished without undue delay. There may be established within the Operations Section a Public Infrastructure Branch to perform the tasks associated with the above.

By written agreement, in the event of a major power outage, the Operations Section will assign a representative to work with the appropriate electric agency for the purpose of facilitating communications and information flow between the utility and the Operations Section. The Operations Section may assign a representative to other utility operations centers as appropriate with the consent of the utility.

During response operations relating to debris clearance and disposal, Sullivan County should act in cognizance of and in cooperation with the State Highway Emergency Task. (See Chapter 5, New York State Highway Emergency Task Force)

#### I. Resource Management

The Planning Function is responsible for the identification and allocation of additional resources needed to respond to the emergency situation. Resources owned by the municipality in which the emergency exists should be used first in responding to the emergency.

All County-owned resources are under the control of the County Manager during an emergency and can be utilized as necessary. Resources owned by other municipalities in and outside of Sullivan County can be utilized upon agreement between the requesting and offering government.

Resources owned privately cannot be commandeered or confiscated by government during an emergency. However, purchases and leases of privately owned resources can be expedited during an emergency. In addition, it is common for the private sector to donate certain resources in an emergency. Resource identification and allocation will be conducted according to the New York State Debris Clearance Policy and Procedures, Chapter 5.

#### J. Standard Operating Guides (SOG's) and other supporting plans

Each County agency assigned responsibility under this response portion of the plan is required to work under its own SOG's. These SOG's address activation of personnel, shift assignments at the EOC, assignment to the field including the Incident Command Post (if applicable), coordination with other agencies, drills, exercises, and NIIMS/ICS training.

Each agency SOG is to be updated at least annually and reviewed at a joint agency-planning meeting held each year. The following chapters support this portion of the plan:

Chapter 2 - Standard Operating Guides for the Sullivan County Emergency Operations Center

Chapter 3 - Instructions for Declaring a State of Emergency and Issuing Emergency Orders

Chapter 4 - Emergency Alert System

Chapter 5 - New York State Highway Emergency Task Force  
Chapter 6 - Hazardous Materials Response Plan  
Chapter 7 - Domestic Preparedness Plan  
Chapter 8 – Bio Hazard Plan (HEOP)  
Chapter 8A – Pandemic Influenza Plan  
Chapter 9 – Pre-Disaster Mitigation Plan  
Chapter 10 – Response Actions for Incidents of Terrorism  
Chapter 11 – Strategic National Stockpile CHEMPACK Plan  
Chapter 12 - Incident Command Procedures Emergency Operations Center  
Chapter 13- Sullivan County Department of Family Services Disaster / Emergency Response Plan

## **Article V Recovery**

### **§1-23 Damage Assessment and Situation/Status Evaluation**

Damage assessment should begin as soon as possible in the response phase of the emergency/disaster and will be fully implemented in the recovery phase. Initially local damage assessment teams may be assigned from various agencies, depending on the type of emergency/disaster expertise required.

- A. The SCOEM/HS will have the responsibility to compile, coordinate and analyze the assessment and evaluation data in order to make sound and timely recommendations to the County Manager and the Chairman of the County Legislature.
1. The NYS DOH or other designated agency, in coordination with initial response agencies, will make an on-site assessment and recommend immediate protective actions to the on-site commander and to the EOC for the health and safety of the public.
  2. The EOC staff will analyze the on-site data with meteorological data and other resource agency information to:
    - a. determine the adequacy of protective actions
    - b. recommend further immediate action (evacuation)
    - c. develop further response actions and resources
  3. The Director of SCOEM/HS, in coordination with local agencies will make recommendations to the County Manager and Chairman of the County Legislature, based on the assessment and evaluation process.
  4. Coordination with the Damage Assessment Team and the fire departments will be the key to implementation of protective action and evaluation.
  5. The EOC will coordinate with SEMO for the dispatch of State Regional/District Damage Assessment teams when technical assistance is required in determining and combating the effects of the emergency/disaster to facilitate recovery. When the State responds, damage assessment and information will be directed by the SEMO District Office in conjunction with field and EOC organizations. Information that can be used to prevent or mitigate damage will be reported to the State field representative or local government field commander prior to reporting to SEMO.

## B. Damage Assessment Team

1. Responsibilities of the Damage Assessment Team will be:
  - a. Estimate and describe the nature and extent of damages resulting from an emergency/disaster,
  - b. Suggest actions that can be taken to prevent or mitigate further damage.
  - c. Estimate and describe assistance required in response and recovery efforts based on actual observations by qualified persons, including engineers and inspectors.
  - d. Evaluate reports of the emergency/disaster impact(s) and make decisions about what seem to be feasible recovery choices.
  - e. Document extent and nature of damage.
  - f. Revise and update damage estimates as additional or improved reports become available.
  - g. Maintain and update the material required to provide a pre-emergency/pre-disaster base for use in assessing damage.
  - h. Periodically review report, formats and procedures required to evaluate the post-event status.
  - i. Cooperate with the Director of SCOEM in periodic testing, evaluating and updating county emergency/disaster operation plans.
  - j. Participate in emergency/disaster prevention or mitigation programs and projects as required.
  - k. Effect liaison with the EOC.
2. The Team Coordinator is Real Property Tax Service Agency Director and will:
  - a. Determine appropriate team membership for each emergency/disaster situation.
  - b. Before EOC activation, make all communications with other departments and agencies through the SCOEM/HS to assure coordination of status reports and resource availability and needs.
  - c. Relocate to the EOC when activated.
  - d. Maintain up-to-date team membership notification list.
3. Team membership will consist of but not limited to the following agencies and organizations:
  - a. USDA Food and Agricultural representatives
  - b. American Red Cross
  - c. SC DPW
  - d. Sullivan County Real Property Tax Service Agency
  - e. Sullivan County Board of Realtors
  - f. Sullivan County Independent Insurance Agents Association
  - g. Utility representatives: NYSEG, Orange Rockland, phone company
  - h. SC Division of Community Services
  - i. Local Supervisors and/or Town Superintendent of Highways in area of disaster
  - j. SCSD
  - k. Field Examiner Appraiser from Real Property Administration Department
  - l. Property Manager from Real Property Administration Department
  - m. Land & Claims Agent – DPW

## **§1-24 Planning for Recovery**

- A. Recovery includes community development and redevelopment.
- B. Community development is based on a comprehensive community development plan prepared under direction of local planning boards with technical assistance provided by the SCDPEM.

Comprehensive community development plans are officially adopted by local government as the official policy for development of the community.

- C. Localities with public and political support for land use planning and the corresponding plan implementation tools such as zoning ordinances, subdivision regulations, building codes, etc. have pre-disaster prevention and mitigation capability by applying these methods successfully after disasters.
- D. A central focal point of analytical and coordinative planning skills which could obtain the necessary political leadership and backing when needed is required to coordinate the programs and agencies necessary to bring about a high quality level of recovery and community redevelopment.
- E. Local government decides whether the recovery will be managed through existing organizations with planning and coordinative skills or by a Recovery Task Force created exclusively for this purpose.
- F. Recovery Task Force will:
  - 1. Direct the recovery with the assistance of county departments and agencies coordinated by the Director of SCOEM/HS.
- G. Prepare a local recovery and redevelopment plan, unless deemed unnecessary, The Recovery and Redevelopment Plan will include;
  - 1. Replacement, reconstruction, removal, relocation of damaged/destroyed infrastructures/buildings.
  - 2. Establishment of priorities for emergency repairs to facilities, buildings and infrastructures.
  - 3. Economic recovery and community development.
  - 4. New or amended zoning ordinances, subdivision regulations, building and sanitary codes
- H. Recovery and Redevelopment Plan will account for and incorporate to the extent practical, relevant existing plans and policies. Prevention and mitigation measures should be incorporated into all recovery planning where possible. Responsibilities for recovery assigned to local governments depend on whether or not a state disaster emergency has been declared pursuant to Article 2-B of the State Executive Law. If the Governor declares a state disaster emergency, then under Section 28-a the local governments have the following responsibilities:
  - 1. Any county, town, or village included in a disaster area will prepare a local recovery and redevelopment plan, unless the legislative body of the municipality will determine such a plan to be unnecessary or impractical.
  - 2. Within 15 days after declaration of a state disaster, any county, town, or village included in such disaster area will report to the State Disaster Preparedness Commission (DPC) through SEMO. Whether the preparation of a recovery and redevelopment plan has been started and, if not, the reasons for not preparing the plan.
  - 3. Proposed plans will be presented at a public hearing upon five (5) days notice published in a newspaper of general circulation in the area affected and transmitted to the radio and television media for publications and broadcast.
  - 4. The local Recovery and Redevelopment Plan will be prepared within 45 days after the declaration of a state disaster and will be transmitted to the DPC. The DPC will provide its comments on the plan within 10 days after receiving the plan.
  - 5. Said county, town, or village will adopt a plan within 10 days after receiving the comments of the DPC.

6. The adopted plan maybe amended at anytime in the same manner as originally prepared, revised and adopted; and shall be the official policy for recovery and redevelopment within the municipality.

## **§1-25 Reconstruction**

- A. Reconstruction consists of two phases:
  1. Phase 1-short term reconstruction to return vital life support systems to minimum operating standards
  2. Phase 2-long term reconstruction and development which may continue for years after a disaster and will implement the officially adopted plans, policies and programs for redevelopment including risk reduction projects to avoid the conditions and circumstances that led to the disaster.
- B. Long term reconstruction and recovery includes activities such as:
  1. Scheduling planning for redevelopment
  2. Analyzing existing State and Federal programs to determine how they may be modified or applied to reconstruction
  3. Conducting of public meetings and hearings
  4. Providing temporary housing and facilities
  5. Public assistance
  6. Coordinating State/Federal recovery assistance
  7. Monitoring of reconstruction progress
  8. Preparation of periodic progress reports to be submitted to SEMO
- C. Reconstruction operations must conform to existing State/Federal laws and regulations concerning environmental impact. Reconstruction operations in and around designated historical sites must conform to existing State and FEMA guidelines.

## **§1-26 Public Information on Recovery Assistance**

- A. SCPIO's are responsible for making arrangements with the broadcast media and press to obtain their cooperation in adequately reporting to the public on:
  1. What kind of emergency assistance is available to the public?
  2. Who provides the assistance?
  3. Who is eligible for assistance?
  4. What kinds of records are needed to document items that are damaged or destroyed by the disaster?
  5. What actions to take to apply for assistance.
  6. Where to apply for assistance.
- B. The following types of assistance may be available:
  1. Food stamps (regular and/or emergencies)
  2. Temporary housing (rental, mobile home, motel)
  3. Unemployment assistance and job placement (regular and disaster unemployment)
  4. Veteran's benefits
  5. Social Security benefits
  6. Disaster and emergency loan (Small Business Administration, Farmers Home Administration)
  7. Tax refunds

8. Individual and family grants
9. Legal assistance

All the above information will be prepared jointly by the Federal, State and SCPIO as appropriate and furnished to the media for reporting to public.

**Attachment 1**  
**Hazard Analysis Results for Sullivan County**  
Using HAZNY as provided by the State Emergency Management Office

The Sullivan County Local Emergency Planning Committee reported these results of the Hazard Analysis.

<u>Hazard</u>	<u>Rating</u>	<u>Classification</u>
Power Failure	354.2	High
Structure Fire	338.2	High
Tornado	337.1	High
Ice Storm	321.2	High
Dam Failure	316.1	High
Winter Storm	312.2	High
HAZMAT – Fixed sites	303.1	High
Flood	301.8	High
Transportation Accident	301.3	High
Structure Collapse	301.2	High
Oil Spill	299.8	Moderately High
HAZMAT – In Transit	295.3	Moderately High
Ice Jam	283.8	Moderately High
Landslide	275.5	Moderately High
Water Supply Failure	269.8	Moderately High
Explosion	251.7	Moderately High
Epidemic	250.5	Moderately High
Civil Unrest	243.5	Moderately High
Drought	238.5	Moderately High
Terrorism	235.8	Moderately High
Windstorm	221.2	Moderately High
Wildfire	217.5	Moderately High
Mass Gathering	203.5	Moderately High
Earthquake	180.8	Moderately Low
Radiological – In Transit	179.2	Moderately Low
Mine Collapse	127.5	Moderately Low

## Attachment 2

### NIIMS/ICS Function and Response Activities by Agency

<u>AGENCY</u>	<u>NIIMS/ICS Function</u>	<u>Response Activities</u>
Office of County Manager	Command	Command of county response forces; Declaration of State of Emergency; Promulgation of Emergency Orders Public Information Emergency public information
Office of Emergency Management /Homeland Security	Operations	Activation & coordination of response personnel; EOC Management; Warning
	Liaison	Liaison & coordination with other governments and Organizations
Sheriff's Dept.	Operations / Logistics	Communications; warning; law enforcement
NYS Dept. of Health	Operations Safety	Medical care & treatment; disease & pest control Emergency worker protection
Division of Public Works	Operations	Debris removal & disposal; damage assessment
Bureau of Fire	Operations	Fire suppression & control; search & rescue; HAZMAT exposure control
Division of Social Services	Operations	Human needs assessment
Office for Aging	Operations	Human needs assessment
Division of Planning & Community Development	Planning	Situation assessment & documentation; advance planning
Division of Social Services/ Mental Health	Operations	Crisis Counseling
Coroner	Operations	Identification & disposition of dead
American Red Cross	Operations	Temporary housing & shelter; emergency feeding & clothing
County Clerk	Logistics	Supply & procurement; information Systems
Director, Personnel	Logistics	Human resources
Commissioner, General Services	Administration	Purchasing; record keeping
Commissioner, Financial Management Administration	Financial	Accounting

### **Attachment 3 - NIIMS/ICS Function by Agency**

**Command Section:**

County Manager

**Finance / Administration Section:**

Commissioner, Financial Management Administration

Commissioner, General Services

**Logistics Section:**

County Clerk

Director, Personnel

Sheriff

**Operations Section:**

American Red Cross

Bureau of Fire

Coroner

Division of Public Works

Division of Social Services / Mental Health

Office of Aging

Office of Emergency Management/Homeland Security

Sheriff

**PIO / Liaison:**

County Manager

Office of Emergency Management/Homeland Security

**Planning Section:**

Division of Planning & Environmental Management

**Safety:**

NYS Dept of Health

# Chapter 2

## Standard Operating Guide

### Emergency Operations Center

- §2-01 Acronyms
- §2-02 Introduction
- §2-03 Readiness
- §2-04 Activation
- §2-05 Staffing
- §2-06 Situation Reporting
- §2-07 Security

#### §2-01 Acronyms

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DPC	New York State Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYS DOH	New York State Department of Health
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDFS	Sullivan County Department of Family Services
SCDPEM	Sullivan County Division of Planning and Environmental Management

SCDPW	Sullivan County Division of Public Works
SCMIS	Sullivan County Management Information Service
SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPIO	Sullivan County Public Information Officer
SCPHS	Sullivan County Public Health Services
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

## **§2-02 Introduction**

This guide is a supplement to the Sullivan County Comprehensive Emergency Management Plan (SCEMP), §1-22, Managing Emergency Response. The Sullivan County EOC, located at the Sullivan County 911 Communication Center, CR 183A, White Lake, NY, serves as a location where multiple agencies and departments coordinate emergency response and recovery activities for the county in support of on scene operations. The Director of SCOEM/HS is responsible for maintaining the EOC in a state of readiness and providing for its continued operation during an emergency.

## **§2-03 Readiness**

The Director of SCOEM/HS maintains at the EOC:

1. A current alert notification roster of all government, private sector, and volunteer emergency support services personnel assigned to the EOC (both in hard copy and in the EOC computer system).
2. A current chart and/or checklist of response activities required during emergencies.
3. Current maps and data, including a county map, depicting municipal boundaries, main roads and waterways, individual maps of each town and village in the county depicting all public roads, and population and special facility data for each municipality.
4. Current copy of agency response plans/procedures.
5. A situation display boards for recording and reporting during the progress of an emergency.
6. A "daily activity" log (both in hard copy and in the EOC computer system).
7. A current resource inventories (both in hard copy and in the EOC computer system).
8. EOC space is to be maintained in an emergency operation mode by the Director of SCOEM/HS at all times. During non-emergency periods, the EOC can be used for meeting, training, and conferences.

## **§2-04 Activation**

- A. Each emergency in Sullivan County should be classified into one of three response levels, according to the scope and magnitude of the situation:
  1. Response Level 0: none emergency situation, facility readiness status maintained through planning sessions, training, drills, and exercises.
  2. Response Level 1: A controlled emergency situation without a serious threat to life, health, or property, which requires no assistance beyond initial first responders.
  3. Response Level 2: Limited emergency situations with some threat to life, health, or property, but

- confined to a limited area, usually within one municipality or involving small population.
4. Response Level 3: Full emergency situations with a major threat to life, health, or property, involving large population and/or multiple municipalities.
- B. Initial notification of an emergency is usually received at the SC911 where the information is recorded. Upon initial notification of an emergency (or a potential emergency), the SC911 will immediately ascertain if a Response Level has been assigned.
1. If a Response Level has been assigned, the Director of SCOEM/HS will notify the appropriate personnel.
  2. If no Response Level has been assigned the Director of SCOEM/HS will, based upon all available information, assign a Response Level for the purposes of activating the appropriate personnel.
- C. Initial notification of an emergency to a County office other than the SC911 requires the recipient to notify the SC911.
- D. The EOC will be activated according to the designated Response Level.
1. For Response Level 1: no additional activation of the EOC is required beyond the normal staffing during working hours. During off-hours, the Director of SCOEM/HS or designee can operate from an alternate location site, if necessary.
  2. For Response Level 2: the full staff of the EOC, and selective representation from the County Emergency Response Organization. Will report to the EOC as determined by the Director of SCOEM/HS or designee depending on the type of emergency.
  3. For Response Level 3: the full County EOC staffing will report to the EOC. A staffing list from each agency is provided to the Director of SCOEM/HS on a quarterly basis.
- E. In every situation, the Director of SCOEM/HS or designee can modify the EOC staffing as the situation requires. For every emergency, the Response Level can shift from one level to another as the event escalates or de-escalates. EOC staffing should also change accordingly.

## **§2-05 Staffing**

- A. The levels of staffing will vary according to the Response Level and the actual demands of the situation. For a Level 3 emergency, with full EOC staffing, staff will be organized into the five NIIMS/ICS groups: Command, Operations, Planning, Logistics, and Finance/Administration. For Level 3 activation, 24-hour continuous-day EOC operations will likely be necessary until the situation de-escalates.
- B. Each agency/organization assigned to the EOC will be prepared to maintain continuous operations using two 12 ½ hour shifts (The additional 1/2-hour is for shift change briefings.). Upon the initiation of the 12 ½ hour shifts by the Director of SCOEM/HS or designee, each agency will update its shift rosters to the Operations Officer.
- C. For lesser emergencies (Level 0, 1 and 2), where there is no need for a major County response, the formal use at the EOC of distinct ICS groups may be limited. In these situations, the Director of SCOEM/HS, under the authority of the County Manager, will normally be responsible for all NIIMS/ICS functions and may utilize distinct ICS groups as needed.

## **§2-06 Situation Reporting**

- A. The NIIMS/ICS Planning function is responsible for preparation of the Incident Action Plan and emergency situation reporting and will:
1. Provide a uniform reporting format for all situation reporting to ensure that the information reported are precise, concise, and clear.
  2. After the occurrence of an emergency, ensure that information on the emergency is collected and reported as soon as possible
  3. Receive copies of all messages and/or situation reports from the IC and local and State government officials sent to the EOC pertaining to all emergency situations.
  4. Periodically request a situation report from each participating agency represented at the EOC.
  5. Select for posting, in chronological order on the situation board, the crucial situation reports and damage assessment information.
  6. In preparation of the Incident Action Plan, analyze the situation and prepare an overall situation report. The report should contain the following information:
    - a. date and time of emergency
    - b. type, response level, and location
    - c. specific area affected (including number of people)
    - d. Number of injured (estimated)
    - e. Number of dead (estimated)
    - f. Extent of damage (estimated)
    - g. Damage or loss of municipal response equipment
    - h. Roads Closed
    - i. State of Emergency declared
    - j. Emergency order issued
    - k. Mutual aid called upon
    - l. Major actions taken
  7. Provide the report to the County Manager and the SEMO Regional Office.
  8. Based upon the report, conduct regular briefings to the Command and Operations Sections
  9. Prepare and provide follow-up situation reports on a regularly scheduled basis to the County Manager and the SEMO Regional Office.
  10. Maintain an event log to include all pertinent disaster related information.

## **§2-07 Security**

Internal security at the EOC will be provided by the SCSD during Level 2 and 3 emergencies; during a Level 0 and/or 1 emergency, any security requirements will be provided by regular building personnel. All persons entering and exiting the EOC will be required to check in at the security desk, located at the main entrance.

# **Chapter 3**

## **Declaring State of Emergency And Issuing Emergency Orders**

### **§3-01 Acronyms**

#### **§3-02 Instructions for declaring a Local State of Emergency**

#### **§3-03 Sample Declaration of a Local State of Emergency**

#### **§3-04 Questions and answers on declaring a State of Emergency**

#### **§3-05 Instructions for issuing Local Emergency Orders**

#### **§3-06 Sample Local Emergency Order**

#### **§3-07 Questions and Answers on issuing Local Emergency Orders**

### **§3-01 Acronyms**

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DPC	New York State Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYSDOH	New York State Department of Health
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center

SCDFS	Sullivan County Department of Family Services
SCDPEM	Sullivan County Division of Planning and Environmental Management
SCDPW	Sullivan County Division of Public Works
SCMIS	Sullivan County Management Information Services
SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPIO	Sullivan County Public Information Officer
SCPHN	Sullivan County Public Health Nursing Services
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

### §3-02 Instructions for declaring a Local State of Emergency

- A. The County Manager or a person acting on their behalf pursuant to section A.(2) of this plan, can declare a local State of Emergency for all of, or anywhere in, Sullivan County. The County Manager, Sheriff, and Chairman of the Legislature will notify the SCDPW of the declaration. They will also notify the State. Each Town Supervisor and Village Mayor can declare a State of Emergency within their jurisdiction.
- B. A Local State of Emergency is declared pursuant to Section 24 of the State Executive Law. It can be declared in response to, or anticipation of, a threat to public safety. A declaration of a Local State of Emergency may be verbal or written.
- C. If it is verbal, it must be followed up with a written format. The declaration should include the time and date, the reason for the declaration, the area involved, and the expected duration.
- D. The written declaration should be kept on file in the County Clerk's Office.
- E. A Local State of Emergency must be declared BEFORE Emergency Orders are issued. A Local State of Emergency should be formally rescinded when the declaration is no longer needed.
- F. The County Manager or by resolution, the Sullivan County Legislature may rescind a Local State of Emergency. Though a rescission may be verbal or written, if the declaration was written, the rescission should also be written. The rescission should include the time and date of the original declaration, the reason for the Local State of Emergency, and the time and date the State of Emergency is rescinded. The written rescission should be kept on file in the County Clerk's Office.

### §3-03 Sample Declaration of a Local State of Emergency

A **State of Emergency** is hereby declared in \_\_\_\_ (area within County or entire County) \_\_\_\_ effective at \_\_\_\_ (time) \_\_\_\_ on \_\_\_\_ (date) \_\_\_\_\_. This State of Emergency has been declared due to \_\_\_\_\_ (description of situation) \_\_\_\_\_. This situation threatens the public safety. This **State of Emergency** will remain in effect until rescinded by a subsequent order. As the County Manager of Sullivan County,

I, (Name), exercise the authority given me under section 24 of the New York State Executive Law, to preserve the public safety and hereby render all required and available assistance vital to the security, well-being, and health of the citizens of this County.

I hereby direct all departments and agencies of Sullivan County to take whatever steps necessary to protect life and property, public infrastructure, and provide such emergency assistance deemed necessary.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Date)

**§3-04 Questions and answers on declaring a State of Emergency**

- A. Why should I declare a Local State of Emergency?
  - 1. It increases your powers as the County Manager. These new powers can include:
    - a. issuing emergency orders;
    - b. implementing public protective measures;
    - c. suspending local laws; and
    - d. requesting supplemental assistance.
  
- B. Can a declaration give legal protection?
  - 1. *Yes.* A declaration of a Local State of Emergency provides legal protection and immunities for the County Manager and local emergency officials when they make decisions and take actions to respond to disasters or emergencies
  
- C. Will the declaration help raise public awareness?
  - 1. *Yes.* A declaration of a Local State of Emergency helps make the public aware of the hazards associated with a disaster. It also can emphasize the protective measures you may need to ask citizens to take.
  
- D. Can a State of Emergency be declared at any time?
  - 1. *No.* A Local State of Emergency can be issued when a situation exists that has or will place the public at risk and that will require extraordinary measures for proper protection.

- E. When should I declare a Local State of Emergency?
1. You should consider declaring a Local State of Emergency when a dangerous situation is present or imminent and emergency officials are considering protective actions such as:
    - a. Evacuation of people for a large or heavily populated area (street, road, housing development, multi-resident buildings).
    - b. Sheltering people in designated areas or buildings.
    - c. Large-scale closing of roads due to conditions considered to be dangerous to lives and property.
  2. You should also consider declaring a Local State of Emergency if the following conditions are present and pose a dangerous threat to the municipality:
    - a. Riots or civil unrest.
    - b. Hostage situations.
    - c. Impending emergency or disaster caused by natural forces (floods, blizzards, ice storms, tornadoes).
- F. Can I Issue the declaration verbally?
1. *Yes*. The County Manager may issue a declaration verbally if time is a crucial matter. However, you should follow the verbal declaration with a written declaration.
- G. Must the declaration be filed?
1. *No*. However, it's a good idea to do so. It should be kept on file at the Office of the County Clerk.
- H. Do I have to extend the declaration of State of Emergency after 5 days?
1. *No*. The State of Emergency does not have to be extended, but Local Emergency Orders do.
- I. Does the law establish a time limit for a State of Emergency?
1. *No*. It is best to include a time of duration in the original declaration of State of Emergency, or to issue a succeeding declaration with a time limit or a statement that the State of Emergency is continuing. When the proclamation is no longer needed, it should be formally rescinded.
- J. Can I Issue Local Emergency Orders without a State of Emergency?
1. *No*. A State of Emergency must be declared before you may issue Local Emergency Orders.
- K. Will a declaration help in getting assistance from the state?
1. *Yes*. If you declare a Local State of Emergency and you determine the disaster is beyond the capacity of County resources, the County Manager may request the Governor to provide assistance from state resources.
- L. Must I rescind a declaration of State of Emergency?
1. *No*. However, a written rescinding statement should be made when the emergency no longer exists. The County Manager can rescind the declaration of emergency at any time.
- M. If I don't rescind a State of Emergency, does it end automatically?
1. *Maybe* - If a time limit was indicated in the declaration of State of Emergency it will end automatically at that the time and date indicated. If no time limit was specified, the State of Emergency does NOT end automatically.
- N. When should I rescind a State of Emergency?

1. You should rescind it when the conditions that warranted the declaration no longer exist.

O. Must the rescission be issued in writing?

1. *No.* However, it is recommended, in the same manner as a declaration of State of Emergency is recommended, to be issued in written form.

P. Must the rescission be filed?

1. *No.* However, it is recommended that it be filed in the Office of the County Clerk.

### **§3-05 Instructions for issuing Local Emergency Orders**

A. Local Emergency Orders can be issued only if there is a State of Emergency in effect pursuant to Section 24 of the State Executive Law (See §3-3, A, above).

B. Local Emergency Orders can be issued at the County level by the County Manager, Sheriff, and Chairman, Sullivan County Legislature or a person acting on their behalf, pursuant to Section A.(2) of this plan. Each Town Supervisor, Village Manager and Village Mayor can also issue emergency orders for their jurisdiction following the declaration of a local state of emergency by that same executive.

C. Local Emergency Orders must be written. Local Emergency Orders should include the time and date they take affect, the reason for the declaration, the area involved, and the duration.

D. A Local Emergency Order expires automatically after five (5) days. It can be rescinded before that by its own terms, or by a rescission by the County Manager. It is also automatically rescinded when the State of Emergency is rescinded.

E. The County Manager may extend Local Emergency Orders for periods not to exceed five (5) days each during the State of Emergency.

F. Local Emergency Orders **must** be published as soon as practicable in a newspaper of general circulation and provided to radio and television media for broadcast.

G. Local Emergency Orders must be executed in triplicate and filed within 72 hours or as soon as practicable in the Office of the County Clerk, and the Office of the Secretary of State. Local Emergency Orders must be re-filed if they are extended.

### **§3-06 Sample Local Emergency Order - Local Emergency Order Evacuating Vulnerable Areas**

I, \_\_\_\_\_ (Name)\_\_\_\_\_, the County Manager of Sullivan County, in accordance with a declaration of a State of Emergency issued on \_\_\_\_\_(Date)\_\_\_\_\_, and pursuant to Section 24 of the State Executive Law, hereby order the evacuation of all persons from the following zones:

Zone 1. \_\_\_\_\_

Zone 2. \_\_\_\_\_

This evacuation is necessary to protect the public from

\_\_\_\_\_. This order is effective immediately and shall apply until removed by order of the County Manager. Failure to obey this order is a criminal offense.

Signed this \_\_ (Date) \_\_ day of \_\_ (Month) \_\_, \_\_ (Year) \_\_ at \_\_ (time) \_\_ o'clock, in  
\_\_ (Municipality) \_\_, New York.

Signed: \_\_\_\_\_

Witness: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

### **§3-07 Questions and Answers on issuing Local Emergency Orders**

- A. Can anyone issue a Local Emergency Order?
  - 1. *No.* Only the Chief Executive of a county, town or village may issue a Local Emergency Order.
- B. What can a Local Emergency Order include?
  - 1. An emergency order can require whatever is necessary to protect life and property or to bring the emergency situation under control as long as what it is within the constitutional powers of county government.
- C. Can a Local Emergency Order be issued at any time in an emergency?
  - 1. *No.* A Local Emergency Order can be issued *only after the* Chief Executive declares a Local State of Emergency.
- D. Is it in effect indefinitely?
  - 1. *No.* A Local Emergency Order is effective from the time and in the manner prescribed in the order. It terminates 5 days after issuance, or by rescission by the Chief Executive, or a declaration by the Chief Executive that the State of Emergency no longer exists, whichever occurs sooner.
- E. Can an order be modified once it's issued?
  - 1. *Yes.* A Local Emergency Order may be amended, modified, or rescinded at any time by the Chief Executive during the State of Emergency.
- F. Can a Local Emergency Order be extended beyond five days?
  - 1. *Yes.* The Chief Executive may extend an order for additional periods up to 5 days each during the Local State of Emergency. *Each extension must be re-filed.*
- G. Must the media be informed?
  - 1. *Yes.* The Local Emergency Order must be published as soon as practicable in a newspaper of general circulation in the area affected by the order. It should be published under the paid legal advertisement section. It must also be provided to radio and television media for broadcast.
- H. Can a citizen who disobeys an emergency order be arrested?
  - 1. *Yes.* Any person who knowingly violates any Local Emergency Order of a Chief Executive issued pursuant to Section 24 of the Executive Law can be found guilty of a class B misdemeanor.

# Chapter 4

## Emergency Alert System

- §4-01 Acronyms**
- §4-02 Purpose**
- §4-03 Authority**
- §4-04 Introduction**
- §4-05 Key EAS Sources**
- §4-06 General Procedures for use of Broadcast Facilities**
- §4-07 Communications between the SC911 and LP-1 Facilities**
- §4-08 Implementation**
- §4-09 Monitoring Assignments: (LP-1)**
- §4-10 Authentication Assignments (activation of EAS)**

### **Attachment 1 - Authorization List**

**Attachment 1 - Part II Authorization List - Sullivan County Government Officials**

**Attachment 1 - Part III Authenticator List - National Weather Service**

**Attachment 2 - Test Message**

**Attachment 3 - Programming Guidelines for EAS Decoders**

### **§4-01 Acronyms**

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DOH	New York State Department of Health
DPC	New York State Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident

NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDFS	Sullivan County Department of Family Services
SCDPEM	Sullivan County Division of Planning and Environmental Management
SCDPW	Sullivan County Division of Public Works
SCMIS	Sullivan County Management Information Services
SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPHS	Sullivan County Public Health Services
SCPIO	Sullivan County Public Information Officer
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

Emergency                    A situation posing an extraordinary threat to the safety of life and property. Examples are tornadoes, hurricanes, floods, tidal waves, earthquakes, icing conditions, heavy snows, widespread fires, discharge of toxic gases, widespread power and/or telephone failures, industrial explosions, civil disorders, and radiological emergencies at nuclear power plants, etc.

Designated Local Government Officials: The person or persons designated by the state and local government.

#### **§4-02 Purpose**

The purpose of this document is to provide Sullivan County (part of the Local Operational Area - Area 05) with procedures agreed upon by the broadcast industry and Sullivan County government which will permit expedient emergency instructions in threatened or actual emergencies.

#### **§4-03 Authority**

Title 47 U.S.C. 161,154 (1) & (o), 303 (r), 524(g) & 606; and 47 C.F.R. Part II, FCC Rules & Regulations, Emergency Alert System

#### **§4-04 Introduction**

These procedures were prepared by the Sullivan County EAS Local Area Emergency Communications Committee with the cooperation of SCOEM/HS, and EAS Broadcast Stations in Sullivan County, and the National Weather Service. It provides background data and prescribes specific procedures for the broadcast media to disseminate emergency warning to the general public in Sullivan County, or any portion thereof within the stations' coverage capability, at the request of designated local, state, and federal government officials, for emergencies or incidents which fall outside the realm of normal EAS

requirements.

- A. This EAS Local Area plan may be activated on a day-to-day basis in response to emergencies such as: power outages, tornadoes, floods, civil disorders, nuclear power plant accidents, toxic leaks, or any occurrence that poses a danger to life or property.
- B. This document is intended to supplement procedures in the EAS New York State Plan as promulgated by the State Emergency Communications Commission (SECC). It shall be considered a part of the Sullivan County Prompt Notification System included in the Sullivan County Hazardous Materials Emergency Response Plan, Chapter 6.
- C. Acceptance of, or participation in, this plan shall not be deemed as a relinquishment of program control and shall not be deemed to prohibit a broadcast or cable licensee from exercising his/her independent discretion and responsibility in any given situation. Stations originating emergency communications shall be deemed to have conferred rebroadcast authority. The concept of management of each broadcast station and cable system exercising discretion regarding the broadcast of emergency instructions to the general public is provided by FCC Rules.

#### **§4-05 Key EAS Sources**

- A. Area 05
  - 1. Local Primary Source (LP-1) is WVOS, Old Rt 17, Ferndale, NY and WSUL, Bridgeville Rd, Monticello
  - 2. Source: National Weather Service, Binghamton Airport, Binghamton, NY

Note: FCC Rules and Regulations require broadcast stations to monitor at least two LP-1 stations. These procedures rely on LP-1 stations WVOS and WSUL for initial transmission of Sullivan County EAS messages. WPDH Channel 2 monitors this LP-1's and retransmits Sullivan County EAS messages. An annex to these procedures establishes the NWS as an alternative source for Sullivan County government to request activation of EAS for a local emergency should communications with the LP-1's fail.

#### **§4-06 General Procedures for use of Broadcast Facilities**

(More detailed procedures to be found under "Implementation")

- A. The Sullivan County EAS will operate under the EAS New York State Plan in the event of a Statewide or National Emergency. In the event of an emergency which poses an extraordinary threat to the safety of life or property of significant importance to Sullivan County, where use of the EAS as outlined in the EAS New York State Plan is precluded, designated local authorities may request activation of the EOC, located at the Sullivan County 911 Communication Center, CR 183A, White Lake, NY.
- B. The Director of SCOEM/HS or designee will determine whether or not to request activation of the Sullivan County EAS through the LP-1 Station, WVOS (Chapter 6). Should the director or designee be unable to contact the LP-1 via telephone alternate methods of communications will be established. The SC911 would be able to access the EAS via remote access by telephone.
  - 1. In the event that the primary LP-1, WVOS, is not operational, an authorized local official may

request activation through the secondary LP-1, WSUL, Monticello.

2. When "severe weather" watches and warnings are issued by the NWS, the NWS can activate EAS directly through NOAA Weather Radio or the NWS can notify the LP-1 directly.
3. Sullivan County and the Chairman of the Sullivan County EAS Local Area Emergency Communications Committee have developed an authentication procedure and distributed a list of officials (on a need-to-know basis), with authorization to request activation of the Sullivan County EAS (See Attachment 2). This list includes a list of NWS officials authorized to request activation of the EAS.

#### **§4-07 Communications between the SC911 and LP-1 Facilities**

Commercial telephone service exists between the SC911, SEMO, NWS, and LP-I stations.

#### **§4-08 Implementation**

- A. Authorized Sullivan County officials shall request activation of EAS through the LP-1. Authorized NWS officials may also request activation of EAS through the LP-1. The LP-1 shall relay/retransmit the EAS messages to the other stations of the local EAS according to the decoder and encoder programming specified in Attachment 3.
- B. Procedures for Direct Activation via telephone by designated government officials through the LP-1.
  1. Request activation of the Sullivan County EAS facilities through WVOS or WSUL by telephone using prearranged authentication procedures as soon as possible. Arrange broadcast details with broadcast station personnel.
  2. The following format should be used when government officials deliver the emergency announcement. This format is deliberately general in nature to allow for the uniqueness of each emergency situation.
    - a. This section will be recited by the activator off-air.

This is \_\_\_\_\_ (Name/Title)\_\_\_\_\_ of \_\_\_\_\_ (Agency)\_\_\_\_\_. I request to activate the Sullivan County Emergency Alert System for Sullivan County Local Area, because of (describe nature of emergency).

- b. LP-1 operators should begin recording message from EAS activator. This section for the activator will be on-air. State the following:

"We interrupt this program because of a local emergency. The Sullivan County Emergency Alert System has been activated at the request of \_\_\_\_ (Title of government official) \_\_\_\_\_. (Give a situation summary. Describe the nature of the emergency, expected duration, and protective actions for the public, if any.) Conclude message with "This concludes this Emergency Alert System message." *Total message length must be less than 2 minutes.*

3. Keep line open if necessary.

#### **C. Procedures for Broadcast Personnel**

### **FOR EMERGENCIES ONLY:**

1. Upon receipt of a request to activate the Sullivan County EAS by Authorized Officials, the master control operator at the LP-1, WVOS, Liberty, (or the LP-1, WSUL, Monticello) may proceed as follows:
  - a. Transmit EAS message from SC911 following instructions in the operators' manual in the control room.
    - 1) Note: When relaying EAS messages for State and local emergencies, broadcast and cable operators have the option of transmitting only the EAS header and EOM codes without the attention signal and emergency message. This is acceptable so that EAS coded messages can be quickly relayed through areas unaffected by the emergency.
2. Appropriate notation should be made on the station operating log of all significant events as they transpire. These records should be carefully preserved in the event that they are required at some later date. Send a brief summary to the FCC (EAS) for informational purposes only. It is also requested that a copy of the summary be provided to the SC911 for inclusion in their quarterly reports.
3. All other broadcast stations are monitoring key sources via EAS equipment and will be alerted by the header codes and attention signal. Each station and cable system will, at the discretion of management, perform the same procedures as in step 1 above by transmitting the emergency message from the LP-1.
4. If desired by the local official, and with the concurrence of the LP-1 and monitoring stations, the emergency message may be rebroadcast as necessary. It is understood, however, that the broadcast stations may rebroadcast emergency messages **at their discretion**.
5. All stations are encouraged to devote the full resources of their news departments to provide information and news pertaining to the emergency. In case of local emergencies which are not of significant importance to the entire county area, each station will, at its own discretion, work closely with local county, village, and town officials. To avoid unnecessary public confusion, all broadcast stations must be cautious in providing information and news pertaining to the emergency. All messages must be based on definite and confirmed facts. The listener must not be left to decide for himself/herself what is or is not factual.

#### **§4-09 Monitoring Assignments: (LP-1)**

All radio stations in the Sullivan County EAS will monitor their EAS assignments in accordance with the EAS New York State Plan. These stations are LP-1's for the Local Operational Area (Area 05) for statewide and national emergencies, as well as for local emergencies. Secondary stations in the Sullivan County EAS Plan are encouraged to monitor more than two sources, including NOAA Weather Radio.

#### **§4-10 Authentication Assignments (activation of EAS)**

- A. Authentication instructions must be posted at operating positions of the SC911, and LP-1 stations WVOS and WSUL. NWS authentication instructions must be located at the NWS and LP-1 stations. Only designated Sullivan County Officials and the NWS are authorized to request activation of EAS.
- B. When requesting activation of the Sullivan County EAS, the current authenticator code must be used (see Attachment A: Authorization List).
  1. For activation request received via the EAS decoder from a Key EAS source (NOAA Weather, LP-1) authentication is not required under normal event conditions and situations.

2. For activation requests received via the telephone, the request shall be authenticated by referring to Attachment 1 - Authentication Procedures.

C. Tests:

1. In order to provide Sullivan County with a method of testing the Sullivan County EAS, coordinated tests of the Sullivan County EAS shall be completed on an agreed upon scheduled basis from the SC 911. Testing will be done semi-annually.
2. WVOS-AM, WVOS-FM, and WSUL-FM, are all designated primary stations by the EAS New York State Plan; therefore, all stations must be activated for the test and in the event of an emergency. The primary method of contact will be via dedicated telephone, first to the WVOS newsroom and then to the WSUL newsroom if unanswered by WVOS.
3. Unless a scheduled State test is received from the State Primary, the Local Primary will originate the Required Monthly Test (RMT).

**Attachment 1  
Authorization List**

Broadcast stations must post authorization list at operating positions of employees responsible for authenticating local requests for activation of Sullivan County EAS by authorized officials.

The actual authenticator number is determined on an as needed basis by the SC911, County Manager and Sullivan County LP-1 station WVOS or WSUL.

AUTHORIZATION LIST - SULLIVAN COUNTY OFFICIALS:  
(All names and phone numbers are kept on file with SC911)

<u>Title</u>	<u>Agency</u>
County Manager	Office of County Manager
Commissioner	General Services
County Sheriff	Sheriff Department
911 Coordinator	SC 911 Communication Center
Director of SCOEM/HS	Sullivan County Office of Emergency Management/ Homeland Security
Chief Dispatcher	SC 911 Communication Center
Commissioner of Health	County Health Department
Commissioner of Public Works	Division of Public Works

**Attachment 1 - Part II  
Authorization List - Sullivan County Government Officials**

Broadcast stations must post authorization list at operating positions of employees responsible for authenticating local requests for activation of Sullivan County EAS by authorized officials.

**Attachment 1 - Part III  
Authenticator List - National Weather Service**

Activator Numbers for NWS Personnel will be provided to the LP-1's by the NWS.

## **Attachment 2 Test Message**

- A. The following text will be utilized in conducting a local test of the EAS:

"This is a test of the Sullivan County Emergency Alert System. Sullivan County is testing equipment that can warn you quickly during emergencies. In an actual civil, weather, or technological emergency, specific emergency instructions would follow the familiar alert tone you just heard. This station voluntarily serves as an EAS station for the Sullivan County Operational Area. This concludes this test of the Emergency Alert System."

- B. The following text will be utilized during coordinated monthly tests of the Operational Area when activated by Sullivan County in conjunction with the LP-1:

"This is a coordinated monthly test of the Emergency Alert System broadcast station of this area. The Sullivan County Office of Emergency Management/Homeland Security is testing equipment that can warn you quickly during emergencies. In an actual national, local, or weather-related emergency, official messages would follow the familiar alert tone. This station serves the Sullivan County Operational Areas. This concludes this test of the Emergency Alert System."

**Attachment 3**  
**Programming Guidelines for EAS Decoders**

- A. All broadcast stations and cable systems are encouraged to set up their EAS decoders to monitor several EAS Key Sources including NOAA Weather Radio.
  
- B. Sullivan County government recommends that EAS be activated with automatic interrupt for civil emergency messages for all or part of Sullivan County.
  - 1. New York State - Sullivan County Location
  - 2. Codes: 36105 = all of Sullivan County
  
- C. National Weather Service Programming Advisory
  - 1. The NWS recommends that EAS be activated with automatic interrupt for the following emergencies because of their immediate life-threatening nature and impact on the public:
    - a. Tornado Warning
    - b. Flash Flood Warning
    - c. Severe Thunderstorm Warning
    - d. Blizzard Warning
    - e. Special Marine Warning
    - f. Severe Weather Statement
    - g. Flash Flood Statement
    - h. Civil Emergency Message
  - 2. The NWS recommends that EAS be activated with 15-minute timed relay (or automatic interrupt for the following potentially life-threatening situations requiring precautionary actions by the public:
    - a. Flood Warning
    - b. Severe Thunderstorm Watch
    - c. Flash Flood Watch
    - d. Tornado Watch
  - 3. Although they contain important information on hazardous and potentially hazardous conditions, the NWS does not normally recommend EAS activation for the following because immediate dissemination of the information is not required. The NWS recommends the information be broadcast as appropriate depending on content:
    - a. Flood Watch
    - b. Flood Statement
    - c. Winter Storm Warning
    - d. Winter Storm Watch
    - e. High Wind Warning
    - f. High Wind Watch
    - g. Special Weather Statement

# Chapter 5

## NY State Highway Emergency Task Force Policy and Procedures

### §5-01 Acronyms

#### §5-02 State Disaster Emergency Declaration

#### §5-03 State Highway Emergency Task Force Assistance

#### §5-04 State Emergency Debris Clearance Policy

#### §5-05 State Debris Clearance Responsibilities

#### §5-06 Federal Debris Clearance Assistance

### §5-01 Acronyms

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DPC	New York State Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYSDOH	New York State Department of Health
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDFS	Sullivan County Department of Family Services
SCDPEM	Sullivan County Division of Planning and Environmental Management
SCDPW	Sullivan County Division of Public Works

SCMIS	Sullivan County Management Information Services
SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPHS	Sullivan County Public Health Services
SCPIO	Sullivan County Public Information Officer
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

## **§5-02 State Disaster Emergency Declaration**

Under a State Disaster Emergency Declaration (Section 28, New York State Executive Law, Article 2-13), the Governor normally issues an Executive Order. That directs State agencies to take such actions as may be necessary to assist affected areas in repairing, restoring and protecting private and public facilities and to provide other emergency assistance as would protect the public health and safety.

## **§5-03 State Highway Emergency Task Force Assistance**

Frequently, in the aftermath of a disaster, municipalities, and public utilities must remove large quantities of downed trees and other debris, as part of the efforts to restore services and clear public streets. When a State Disaster Emergency is declared, State agencies may be directed to assist in those efforts. If that occurs, their activities will be conducted in accordance with the policy described in (**§5-04**) below, subject to the direction of and priorities established by the State Coordinating Officer.

## **§5-04 State Highway Emergency Task Force Policy**

With respect to debris clearance and removal, the State's policy following a State Disaster Emergency Declaration is as follows:

### **A. Mission Responsibilities**

State resources may be utilized to clear debris from impacted roads and other public property. The removal of the cleared debris and ultimate storage and/or disposal is the responsibility of the affected governmental entity.

### **B. Mission Priorities**

1. State missions to clear debris will be assigned on a prioritized basis, according to the following order of priorities:
  - a. First Priority: the clearance of transportation corridors in order to enable the passage of emergency vehicles.
  - b. Second Priority: the clearance of transportation corridors and other property to allow utility crews access to damaged power lines and other utility infrastructure which must be repaired in order to restore power to affected areas.
  - c. Third Priority: other emergency-related needs as identified by the affected local jurisdictions or by State agencies, and as authorized by the State Coordinating Officer.

### C. Mission Requests

Local jurisdictions will submit requests for debris clearance assistance to the State Emergency Management Office (SEMO), which will evaluate and prioritize requests. When requested by SEMO, State agencies will conduct damage assessments at impacted sites in order to determine the appropriate equipment and other resources needed to perform the required work. The information to be collected will be compiled and transmitted to the State.

### D. Mission Assignments

Under SEMO coordination, State agencies with debris clearance capabilities will jointly review requests for debris clearance assistance to determine which agencies have the appropriate and necessary resources available to perform the required work.

### E. Completion Date

At the direction of the State Coordinating Officer (SCO), or within one to two weeks after the issuance of the State Disaster Emergency Declaration, the SCO, SEMO, impacted local jurisdictions and appropriate State agencies will assess the need to determine a completion date for the collection of debris placed in public rights-of-way by private property owners and others. This assessment will be conducted at least weekly thereafter. Once the SCO decides to implement a completion date, the date will be publicized in the affected jurisdictions. The purpose of the deadline is to maintain emphasis on the emergency nature of the work and to insure that storm-related debris clearance activities are completed in a timely manner. This will also serve to avoid problems that can occur when non-disaster work is performed simultaneously with emergency projects. In addition, this will allow residents and local jurisdictions to complete a storm clean up and will free governmental workers to proceed with other essential services.

## **§5-05 State Debris Clearance Responsibilities**

### A. State Coordinating Officer (SCO)

The SCO provides overall direction and control of available State agency resources under a State Disaster Emergency Declaration.

### B. State Emergency Management Office (SEMO)

SEMO coordinates debris clearance missions under a State Disaster Emergency Declaration

### C. Department of Transportation (DOT)

DOT, as part of its agency mandate to keep transportation routes clear, is involved in debris clearance activities. DOT's normal policy is to clear debris from major transportation routes by moving it to the side of the road. At that point, the county or local jurisdiction that owns the road is expected to transport the debris from the side of the road to approved disposal sites or to landfills for final disposition (burying or burning). DOT Regional offices maintain a list of disposal sites within their regions to which they may take "State-owned" debris (i.e., debris which is not under local jurisdiction) for disposal.

### D. Department of Environmental Conservation (DEC)

1. Under 6 NYCRR Part 215, DEC requires a permit for the disposal of trees, branches, leaves and other brush by open burning. In addition, storage sites and transfer stations require a solid waste management permit under 6 NYCRR Part 360. These permits must be filed by each entity wishing to burn brush or landfill debris. However, NYS Environmental Conservation Law

(ECL) Sec.a'70-0111 (d) provides for the issuance of general permits, valid for a specific period of time following natural disasters, when numbers of individuals undertake similar types of minor projects that are of a remedial nature. Further, ECL Sec. a'70-0116 allows the DEC to give emergency authorization, not to exceed 30 days, for an action normally requiring a permit. Both emergency provisions require a finding of an emergency or written statement of necessity by the DEC Commissioner in order to be implemented.

2. Under the Commissioner's finding, DEC Regional Directors and their staffs may be authorized to issue general permits or emergency authorizations in affected areas when, in their judgement, open burning or temporary storage of downed trees and brush is immediately required. Actions taken in furtherance of the storage and disposal of downed trees are exempted from the requirements of Article 8 of the ECL and 6 NYCRR Part 617.
3. DEC maintains a computerized list of Construction and Demolition landfills that will accept storm debris. Periodically, as when as during emergency operations, this list is provided to SEMO to serve as a source of disposal sites for storm debris. In addition, DEC may also be required to provide personnel and equipment to assist in debris clearance activities.

#### E. Other State Agencies

Other State agencies, such as the Department of Correctional Services, the Thruway Authority and the Office of Parks, Recreation and Historic Preservation, will be called upon to provide personnel, equipment and other needed resources for debris clearance activities.

### **§5-06 Federal Debris Clearance Assistance**

#### A. Federal Disaster Assistance Law Provisions

1. Following a Presidential Disaster Declaration, Federal disaster assistance will be used to the maximum extent possible to remove debris and wreckage from publicly and privately owned lands and waters. Such assistance can only be provided when it is judged to be in the public interest by meeting the following three conditions:
  - a. The necessary elimination of immediate threats to life, public health, and safety;
  - b. The elimination of immediate threats of significant damage to improved public or private property;
  - c. To ensure the economic recovery of the affected community to the benefit of the community-at-large.

# **Chapter 6**

## **Hazardous Materials Response Plan**

### **Article I**

- §6-01 Acronyms**
- §6-02 Legal Authority**
- §6-03 Introduction**
- §6-04 Notification and Alerting**
- §6-05 Direction and Control**
- §6-06 Containment**
- §6-07 Assessment and Evaluation**
- §6-08 Public Warning and Emergency Information**
- §6-09 Protective Actions for In-Place Sheltering and Evacuation**
- §6-10 Emergency Medical Service**
- §6-11 Exercises and Plan Updating**
- §6-12 Emergency Resources and Site Specific Procedures**
- §6-13 Telephone and Emergency Contact Personnel**

### **Article II**

#### **Attachments**

- Attachment #1 - Title III Model Plan for Sullivan County**
- Attachment #2 - Draft Release Report Form**
- Attachment #3 - Authority and Command in Hazardous Material Response**
- Attachment #4 - Using the Hazardous Materials Emergency Response Guidebook, Dot P 5800**
- Attachment # 5 - CHEMTREC Assistance**
- Attachment # 6 - EAS Message #1, Take Shelter Announcement**
- Attachment # 7 - EAS Message # 2, Evacuation EAS Announcement**
- Attachment # 8 - In Place Sheltering Instructions**
- Attachment # 9 & 10: SARA Title III, Section 302, Facility Compliance Report**
- Attachment # 11: NY State Fire Training Program**

#### **§6-01 Acronyms**

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DPC	New York State Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service

EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYSDOH	New York State Department of Health
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDFS	Sullivan County Department of Family Services
SCDPEM	Sullivan County Division of Planning and Environmental Management
SCDPW	Sullivan County Division of Public Works
SCMIS	Sullivan County Management Information Services
SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPHS	Sullivan County Public Health Services
SCPIO	Sullivan County Public Information Officer
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

## **§6-02 Legal Authority**

New York State Defense Emergency Act Laws of 1951, Chapter 784 (as amended) Laws of 1970.

New York State Executive Law - Article 2B.

New York State General Municipal Law (Sec. 209 - F)

Federal Regulations entitled SARA Title III, as per Public Law 99-499.

Based on the above-mentioned laws, regulations, etc, the Director of SCOEM/HS acts as a staff specialist for the County Manager. During a major disaster, the Director of SCOEM/HS serves as the Coordinator of Operations under the direction of the County Manager, who must remain the ultimate decision-maker

## **§6-03 Introduction**

### **A. Purpose**

This Hazardous Materials Response Plan for Sullivan County has been prepared to meet statutory

planning requirements of the Federal Superfund Amendments and Re-Authorization Act of 1986, SARA, Title III, and to provide for a higher degree of preparedness to deal with incidents involving extremely hazardous substances.

The plan has been specifically designed to serve as a chapter to the SCEMP and supplements that document. Every effort has been made to integrate the Hazardous Material Plan with SCEMP. In that regard the Plan is consistent with existing authorities, planning assumptions, systems, and procedures.

**B. Objectives**

1. Set forth a course of action that will minimize hazards to life and property and adverse impacts upon the environment from the release of a hazardous material.
2. Establish procedures to provide for a coordinated effort on the part of the County, its communities, and industry in response to a hazardous materials emergency.
3. Identify emergency response organizations, equipment, and other resources that can be employed during such a response.
4. Provide a mechanism to integrate community and facility response procedures into the County Emergency Management Plan.

**C. Organization: This Plan is organized in two (2) major parts:**

1. §6-04 through §6-11 County response procedures by function/applicable to any hazardous materials emergency.
2. §6-12 represents Emergency Resources and Site Specific Procedures.
3. Additionally a separate section Attachment 1 has been included for attachments to the Model Plan.

**§6-04 Notification and Alerting**

- A. Purpose:** To provide for the initial notification to the SCSD, local police, and the Sullivan County 911 Communications Center (SC911) of a hazardous material emergency and the subsequent alerting of other response personnel.
- B. Situation:** Timely, informative, and accurate notification of a hazardous material emergency is critical for an effective emergency response operation. Section 304 of SARA Title III requires the immediate notification of the Community Emergency Coordinator and the State when a release of an extremely hazardous substance (EHS) or hazardous chemical in a quantity above the Reportable Quantity (RQ) occurs. Specific information is required by the notification such as chemical name, method of release, health effects, medical attention, and protective actions.

In addition to statutorily required notifications, this procedure is applicable to all hazardous material emergency notifications. This procedure details the notification information required from the emergency site to the local fire department and the SC911 and the subsequent alerting of county response personnel. This procedure reflects the belief that local, county, and adjacent county response personnel must be immediately notified of a release.

**C. Participating Agencies:**

Sullivan County Sheriff Department (SCSD) or police agency of jurisdiction and the SC911.

D. Response Procedures:

1. Upon notification of a hazardous material emergency, the SC911 shall record all emergency notification information on the New York State Emergency Response Commission Release Report Form (See Attachment #1.).
2. The SC911 shall immediately alert and inform the appropriate local fire department of the emergency notification information (See Attachment #2). This alert will take place even if the notification information states that the local fire department has been alerted.
3. The SC911 shall immediately alert and inform the Director of SCOEM/HS and the Battalion Chief of HAZMAT of the emergency notification information.
4. The SC911 shall notify the appropriate agency;
  - a. Spill: NYS DEC
  - b. Air: NYS DOH
  - c. Explosives: NYSP
  - d. River Corridor: National Park Service

**§6-05 Direction and Control**

- A. Purpose: To provide for effective leadership, coordination and unified on-scene command of emergency response forces in the event of a hazardous material emergency.
- B. Situation: A hazardous material emergency may require a broad range of on-scene response organizations including; emergency services personnel from all levels of government, industry representatives, private contractors, and the media. The need for specialized equipment and technical knowledge during response may also be extensive, as are the number of critical decisions that must be made in areas of release containment, emergency worker safety, public protective actions, and environmental protection.

It is recognized that response organizations are typically trained to operate within their agency command structure, but they are rarely called upon to perform their duties as part of a unified and integrated multi-organizational response, such as that required for a major hazardous materials emergency. Therefore, this plan calls for implementation of a strong system of direction and control.

Direction and control begins with the initial local response, but is expanded as the emergency escalates to a larger response directed by the County, or possibly the State.

C. Participating Agencies

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>1. County<ol style="list-style-type: none"><li>a. County Manager</li><li>b. SCSD</li><li>c. SC911</li><li>d. Director of SCOEM/HS</li><li>e. EMS Coordinator</li><li>f. NYSDOH</li><li>g. SCDPW</li><li>h. SCPIO</li><li>i. American Red Cross</li><li>j. School Districts</li><li>k. Hospitals</li></ol></li></ol> | <ol style="list-style-type: none"><li>2. Local<ol style="list-style-type: none"><li>a. Town Supervisor/ Village Mayor or Manager</li><li>b. Fire Departments</li><li>c. Health/EMS</li><li>d. Police</li><li>e. Public Works</li><li>f. Volunteer Groups</li></ol></li><li>3. State Agencies</li><li>4. Federal Agencies</li><li>5. Facility Representatives</li><li>6. Industry Teams and Specialists</li><li>7. Contractors</li></ol> |
|---|---|

D. Response Procedures

1. Unified Command: This plan addresses the need to insure direction and control for a multi-jurisdiction/ multi-agency response to a hazardous materials emergency, which highlights the demand for a Unified Command Structure among responding organizations under the direction of one (1) Incident Commander (IC). The concept of unified command simply means that all agencies that have jurisdictional responsibilities and authority at an incident will contribute to the process of:
  - a. Determining overall response objectives.
  - b. Selection of response strategies.
  - c. Ensuring joint planning and application of tactical activities.
  - d. Ensuring integrated planning and application of operational requirements; including emergency protective measures, containment, safety, and security.
  - e. Maximizing use of available resources.

The IC should be the ranking officer of the Fire Service as mandated by New York State Directive No. 26. The Town Supervisor/ Village Mayor/ Village Manager have overall authority of an emergency in their jurisdiction pursuant to Article 2-B of the State Executive Law.

2. Command Post: The IC will assess the emergency situation and will establish a command post. The IC should also declare a response level according to the response level criteria listed in this section with consultation of the Director of SCOEM/HS.
3. Director of SCOEM/HS: Upon notification by the SC911 of a hazardous material emergency, the Director of SCOEM/HS will contact the IC to assess the situation. This contact can be made by the assignment of the County Bureau of Fire HAZMAT Battalion Coordinator to the scene or by radio or telephone.
4. Declaring a Response Level: The IC should declare a response level. If a response level has not been declared, the Director of SCOEM/HS should provide advice to the IC in declaring a response level.

If necessary, the Director of SCOEM/HS may unilaterally declare a response level for the purpose of activating and coordinating the county response. In all cases, the Director of SCOEM/HS should coordinate with the IC in declaring a response level.

5. Authority Dynamics and Transfer: Just as the dynamic of on-scene direction and control operations expand and change as an incident escalates, leadership and authority may also have to be transferred as an emergency expands. In this regard, the following criteria could be used to determine where direction and control authority should be centered:
  - a. Geographic area involved
  - b. Single or multi-jurisdiction affected
  - c. Number of response agencies
  - d. Resource commitments
  - e. Response operational requirements (fire fighting, environmental contamination, public health impacts, evacuation, containment, emergency medical)

Based on these criteria, authority, unified command, and the designation of an IC could change as a hazardous material emergency expands.

## 6. Responsibilities

### a. Response Level I:

- 1) Ranking officer of the local fire department serves as IC
- 2) IC establishes liaison with the Facility Emergency Coordinator
- 3) IC ensures the Director of SCOEM/HS, County Manager and police agency of jurisdiction, is notified. Director of SCOEM/HS alerts and briefs the County Manager and the SCPIO, if necessary.
- 4) Command Post established, if required.
- 5) IC evaluates the need to declare a higher response level, if appropriate.

### b. Response Level II: Should have followed procedures of Level I before proceeding

- 1) Director of SCOEM/HS notifies and briefs the Town Supervisor/Village Mayor/Village Manager and County Manager.
- 2) Director of SCOEM/HS briefs the SCPIO and the SCPIO takes over if necessary.
- 3) Director of SCOEM/HS and Town Supervisor/Village Mayor/Village Manager evaluate the need to declare a local state of emergency under NYS Executive Law, Article 2-B.
- 4) Director of SCOEM/HS notifies SEMO or the 24-hour State Warning Point
- 5) IC, Director of SCOEM/HS, County Manager and the police agency of jurisdiction evaluate the need to declare higher or lower response level.
- 6) IC, Director of SCOEM/HS, County Manager and the police agency of jurisdiction evaluate the existing designation of the IC. They make a recommendation to the County Manager who will decide to retain the existing IC or designate a new IC based on the scope and technical complexity of the emergency.
- 7) Notification to the American Red Cross for shelters.

### c. Response Level III: Should have followed procedures of Level I and II before proceeding.

- 1) County Manager declares a local State of Emergency under NYS Executive Law, Article 2-B.
- 2) As a result of the recommendation, it may become necessary for the IC function to be taken over by state or federal officials.

Response Level III could be of the magnitude that requires resources from New York State. SEMO coordinates the application of the state's resources in an emergency. At this response level, unified command would likely include State and possibly, Federal resources. Local, county, and state officials should re-examine response requirements and the designation of the IC at this time.

In a Response Level III, Emergency or a State Disaster Emergency, the County Manager, the Director of SCOEM/HS, and senior state official at the scene would jointly decide whether or not to designate a state official as the IC.

## **§6-06 Containment**

A. Purpose: Provide for the control of a hazardous material release or spill into the environment.

Cleanup is not addressed in the model plan. Cleanup is properly classified as a recovery action, and not part of response. Like containment, the spiller has the primary responsibility for cleanup. In New York State, the New York State Department of Environmental Conservation (DEC) supervises cleanup. The DEC shall ensure that the property owner follows rules and regulations.

The IC will make determinations regarding the need for resources and assistance. The Director of SCOEM/HS will coordinate the provision of county containment resources. Other municipalities and/or agencies may be contacted for support containment operations with manpower and equipment.

## B. Response Procedures

1. Response Level I
  - a. IC and the facility personnel assess the need for containment operations.
  - b. Director of SCOEM/HS monitors containment assistance and resource requirements.
2. Response Level II & III
  - a. IC in consultation with the facility personnel takes appropriate containment action.
  - b. Facilities response liaison advises the Director of SCOEM/HS of facilities containment resources situation
  - c. Director of SCOEM/HS assesses need for other municipal assistance.
  - d. DOH monitors health impact of containment activities on emergency workers and nearby residents.

## §6-07 Assessment and Evaluation (A & E)

- A. Purpose: To obtain and analyze hazardous material release information in order to determine the threats and impact of the emergency on people and the environment and to recommend protective actions to decision maker.
- B. Situation: A release or threatened release of hazardous material could result in serious and quickly escalating threats to the public. The physical or chemical characteristics of hazardous materials may include toxicity, flammability, or reactivity. These factors require technical analysis by specialists in order to determine existing hazards, the anticipated course of the incident, and any new hazards if things go wrong. Because the situation may be changing quite rapidly, it is important that this analysis be done thoroughly by specialists in order to ensure public safety.

Responders arriving at the scene without knowledge of the hazardous materials involved will attempt to determine at a distance what material is involved, ensuring utmost regard for personal safety and staying upwind of the incident scene. After referring to the US DOT Hazardous Materials Response Guidebook for information on hazards from the material involved, responders will cautiously determine if any victims require rescue and take appropriate action.

Few communities in Sullivan County have the extent of expertise to analyze the wide range of hazardous material emergencies that can occur and would need to request technical assistance for many types of emergencies. A critical element of assessment and evaluation is to recognize when additional expertise is needed and how to obtain it.

The process of A & E takes place at several levels. At the emergency site, the IC must have expertise available that can provide technical guidance. Determination of the type of hazard involves

knowing what hazardous material is involved and its potential impact and its containment status.

Assessment priorities may include:

- a. Identifying the material involved
- b. Determining its hazard potential
- c. Measuring the magnitude release of material into the environment.
- d. Assessing health impact of the release on emergency workers, the public and environmental resources.

As the incident continues, it may be appropriate for an in-depth analysis to be performed at a location where experts can assemble collectively in the proper analytical environment, such as the Incident Command Post or the SC911. In this situation, all appropriate information from the scene is provided to A&E Specialists as appointed by the IC.

A&E Specialists must also determine what additional information is needed. Inquiries will be directed to individuals at the scene and to the owners of the material, or to other experts involved.

A list of the information about the incident that may be needed is found in Attachment #1 (Release Report Form).

Other sources of information that may be used include:

1. US Department of Transportation - Emergency Response Guide Book. (See Attachment #4 for instructions on its use)
2. National Fire Protection Association (NFPA) Hand Books
3. CHEMTREC (See Attachment #5)
4. Material Safety Data Sheets
5. Chemical industries or laboratories nearby
6. Farm and related industry
7. Private consultants
8. Local contractors

In certain cases, the physical characteristics of a material may be important. For example, if a toxic gas is heavier than air, responders should be advised to avoid low areas. If a material reacts violently with water, firefighters should not use water.

Meteorology may be of significant importance and should be factored into the assessment. The wind direction may indicate areas or people at risk. Wind speed may help to predict the amount of warning time that will be available in the event of a sudden spill or explosion producing toxic by-products. Atmospheric dispersion will depend on meteorological conditions. Analysts also need to evaluate the weather forecast to prepare for changing conditions, such as precipitation that may react with materials.

A&E Specialists must evaluate the potential impact by area and its population. Special consideration must be given to additional facilities that could contribute to the problem, those which are subjected to additional risk due to their proximity to the emergency site and the nature of their activities, and those with a special role in emergency response.

C. Participating Agencies

- |                                    |                         |
|------------------------------------|-------------------------|
| 1. NYSDOH                          | 4. Fire Departments     |
| 2. Facility Emergency Coordinators | 5. Industry Specialists |
| 3. NYS DEC                         | 6. EMS Agencies         |

D. Response Procedures:

1. Response Level I
  - a. IC conducts joint assessment with the Facility Coordinator.
  - b. IC provides facility assessment technical information to the Director of SCOEM/HS, if appropriate.
  - c. Director of SCOEM/HS provides facility assessment technical information to the County Manager if appropriate.
  
2. Response Level II: Should have followed procedures of Level I before proceeding
  - a. The A&E specialists will:
    - 1) Deploy assessment monitoring resources
    - 2) Determine the magnitude of the release
    - 3) Estimate health impact of release on the community
    - 4) Based upon available protective action guides recommends protective actions to the IC.
  - b. If appropriate, the Director of SCOEM/HS will advise State officials of A&E findings and potential A&E support.
  
3. Response Level III: Should have followed procedures of Level I and II before proceeding
  - a. The Director of SCOEM/HS will request State and/or Federal A&E support.

**§6-08 Public Warning and Emergency Information**

- A. Purpose: To provide timely, reliable, and effective warning to the public in the event of a hazardous material emergency. To provide emergency information pertaining to the need for protective actions and provide information on the emergency situation to the media.
  
- B. Situation: A release of a hazardous material into the environment could quickly bring harm to public health. The public, however, can be protected through the implementation of protective actions. In order for protective actions to be effective, the public must be first, warned or alerted that an emergency exists and secondly, instructed on what to do.

The activation of siren and emergency vehicles is a local responsibility although limited county resources are available to assist in route alerting. The activation and implementation of Emergency Alert Systems (EAS) is a county responsibility. Hence, there is an obvious need for close coordination between the county and local response forces. The following procedures provide for an effective implementation and coordination of county and local public warning systems and the provision for emergency information to the public and the media.

C. Participating Agencies

- |  |                          |
|--|--------------------------|
| 1. Local police agency of jurisdiction | 5. SCPIO                 |
| 2. SCOEM/HS                            | 6. EBS Stations          |
| 3. Local Fire Dept                     | 7. National Park Service |
| 4. SC911                               |                          |

D. Response Procedures

1. Response Level I: There should be no need for Public Warning or Emergency Information for Response Level I. However, the SCPIO should fully monitor the situation and respond to public media requests for information.
2. Response Level II: This response level may require the warning of a limited area close to the emergency scene which local response forces are capable of managing. It may also require the activation of the County EAS.
  - a. IC, based on the protective action decision, activates local warning system, if necessary, which may include sirens, route alerting, and residential door to door alerting.
  - b. IC advises the Director of SCOEM/HS if there is a need to activate EAS.
  - c. Director of SCOEM/HS advises SCPIO to activate EAS.
  - d. EAS messages are prepared jointly by SCPIO and IC (See Attachment 6 & 7)
  - e. SCPIO is responsive to media requests for information of the situation.
3. Response Level III: Should have followed procedures of Level II before proceeding
  - a. Local police agency of jurisdiction and/or support agency assists in public warning.
  - b. The SCPIO establishes a joint command center, away from the scene, where all media can obtain information on the emergency.

**§6-09 Protective Actions for In-Place Sheltering and Evacuation**

- A. Purpose: To implement actions that would reduce or eliminate public and emergency worker exposure to hazardous materials released into the environment.
- B. Situation: A release of a hazardous material into the environment could quickly bring harm to public health and can immediately pose life threatening dangers to emergency workers. In-place sheltering and evacuation are protective actions that the public could take to reduce or eliminate their exposure to a hazardous material. Protective actions for emergency workers are accomplished through exposure control methods.
- C. Participating Agencies:
- |                                       |                            |
|---------------------------------------|----------------------------|
| 1. American Red Cross                 | 8. Dept of Family Services |
| 2. SCOEM/HS                           | 9. Hospitals               |
| 3. NYSDOH                             | 10. Schools                |
| 4. Office of Aging                    | 11. National Park Service  |
| 5. SCPIO                              |                            |
| 6. SCDPW                              |                            |
| 7. SCSD/police agency of jurisdiction |                            |

D. Response Procedures

1. Emergency Worker Exposure Control
  - a. Response Level I
    - 1) The IC and facility personnel are responsible for controlling toxic exposure to emergency workers by the following methods.
      - a) Inform each emergency worker of all hazards present.
      - b) Require emergency workers to record any exposures.
      - c) If an emergency worker is exposed, a decision must be made to isolate,

- d) decontaminate, or transport for treatment.
    - e) Assure that personnel are properly protected and given instruction on how to use appropriate protective clothing and equipment.
    - f) Recording, initiating, and maintaining records on exposure to emergency workers.
  - b. Response Level II & III
    - 1) The IC, Director of SCOEM/HS, and facility personnel will be responsible for items 1 through 5 as described in Response Level I above.
    - 2) The IC will designate an Incident Safety Officer responsible for emergency worker exposure control.
    - 3) The Safety Officer will:
      - a) Determine the need for establishing exclusion zones for emergency workers
      - b) If required, establish decontamination station procedures for emergency workers and equipment.
      - c) Ensure that emergency workers use appropriate protective equipment that meets OSHA standards.
      - d) Determine the need for additional exposure control resources.
- 2. Public Protective Action - In Place Sheltering
  - a. Response Level I: There should be no need for protective action under this Response Level I.
  - b. Response Level II: Upon the decision to implement Protective Action In-Place Shelter, the IC will provide the In-Place Shelter Instruction to the affected area or special facilities. (See Attachment # 8).
  - c. Response Level III: Upon the determination to implement the Protective Action In-Place Shelter Plan, the IC will advise the Director of SCOEM/HS of the need to implement the EAS using the In-Place Shelter Instruction (See Attachment # 8)
- 3. Public Protective Action - Evacuation
  - a. Response Level I: There should be no need for this protective action under Response Level I.
  - b. Response Level II: Upon the decision to implement an evacuation as a protective action, due to the limited area, the IC will be responsible for its implementation. See Evacuation Annex of the SCEMP for additional responsibilities. See §6-12, Site Specific Procedures, for detailed vulnerable zone information.
  - c. Response Level III: Should follow procedures of Response Level I & II.
    - 1) Evacuations that demand urgent and immediate action will be directed and managed by the IC. Evacuation of major scope, which includes large populations and extensive relocation and support services, will be under the authority of the Town Supervisor/ Village Mayor or Manager or County Manager and coordinated by the Director of SCOEM/HS.

## **§6-10 Emergency Medical Service**

- A. Purpose: To coordinate on-scene emergency medical care, transportation, and hospital treatment for victims of a hazardous materials emergency. To ensure that mutual aid plans for both the Emergency Medical Service (EMS) and hospitals are implemented.
- B. Situation: A release of a hazardous material into the environment could result in multiple casualties. Emergency medical assistance will be needed to provide medical care to employees of the facility, emergency workers, and the affected public.

1. Hazardous materials emergencies commonly require mutual aid assistance among ambulance services and hospitals.
2. EMS is typically provided by local agencies and are hospitals. The role of EMS mutual aid is to coordinate medical resources responding to the scene.

#### C. Participating Agencies

- |                                      |                                       |
|--------------------------------------|---------------------------------------|
| 1. Ambulance services/ Fire Dept EMS | 5. NYSDOH                             |
| 2. Area Hospital                     | 6. SCSD/Police Agency of jurisdiction |
| 3. SCOEM/HS                          | 7. SCPHS                              |
| 4. EMS Coordinator                   |                                       |

#### D. Response Procedures

1. Response Level I: No county action should be required for this response level. If required, the situation would be managed by community EMS response. The initial responding ambulance crew will be directed by the dispatcher to contact the IC through the SC911. The IC is responsible for workers at the scene and to minimize health threats from exposure.
2. Response Level II
  - a. The Director of SCOEM/HS will advise the EMS Coordinator of the situation.
  - b. The EMS Coordinator will monitor the situation and begin coordination with the IC, area hospitals, and the NYSDOH.
  - c. The initial responding ambulance crew will take the initial steps to work with the fire service to isolate and decontaminate at the site.
  - d. Hospital administrators will be notified and take initial steps to prepare for treatment of chemical exposure victims and shall evaluate the need to implement the hospital disaster plan.
3. Response Level III
  - a. The EMS Coordinator will:
    - 1) Implement County Mass Casualty Incident Plan (MCI), if appropriate.
    - 2) Coordinate EMS activities with the IC and Director of SCOEM/HS.
    - 3) Assign transportation with triage officers, if required.
  - b. If multiple victims are expected, area hospitals so designated in §6-12, Site Specific Procedures, will implement their disaster plan.
  - c. The NYSDOH will provide manpower support as necessary.

### §6-11 Exercises and Plan Updating

#### A. Exercises

1. Purpose: To establish a comprehensive drill program that will effectively implement and evaluate the Sullivan County Hazardous Materials Plan. To have a drill once a year to practice the plan at the direction of said Chairperson.
2. Situation: Similar to training programs, Section 303 (c) (9) of Title III places a requirement on local jurisdictions to establish "methods and schedules for exercising the emergency plan". In establishing training programs and schedules, Sullivan County recognizes the need for an integrated exercise program that will ensure community response agencies and facilities successfully perform their emergency roles and functions in accordance with the Hazardous

Materials Plan. An effective exercise program will also strengthen response management, coordination, and operations, plus reveal shortcomings and weaknesses that can be acted upon prior to an emergency. Corrective actions can then be taken to improve and refine public safety capabilities.

3. Types of Exercises: Exercises are generally classified in three major categories: Tabletop, Functional, and Full Scale. Local jurisdictions may also consider preliminary exercises, called Orientations, to introduce participants to the plan and prepare for the exercise process.

Each of these exercises varies in activities and resources. Some require simple preparations and execution while others may be more complex and require greater efforts and resources. Each provide their own benefits and should be considered in the overall development of an exercise program.

- a. Orientation is used to acquaint personnel with policies and procedures developed in the planning process, providing a general overview of the emergency plan and its provisions. An orientation is especially effective in ensuring that emergency personnel understand their roles and responsibilities and it helps to clarify any complex or sensitive plan elements. While the orientation does not normally involve any direct simulation or role playing, it is used to review plan procedures and informally apply them to potential emergency situations or past events familiar to everyone.
- b. Tabletop Exercise is primarily a learning exercise that takes place in a meeting room setting. Prepared situations and problems are combined with role playing to generate discussion of the plan, its procedures, policies, and resources. Tabletop exercises are an excellent method of familiarizing groups and organizations with their roles and in demonstrating proper coordination. It is also a good environment to reinforce the logic and content of the plan and to integrate new policies into the decision making process. It allows participants to act out critical steps, recognize difficulties, and resolve problems in a non-threatening format. A Tabletop usually lasts 2-4 hours and requires a trained facilitator.
- c. Functional Exercise is an emergency simulation designed to provide training and evaluation of integrated emergency operations and management. More complex than the Tabletop, it focuses on interaction of decision making and agency coordination in a typical emergency location. All field operations are simulated, although messages and information are normally exchanged using actual communications, including radios and telephones. It permits decision-makers, command officers, coordination and operations personnel to practice emergency response management in a realistic forum with time constraints and stress. It generally includes several organizations and agencies practicing interaction of a series of emergency functions. Such as direction and control, assessment, and evacuation.
- d. Full Scale Exercise evaluates several components of an emergency response and management system simultaneously. It exercises the interactive elements of a community emergency program, similar to the Functional Exercise, but it is different from the Functional Exercise in that it adds a field component. A detailed scenario and simulation are used to approximate an emergency that requires on-scene direction and operations, and also includes coordination and policy-making roles at an emergency operation or command center. Direction and control, mobilization of resources, communications and other special functions are

commonly exercised.

4. Critiques are required after each incident with all agencies present.

#### B. Plan Updating

1. The Plan will be updated at such times as may be necessary but in no case, less than annually. Updating of the plan will be preceded by an appraisal of its contents and/or a test and critique of the plan. Execution of the plan in response to an actual event will be considered as a test and will require a critique and after-action report to be submitted to the Chairperson LEPC.

Those items which are subject to frequent change and shall be reviewed annually for possible updating include, but are not limited to, the following:

- a. County, community, and facility notification and alerting list, including identity and phone numbers of response personnel.
- b. Facilities subject to the provisions of Section 302-c of the Act, and the name of the facility Emergency Coordinator.
- c. Facility Hazard Analysis and Maps.
- d. Transportation routes for hazardous materials.
- e. Inventories of critical equipment, supplies, and other resources.

In addition, County facility and community - specific functions and procedures - should be reviewed and revised as appropriate.

2. Update Policy: The following policies apply to the appraisal and updating of the Sullivan County Hazardous Materials Plan:
  - a. It is the responsibility of the Chairperson of the LEPC to coordinate the review and update of the plan. The departments and agencies, communities, facilities, and others, that have a role in hazardous materials response under the plan, will provide support.
  - b. The plan shall be updated as necessary on an annual basis. This update will be preceded by a thorough review of the plan's status and contents. A written report on this review shall be submitted to the Chairperson of the LEPC. The report will highlight significant changes, deficiencies and other data relevant to an update of the plan. Such review shall be submitted on or before January of each year.
  - c. In conducting the plan review and update, the Director of SCOEM/HS will seek input from county departments, local agencies, industry, and other interested parties. If necessary, the Director of SCOEM/HS will conduct meetings to insure that all critical issues have been addressed, and that changes have been implemented.
  - d. Departments and agencies and other agents maintaining annexes and/or procedures that are a part of this plan shall review that portion of the plan pertaining to their function on an annual basis.
  - e. The SCOEM/HS shall serve as an office of record for the plan and supporting materials. The office shall maintain files relative to the planning effort and shall keep an inventory of emergency public information and other planning and training materials.

The Director of SCOEM/HS shall maintain a list of plan holders to insure all parties receive appropriate changes. Comments, corrections or suggestions on any aspect of this plan should be forwarded to:

Sullivan County Local Emergency Planning Committee  
c/o Sullivan County Office of Emergency Management/Homeland Security  
P.O. Box 5012  
100 North Street  
Monticello, NY 12786

#### **§6-12 Emergency Resources and Site Specific Procedures**

- A. Emergency Resources play a central role in an effective response to a hazardous material emergency. Technical expertise, scientific instrumentation, heavy equipment, and transportation vehicles are just a few of the types of resources that are typically needed in a hazardous material response. Knowing what resources are available locally and how to obtain them is a major step in assuring an effective management of emergency resources.
- B. Site Specific Procedures (See Attachment # 9 & 10)
1. The Facility Identification Sheet outlines procedures for each facility in Sullivan County. The Director of SCOEM/HS manages this inventory and corrects as necessary. Chlorine is the reportable EHS and similar actions are applicable to all sites. The evacuation routes and emergency responders are listed, also special populations and available equipment at the site. Community response is outlined in the Plan.

#### **§6-13 Telephone and Emergency Contact Personnel**

***Please Note:*** For security and confidentiality reasons the Emergency Contact Numbers have been omitted. However, the information will be on a form upon distribution to persons affected at the time of a disaster or emergency. It should also be noted that this information is on file with SC911 and Sullivan SCOEM/HS.

**Attachment #1**  
**Title III Model Plan for Sullivan County**  
**Comprehensive Emergency Management Plan**  
**Hazardous Materials Response Level Criteria**

Response Level I

Controlled  
Emergency  
Condition

Criteria

1. Incident that can be controlled by the primary first response agencies of a local jurisdiction
2. Single jurisdiction and limited agency involvement
3. Does not require evacuation, except for the structure or affected facility
4. Confined geographic area
5. No immediate threat to life, health, or property

Response Level II

Limited  
Emergency  
Condition

Criteria

1. Potential threat to life, health, or property
2. Expanded geographic scope
3. Limited evacuation of nearby residents or facilities
4. Involvement of two or three jurisdictions
5. Limited participation or mutual aid from agencies that do not routinely respond to emergency incidents in the area.
6. Specialist or technical team is called to the scene
7. Combined emergency operations such as fire fighting and evacuation or containment and emergency medical care

Response Level III

Full  
Emergency  
Condition

Criteria

1. Serious hazard or severe threat to life, health, and property
2. Large geographic impact
3. Major community evacuation
4. Multi-jurisdictional involvement
5. State and Federal involvement
6. Specialists and technical teams deployed
7. Extensive resource management and allocation
8. Multiple emergency operations

**Attachment #2**  
**New York State Emergency Response Commission**  
**Draft Release Report Form - Sara Title Section 304**

State Spill Hotline (800) 457-7362  
Alternate # State Warning Point (518) 457-2200

1. Caller Name \_\_\_\_\_ Call Date \_\_\_\_\_
2. Affiliation \_\_\_\_\_ Time \_\_\_\_\_
3. Telephone # \_\_\_\_\_ Fax # \_\_\_\_\_ Ref # \_\_\_\_\_
4. Material Released \_\_\_\_\_ EHS \_\_\_\_\_/\_\_\_\_\_  
CERCLA \_\_\_\_\_/\_\_\_\_\_  
Yes/No
5. Amount Released \_\_\_\_\_ lb/gal
6. Date of Release \_\_\_\_\_ Time \_\_\_\_\_ Duration \_\_\_\_\_ hr \_\_\_\_\_ min
7. Release Medium \_\_\_\_\_ Air \_\_\_\_\_ Water \_\_\_\_\_ Land
8. Weather Conditions (Be Specific - wind speed, type of weather) \_\_\_\_\_  
\_\_\_\_\_
9. Location (St/Bldg#) \_\_\_\_\_  
of  
Release (City/County) \_\_\_\_\_
10. Facility (Name ) \_\_\_\_\_  
(Address) \_\_\_\_\_
11. Emergency Contact (Name) \_\_\_\_\_
12. Incident Description \_\_\_\_\_  
\_\_\_\_\_
13. Health Risks \_\_\_\_\_  
\_\_\_\_\_

**Attachment #2 (cont'd)**

14. Precautions \_\_\_\_\_

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15. Additional Notifications Made

Local Fire Department \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Time

Community Emergency Coordinator \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Time

NYS Environmental Conservation \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Time

Federal National Response Center \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Time

Remarks, etc. \_\_\_\_\_

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(PRINT NAME) \_\_\_\_\_

(Signature) \_\_\_\_\_

(Title) \_\_\_\_\_

**Attachment #3**  
**Authority and Command in Hazardous Material Response**

<u>Response Level</u>	<u>Authority &amp; Policy</u>	<u>Unified Command</u>	<u>Incident Commander</u>
I. Controlled Emergency Condition	Local Town Supervisor/Village Mayor/ Village Manager	Coordination among responding agencies	Ranking officer of fire service with primary jurisdiction and authority
II. Limited Emergency Condition	Local Town Supervisor/Village Mayor/ Village Manager	Key officers of responding emergency service organizations, county and state agency representatives	Ranking officer of fire service with primary jurisdiction and authority or County Manager.
III. Full Emergency Condition	County Manager or State Disaster Preparedness Commission Chairman	Key officials of county emergency response agencies, state and federal coordinating officers	County or State Official

**Attachment #4**  
**Using the Hazardous Materials Emergency Response Guidebook**  
**DOT P 5800**

This guidebook was developed for use by firefighters, police and other emergency services as a guide for initial actions to be taken to protect themselves and the public when they are called to handle incidents involving hazardous materials. The information given is intended to provide guidance primarily during the initial phases following an accident. To obtain additional assistance for most effective handling of an incident, it is important that a call be made **AS SOON AS POSSIBLE** to:

CHEMTREC TOLL FREE (800) 424-9300

The purpose of this guidebook is to assist an individual in making decisions. It is not intended to serve as a substitute for knowledge of judgement. This distinction is important since the recommendations given are those most likely to be applicable in the majority of cases. It is **NOT** claimed that the recommendations are necessarily adequate or applicable in **ALL** cases. While this document was primarily designed for use at a hazardous materials incident occurring on a highway or railroad, it will, with certain limitations, be of use in handling incidents in other modes of transportation and at facilities such as terminals and warehouses.

Each numbered response guide provides only the most vital information in the briefest practical form. It identifies the most significant potential hazards and gives information and guidance for initial actions to be taken. One numbered guide is assigned to each material listed in the indexes. Neither the order of presentation nor the guide number assigned is of any significance. Since many materials represent similar types of hazards that call for similar initial emergency response actions, only a limited number of guide pages are required for all materials listed. The numbered guides only cover single commodities. The materials involved in an accident may, by themselves, be non-hazardous; however, any combination of different materials or the involvement of a single commodity in a fire may produce serious health, fire, or explosion hazards.

**ID number does NOT LIST EXPLOSIVES and BLASTING AGENTS INDIVIDUALLY IN THIS GUIDEBOOK.** If the shipping paper or placard identifies the material as Class A Explosives, Class B Explosives or as Blasting Agents (UN Class 1.1, 1.2, 1.3, or 1.5 for international shipments), follow the instructions given in Guide 46. If the shipping paper identifies the material as a Class C Explosive (or UN Class 1.4 for international shipments), follow the instructions given in Guide 50. The instructions on the first page of the guidebook cover explosives as a special case.

Since the identification number assignments made in this guidebook, and the designation of hazardous materials are closely tied to the actions of regulatory authorities, each edition of this guidebook will have a limited useful life of two or three years from the date of publication.

**Attachment #4 cont'd**  
**HOW TO USE THIS GUIDEBOOK**  
**DURING AN INCIDENT WITH HAZARDOUS MATERIALS**

- A. Identify the material by finding either:
1. The 4-digit ID number on a placard or orange panel or
  2. The 4-digit ID number (after letters UN or NA), on a shipping paper or
  3. The material name on a shipping paper, placard, label or package

IF YOU FAIL TO FIND AN ID NUMBER OR NAME, SKIP TO THE NOTE BELOW.

- B. Look up the material's 2-digit guide number in either:
1. The ID number index (yellow pages in first section of Guidebook) or
  2. The materials name index (blue pages in second section of guidebook) or
  3. The list for explosives
    - a. Explosives A - Use Guide 46
    - b. Explosives B - Use Guide 46
    - c. Explosives C - Use Guide 50
    - d. Blasting Agents - Use Guide 46

IF YOU FAIL TO FIND A GUIDE NUMBER IN EITHER INDEX CALL CHEMTREC

- C. Turn to the numbered guide page: (white pages, orange tops)
1. Read the guide page carefully before taking action.

NOTE: IF YOU FAIL TO TURN A GUIDE PAGE IN THE STEPS ABOVE:

- D. And you find a placard, look it up in the Table of Placards in the back of the guidebook and use the guide page given or
- E. Turn to and use guide page 11 now, until additional information or help becomes available to you.

## **Attachment # 5**

### **CHEMTREC ASSISTANCE**

CHEMTREC stands for Chemical Transportation Emergency Center, a public service of the Chemical Manufacturers Association at its offices in Washington, D.C.

CHEMTREC provides immediate advice for those at the scene of emergencies, then promptly contacts the shipper of the hazardous materials involved for more detailed assistance and appropriate follow-up.

CHEMTREC can usually provide hazard information warnings and guidance when given the IDENTIFICATION NUMBER or the NAME OF THE PRODUCT and the NATURE OF THE PROBLEM. For more detailed information and/or assistance, if the product is unknown, attempt to provide as much of the following information as possible:

Name of caller and callback number	Rail car or truck number
Nature and location of the problem	Carrier name
Guide number you are using	Consignee
Shipper and manufacturer	Local weather conditions
Container type	

Incidents involving hazardous materials frequently occur at inconvenient locations making communications difficult. It is important that every effort should be made to keep a phone line open so that the shipper can make contact with the Incident Commander to provide guidance and assistance.

The successful use of the Hazardous Materials Emergency Response Guidebook depends heavily upon your contact with CHEMTREC as soon as you have established yourself as the On-Scene Leader, surveyed the incident and have seen to the immediate need of people involved in the situation. The shipper or manufacturer of the material can usually be contacted through CHEMTREC for expert assistance.

**Attachment # 6**  
**EAS MESSAGE #1**  
**Take Shelter Announcement**

The Sullivan County Office of Emergency Management/Homeland Security has released the following message:

The County Manager has announced that an emergency presently exists at \_\_\_ (location) \_\_\_, as a result of a \_\_\_ (description of incident) \_\_\_. Persons living, working, or traveling within an approximate \_\_\_ (miles) \_\_\_ radius of this location should take shelter.

Response Zone 1 includes \_\_\_ (area of incident) \_\_\_. According to Emergency Response Officials there is NO need for residents to evacuate the area. In Sullivan County, people living, working, or traveling in the following areas is affected by this advisory.

(Repeat the list of area's one time and then continue the message.)

All persons traveling in the affected areas, in motor vehicles, should roll up windows, close air vents, turn off heaters, and/or air conditioners. If in an automobile, or when shelter is not immediately available, improvised respiratory protective actions may be taken by placing a handkerchief, towel, or similar item snugly over the nose and mouth until in shelter or indoors.

Persons who have taken shelter should observe the following procedures:

1. Close all doors and windows
2. Disconnect air conditioners or fans.
3. Lower the thermostat setting of any heater to minimize the intake of external air.
4. Keep pets inside, and to the extent possible, bring farm animals under covered facilities and placed on stored feed.

You are asked NOT to do the following: (Read statement #1 if school is in session)

1. You are requested not to telephone or go to the school your children are attending. They are in a covered protected environment and will be bused home when it is safe to do so.
2. Do not telephone the officials directly involved. They will keep you informed of the situation through this station. Do not use the telephone except for medical emergencies.

The preceding has been an announcement by the Sullivan County Office of Emergency Management/Homeland Security. It calls for all persons living or working within a \_ (mile) \_ radius of \_ (location) \_ to take shelter. For further information, stay tuned to this station.

(Thereafter, this message shall be repeated every five minutes until the station is informed by the SCOEM/HS to end the transmission)

**Attachment # 7**  
**EAS MESSAGE # 2**  
**Evacuation EAS Announcement**

The Sullivan County Office of Emergency Management/Homeland Security has released the following message.

The Sullivan County Manager has announced that an emergency condition exists at \_\_ (location) \_\_ and orders the evacuation of all persons living or working in the area, as a result of a \_\_ (description of emergency) \_\_. This area includes \_\_ (location) \_\_.

Please follow the main evacuation routes for your community. If you will need a place to stay, report to the designated mass care center, which is located at \_\_ (location) \_\_. Please follow main evacuation routes for your community.

If you have housebound or mobility impaired persons in your home and require assistance in moving them, contact the Sullivan County 911 Communication Center at 583-7100.

Please cooperate by checking on persons who may live alone in your neighborhood. If they have no way of providing for their own transportation, please assist them if possible or call the hotline.

Persons affected by this evacuation order should prepare to spend a minimum of three days away from home and should take with them sufficient quantities of clothing, sleeping bags or blankets, personal care items and prescription drugs for at least this period. Persons evacuating to mass care centers will be provided with food and sanitary facilities. Pets will not be allowed inside the mass care centers. The care and feeding of pets is the responsibility of the owner.

Persons preparing to evacuate are reminded to take the following steps prior to leaving:

1. Secure your home and property.
2. Turn off all lights and electrical appliances.
3. Turn down any heating systems (or turn off air conditioning systems).
4. Proceed calmly to your destination, obeying all traffic laws. Drive carefully.
5. Please obey the police and others who will be directing traffic along the evacuation routes.

The preceding has been an announcement by the Sullivan County Office of Emergency Management/Homeland Security regarding an order by the County Manager for the evacuation of all persons living in response area. For further information, please stay tuned to this station.

## **Attachment # 8 In Place Sheltering Instructions**

Close all doors. Close and lock all windows. Seal gaps under doorways and windows with wet towels or thick tape.

Set ventilation systems to 100% re-circulation. If not possible, turn off system.

Turn off all heating systems or air conditioners.

Seal any gaps around window air conditioners, bathroom exhaust fans, range vents, and dryer vents.

Close fireplace dampers.

Close as many internal doors as possible.

If explosion is possible, close drapes, curtains, and shades over windows. Stay away from windows.

If you suspect that the gas or vapor has entered the structure you are in, hold a wet cloth over your nose and mouth.

### **Attachment # 9 & 10:**

**SARA Title III, Section 302, Facility Compliance Report - are kept on file at the SCOEM/HS**

**Attachment # 11: NY State Fire Training Program - are kept on file at the SCOEM/HS**

# Chapter 7

## Domestic Preparedness Plan

- §7-01 Acronyms
- §7-02 Domestic Preparedness
- §7-03 Situation and Assumptions
- §7-04 Concept of Operations
- §7-05 Response
- §7-06 Specific Terrorism Hazards and Personnel Protective Measures
- §7-07 Response Tactics for Specific Terrorism Hazards

### §7-01 Acronyms

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DPC	New York Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYS DOH	New York State Department of Health
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDFS	Sullivan County Department of Family Services
SCDPEM	Sullivan County Division of Planning and Environmental Management
SCDPW	Sullivan County Division of Public Works
SCMIS	Sullivan County Management Information Services

SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPHS	Sullivan County Public Health Services
SCPIO	Sullivan County Public Information Officer
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

## **§7-02 Domestic Preparedness**

A. Introduction: Recent events worldwide and in this country have caused all levels of government to take a closer look at terrorism and how it can affect us. This chapter to the Sullivan County Comprehensive Emergency Management Plan (SCEMP) is for use by county and local officials in addressing the terrorism threat.

Terrorism is the threat or use of force or violence against persons and property to achieve political/social ends usually associated with community disruption and/or multiple injuries or death.

B. Purpose: The purpose of this plan is to protect lives and property by better preventing, mitigating, and responding to terrorist incidents affecting Sullivan County.

C. Scope: The response to a terrorist incident includes two major components, which may operate concurrently or consecutively:

1. Crisis Management involves measures to resolve the hostile situation, investigate, and prepare a criminal case for prosecution under federal and state law. It includes measures to identify the terrorist(s), define the threat, secure the area, and prevent the threat from being carried out.
2. Consequence Management involves measures to alleviate the damage, loss, hardship or suffering caused by terrorist emergencies. It includes measures to protect public health and safety, provide emergency relief to affected governments, businesses, and individuals, and to restore essential government services.

## **§7-03 Situation and Assumptions**

Sullivan County's response to a terrorist incident will be determined by the material involved (i.e., firearms, explosive, nuclear, incendiary, biological, or chemical) and by the authorities, plans and operations that are triggered.

A. Crime Scene as HAZMAT Site as Disaster Area

1. In a terrorist incident, the area of operations is potentially a crime scene and a hazardous material site and a disaster area - spanning the borders of several local jurisdictions. In order to organize a complex on-scene operation, operational boundaries need to be defined with common terminology and procedures for officials responding to the crime, the hazardous materials incident, and the disaster. Operational boundaries may be used to control access to the area, target public information messages, assign operational sectors among responding organizations,

and assess potential impacts on the population and the environment. The physical location of these boundaries will depend on the type and quantity of hazardous materials involved:

- a. The Crime Scene Boundary defines the crime scene. The crime scene may include the areas that are referred to in technical operations as the "working point" or "red zone." The State, Federal, and local law enforcement may restrict access to the crime scene. Response activities within the crime scene may require special procedures in order to protect evidence collection.
- b. The Hazardous Materials Boundary defines the hazardous materials' site, which may be referred to in technical operations as the hot or isolation zones. Depending on the spread of contaminants, the HAZMAT site may include some portion of the crime scene and the surrounding community. Access to the HAZMAT site may be restricted to response personnel wearing protective clothing and using decontamination procedures.
- c. The Disaster Boundary identifies the community-at-risk that may need to take protective actions such as shelter, evacuation or quarantine. Access into this area may or may not be restricted on the authority of State and local health officials.

## B. Assumptions

Terrorist attacks are usually directed at population centers and buildings or facilities that conduct operations for government, transportation, or industry.

1. Terrorist attacks may or may not be preceded by a warning or a threat, and may at first appear to be an ordinary hazardous material incident.
2. Terrorist attacks may require a vast response effort from all levels of government (federal, state, and local).
3. Terrorist attacks may result in large numbers of casualties, including fatalities, physical injuries, and psychological trauma.
4. The attack may be at multiple locations.
5. The attack may be accompanied by fire, explosion, or other acts of sabotage.
6. Emergency responders should be aware of the possibility of secondary devices that are intended to target the responders themselves.
7. The presence of a chemical or biological agent may not be recognized until some time after casualties occur.
8. There may be a delay in identifying the chemical or biological agent present and in determining the appropriate protective measures.
9. The chemical or biological agent may quickly dissipate or may be long acting and persistent.
10. Investigations of the cause of the event and those responsible for it are important law enforcement activities.
11. Resources for combating terrorist attacks exist in local, state, and federal governments.
12. Recovery can be complicated by the presence of persistent agents, additional threats, extensive physical damages, and psychological stress.

## **§7-04 Concept of Operations**

A terrorist threat or actual incident will likely require the response by the State and Federal governments. However, Sullivan County and its local governments will still play a key role in Crisis Management and the full role, initially, in Consequence Management, with that role continuing throughout. With the response of multiple levels of government, the coordination between and among such agencies is a necessity. The NIIMS/ICS is a means for ensuring that the required close coordination is realized.

Sullivan County and New York State government will organize its response to a terrorist threat/incident according to the NIIMS/ICS.

Crisis Management, the purview of law enforcement, may operate from a general threat, to a credible threat, through the incident. Consequence Management, the purview of all response agencies, may operate before, during, and after an incident, and continue until demobilization of emergency operations.

## §7-05 Response

### A. Protecting Emergency Responders

1. Emergency personnel first responding to a terrorist incident must be protected from the various hazards that a terrorist incident can produce. They include:
  - a. Mechanical hazard - Any type of mechanical harm causing trauma (includes gunshot wounds, bomb fragments or shrapnel).
  - b. Etiological hazard - Disease causing material including bacteria (e.g., anthrax), rickettsias (e.g., Q fever), viruses (e.g., hemorrhagic fever), and toxins (e.g., ricin or botulinus)
  - c. Thermal hazard - From both extreme heat and cold (e.g., burning liquids or metals like magnesium, cryogenic materials such as liquid oxygen).
  - d. Chemical hazard - Toxic or corrosive substances (e.g., acids such as sulfuric or hydrochloric; caustics such as ammonium hydroxides; toxic substances such as nerve agents, pesticides, or other chemical agents).
  - e. Radiological hazard - Alpha, beta, and gamma radiation from nuclear material.
  - f. Asphyxiation hazard - Lack of oxygen in the atmosphere due to displacement by heavier than air vapors or depletion by a chemical reaction such as burning.
2. Though the type of protection required varies from hazard to hazard, there are three basic principles of protection that apply to all hazards:
  - a. Time. Spend the shortest amount of time possible in the hazard area or exposed to the hazard. Use techniques such as rapid entries to execute reconnaissance or rescue. Rotate personnel in the hazard area. The less time spent in the affected area, the less likely you are to become injured. Minimizing time spent in the affected area. Minimizing time spent in the affected area will also reduce the chance of contaminating the crime scene.
  - b. Distance. Maximize the distance from the hazard area or the projected hazard area. For chemical hazards recommended distances are included in the North American Emergency Response Guidebook (NAERG).
  - c. Shielding. Use appropriate shielding to address specific hazards. Shielding can include vehicles, buildings, chemical protective clothing, and personnel protective equipment.
3. Detailed information on protection from specified terrorist incidents and hazards is contained in §7-06 & §7-07.

### B. Scene Control

1. Initial Considerations: approaching a criminal event that has been created by an act of terrorism presents unique challenges to the responder. To effectively implement scene control and ensure public safety, emergency responders must quickly and accurately evaluate the incident area and determine the severity of danger. Once the magnitude of the incident is realized then attempts to **isolate the danger** can begin. Establishing control (work) zones early will enhance public protection efforts.
  - a. Initially, when response resources are limited, isolating the hazard area and controlling a mass exodus of panicked and contaminated people will likely overwhelm the best efforts of

- the first arriving responders.
- b. Terrorists may still be lurking nearby waiting for responders to arrive, or could be among the injured. If this is suspected, initial scene control will likely be delayed and dictated by law enforcement activities.
  - c. Anticipate the potential for multiple hazard locations. Responders may have to define outer and inner operational perimeters. There may exist several hazards within the outer perimeter that must be isolated, especially when victims are scattered throughout the boundaries of the incident, or multiple targets contain dangers.
  - d. Controlling the scene, isolating hazards and attempting to conduct controlled evacuations will be resource intensive. Inordinate security may be needed for the event, so responders should request additional assistance early.
  - e. After a bombing, access to the scene may be limited due to rubble or debris. Police activity may make it difficult to establish access and exit avenues for operations.
2. Perimeter Control
- a. Recognizing and-evaluating dangers is critical to implementing perimeter control. Adequately evaluating potential harm will guide decisions and considerations for "stand off@ distances, or establishing "work zones."
    - 1) Take time to perform an adequate size-up.
    - 2) Better to overestimate the perimeter than underestimate (it is easier to reduce the perimeter instead of increasing it after operations is set up).
  - b. Depending on the size and complexity of the incident, the boundaries may need to be divided or identified as having "outer" and "inner" perimeters.
    - 1) The outer perimeter is the most-distant control point or boundary of the incident. It is used to restrict all public access to the incident.
    - 2) The inner perimeter isolates known hazards within the outer perimeter. It is used to control the movement of responders.
    - 3) Types of terrorist incidents that may require outer and inner perimeter control include:
      - a) Improvised explosive devices;
      - b) Chemical or biological dispersion devices; and
      - c) Radioactive contamination.
  - c. Perimeter control may be influenced by the following components:
    - 1) Amount and type of on-hand resources;
    - 2) Capability of available resources (training level);
    - 3) Ability of the resources to provide self-protection (PPE);
    - 4) Size and configuration of the incident; and
    - 5) Stability of the incident.
  - d. Establish the standard "control zones" within the outer perimeter. These zones include:
    - 1) Hot (exclusion) zone (exceptional access);
    - 2) Warm zone (contamination reduction corridor); and
    - 3) Cold (support) zone (staging area).
  - e. Because of the potential for secondary and tertiary events, the perimeter and control zones should be mapped. Therefore, if the incidents escalate, boundaries can be expanded using established reference points that are familiar to On-scene responders. Mapping components should include:
    - 1) Topography
    - 2) Structures/landmarks
    - 3) Access and egress points; and
    - 4) Perimeter boundaries.

- f. Using detection and monitoring equipment to identify perimeter and work zone boundaries has limitations:
  - 1) Responders must attempt to identify "clean" areas as well as hazardous areas. This is usually accomplished by using detection and monitoring equipment. However, equipment designed to detect hazardous materials may not be immediately available to first responders.
  - 2) Unlike chemical and/or biological detectors, radiological detection equipment and trained operators are available from the SCOEM/HS.
- g. Isolation/Stand-off Distance Considerations
  - 1) First, identify the problem from initial incident information (dispatcher reports) and outward warning signs and detection clues.
  - 2) Determine isolation area based upon these factors:
    - a) Potential of harm to life, critical systems, and property;
    - b) Topography;
    - c) Meteorological factors; and
    - d) Resources available to implement tactical operations.
  - 3) Access references material such as the NAERG to determine initial isolation and protection distances.
  - 4) When limited information is available pertaining to the agent, Guide 111 in the NAERG recommends minimal isolation distances of 50 to 100 meters (160 to 330ft.) in all directions.
  - 5) If responders suspect radioactive materials, use appropriate detection equipment with trained operators in determining isolation distances. Monitoring for radioactive materials at any bombing event should be done routinely. Monitoring is the only way to detect the presence of radiation at the scene.

### C. Public Protection Consideration

- 1. Overview: Public safety will largely depend on the ability of responders to effectively conduct a hazard and risk analysis of the affected population. The same basic strategies used by responders to protect the public during a hazardous material incident can be applied to a terrorist event. First arriving responders may be required to make rapid decisions that apply to implementing public protection measures because of escalating dangers. This being the case, those responders will need to base decisions on information gathered during the primary size-up. This can be a challenging task at any significant incident when so many demands are placed upon first arriving units. Remember size up is a continuous process of gathering and using information to make the best decision for a particular point in time.
  - a. For a major terrorist incident, the following options should be considered in defining the approach to protecting the public.
    - 1) Evacuation
    - 2) Shelter-in-place
    - 3) A combination of evacuation and shelter-in-place
- 2. Evacuation
  - a. Evacuating the public from a hazard is a decision based on information that indicates the public is at greater risk by remaining in or nearby the hazard area. The types of information that should be considered in the decision to evacuate should include the following:
    - 1) The degree or severity of public dangers or threats as a result of the hazard.
    - 2) The number of individuals or population areas affected by the hazard.
    - 3) Availability of the resources needed to evacuate the affected population including:

- a) Additional fire/EMS/police personnel
  - b) Transportation vehicles including school buses privately owned vehicles or public mass transit.
- 4) Means available to notify the public and provide emergency instructions before and during the evacuation, including:
- a) Local broadcast media (Emergency Alert System)
  - b) NOAA Weather Radio
  - c) Route alerting via mobile address systems
  - d) Sirens
  - e) Door to door alerting
- 5) Safe passage for the evacuees, including:
- a) Adequate time and opportunity to conduct the evacuation
  - b) Evacuation route monitoring
  - c) Ability to re-route traffic due to congestion
  - d) Availability of shelters
- 6) Special needs of the evacuees:
- a) The needs to assist special facilities (e.g., hospitals, nursing homes, prisons) in evacuating
  - b) The needs to alert and warn the hearing impaired and provide evacuation assistance to the mobility impaired.
- 7) The ability to provide shelter and sustenance to evacuees including:
- a) Adequately staffed shelters with feeding and lavatory facilities
  - b) The provision of medical care to evacuees in need
3. Shelter-in-place
- a. Shelter-in-place is advising the affected population that remains to seek protection within the structure that they occupy or a nearby structure. The decision to do so, like evacuation, is based upon the analysis of the hazard. If the danger to the public is determined to be less by sheltering-in-place, rather than evacuate, then it should be carried out. With certain hazards (i.e., short-term airborne chemical or radiation hazards or line-of-sight exposure to explosives) the best decision is probably to shelter-in-place. One distinct advantage of shelter-in-place over evacuation is the relative short time and ease of implementation. Remember that as long as there remains a danger, hazards and risks must be continuously evaluated. When considering shelter-in-place include the following:
    - 1) The risks of shelter-in-place vs. evacuation
    - 2) The availability of resources
    - 3) The time available to take protective action
    - 4) The level of public understanding of the shelter-in-place concept
  - b. For some hazards, seeking the most protective refuge in the structure (for explosions) or reducing the indoor-outdoor air exchange rate (for chemical, radiation, and some biological hazards) can enhance the in-place shelter.
4. Combination of Both Protective Actions
- a. There may be circumstances when using both evacuation and shelter-in-place would be appropriate. For example, when time or resources cannot support the immediate need to evacuate a large population, only those closest to the hazard, and at the greatest danger, could be instructed to evacuate, while people not in the immediate would be advised to take shelter in place.

#### D. Scene Security Considerations

The agencies assigned site security responsibilities will likely vary according to the location and scope of the incident and the resources available.

1. Whenever there is an ongoing or unstable criminal activity present, law enforcement officials should dictate security measures for scene control.
2. As the incident becomes more defined and more stable (intermediate phases), the shift from a combination of police and other (non-police) personnel in control of the perimeter, should begin to transition to all law enforcement.
3. If the incident is of such magnitude that response activities may continue for days, the use of National Guard units should be considered for perimeter security and control. National Guard support can only be obtained if requested through the SEMO.

#### E. Tactical Considerations

1. When an emergency responder approaches any type of suspicious incident, he or she should do so in a cautious manner with all senses alert for warning signs and detection clues. The following rules should always apply.
  - a. Always approach the scene utilizing protective clothing and equipment.
  - b. Be alert for outward warning signs that may indicate the type of danger present, such as:
    - 1) Casualties resulting from no apparent reason
    - 2) Signs and symptoms indicating chemical exposure
    - 3) Obvious signs of criminal activity, such as weapons on the scene
    - 4) Suspicious vehicles or packages
    - 5) Pre-incident verbal or written warnings
  - c. Properly stage vehicles. During emergency conditions (especially if the incident has created large-scale public chaos and panic) responders must realize when approaching the event, conditions may not provide the most ideal locations to stage vehicles and apparatus. When possible, consider the following:
    - 1) If practical, position first-in vehicles and responders upwind and uphill
    - 2) Direct supporting responders to approach from upwind and uphill
    - 3) Avoid 'stacking' vehicles where they interfere with each other's evacuation route
    - 4) Avoid line-of-site staging with suspected explosive devices
    - 5) Strictly enforce staging instructions
    - 6) Consider having vehicles back into position so that they may leave the scene quickly
  - d. Avoid vapor clouds, mist and unknown liquid.
  - e. Initially, assign at least one responder to observe ongoing activities surrounding your operating position. This person should be alert for criminal activities and the potential for secondary events.
  - f. Plans tentative escape routes for emergency personnel and refuge assembly points.
  - g. Prepare for emergency decontamination on arrival and during all phases of the incident.
  - h. Each response agency should have plans for emergency decontamination of large (mass decontamination) and small groups of contaminated persons. These plans should be developed and maintained with the assistance of the NYSDOH in order to provide technically correct decontamination procedures without incurring potential liability for privacy violations.

#### F. Incident Command for Terrorist Incidents

1. Overview **Error! Bookmark not defined.**: Terrorism is more challenging to manage than most other emergency events. It presents or requires the following:

- a. Coordination of multiple response agencies.
    - 1) The IC must ensure that all participating agencies (local, state, and federal) are effectively communicating within the designated command structure.
    - 2) Regular planning sessions should be conducted to review the progress of assigned tasks and to incorporate new resources as they engage or disengage from the incident.
    - 3) When multiple agencies are operating on site, the IC must request or appoint a representative or liaison for each.
  - b. Unique scene control/security issues.
    - 1) On-going criminal activities will likely impact scene control initiatives. Police may limit or restrict access to the scene due to security concerns.
    - 2) Due to the dynamic nature of criminal activity, anticipate that the incident perimeter will be larger than would be expected simply due to the incident scope.
  - c. Special awareness that responders may be an intended target.
    - 1) Consider that terrorists may still be on the scene, waiting for responders to arrive. The intent could be to add responders to the victim list.
  - d. Specialized resources.
    - 1) Terrorist events will generate responses from many agencies. Some of the response teams will provide personnel who are specially trained and equipped to support operational objectives. Examples include the FBI Hazardous Materials Response Unit and law enforcement bomb disposal teams.
  - e. Crime scene considerations (evidential preservation).
    - 1) Responders working in the confines of a crime scene must respect the mission of law enforcement investigators. Assist the mission by identifying and preserving potential evidence whenever encountered or suspected.
2. The Role of the IC
- a. The IC must safely, effectively and efficiently manage response resources to achieve the most favorable incident outcomes possible.
    - 1) Follow the SEE principle.
      - a) Safe - No one gets hurt.
      - b) Effective - Everyone works toward stated objectives.
      - c) Efficient - All resources are utilized to maximum benefit.
    - 2) Management of the incident is based on these components:
      - a) Establishing and updating priorities.
        - (1) Life Safety
        - (2) Incident Stabilization
        - (3) Property and environmental conservation
        - (4) Investigation of cause and origin
      - b) Continual size-up based on all available information
        - (1) Present situation
        - (2) Predicted behavior
    - 3) IC responsibilities may include, but are not limited to:
      - a) Establishing command
      - b) Hazard and risk assessment
      - c) Notifications
      - d) Developing and implementing site safety
      - e) Ensuring responder protection levels
      - f) Public protection
      - g) Developing and implementing integrated incident action plans

- h) Controlling hazards
  - i) Requesting specialized resources
  - j) Resource management
  - k) Evaluating progress
  - l) Logistical support
  - m) Information control; and
  - n) Incident termination
- 4) Command and control issues at terrorist incidents will likely involve a unified command system in order to properly coordinate the various agencies and authorities involved in responding to the incident. Some key agencies may include:

- a) Local Government
  - (1) Local Fire Department
  - (2) SCSD
  - (3) DOH
  - (4) SCOEM/HS

This Chapter designates the SCSD as the lead local agency for crisis management for terrorist incidents affecting Sullivan County. It also designates SCOEM/HS as the lead agency for consequence management.

- b) New York State
  - (1) Division of State Police
  - (2) NYSDOH
  - (3) DEC
  - (4) Office of Fire Prevention & Control
  - (5) SEMO

The New York State Domestic Preparedness Plan identifies the NYSP as the lead state agency for Crisis Management for terrorist's incidents. The designation of the lead state agency for Consequence Management is contingent upon the actual event and will be designated by SEMO at the time of the incident. SEMO is designated as the lead state agency for coordination of state-level emergency response.

- c) Federal
  - (1) Federal Bureau of Investigation (FBI)
  - (2) Federal Emergency Management Agency (FEMA)

Presidential Decision Directive-39 identifies the FBI as the lead federal agency for crisis management during terrorist incidents involving nuclear, biological, or chemical materials. It identifies FEMA as the lead agency for consequence management during terrorist incidents involving nuclear, biological, or chemical materials.

- 5) Transition Incident Command
- a) The IC for a major terrorist incident will likely be, initially, a local official. As State and Federal assistance arrives and the scope of the response grows more complex, the need to transition IC to a higher level may become obvious. This transition must be accepted by all and Sullivan County officials will support such a transition.
- 6) Termination of the Incident
- a) Termination procedures include debriefing all response participants. For terrorist incidents, debriefing sessions are especially important to responders that are unfamiliar with weapons of mass destruction. Recognize the potential for psychological impacts for several reasons:
    - (1) Most responders are not used to dealing with chemical and biological warfare agents;

- (2) Responders may have been the intended target;
- (3) Exposure concerns may cause post-incident stress

G. County Agency Responsibilities

1. Sullivan County Sheriff's Department (SCSD)
  - a. Lead County agency for crisis management
  - b. Threat investigation and intelligence
  - c. Law enforcement and criminal investigation
  - d. Site security, perimeter and access control
  - e. Traffic control
  - f. Coordination and cooperation with State and Federal law enforcement agencies
2. Sullivan County Office of Emergency Management/Homeland Security (SCOEM/HS)
  - a. Lead County agency for consequence management
  - b. Activates and coordinates County emergency response
  - c. Advises County Manager on declaration of emergency and emergency orders
  - d. Ensures that County response is organized according to NIIMS/ICS
  - e. Coordinates fire service response to HAZMAT incident
  - f. Coordinates EMS activities
  - g. Coordinates local search and rescue efforts
3. New York State Department of Health (DOH)
  - a. Monitors and investigates public health threats
  - b. Initiates public health alerts and emergencies
  - c. Maintains and operates radiological and chemical detection equipment

Additional agency responsibilities are listed in the SCEMP Chapter 1.

**§7-06 Specific Terrorism Hazards and Personnel Protective Measures**

A. Firearms

Armed attack incidents can include many different scenarios and types of weapons. Harm occurs from physical trauma inflicted from the weapon(s). Terrorists generally utilize weapons that can kill the largest number of persons in the shortest amount of time.

1. Types of harm
  - a. Primary:
    - 1) Mechanical - Historically the weapons of choice have been 9-mm semi-automatic pistols, 9-mm machine gun and AK-47 type assault rifles.
  - b. Secondary: etiological (disease causing)
    - 1) Etiological harm may come from contact with blood and other bodily fluids.
2. Implementing personnel protective measures
  - a. Time - Until law enforcement officials have secured the scene, any time spent in the area should be kept to an extreme minimum. Trained responders executing clear tactical objectives should only do time spent in the unsecured area.
  - b. Distance - Until the scene has been secured by law enforcement officials, responders should keep an approximate distance of 2 to 1 mile from the shooter's location. Determining the exact distance will be based on topography and the individual situation, the point is to utilize distance as much as possible. Be aware that projectiles from high-power rifles can travel distances greater than one mile
  - c. Shielding - Implementing shielding at the scene of an armed attack can be accomplished by

utilizing physical objects such as buildings and response vehicles. In some high risk areas and situations departments have issued protective vests and helmets. Shielding at an armed attack needs to include both horizontal shielding and vertical cover. Projectiles falling from above, as well as shots fired from elevated structures can bypass horizontal shielding. Responders should utilize comprehensive shielding as projectiles can ricochet from any direction.

## B. Explosion

### 1. Overview of bombing incidents

- a. Size and target - Bombing incidents can involve multiple devices from small pipe bombs to large vehicle bombs. The incident may involve an attack against a fixed target or a group of people such as emergency responders. The incident may be an isolated event or may involve secondary devices, booby traps or suicide bombers.
- b. Materials used - Materials involved will always include some form of explosives. However, the detonation may be designed to disperse biological, chemical or radiological materials. The type of bomb involved may be an improvised explosive device or a commercially manufactured explosive.
- c. Detonation methodology - The bomb may be activated by a timing device or equipped with various switches that can be activated by light, heat, pressure, movement or radio transmission.
- d. Special considerations - Bombs are the most frequent weapons currently used by terrorists. It is important to note that one of the bomb victims may be the bomber. For this reason victims may be searched for weapons prior to transport.

### 2. Types of Harm

- a. Thermal: This would apply to individuals exposed to the heat generated by the detonation. It is usually not an ongoing risk unless there are unexploded materials present.
- b. Radiological: If the device was designed for the purpose of dispersing radiological contamination or detonated in an area containing radiological materials, this will be a continuing hazard.
- c. Chemical: Chemical hazards can come from products created as a result of the explosive reaction, from chemicals already present at the detonation site, or could have been included in the device for the purpose of being dispersed. Responders must address all of these potential hazards.
- d. Etiological: This will be a primary risk if the device is used as a dispersion mechanism. Otherwise, it is always a secondary risk due to mechanical trauma.
- e. Mechanical: Mechanical harm can result from blast over pressure, shock waves and fragmentation.

### 3. Implementing protective measures

#### a. Time

- 1) Pre-blast: attempting to use time, as a protective measure in a pre-blast situation is a gamble. Once detonation starts, harm will occur almost instantaneously.
- 2) Post-blast: minimizing exposure time in the affected area will assist in keeping exposure to hazards as low as possible. Work time in the affected area should be kept at a minimum until specialized teams have evaluated the area. Teams will search the area for mechanical hazards, unexploded material, radiological hazards, chemical hazards, biological hazards, secondary devices and booby traps.

#### b. Distance

- 1) Pre-blast: Determining the appropriate distance from a suspected explosive device is difficult. Responders must consider the size and estimated power of the device,

- topography of the scene and estimation of the likely harm in the event of detonation. Guide 112 in the NAERG states "May explode and throw fragments 1600 meters (1 mile) or more if fire reaches cargo." For public safety at non-fire situations it recommends isolating the area for at least 500 meters (1/3 mile) in all directions. The NAERG further recommends not operating radio transmitters within 100 meters (330 feet) of the device.
- 2) Post-blast: These incidents may involve a large area. Maintaining a proper distance from the effected area until it has been evaluated is important. Time in the affected area should be kept at a minimum until the area has been evaluated by specialized teams which should search the area for mechanical hazards, chemical hazards, biological hazards, secondary devices and booby traps.
  - 3) Other reference materials such as an ATF (Bureau of Alcohol, Tobacco & Firearms) Bomb Explosion Hazards & Evacuation Distance Table Cards should be uses to assist in determining evacuation distances if they are available.
- c. Shielding
- 1) Pre-blast: Implementing shielding at the scene of a bombing incident can be accomplished by utilizing physical objects such as buildings and response vehicles. If practical, keep out of the line of sight of the scene and stay away from windows.
  - 2) Post-blast: May require the use of respiratory protection and protective clothing.

#### C. Biological Agents

Biological incidents will present themselves as either a focused emergency response or a public health emergency. Materials include bacteria, rickettsia, viruses or toxins. These materials are inhaled or ingested into the body to cause harm.

##### 1. Types of harm

- a. Etiological: Primary type of harm. The US Department of Transportation classifies these materials as Class 6 Hazardous Materials.
- b. Mechanical: Possible secondary hazard where explosives have been used to disperse the agent.

##### 2. Implementing self-protective measures

- a. Time: keep exposure time and product contacts to a minimum.
- b. Distance: keep appropriate distances from the actual biological material. Stay up wind, uphill and away from contaminated areas and casualties if you don't have the appropriate protection.
- c. Shielding: implementing appropriate shielding in the form of respiratory protection and protective clothing.

#### D. Chemical Agents

1. Overview of Chemical Incidents: Chemical incidents can include many hazardous materials classes. Materials can be inhaled, ingested absorbed or injected. Materials can include industrial chemical or warfare type agents.

##### 2. Types of Harm

- a. Chemical (primary): Chemical hazards, of course, include a wide variety of effects including corrosivity, reactivity and a variety of systemic effects which may attack the central nervous system, cardiovascular system, respiratory system and other bodily functions.
- b. Thermal: Many chemical reactions create heat. Also the chemicals involved may be flammable.
- c. Asphyxiation: Some chemical reactions may deplete oxygen or create gases that displace oxygen.
- d. Mechanical: Corrosive chemicals like strong acids can weaken structural elements.

3. Implementing Protective Measures
  - a. Time: keep exposure time and product contact time to a minimum.
  - b. Distance: keep appropriate distances from the actual chemical. Stay up wind, uphill and away from contaminated areas and casualties if you don't have the appropriate protection.
  - c. Shielding: implement appropriate shielding in the form of respiratory protection and protective clothing.

#### E. Incendiary Devices

1. Overview: Incendiary incidents involve flammable devices that are either stationary or hand-thrown. Incendiary devices are used in approximately 20-25% of all bombing incidents in the United States and can include many different chemicals and flammable or explosive devices.
2. Types of harm
  - a. Thermal (primary)
  - b. Asphyxiation (secondary): Asphyxiation is always a possibility due to the fact that burning depletes oxygen.
  - c. Chemical (secondary): The incendiary material may release a chemical hazard or other fuels present may generate chemical hazards.
  - d. Mechanical: Secondary from structural damage, thrown devices or secondary events or explosions.
3. Implementing self-protective measures
  - a. Time: keep exposure times in the affected area and product contact time to a minimum.
  - b. Distance: Keep an appropriate distance from any chemicals. Stay up wind, uphill and away from contaminated areas and casualties if you don't have the appropriate protection.
  - c. Shielding: implementing appropriate shielding in the form of respiratory protection and protective clothing.

#### F. Nuclear Devices

1. Overview: Terrorist nuclear incidents are most likely going to involve the use of an explosive dispersion device or any other means to spread nuclear materials. Intelligence sources report that the use of a nuclear fission device to cause a nuclear detonation is highly unlikely if not nearly impossible. Identifying a nuclear incident may be difficult due to the fact that radiation cannot be detected by the senses and those symptoms of radiological exposure are generally delayed for hours or days.
2. Types of Harm
  - a. Radiological Material and/or Devices (primary): due to the nature of radiological materials, this will present an ongoing hazard, the scope of which will only be determined when the amount and identity of the substance involved is ascertained.
  - b. Chemical (secondary): many radiological substances are also chemical hazards. This is an area that may be overlooked by responders concentrating on radiation effects.
3. Implementing protective measures: Remember that radiological detection equipment is the best method to determine if your self-protective measures are effective and appropriate.
  - a. Time: Spend the shortest amount of time in the suspected contaminated area.
  - b. Distance: Keep an appropriate distance from the suspected contaminated area. The NAERG section on radiological materials recommends to isolate the area for at least 25 to 50 meters (80 to 160 feet) in all directions and to stay upwind.
  - c. Shielding: Implementing shielding at the scene of a radiological incident can be accomplished by utilizing physical objects such as buildings and response vehicles. The penetration effects of radiation are dependent upon the type of material and the nature of the

radiation emitted. As a rule of thumb, keep as much mass between yourself and suspected radiological materials as possible.

- d. Avoiding Internal Contamination: Do not eat or drink in an area with suspected or confirmed radiological hazard.
- e. Avoid External Contamination: Responders should be mindful of avoiding any type of radiological fallout or dust, is present, and thus becoming contaminated. If a person or equipment is contaminated, they should be decontaminated as soon as possible.

## **§7-07 Response Tactics for Specific Terrorism Hazards**

This section addresses tactical issues for Biological, Nuclear, Incendiary, Chemical, and Explosives incidents.

### **A. Biological Agents**

#### **1. Introduction to biological agents**

- a. Biological agents can be either disease-causing organisms (bacteria, rickettsia or viruses) or toxins produced by living organisms.
- b. Biological agents are generally split into three groups.
  - 1) Bacteria and Ricketts - Single celled organisms which cause a variety of diseases in animals, plants and humans. They may also produce extremely potent toxins inside the human body. Ricketts live inside individual cells.
  - 2) Viruses - Much smaller than bacteria and use the reproductive mechanism of host cells to create more viruses.
  - 3) Toxins - Potent poisons produced by a variety of living organisms including bacteria, plants, and animals. Biological toxins are some of the most toxic substances known. Ricin is 10,000 times more toxic than the sarin nerve agent is used in the Tokyo subway attack.

#### **2. How are biological agents disseminated?**

- a. There are a wide variety of means to disseminate biological agents.
  - 1) Aerosol dispersion to produce airborne hazard.

An agricultural sprayer can be used to spray just about anything. Crop dusters could be modified to distribute biological agents. A typical commercial unit has dozens of nozzles that produce a particle size between 2 and 6 microns. This is an ideal size for spreading biological agents such as anthrax spores. There is no restriction on sale or purchase of this type of unit and it is sold all over the world for agricultural use.
  - 2) Oral dissemination via contamination of food, water, or medicine.

Terrorists sprayed salmonella on salad bars in the Northwest that caused over 700 people to become ill. These same terrorists could have used ricin or some other deadly agent that could have killed those whom the salmonella merely made ill.
  - 3) Dermal exposures by direct contact or injection.

Georgi Markov was a Bulgarian journalist who wrote in 1968 about corruption in high government officials in Bulgaria. He was forced to flee Bulgaria for Italy and eventually England. While living in London he continued his reports on Bulgaria and its problems as a reporter for Radio Free Europe. One morning while waiting for a bus, he was jabbed in the thigh with an umbrella. His health quickly deteriorated and he died four days later. An autopsy revealed a small metal pellet near the wound. After analysis, it was found to have contained less than .01 grams of ricin, this tiny amount was more than enough to kill him.

3. Focused response and public health emergencies are two types of incidents that may indicate a biological agent.
  - a. Focused response: A focused response incident involves a single, known point source of contamination. One example of this would be an individual standing up in a restaurant or theater and announcing that the glass vial in his/her hand contained anthrax then broke the vial.
  - b. Public health emergency: The result of spraying salmonella on salad bars in the Northwest is an example of a public health emergency.
4. Potential bacteria or ricketts
  - a. Anthrax: Anthrax is an acute bacteriological disease which can manifest itself as either a skin infection contagious by direct skin contact only, or in its much more deadly inhalation form. The skin infection starts with a gradual itching and then gradually turns into a depressed lesion that becomes black. This form may turn septic and spread throughout the body via the bloodstream and lymph node. Untreated cutaneous anthrax has a fatality rate of 5-20%.
 

Inhalation anthrax has two phases. After an incubation period of one to six days, the initial symptoms include malaise, fever, fatigue, non-productive cough, and chest discomfort. The second phase develops suddenly with the development of severe shortness of breath and cyanosis. Shortly after this phase, the terminal phase develops and typically lasts less than 24 hours with a 90-95% fatality rate despite therapy.
  - b. Plague: Pneumonic plague is the airborne form of the so-called "black plague". Symptoms include a cough with bloody sputum, fever, and pathogenic (dead) tissue in the lymph nodes. It is rapidly fatal and highly contagious.
  - c. Tularemia: Three to five days after exposure to aerosolized Tularemia, there is an abrupt onset of fever, chills, headaches, muscular pain (myalgia), etc., with non-productive cough. It is not considered contagious, but can be fatal.
  - d. Q fever: Q fever is caused by a ricketts-type organism and is rarely contagious. Symptoms include those commonly associated with the flu, acute hepatitis, and pneumonia. Other symptoms are inflammation of the brain and the three membranes or meninges surrounding the brain and spinal cord (meningoencephalitis), inflammation of the membranes surrounding the heart (pericarditis), and inflammation of the myocardium or muscular middle layer of the heart (myocarditis). It is normally not fatal.
5. Potential viral agents: Viruses are different from bacteria in that they grow and reproduce by forcing host cells to produce additional viruses.
  - a. Smallpox: Smallpox is infectious as an aerosol. It is highly contagious and has a high mortality rate. After 7 to 17 day incubation, the pox-like rash starts and patients may present fever, muscle rigidity and shivering, malaise, headaches, vomiting, and other symptoms. Scabs start forming eight to fourteen days after the onset of the disease and leave depressed pigmented scars.
  - b. Venezuelan Equine Encephalitis (VEE): VEE is a mildly contagious disease with an incubation period of one to four days. Symptoms usually include fever, headaches, myalgia and vomiting. They may also include drowsiness, chills, sore throat and diarrhea. Can be fatal.
  - c. Viral Hemorrhagic Fevers (VHF): Hemorrhagic viruses include Ebola, Yellow Fever, Dengue Fever, Crimean-Congo Hemorrhagic Fever, the Hantaviruses and several others. Symptoms include fever, muscular pain (myalgia), headaches, prostration, hemorrhage, capillary leaks, hypotension, and shock; they are generally moderately contagious and often fatal.

6. Potential toxins: Toxic substances are produced by almost every, major category of living organism known. Many of the most deadly are produced by fungi, flowering plants and bacterial.
  - a. Botulinum toxins: Seven related neurotoxins produced by the *Clostridium botulinum* bacteria. They are some of the most potent toxins known and cause life-threatening paralysis leading to progressive weakness of extremities and respiratory muscles leading to respiratory failure. Symptoms can occur as quickly as 24 hours after ingestion.
  - b. Staphylococcal Enterotoxins: These toxins commonly caused food poisoning after the toxin is produced in and ingested from improperly handled foods. Inhalation of aerosolized toxin can lead to septic shock and death.
  - c. Ricin: Ricin is a water-soluble constituent of castor beans. The wash from preparing castor oil contains up to 5% ricin. As little as a milligram (1/1000 of a gram) can kill an individual. Symptoms from inhalation of ricin include necrotizing (tissue-killing) lesions (injury or abnormality) of upper and lower airway, necrotizing pneumonia and pulmonary edema (accumulation of fluid in the lungs). Symptoms from ingestion or intramuscular injection include gastric bleeding, liver necrosis (death), lymphoid necrosis, splenitis (inflammation of the spleen), and pulmonary congestion.
  - d. Mycotoxins (Trichothecene Mycotoxins): These include more than 40 toxins produced by various fungi. Symptoms can include weight loss, vomiting, bloody diarrhea, diffuse hemorrhage, and skin inflammation. Some may cause death.
7. Outward warning signs and detection clues for the presence of a biological agent. There is a number of outward warning signs and detection clues that can alert the responder to the possible presence of biological agents both prior to an incident and at the incident scene.
  - a. Verbal or written threats
  - b. Suspicious bombing incidents that do not cause much blast or fire damage.
  - c. Abandoned spray device out of place for the environment.
  - d. Containers from laboratory or biological supply houses.
  - e. Biohazard, culture or culture media labels.
8. Detection methods for biological agents: On-site detection of biological agents is currently not practical for most first responders. Typically, samples are collected using various techniques including bioassay, mass spectrometry, gas chromatography, and culture of living organisms.
  - a. Bioassay for living organisms and some toxins: Bioassay techniques usually involve taking an unknown sample and comparing its effect on an organism against that of a known substance. Researchers within Army and Navy laboratories are developing assays for botulinum toxin, ricin, plague, brucellosis, Q fever, anthrax, and several viruses.
  - b. Mass Spectrometer: Mass spectrometers ionize a sample and then apply electric and magnetic fields to the charged particles (ions). Analysis is derived from measuring the behavior of the ions when exposed to the fields. There are several types of mass analyzers, but any more technical discussion would be far beyond the scope of this Annex.
  - c. Chromatographic analysis of residue for toxin: Chromatographic analysis involves placing an unknown residue in either a single solvent or solvent blend and then comparing the behavior of the dissolved material when subjected to certain pressures and tests against that of known substances. There are several types of chromatography used, involving both liquid and gaseous materials, but all follow the same basic principles. Gas chromatography is often combined with mass spectrometry for a form of analysis called "Mass spec/GC."
9. Proper self-protection techniques
  - a. Respiratory protection
  - b. Splash protection (boots and gloves)
  - c. Emergency Medical Services (EMS) universal precautions.

10. Treatment procedures for casualties should generally follow this sequence
  - a. Decontamination, if necessary;
  - b. Patient management;
  - c. Transport to medical facilities (hospital); and,
  - d. Definitive care from medical field.

Decontamination covers a broad scope of activities. Technical Decontamination refers to decontamination of tools, suits, and other PPE. Emergency Decontamination of large and small groups was discussed in Chapter 2. Self Decontamination involves a responder who has been contaminated with a hazardous substance. The responder should remove clothing, decontamination with the appropriate materials and then cover him- or herself prior to seeking medical evaluation. Follow your local protocols for detailed instructions.

11. Available technical resources
  - a. Director of SCOEM/HS, NYS Office of Fire Prevention & Control. Local and state resources as indicated in your plan.
  - b. U.S. Public Health Service or the Centers for Disease Control.
  - c. Federal Bureau of Investigation.
  - d. Department of Defense.

## B. Nuclear Devices

1. Introduction: There are three potential forms of nuclear terrorism:
  - a. Radiological Dispersal Device: Release and dispersal of nuclear materials by packing the nuclear material around a conventional explosive device; (See suggestions above regarding Radiological Devices)
  - b. Large-scale conventional explosive device detonated in proximity to a target containing large amounts of nuclear materials (power plant or similar facility); and
  - c. Detonation of a fission device ("nuclear bomb").
2. The Radiological Dispersal Device: Using conventional explosives to spread radioactive contamination is far more likely than an actual nuclear detonation.

In this scenario, radioactive materials are packed around conventional explosives. When the explosive device detonates, it disperses the radioactive material over a wide area. Depending upon the material, both long-term and short-term hazards can be generated with such a device.

Immediate dangers include radiation burns and acute poisoning. Long-term hazards include various forms of cancer and contamination of ground water. This can lead to forced abandonment of large areas or even entire towns.

The New York Times reported that on November 23, 1995, the Russian Independent Television Network was contacted by a Chechan Separatist organization and told of the location of a package in Ismailovsky Park in Moscow. The 30-pound package contained radioactive Cesium (a gamma ray source) and explosives.

One reason that this is a far more likely scenario is those weapons grades fissionable are not required for this type of device. Radioactive materials are used in a variety of industrial products, such as radiographic units used to test bridges, buildings, and other structures.

3. A second form of nuclear terrorism is to target a facility containing nuclear materials. Such facilities include:
  - a. Military bases where nuclear weapons are housed
  - b. Weapons construction / maintenance facilities
  - c. Nuclear-powered vessels
  - d. Nuclear power plants
  - e. Fuel reprocessing facilities
  - f. Nuclear waste facilities
4. Detonation of a fission device: The third form of possible nuclear terrorism is the least likely. The potential for encountering a nuclear bomb is minimal. Terrorists would find it extremely difficult to build or acquire and use such a device because:
  - a. In order to build a device, substantial quantities of weapons-grade fissionable materials are needed. There are three potential sources of fissionable materials:
    - 1) Hijacking shipments of spent nuclear fuel;
    - 2) Acquisition through black markets; and
    - 3) Theft from secured facilities.

Materials acquired from the first two are unlikely to be pure weapons grade and will need further refining, which requires specialized knowledge, skill, money, and equipment. The largest seizure of weapons-grade Uranium as of 1995 was 2.72 kilograms (about 6 pounds), which should not be enough to build a fission bomb.

Fissionable materials are difficult to transport. A given volume of uranium weighs about 18.7 times as much as water. Therefore, a gallon jug filled with powdered uranium would weigh about 156 lb., not counting the shielding required for safe transport.

- b. Building a nuclear device is much more than assembling the requisite quantity of fissionable material. The purified material must be machined into precise shapes and exact quantities of explosives packed around the fissionable material in geometry that ensures the proper creation of a critical mass for the short time necessary for the reaction to occur. If this is not done, the device will simply scatter the fissionable material over the area instead of detonating.
- c. Theft of an operational nuclear device would be even more difficult than acquiring the materials to build one.

Strict national and international security measures make it very unlikely that an entire bomb could be acquired. Even if such a device was stolen, all western and former Soviet nuclear devices incorporate the Permissible Action Links (PAL) security system that will render the weapons safe unless the correct multi-digit code is entered.

5. Outward warning signs and detection clues: Outward warning indicators include placards, labels and specialized packaging such as lead containers. Responders should be well acquainted with the standard radiation warning symbols and hazardous materials containers. For additional information, check the NAERG.
6. Radiological Monitoring Equipment: Electronic equipment will likely be the only means of testing an area for radiation. Properly trained responders should survey any incident scene with radiation detectors following a suspicious explosion or terrorist threat.
7. Self-protection: As discussed in Attachment 1, implement personal protection through time,

distance, and shielding.

8. Treatment procedures for casualties should generally follow this sequence:
  - a. Decontamination, if necessary;
  - b. Patient management;
  - c. Transport to medical facilities (hospital); and
  - d. Definitive care from medical field.
9. Available technical resources
  - a. LHD & NYSDOH
  - b. U.S. Department of Energy (DOE),
  - c. Federal Bureau of Investigation (FBI).
  - d. Department of Defense (DOD).
10. Notifications: Make appropriate notifications as indicated in your local emergency plan.

### C. Incendiary Devices

1. Introduction
  - a. Incendiary devices have been used by terrorists for many years. Fire is a flexible tool that is capable of causing property damage, loss of life, and sparking panic among the public. It will also continue to spread and do damage until all available fuel is consumed, or the fire is extinguished. In the United States the use of incendiary devices is on the rise.
  - b. According to data from the FBI Bomb Data Center:
    - 1) Incendiary devices were used in approximately 20-25% of all bombing incidents in the United States;
    - 2) When used, incendiary devices ignited approximately 75% of the time;
    - 3) Less than 5% of actual or attempted bombings (including those involving incendiaries) were preceded by a threat.
2. Classification of Incendiary Devices: Incendiary devices can be classified in a number of ways such as by triggering and delivery methods.
  - a. Classification by triggering methodology.
    - 1) Chemical reaction (including burning fuse)
    - 2) Electronic ignition
    - 3) Mechanical ignition
  - b. Classification by delivery methodology.
    - 1) Stationary (planted)
    - 2) Hand-thrown (Molotov Cocktail)
    - 3) Self-propelled (rocket, etc.)
3. Components of incendiary devices
  - a. Ignition source.
  - b. Combustible filler material.
  - c. Housing or container to hold the filler.
4. Materials used to construct incendiary devices:
  - a. Roadway flares;
  - b. Gasoline and motor oil;
  - c. Light bulbs;
  - d. Common electrical components and devices;
  - e. Matches and other household chemicals;
  - f. Fireworks;
  - g. Propane and butane cylinders; and
  - h. Plastic pipes, bottles and cans.

5. Outward warning signs and indicators of incendiary use
  - a. These are similar to the detection clues for arson investigations and include:
    - 1) Prior warning (phone calls);
    - 2) Multiple fire locations;
    - 3) Signs of accelerants;
    - 4) Containers from flammable liquids;
    - 5) Splatter patterns indicating a thrown device;
    - 6) Fusing residue;
    - 7) Signs of forced entry to the structure; and
    - 8) Common appliances out of place for the environment.

These clues should simply be a signal for you, the responder, to take appropriate precautions to safeguard yourself and the public, and to start considering the incident as a potential crime scene.

6. Detection methods: Various methods of detecting chemical residue indicating incendiary use are available including color metric tubes, combustible gas meters, flame ionization detectors, trained dogs, and photo-ionization detectors.
7. Self protection
  - a. Approach the scene utilizing appropriate personal protective clothing equipment.
  - b. Do not handle any suspicious device.
  - c. Avoid vapor clouds, mists, and liquids.
  - d. Call for technical assistance.
8. Treatment of casualties
  - a. Consider decontamination.
  - b. Patient management.
  - c. Transport to medical facilities (hospital).
  - d. Definitive care from medical professionals
9. Additional resources
  - a. Local and state resources as indicated by your plan.
  - b. Bureau of Alcohol, Tobacco and Firearms (BATF).
  - c. Federal Bureau of Investigation (FBI).

#### D. Chemical Agents

1. Introduction: Chemical agents are substances that can injure or kill through a variety of means. The ones we will address in this section are also identified by military classification codes that give field personnel a quick reference to their characteristics and hazards.
  - a. Nerve agents are some of the most toxic known chemicals. They are hazardous in their liquid and vapor states and can cause death within minutes of exposure. Nerve agents, like their close relatives the organophosphorus pesticides, inhibit acetylcholinesterase in tissue, and their effects are caused by the resulting excess acetylcholine.
  - b. Vesicants (blister agents) cause red skin (erythema), blisters, irritation, and damage to the eyes, respiratory damage and gastrointestinal effects. Their effect on exposed tissue is somewhat similar to that of a corrosive chemical like lye or a strong acid.
  - c. Cyanides or blood agents include common industrial chemicals such as potassium cyanide, which can cause rapid respiratory arrest and death.
  - d. Pulmonary or choking agents include common industrial chemicals such as chlorine, which can cause eye and airway irritation, dyspnea, chest tightness, and delayed pulmonary edema.
  - e. Irritants or riot control chemicals such as pepper spray cause burning and pain on exposed mucous membranes and skin, eye pain and tearing, burning in the nostrils, respiratory

discomfort, and tingling of the exposed skin.

## 2. Dissemination methods

- a. Aerosol: An aerosol is defined as a suspension or dispersion of small particles (solid or liquids) in a gaseous medium. Aerosol dissemination methods range from hand-held spray bottles and backpack pesticide spray equipment to powered generators carried by trucks, ships and aircraft.
- b. Area contamination: Area contamination, such as spraying an area with a persistent liquid chemical, can cause thousands of casualties through inhalation or skin absorption.

A Persistent Agent is one that remains in the target area for longer periods of time. Hazards from both vapor and liquid may exist for hours, days, or in exceptional cases, weeks, or months after dissemination of the agent. As a general rule, persistent agents' duration will be greater than 12 hours.

## 3. Nerve agents

### a. Examples

- 1) Tabun (GA)
- 2) Sartin (GB)
- 3) Soman (GD)
- 4) Thickened Soman (TGD)
- 5) V agent (VX)

Note: In the military classification of these nerve agents, 'G' refers to German origination and the letter following the 'G' is derived from the name of the scientist primarily responsible for developing that chemical. The letter 'V' stands for 'venom' and the 'X' following the 'V' refers to a chemical series.

- b. Exposure and effects: Exposure to these agents typically occurs through exposure to airborne vapors or direct skin contact with the liquid.

While liquid nerve and blister agents will produce vapors, it is important to understand that they are intended to be aerosolized to maximize their effect. This can be explained in terms of an agents' vapor pressure.

The vapor pressure of a substance refers to the relative amount of vapor that will be released from a given substance to reach equilibrium with the liquid or solid form at normal conditions of air pressure and temperature. The higher the vapor pressure, the more vapor will be generated. This, of course, does not take into account such factors as surface area and air currents. Increasing surface area (by aerosolizing) or temperature (by heating, as in a fogger) will increase the amount of vapors generated.

One atmosphere of air pressure is approximately 760 millimeters of mercury (mm/hg). Substances with a vapor pressure at or above this level are gasses. An example of this is chlorine with vapor pressure of around 7,000 mm/hg. Sartin has a vapor pressure of 2.9 mm/hg and that of distilled mustard less than 1.

Some nerve agents and vesicants are normally liquids and are classified as Hazard Class 6 by the Department of Transportation. In order to properly weaponize these products, they must be manipulated in a manner designed to maximize vapor release. By aerosolizing them, the terrorist maximizes surface area and provides maximum amount of vapor and even a means

of causing victims to inhale the actual liquid. Heating will also assist in this effort. The sarin used in the Tokyo subway incident was not properly weaponized, which accounts for the limited number of fatalities among the victims.

- 1) Inhalation vapors.
    - a) A small exposure to vapor can cause pinpoint pupils (miosis), runny nose (rhinorrhea) and mild difficulty breathing.
    - b) Large exposure can cause sudden loss of consciousness, convulsions, temporary breathing stoppage (apnea), flaccid paralysis, copious secretions, and death.
  - 2) Liquids on skin.
    - a) Depending on the degree of exposure, symptoms can range from localized sweating, nausea, vomiting, and a feeling of weakness to sudden loss of consciousness, seizures, breathing stoppage, -copious secretions, paralysis, and death.
    - b) VX is more persistent and harder to decontaminate from the skin than the other agents listed.
  - c. Outward warning signs: Outward warning signs include observation of “SLUDGE” symptoms such as salivation, lacrimation, urination, defecation, & gastrointestinal. Victims may possibly report a fruity odor.
  - d. Detection is by means of:
    - 1) Detection papers such as M8 or M9;
    - 2) Color metric tubes;
    - 3) Military detection kits;
    - 4) Pesticide tickets; and
    - 5) Electronic meters.
  - e. Self-protection: Follow your agency procedures for operating at the scene of a hazardous materials incident. If the material has not been positively identified but is suspected to be nerve agent follow NAERG Guide 153. Do not make entry into confining environments unless you have been appropriately trained and have the necessary equipment. Use time, distance and shielding to your maximum advantage. Antidotes to nerve agents include Atropine and 2-PAM Chloride.
4. Vesicants (blister agents)
- a. Examples
    - 1) Mustard (H)
    - 2) Distilled Mustard (HD)
    - 3) Nitrogen Mustard (HN1, HN2, HN3).
    - 4) Lewisite (L).

Note: In the classification system devised for the mustard agents, the letter 'H' is derived from the German word for 'hot stuff'. The rest of the letters should be self-evident. Distilled and nitrogen mustards were developed because straight mustard freezes at 50F and is, therefore, unusable in colder climates.

- b. Exposure and effects: Exposure to vesicants can be through contact with either the liquid or vapor. The warmer the climate, the more easily the vapors are produced.
  - 1) Overview of effects: The primary effects of Mustard, Distilled Mustard and Nitrogen Mustards occur in the eye, airways, and skin. Absorbed mustard may produce effects in other bodily systems.
  - 2) Effect on skin: Reddening (Erythema) is the mildest and earliest form of skin injury appearing after exposure to mustard. It resembles sunburn, and is associated with itching or a burning, stinging pain. Erythema begins to appear in 2 to 24 hours after vapor

- exposure.
- 3) Effects on the pulmonary system: The primary airway lesion from mustard is necrosis (death) of the mucosa with later damage to the musculature of the airways if the inhalation exposure is large. The common cause of death in mustard poisoning is respiratory failure.
  - 4) The eyes are the organs most sensitive to mustard vapor injury. The time between exposure and visible injury (latent period) is shorter for eye injury than for skin injury.
  - 5) Effect on the Gastrointestinal (GI) tract: The GI tract is very susceptible to mustard damage, either from systemic absorption or ingestion of the agent.
  - 6) Central Nervous System (CNS) effects: The CNS effects of mustard remain poorly defined. Animal studies demonstrated that mustards (particularly the nitrogen mustards) are convulsants. There are several human case reports describing people who were heavily exposed experiencing neurological effects just prior to death. Reports from WWI and Iran described people exposed to small amounts of mustard, as appearing sluggish, apathetic, and lethargic.
  - 7) Lewisite: The effects of Lewisite are similar to that of the mustards, but far more immediate. Lewisite causes immediate pain or irritation of skin and mucous membranes. Delayed symptoms, including erythema and blisters on the skin and eye, as well as airway damage, develop later in a manner similar to that caused by the mustards. Lewisite has not been known to have been used on humans.
- c. Outward warning signs: Outward warning signs include observation of blistering and other external symptoms. Victims may report on odor of garlic.
  - d. Detection methods:
    - 1) Detection papers such as M8 and M9;
    - 2) Military detection kits;
    - 3) Color metric tubes; and
    - 4) Electronic meters.
  - e. Self-protection: Follow your department procedures for operating at the scene of a hazardous materials incident. If the material has not been positively identified but vesicants are suspected, follow Guide 153 found in the NAERG as discussed earlier. Do not make entry into confined spaces unless you have been properly trained and have the necessary equipment. Use time, distance and shielding to your maximum advantage.
5. Cyanides (Blood Agents)
- a. Examples:
    - 1) Hydrogen Cyanide (AC)
    - 2) Cyanogen Cyanide (CK).
  - b. Exposure and effects:
    - 1) Exposure can be through contact with either liquids or vapors. Due to high degree of volatility of these compounds, the liquid rapidly vaporizes and disperses.
    - 2) Hemoglobin carries oxygen to the cells and carbon dioxide back to the lungs for disposal. Cyanides react with the iron in hemoglobin and prevent it from properly taking up and dispensing oxygen and carbon dioxide. The effect is the same as asphyxiation, but more sudden.
    - 3) Symptoms are few. Exposure to high concentration can lead to seizures, respiratory and cardiac arrest.
  - c. Outward warning signs include victims showing great difficulty in breathing and onset cardiac symptoms. Some victims may report on odor of bitter or burnt almonds.
  - d. Detection methods:

- 1) Military detection kits;
  - 2) Color metric tubes; and
  - 3) Electronic meters.
- e. Self-protection.
- 1) Follow your department procedures for operating at the scene of a hazardous material incident.
  - 2) If you have positively identified the substance as Cyanogen Chloride, use NAERG Guide 125.
  - 3) If the material is positively identified as Hydrogen Cyanide, use Guide I 17.
  - 4) If a blood agent is suspected, but not positively identified, use Guide 123.
  - 5) There is an antidote kit for blood agents called the Pasadena Cyanide Antidote.
6. Pulmonary (Choking) Agents
- a. **Error! Bookmark not defined.**Examples
    - 1) Chlorine (CL)
    - 2) Phosgene (CG)
  - b. Exposure and effects
    - 1) Chlorine was the first battlefield gas. The German army in WWI used it.
      - a) Exposure is through inhalation of vapors.
      - b) The primary effect is pulmonary edema. The victim's lungs fill with fluid and they develop severe pneumonia.
      - c) Symptoms include eye and airway irritation, dyspnea, chest tightness, and delayed pulmonary edema.
  - c. Outward warning signs include observation of pulmonary distress among victims. They may also report odors such as chlorine, bleach or swimming pool odors (chlorine) and the odor of newly mown hay or grass (phosgene).
  - d. Detection methods
    - 1) Military detection kits;
    - 2) Color metric tubes; and
    - 3) Electronic meters.
  - e. Self-protection.
    - 1) Follow your department procedures for operating at the scene of a hazardous materials incident. If the material has been identified as Chlorine, use NAERG Guide 124.
    - 2) If the material has been identified as Phosgene, use Guide 125. If you suspect a choking agent, but do not have positive identification, use Guide 123.
7. Irritants
- a. Examples
    - 1) CS (tear gas)
    - 2) CR (tear gas)
    - 3) CN (mace)
    - 4) OC (pepper spray)
  - b. Exposure and effects
    - 1) Riot control agents, also called irritants, lacrimators, and tear gas, produce transient discomfort and eye closure to render the recipient temporarily incapable of fighting or resisting. Exposure is through inhalation and absorption of small smoke-like particles suspended in the air. Despite the common names, these are not gasses. They are micro pulverized solids.
    - 2) Their major activity is to cause pain, burning, or discomfort on exposed mucous membranes and skin; these effects occur within seconds of exposure, but seldom persist

- more than a few minutes after exposure has ended.
- c. Outward warning signs include observations of classic 'tear gas' symptoms among victims. They may report multiple odors including hair spray and pepper due the variety of propellants used to dispense these agents.
- d. Detection: There is no detector. The means of identification is by locating and collecting residue for laboratory analysis. Contact your state and local law enforcement agencies for additional information.
- e. Self protection
  - 1) Follow your department procedures for operating at the scene of a hazardous materials incident. For tear gas or pepper spray, or for unidentified irritants, use NAERG Guide 159.
  - 2) If Mace is identified, use Guide 153.
- 8. Basic Tactical Considerations with Chemical Incidents **Error! Bookmark not defined.**
  - a. Time: Keep exposure time and product contact to a minimum.
  - b. Distance: Keep an appropriate distance from the hazardous environment. Stay up wind, uphill and away from contaminated areas.
  - c. Shielding: Implement appropriate shielding in the form of respiratory protection and protective clothing.
  - d. Treatment of casualties
    - 1) Casualty treatment-follows a standard sequence:
      - a) Decontamination per your local protocol;
      - b) Patient management;
      - c) Transport to medical facilities (hospital); and
      - d) Definitive care from medical field.
  - e. Additional Resources
    - 1) Local and state resources as indicated by your plan
    - 2) The Environmental Protection Agency (EPA)
    - 3) The Federal Bureau of Investigation (FBI)
    - 4) The Department of Defense (DOD)

## E. Explosives

1. Introduction: Bombs appear to be the weapon of choice for terrorists. Approximately 70% of all terrorist incidents involve the use of explosives. Improvised explosives can be designed by terrorists to deliver an assortment of harm and destruction, and can also provide a vehicle for dispersal of chemical, biological, incendiary, and nuclear agents.

According to the FBI Bombing Statistics, from 1990 through 1995 there were 10,122 actual bombings (including incendiaries) with another 3,278 additional attempts resulting in 3,176 injuries and 355 deaths.

2. Terminology
  - a. Explosives are defined as materials capable of violent decomposition. This decomposition often takes the form of extremely rapid oxidation (burning). Explosions are the result of sudden and violent release of gas during the decomposition explosive substances. High temperature, strong shock and loud noise follow this release.
  - b. A common method classifying explosives is by dividing them according to the speed their decomposition. While most people understand the terms high and low explosive, the correct terminology is high and low order filler materials.

- c. When high order fillers are initiated, the reaction is propagated through the filler material at a speed at or above 3,300 feet per second (fps). These explosives are designed to detonate and destroy a target by a shattering effect.
- d. When low order fillers are initiated, the reaction is propagated through the filler material at a speed below 3,300 feet per second (fps). These explosives are designed to deflagrate, or burn rapidly, and destroy a target by a pushing and pulling effect.

Both the Oklahoma City and World Trade Center bombings utilized primarily high order fillers to cause maximum damage. The World Trade Center bomb was approximately 1,200 lbs. of Urea Nitrate. The Oklahoma City bomb was approximately 4,800 lbs. of fertilizer grade Ammonia Nitrate and fuel oil. The vehicle bomb used on the barracks in Beirut in 1983 is believed to have contained approximately 12,000 lbs. of explosives that have not been positively identified.

3. Explosives, when detonated, produce three primary effects

- a. Blast Pressure: There is two different phases blast pressure. Positive blast pressure (over pressure) moves rapidly away from the explosion center (ground zero) due to the expansion caused by the released energy.

After the positive pressure phase, a vacuum is created at the explosion site. This creates a negative pressure that moved toward the original center the detonation at humane speed. It is less sudden, but lasts approximately three times as long as the positive pressure wave.

- b. Fragmentation: The explosive device may propel fragments at high speed for long distances. This often accounts for many the injuries or casualties.
- c. Thermal Effects: Sometimes referred to as the incendiary effect, heat produced by the detonation of either high or a low explosive varies according to the ingredient materials. High explosives generate greater temperatures than low explosives; however the thermal effects from low explosives have a longer duration then those high explosives.

The thermal effect is visible in the bright flash or fireball temporarily produced by an explosion. Thermal effects vary as to type, explosive, container, addition fuels/accerlants, shielding, and proximity. Fire and thermal effects are usually localized and short-lived with conventional devices - those not enhanced for collateral incendiary effects.

- d. Ground shock: A fourth effect, ground or seismic shock, is possible, but will usually be generated only by a large detonation. The Oklahoma City explosion, for example, was easily picked up by seismic detection equipment hundreds miles away from the scene.

4. Types of improvised explosive devices commonly used by terrorists.

- a. Vehicle bombs are usually large, powerful devices with a quantity of explosives fitted with a timed or remotely triggered detonator packed into a car or truck. The two most famous vehicles on United States soil were the World Trade Center bombing in New York and the Alfred P. Murrah Federal Building bombing in Oklahoma City.
- b. Pipe bombs are one the most common explosive devices. They are at the opposite end of the scale from vehicle bombs in term's size and destructive potential. Pipe bombs usually consist of a quantity explosives sealed into a length metal or plastic pipe. A timing fuse usually controls detonation. Other possible methods include electronic timers, remote triggers, and motion sensors.
- c. Satchel devices. The name comes from an old military term for an explosive device

consisting of a canvas over pack containing explosives. It was far more powerful than a grenade, but could still be thrown. The container may also be packed with antipersonnel materials such as nails and glass to inflict more casualties. The Centennial Park explosives incident in Atlanta is a clear example this type device.

- d. Other improvised explosives devices may be utilized, including homemade grenades, mines, and/or projectiles.

Explosive projectiles like rocket-propelled grenades have been used in the past, but have not been a common occurrence. In Fairfax County, VA, police confiscated homemade projectiles capable of exploding on contact along with tube-type launchers from a private home. This occurred after the individual who had apparently manufactured the devices was found dead in the home. The obvious danger associated with such weapons is the ability the terrorist to take the threat from a static to a dynamic environment. The possibility of drive-by bombings will certainly increase the operational risk to responders if they are included in the target scenario.

5. Size-up issues related to responder safety during operations
  - a. Disposition of the threat on arrival.
    - 1) Bombs that are still intact and explosive materials that have not been consumed pose extremely dangerous circumstances. The disposition a bomb threat to the initial responder is a matter recognizing the presenting hazards; has the bomb detonated, if so, is there a concern for dangerous remnants, are there secondary devices, etc.
  - b. Pre-blast or post-blast conditions
    - 1) Pre-blast conditions refer to the affected incident environment and/or activities prior to a bomb detonating. This may include a host of activities such as, building searches, evacuations and render safe procedures.
    - 2) Post-blast conditions refer to the incident environment after a bomb has exploded. This will involve issues dealing with casualties, fires and structural instability to name a few.
  - c. Size the explosive device  
The amount and type ingredient materials will significantly contribute to the power or strength the potential blast. Responders should consider size as an element in determining threat levels.
  - d. Proximity exposures  
The distance exposures from the explosive device will likely influence operational objectives such as evacuations, staging locations, medical treatment areas, and perimeter control points.
  - e. Physical protection variables  
Responders should consider using hardened structures such as, masonry walls and buildings (not glass), or even fire apparatus to keep responders away from potential line--site blast pathways (remember, stand-off distance significantly factors into selecting physical protection mediums).
  - f. Condition, location, number and status of casualties.  
When responders arrive at the incident, the number and severity of casualties on site will influence operational priorities. Large numbers victims may overwhelm initial resources. Also, many types of injuries will require special medical attention. If the victims are still trapped beneath the rubble specialized rescue personnel and equipment will be required.
  - g. Capabilities resources on-hand  
The degree or level operational involvement the responders may be predicated upon their training, equipment and in some cases experience. Responders not trained to conduct render safe procedures with explosive devices would be foolish to make any attempt to do so.
  - h. Reflex/response time for technical assistance

Operational decisions will be influenced by the reaction and response time it takes to get specialized resources on the scene. For those responders working a bomb incident located in a rural area, waiting two hours for a bomb disposal team to arrive may not have the same operational impact as it would on responders in the downtown section of a major city.

- i. Commitment level of on-scene resources  
Responders should prepare for, and anticipate, difficult decisions early in the response pertaining to the level operational engagement. For example, the incident commander may elect to commit responders to rescue operations inside an unstable structure, or dedicate responders to assisting evacuees in proximity to an improvised explosive device. Decisions that commit responders to dangerous areas must include the use a hazard and risk assessment and prescribed (agency) operational procedures.
  - j. Radiological  
Responders should always be aware the potential for multiple hazards when on the scene a bombing incident. Explosives devices may have been used to disperse other Biological, chemical or nuclear agents.
6. Outward warning signs:
    - a. Responders must remain alert at all times for warning indicators when involved with suspected bombings. Warning signs include:
      - 1) Any abandoned container out place for the surroundings;
      - 2) Obvious devices containing blasting caps, timers, booster charges, etc.;
      - 3) Abandoned vehicles not clearly belonging in the immediate environment;
      - 4) Strong chemical odors with no apparent reason;
      - 5) Unusual or foreign devices attached to pressurized containers, bulk storage containers or supply pipes;
      - 6) Trip wires or other booby traps, suspicious mailing containers; and
      - 7) An incident preceded by a written or verbal threat.
  7. Detection methods: Detection methods are usually limited to outward warning signs for first responders. However, specialized resources will use techniques such as fluoroscopes, detection dogs, and photo ionization detectors.
  8. Self protection via time, distance and shielding
    - a. Time: Work time in the affected area should be kept as a minimum until specialized teams have evaluated the area. Teams will search the area for mechanical hazards, unexploded materials, radiological hazards, hazardous chemicals, biological hazards, secondary devices, and booby traps.
    - b. Distance: Guide 112 provides some guidance when dealing with unexploded materials. It also suggests not permitting radio transmitters (which include cellular phones) within 100 meters (330 feet) any suspected device.
    - c. Shielding: If practical, keep out of line, out of sight, of any suspected devices. Buildings and vehicles may provide some protection.
  9. Treatment casualties
    - a. Casualty treatment follows a standard sequence:
      - 1) Decontamination, if necessary;
      - 2) Patient management;
      - 3) Transport to medical facilities (hospital); and
      - 4) Definitive care from medical field.

Clothing removed from victims may contain evidence that can be recovered. When cutting clothing from individuals, responders should avoid, if possible, cutting through holes in the

clothing created by shrapnel or other materials that can yield evidence. Identify and bag all such materials for laboratory analysis.

- a. Additional Resources
- b. Local and state resources.
- c. Bureau Alcohol, Tobacco and Firearms (BATF).
- d. Federal Bureau Investigation (FBI).
- e. Department Defense (DOD).

# **Chapter 8**

## **Health-related Emergency Operations Plan**

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Introduction and Background**

**§8-01 Acronyms**

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DPC	New York Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HERDS	Health Emergency Response Data System
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYSDOH	New York State Department of Health
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDFS	Sullivan County Department of Family Services
SCDPEM	Sullivan County Division of Planning and Environmental Management
SCDPW	Sullivan County Division of Public Works
SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPHS	Sullivan County Public Health Services
SCPIO	Sullivan County Public Information Officer

SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

## **§8-02 Purpose**

Purpose: The purpose of this document is to provide a Health Emergency Operations Plan (HEOP) to the Sullivan County Emergency Management Plan (SCEMP.) This HEOP has been prepared by a subcommittee of the Local Emergency Planning Committee (LEPC).

This plan will address readiness and specific responses to population-wide large scale health emergencies including but not limited to: biologic threats, chemical exposures, radiological exposures or a pandemic influenza outbreak. The aspects of a response to a potential crime scene and use of personal protective equipment are adequately covered in Chapter 7 of the SCEMP, “Domestic Preparedness Plan” and will not be reiterated in this HEOP.

## **§8-03 Planning Assumption (Scope of Plan)**

This plan assumes the occurrence of large-scale emergency and/or disaster events that would cause casualties or fatalities sufficient to overwhelm local medical, health, and mortuary services capabilities, thus requiring maximum coordination and efficient use of state, regional and local resources. Other assumptions made in this plan include the following:

Public and private health and medical resources located in the affected jurisdiction may not be available for use during disaster situations. Many of these resources, including communications, and human resources, may be affected by the event.

It may be necessary to relocate hospital and other healthcare facilities under difficult conditions to contingency field hospitals or to permanent or temporary buildings that can adequately protect patients and medical staff from the effects of the event.

Volunteers can help perform some essential tasks; their efforts must be anticipated and coordinated. If an event occurs in the summer months, the population will be greatly increased creating the necessity for additional resources and support.

### **A. Public Health Planning:**

1. Pandemic Influenza: See Chapter 8A

### **B. Biologic Agents:**

1. Anthrax - An intentional release of laboratory-produced anthrax could potentially cause exposure to hundreds or thousands of people as evidenced in 2001. Anthrax exposure can result in one of three types of disease: cutaneous, gastrointestinal, and inhalational. The inhalational form is the one expected to account for most morbidity and all mortality. That a release has even occurred may not be known until people begin to demonstrate signs and symptoms of illness. Those who are already ill will require aggressive medical intervention and those possibly exposed will then require aggressive and immediate screening and prophylaxis.

2. Botulinum Toxins - Intentional release by belligerents or terrorists would likely involve aerosolization of pre-formed toxin, which could then produce disease via the inhalational route. Deliberate contamination of food supplies is also possible. Intentionally released aerosols of botulinum toxin probably pose little risk beyond the immediate period of release. In the event that contamination of foodstuffs is suspected, boiling for 10 minutes may destroy pre-formed toxin. In the face of large numbers of casualties and/or in the absence of prompt, intensive, and long-term medical management, botulism can be thought of as a lethal agent.
3. Glanders - The organism has been considered as a potential agent for biological warfare and of biological terrorism. Primarily a disease of horses, mules, and donkeys. In humans, disease can occur in four basic forms: acute localized infection, septicemic illness, acute pulmonary infection, or chronic cutaneous infection. Mortality rate is over 50% despite antibiotic treatment.
4. Pneumonic Plague - Plague is an infectious disease caused by the Gram-negative, bipolar-staining bacterium, *Yersinia pestis*. Naturally occurring plague is most often acquired by the bite of a flea, which had previously fed on infected rodents. Intentional release by belligerents or terrorist groups would presumably involve aerosolization, but could also involve the release of infected fleas. Plague may be considered a lethal agent.
5. Q-Fever - Q fever is caused by infection with the rickettsial organism, *Coxiella burnetii*, and is typically spread by inadvertent aerosolization of organisms from infected animal products, especially the placentas of parturient sheep and goats. Person-to-person transmission rarely, if ever, occurs. Intentional release by belligerents or terrorist groups would presumably involve aerosolization, and Q fever would likely be employed as an incapacitating agent, as its' mortality rate is quite low (1-3%).
6. Smallpox (Variola) - Smallpox is an infection caused by Variola virus, a member of the chordopoxvirus family. Naturally occurring smallpox has been eradicated from the globe, with the last case occurring in Somalia in 1977. Repositories of virus are known to exist in only two laboratories worldwide. Monkeypox, Cowpox, and Vaccinia are closely related viruses, which might lend themselves to genetic manipulation and the subsequent production of smallpox-like disease. In unvaccinated individuals, Variola Major, the classical form of the disease, is fatal in approximately 30% of cases.
7. Tularemia - Tularemia is an infection caused by the Gram-negative coccobacillus, *Francisella tularensis*. Two biogroups are known; biogroup tularensis, also known as type A, is the more virulent form, and is endemic in much of North America. Naturally acquired tularemia is contracted through the bites of certain insects (notably ticks and deerflies), or via contact with infected rabbits, muskrats, and squirrels. Intentional release by belligerents would presumably involve aerosolization of living organisms. Although naturally acquired tularemia has a case-fatality rate of approximately 5%, the pneumonic form of the disease, which would predominate in the setting of intentional release, would likely have a greater mortality rate.
8. Staphylococcal Enterotoxin B disease - Staphylococcal enterotoxin B (SEB) is one of several toxins produced by the bacterium *Staphylococcus aureus*. SEB is a common contributor to staphylococcal food poisoning but could be employed by belligerents or terrorist groups as an aerosolized inhalational agent. It is incapacitating, but would rarely be expected to produce lethality.

9. Venezuelan Equine Encephalitis - Venezuelan Equine Encephalitis (VEE) is a mosquito borne alphavirus disease maintained in nature predominantly in a horse-mosquito-horse cycle, although thousands of natural human infections also occur each year. Large equine epizootics typically precede the appearance of human cases. Use of VEE as a weapon would presumably involve aerosolization, and such usage might be suspected on the basis of a preponderance of human cases and/or the presence of VEE outside of its typically well-localized focus in the Americas.
10. Viral Hemorrhagic Fevers - The viral hemorrhagic fevers are a diverse group of human illnesses that are due to RNA viruses from several different viral families: the Filoviridae, which consists of Ebola and Marburg viruses; the Arenaviridae, including Lassa fever, Argentine and Bolivian hemorrhagic fever viruses; the Bunyaviridae, including various members from the Hantavirus genus, Congo-Crimean hemorrhagic fever virus from the Nairovirus genus, and Rift Valley fever from the Phlebovirus genus; and Flaviviridae, such as Yellow fever virus, Dengue hemorrhagic fever virus, and others. The viruses may be spread in a variety of ways, and for some there is a possibility that humans could be infected through a respiratory portal of entry. Although evidence for weaponization does not exist for many of these viruses, many are included in this plan because of their potential for aerosol dissemination or weaponization, or likelihood for confusion with similar agents, which might be weaponized.
11. Ricin intoxication - Ricin is a protein toxin, which acts as a cellular poison and is readily produced from castor beans (*Ricinus communis*), which are ubiquitous throughout the world. Waste from the commercial production of castor oil contains 5% ricin, making it easy for such a substance to fall into the hands of bioterrorists. Naturally occurring cases of ricin intoxication involve ingestion of castor beans, and are marked by severe gastrointestinal symptoms, vascular collapse, and death. Ricin is toxic by numerous exposure routes, however, its use by belligerents might involve poisoning of water or foodstuffs, inoculation via ricin-laced projectiles, or aerosolization of liquid ricin or lyophilized powder.

## C. Chemical Agents

### 1. Blood Agent

Cyanide - Cyanide is a rapidly acting, lethal agent that uncouples oxygen use at the cellular level. It must be present in high concentration if used in an open or enclosed space. It also breaks down quickly. Death occurs within minutes of inhaling a high dose. Sodium nitrite and sodium thiosulfate are effective antidotes, since cyanide will bind irrevocably to methemoglobin.

### 2. Incapacitating Agents (Bz, Agent 15) -

BZ is an anticholinergic agent related to atropine and scopolamine. It can be aerosolized as a particle for inhalation or dissolved for injection or percutaneous absorption. It acts as a competitive inhibitor of acetylcholine. It has peripheral and CNS effects. Agent 15 is alleged to be an Iraqi agent that is identical or similar to BZ. Physostigmine is a specific antidote.

### 3. Nerve Agents (Tabun, Sarin, GF and VX) -

Nerve agents are the most toxic of the known chemical agents. They are hazardous in their liquid and vapor states and can cause death within minutes after exposure. Nerve agents inhibit acetylcholinesterase in tissue, and their effects are caused by the resulting excess acetylcholine

#### 4. Choking Agent

Phosgene gas or CG was used in World War I alone and in combination with chlorine gas. The United States produces over a billion pounds per year for industrial users. Inhaled, it has primarily pulmonary effects. It can also be produced as Phosgene Oxime, or CX, which as a vapor or liquid causes corrosive skin lesions, as well as inhalation damage.

#### 5. Blister Agent & Vesicants

These are agents that cause blisters on exposed skin, but they also damage the eyes, airways and lungs. Phosgene Oxime (CX) is often mistakenly classified as a vesicant. Mustard gases also cause gastrointestinal and hematologic problems; in fact, nitrogen mustard remains a mainstay of some cancer chemotherapy today.

### C. Radiological:

1. Regardless of the nature of fires or detonations of high explosives in nuclear weapons, the major radiological threat will be the release of plutonium. When associated with a fire, metallic plutonium may burn, producing radioactive plutonium-oxide particles, which may present serious hazards if inhaled or deposited in wounds. Also, detonation of the high-explosive component in nuclear weapons may pulverize plutonium into very small particles, which can cause contamination over a large area.

## §8-04 Legal Authority

**Executive Law § 21, Disaster Preparedness Public Policy Statement:** Indicates that it is the State's policy that the local government and emergency service organizations continue their essential role as the first line of defense in times of disaster, and that the State provide appropriate supportive services to the extent necessary.

**Executive Law § 24, Local CEO Power:** Authorizes the local chief executive (County Manager in Sullivan County) to proclaim a local state of emergency and to issue orders which control curfews, traffic flow, designation for specific uses of buildings, the presence of persons on public streets and places, and establishment of emergency shelters and/or emergency medical shelters.

**Public Health Law Article 21, § 2100, "Communicable diseases, local boards of health and health officers; powers and duties":** Extends quarantine powers to local boards of health and health officers. The Public Health Director, as the County Health Officer, has broad authority to "provide for care and isolation of cases of communicable disease in a hospital or elsewhere when necessary for protection of public health", and to "prohibit and prevent all intercourse and communication with or use of infected premises, places, and things...", subject to the provision of the state sanitary code.

**Public Health Law § 1300, 1301, "Local Health Officer's and Commissioner's Nuisance Authority":** County Health Commissioners (Health Commissioner as defined by NYS Law) and local Health Officers (a Public Health Director is the County Health Officer) are given under this law, "all necessary powers to make investigations and examinations into nuisances, or questions affecting the security of life and health in any locality."

**Public Health Law § 16, "Commissioner's Authority to Expeditiously Address Dangerous Situations":** This law describes the New York State Commissioner of Health's authority to "order a person who is found, after investigation, to be causing, engaging in, or maintaining a condition or activity which constitutes a danger to the health of the people, and that it appears to be prejudicial to

delay fifteen days for a hearing on the matter, the commissioner shall order the person (including a state agency or political subdivision) to discontinue the dangerous condition or activity or take action immediately or within a period of fifteen days.”

**Related Authority:**

**Section 308(d), Local Health Authority to Impose Consistent Orders or Regulations:** This law empowers local boards of health, county boards of health, and to counties and local governments generally to make and publish orders and regulations “not inconsistent with the provisions of the sanitary code.” The power to impose such regulations includes an ability to address public health matters not addressed by the public health law or the sanitary code, still subject to the general requirement that such regulations must not be inconsistent with either. A draft of the regulation must be sent to the NYSDOH for a confirmation letter stating that the new regulation is *not* inconsistent with the existing NYS public health law or sanitary code.

**State Sanitary Code 2.27 et seq., Local Health Authority to Inspect and Access:** Imposes specific reporting and investigation obligations upon local boards of health and health officers. Section 1.11 provides for a right of entrance and inspection, as well as noninterference for state and local health officers and their representatives in the discharge of their official duties.

**Local Health Authority to Approve Transfers of Persons and Handling of Food:**

**State Sanitary Code 2.33:** This section provides that persons affected with highly communicable disease may not be moved from one health district to another except with the permission of the jurisdiction’s health officer. Persons carrying disease germs for typhoid fever are subject to monitoring by the health officer and restrictions on activity.

**State Sanitary Code 2.51 and 2.52:** Limits the handling of food by persons suffering from certain listed diseases, and directs the destruction or forbids the sale of food from farms or dairies affected by certain listed diseases.

**§8-05 Preparedness Activities**

Sullivan County has adopted the National Interagency Incident Management System (NIIMS) along with the Incident Command System (ICS) to respond to emergencies. NIIMS/ICS is a management tool for the command, control, and coordination of resources and personnel in an emergency. Certain aspects of NIIMS/ICS may also be used in the EOC.

**A. Incident Management:**

SCPHS will operate during an emergency under the principles of the NIIMS/ICS. See Chapter 3 for instructions for declaring a state of emergency and issuing orders. The EOC will be located at the Sullivan County Emergency Services Training Center in White Lake, NY. Designating an alternative site is in progress. At this time, a mobile command post trailer would be used as an alternative site if necessary. Five major management activities would take place whether it was a routine emergency, organizing for a major event, or managing a response to a disaster. These five activities are:

1. **Command:** sets objectives and priorities, has overall public health responsibility for the incident or event.
2. **Operations:** conducts public health operations to carry out the plan, develops the public health objectives, organize resources and response, direct resources.

3. Planning: develops the action plan to accomplish the public health objectives, collects and evaluates information, maintains resource status.
4. Logistics: Provides support to meet incident needs, provides resources and other services to support the public health response.
5. Finance/Administration: monitors the cost related to incident, provides accounting procurement time recording cost analyses.

Staffing levels will be assigned in accordance to NIIMS/ICS and will be based upon availability.

The Public Health Director will act as the executive director of the preparedness and response program. In the absence of the Public Health Director, the alternate, Deputy Director of Public Health or a designated Supervising Public Health Nurse will be in charge.

- B. Liaison for Preparedness Education: The contact person from the local health department who will act as the liaison with the Director of Preparedness Education at the NYSDOH will be the Health Emergency Planner. This person also has the authority to update the Communications Directory.
- C. Health Emergency Planning Committee: The following agencies are representatives of the Sullivan County Health Emergency Planning Committee. Membership may change and evolve over time, and will be based on the planning needs and issues involved in ensuring an adequate level of preparedness to address newly emerging infectious diseases and potential disasters impacting the health of the public.

SCPHS	County Manager
SCPIO	County Coroner
Director of SCOEM/HS	Director of Community Services
SC911 Coordinator	EMS Coordinator
NYSP	SCSD
SCDPW	BOCES Safety and Health Coordinator
SC Community Services	SC Adult Care Center
CRMC	Center for Discovery

It is understood that SCPHS, as part of the LEPC, will be the appropriate agency to respond to a public health emergency in collaboration with other emergency response partners.

- D. Annual Review and Acknowledgement: the plan will be reviewed annually and changes will be approved by the LEPC.

#### **§8-06 Training, Exercises, and Drills**

- A. Exercises and drills: SCPHS will conduct periodic drills of the HEOP to maintain skills and identify deficiencies. Drills will consist of tabletop exercises and full scale drills. The exercises will consist of state and local personnel. The Health Alert Network (HAN) may be used during the drill. Drills will include one or more of the following scenarios: biological, radiological, chemical, pandemic flu, and explosive situations that involve casualties and the release of the SNS.
- B. NIIMS/ICS Training: All personnel will have or have had the SEMO ICS Level 100 and 200 training and NIIMS 700 training. Additional training may be required per the NIIMS Integration Center.

- C. Communication systems between the county, region, and state are regularly tested by state and county public health personnel. SC911 has an emergency contact roster for notification of SCPHS staff, and a call down list is available for NYSDOH personnel and on-call duty officers.

## **Article II Readiness**

### **§8-07 Purpose**

Readiness is the first phase of a health related emergency preparedness program. Its primary purpose is to rapidly identify infectious disease outbreaks, and to eliminate or reduce the effects of biological, chemical, and radiological events.

Specific agencies on the Federal, State and local level with individual roles and responsibilities react and combine their resources with those of the private health care system to produce an effective readiness public health infrastructure.

### **§8-08 Operations (General Responsibility)**

#### **A. Local Responsibilities:**

1. Local and regional hospitals: Disease reporting to SCPHS, provision of in-hospital care, training of in-house staff; Designation of available medical, nursing and paraprofessional staff to alternate care sites.
2. Local Coroners: Responsible for enhancing capabilities for storing and disposing of mass fatalities including infected remains; Integrating Federal Disaster Mortuary Operational Response Teams (DMORT).
3. SC911: Reporting of numbers and types of calls to SCPHS including any trends, which might portend a pandemic, facilitation of communication between SCPHS, EMS, hospitals, and other health care providers.
4. Emergency Medical Services (EMS): Responsible for coordinating with Public Health for assistance to respond to events that affect the health and safety of the general public. Coordinate with SEMO for requests for federal and state disaster and terrorism response assets and requests for federal disaster assistance. Transporting of patients to emergency care facilities and reporting of any conditions that could be BT related to receiving hospital or a designated facility in the NIIMS/ICS structure.
5. Planning Department: Refer to SCDPEM.
6. Home Health Care Providers: Provision of care for homebound during emergency situation, disease reporting to SCPHS; Designation of available staff to alternate care sites.
7. Mental Health Professionals: Provision of counseling services during and after emergency. A Critical Incident Response Team will provide critical incident stress management for response personnel, including public health and medical professionals and others in need of this service; if multiple teams of mental health professionals are needed, the appropriate resources will be coordinated through and requested by SC911.
8. Sullivan County Division of Public Works (SCDPW): Responsible for inspection of buildings and shelters pre and post disaster, upgrading shelters as requested by the incident commander, debris removal and disposal, damage assessment and sewage control. SCDPW will also be called upon for heavy equipment needs, transportation and manpower, including staging areas.

9. County Jail: Disease reporting to SCPHS.
10. Private Practitioners: Disease reporting to SCPHS. They may volunteer their services during an emergency. Some of these providers are members of the Sullivan County Public Health Response Team (SCPHRT).
11. Pharmacists: to SCPHS, may be part of SCPHRT.
12. Veterinarians: Disease reporting to SCPHS of communicable disease that may signal BT episode.
13. Nursing Homes, Adult Homes and Special Needs Residential Providers: Disease reporting to SCPHS. Provide available staff during emergency. Implement surge capacity and/or evacuation emergency plans as needed.
14. American Red Cross Local Chapter: Will maintain an inventory of public shelters, recruit and train shelter managers, and provide the IC with updates and situation reports on shelter status and any supply needs. American Red Cross will negotiate agreements with local motels/hotels or other facilities.
15. School Districts: School nurses have an established communications with SCPHS and report any communicable diseases, wide spread illness among students or staff and any unusual patterns of absenteeism.

#### B. Regional/State Responsibilities:

1. NYSDOH: Coordinates health surveillance and monitoring. Coordinates epidemiological investigation, communicates medical matters to hospitals and private practitioners throughout the region and the state, provides education and information, and provides laboratory services.
2. Metropolitan Area Regional Office (MARO) of the NYSDOH: Regional epidemiology and technical support, coordination with neighboring counties, possible onsite assistance.
3. New York State Police (NYSP): Work in conjunction with FBI, SCSD and the town/village police on matters pertaining to a criminal investigation.
4. State Emergency Management Operations (SEMO): Emergency operations coordination and technical support.
5. Sullivan County Public Health Services (SCPHS): Surveillance, disease reporting to NYSDOH, epidemiology, education, coordination of local response using NIIMS/ICS.
6. National Guard: If requested through SEMO, the National Guard may provide logistical support to move materials and personnel and deploy chemical/biological teams if necessary.
7. Department of Correctional Services/State Prisons: Disease reporting to SCPHS and DOH Regional Office. If requested through SEMO, the Department of Correctional Services/State Prisons may provide CERT to assist with security related duties

#### C. Federal Responsibilities:

1. CDC/DHHS: Coordinates the Strategic National Stockpile (SNS), provides expertise in infectious disease management and provides laboratory support.
2. FBI: Serves as lead federal agency for crisis management in law enforcement matters. They establish a Joint Operations Center to coordinate the federal response during the early stages of the incident.
3. FEMA: Serves as lead federal agency for consequence management. They coordinate the response of all federal agencies through the Federal Response Plan, including:
  - a. Deploy an Emergency Response Team to the EOC early in the incident to determine the needs of the federal response.
  - b. Establish a Regional Operation Center to coordinate the federal response.
  - c. Establish a National Emergency Operations Center to coordinate the national response in support of the local jurisdiction.

## §8-09 Health Surveillance and Epidemiological Investigations

### A. Surveillance and Reporting:

Daily reports, ongoing, from both CRMC and SC911 assist in early recognition of potential large-scale health emergencies. SC911 will notify SCPHS EPI Department of any unusual activities, trends, or clusters. The SCPHS has nurses that are responsible for coordinating health surveillance and epidemiology. The on-call supervising nurse and EPI Nurse can be reached 24 hours a day. This information would be disseminated to the appropriate party depending on the incident. The local and area hospitals and SC911 would be called in any situation

There are many other important surveillance partners in the community who may suspect or recognize the early signs of a pandemic or biologic event before it is known to local public health authorities at SCPHS, such as the EMS, Law Enforcement, Fire Department, or Veterinarians. CRMC, the only local hospital system (and their lab) has the criteria and 24 hour contact information for reporting to SCPHS. The following are algorithms for identifying which events should be investigated:

1. A rapidly increasing disease incident (within hours or days) in a normally healthy population.
2. An epidemic curve that rises and falls during a short period of time.
3. An unusual increase in the number of people seeking care, especially with fever, respiratory, or gastrointestinal complaints.
4. An endemic disease rapidly emerging at an uncharacteristic time or in an unusual pattern.
5. Lower attack rates among people who had been indoors, especially in areas with filtered air or closed ventilation systems, compared with people who had been outdoors.
6. Clusters of patients arriving from a single locale.
7. Large numbers of rapidly fatal cases.
8. Any patient presenting with disease that is relatively uncommon and has bio-terrorism potential (pulmonary anthrax, tularemia or plague for example).
9. Animals being reported with similar characteristics as above.

During a bioterrorism event, the SCPHS would utilize epidemiologic and surveillance tools developed by NYSDOH in order to be consistent with the rest of the state. Such tools would include case investigation forms; contact tracing forms, case definitions and other necessary forms and investigation tools consistent with CDC forms and standards for data and sample collection.

Chemical surveillance includes environmental indicators such as dead insects, foliage, birds, unusual liquid puddles, powders with no apparent source, vapors or mists and strange odors. Chemicals can be released by means of explosion or dispersion under pressure or by deliberate contamination of water or food supplies. Victims are likely to present with signs and symptoms including:

1. Loss of consciousness
2. Seizures, apnea, and death
3. Increased secretions, salivation, tears, runny nose, increased airway secretions, diarrhea, vomiting, and sweating
4. Blisters, gaseous odors coming from clothing and skin.

Radiological Surveillance includes community reporting of explosion and signs that indicate a radioactive material release. Victims will present after high dose exposure with:

1. Burned reddened skin,
2. Nausea, vomiting, diarrhea, hair loss, convulsions, and unconsciousness.
3. Some symptoms may take hours, days, or weeks to manifest.

4. Low dose effects such as birth defects, cancer and blood chemistry changes may take years to detect.

***Outside Agencies***

CDC (Center for Disease Control and Prevention)	CRMC
Pharmacy	FEMA
DMAT	DMORT
National Guard	FBI
DEC	NYSP
VMAT	SCSD or local police agency of jurisdiction
SEMO	NYSDOH

Veterinary surveillance includes reporting outbreaks of individual/clusters of ill or deceased animals that could be affected by the release of a chemical, biological or radiological material. SCPHS has a contact list for all of the veterinarians within the county. In the case that there was a suspected illness related to bioterrorism, the Veterinarian would contact SCPHS and based upon the assessment, would send a lab specimen to the appropriate facility approved NYSDOH CDC.

- B. Training: Training has been provided to nurses and physicians at the CRMC on how to recognize and report possible BT/flu conditions. SCPHS will provide education on surveillance, disease reporting, epidemiology, response activities and bioterrorism related issues to area health care providers. SCPHS will also provide educational presentations on topics related to bioterrorism preparedness to the medical community including pharmacies and the local hospitals.

**§8-10 Health Care System Readiness**

Institution Specific Emergency Plans: It is particularly important, for effective collaboration in an emergency situation, to be aware of, and if possible, involved in the preparation of, the emergency plans for large health care facilities such as hospitals and nursing homes. Contact Rosters have been developed and shared between the emergency response agencies, the SCPHS, the hospital and SC911. Additional planning is taking place with area nursing homes and adult care homes to ensure emergency preparedness plans are in place. SCPHS has contact lists of all the nursing home and adult care facilities in the county.

The Sullivan County Community Services Division will be responsible for coordinating and providing mental health care during an emergency and post event to the public. Specific responsibilities of the Division of Community Services in the event of a local disaster are as follows:

1. Will provide a team of mental health professionals to serve the needs of the public.
2. Provide emergency psychiatric outpatient services.
3. Provide for emergency 24/7 per week telephone crisis and referral services.
4. Complete paperwork and/or other administrative activities regarding emergency activities in accordance with agency policies.
5. All needed mental health services will be coordinated through SC911 and the EOC with other resources for mental health survivors.

## **§8-11 Patient Decontamination**

Decontamination may be required for a chemical or radiological agent. The decision about whether or not decontamination will be needed is to be made at the time by the IC in consultation with the HAZMAT Response Team, based on current available information and in consultation with Public Health Services as necessary. The initial decontamination is mobile, depending where the situation occurs; there are no permanent sites. Field decontamination is highly preferred prior to transporting patients to CRMC. CRMC has developed a patient decontamination and control plan in the event it becomes necessary to triage victims of a chemical or radiological event at the hospital prior to admission.

The Public Health Director or designee, in conjunction with the Director of SCOEM/HS, will educate and inform the public, through the SCPIO, of decontamination procedures in the event of an incident, assist in ensuring appropriate training of medical personnel to decontaminate ill or injured people safely before their entry into a hospital setting, and to act in an advisory capacity in order to limit unnecessary decontamination and to ensure that needed decontamination actions are timely, sufficient, and effective.

## **§8-12 Mass Care**

### **A. Shelters**

1. Mass Care shelters may need to be set up in the event of a large scale emergency necessitating the displacement of large numbers of individuals. In such a case, health care volunteers would need to be assigned to each mass care facility to triage people who may need basic onsite medical care, or transportation to an appropriate facility for higher level medical care. SCPHS will work with the American Red Cross and the SCOEM/HS to prevent injury and illness among displaced persons, including the assurance of qualified health workers, credentialing, and necessary medical documentation procedures.

In the event that large numbers of people needed to receive vaccinations or prophylaxis within a certain timeframe following an outbreak of disease or bioterrorism related event, SCPHS will identify facilities at which operations can be set up for mass care. This will be done in conjunction with the SCOEM/HS and the County Manager or designee.

Utilization of the electronic resource tracking system (NYSDOH Health Emergency Related Data System) will play a major role in assisting the expedient assessment of local and regional hospital resources, beds, and medical personnel and needed support staff, and/or the need for diversion of patients to other facilities.

### **B. Points of Distribution (POD)**

1. In the event that large numbers of people need to receive vaccinations or prophylaxis within a certain timeframe following an outbreak of disease or bioterrorism related event, SCPHS will identify facilities at which operations can be set up for points of distribution. This will be done in conjunction with the SCOEM/HS and County Manager. If the total county population had to be prophylaxed, additional personnel and resources would be called upon and arranged through the SEMO, NYSDOH, and neighboring county public health services.

In the event that both SCPHS and the American Red Cross need the same facilities for mass care and/or vaccine and distribution of medications, coordination efforts will be managed through the SCOEM/HS.

- C. Mass Care of Animals will be handled by local Veterinarians if possible. In the event that county resources approach capacity, a request for the deployment of a Veterinary Medical Assistance Team (VMAT) will be requested through the Director of SCOEM/HS.
- D. Mass Mortuary needs will be met after the county reaches its maximum care capacity. This number has been determined by the amount of morgues and funeral homes in Sullivan County. Once the determination has been made that mass mortuary care is needed, the county will set up a temporary morgue and utilize refrigerator trucks from businesses within the county to hold bodies until the DMORT group arrives. At this time the DMORT group will be briefed on the situation and they would make recommendations based upon the event and circumstances. The Coroner and/or designee would pronounce the site, ID if possible, secure any valuables of the deceased, take photos and chart information.

**§8-13 Laboratory Response**

SCPHS will follow the standard laboratory procedures as regulated by NYSDOH. SCPHS has an agreement in place in order to collect and store laboratory samples from a bioterrorism or natural occurring incident. Depending on the incident, the SCSD, NYSP, or FBI could be conducting the threat (risk) assessment and then have the Hazmat team collect samples from the scene. If samples are required, the HazMat team, in consultation with law enforcement or another qualified team such as NYSP Contaminated Crime Scene Emergency Response Team (CCSERT) should be used to collect them. Specimen packaging and transport will be coordinated with the receiving laboratory and law enforcement. A chain of custody document will accompany the specimen from the moment of collection. The Monticello District Office of the NYSDOH is available for environmental health questions or concerns in Sullivan County. Depending on the event, sample or specimen collection and shipment/delivery procedures to state or federally approved laboratory facilities will be determined in consultation with NYSDOH and CDC according to established protocols.

**§8-14 Strategic National Stockpile (SNS)**

The SNS must be requested from CDC through the NYSDOH. This may be done through the County Manager’s request to the Governor’s office if a state of emergency has been declared. The SNS will be delivered to the county. The County’s responsibility will be readiness to receive the shipment, availability of staff resources to operate the distribution process, as well as a comprehensive plan to detail the process, including qualified personnel to serve in the various capacities (clerk, physician, pharmacist, nurse, security, etc.) The distribution sites are different from the storage and reception site, so the County will be responsible for making arrangements for the appropriate vehicles to move the supplies. In this case, security will be required at all sites.

Upon notification of deploying the SNS, the following local department, division or agencies will be contacted:

- |                                   |       |
|-----------------------------------|-------|
| SC911                             | SCEMS |
| SCDPW                             | SCMIS |
| Sullivan County Community College | SCSD  |

SCPHS has a complete the pharmacy list of pharmacies in Sullivan County.

## **§8-15 Environmental Health**

SCPHS will work with the NYSDOH district office assigned to the region to respond to incident and post incident related environmental issues, including environmental sampling, requirements of environmental decontamination and remediation, worker safety and reentry onto the scene. In the SCEMP, Chapter 6, Hazardous Materials Response Plan, states that Sullivan County has few communities with the expertise to analyze and respond to hazardous material emergencies. A critical element of assessment and evaluation is to recognize when additional expertise is needed and how to obtain it. SCPHS would partner with the SCOEM/HS, NYSDOH/Environmental Assessment Group, and the NYSDEC in order to ensure quality assistance to this matter.

The PPE will be tailored to the hazard involved. The proper level will be determined by the IC with the coordination and consultation with SCPHS of the appropriate resources.

## **Article III** **Response and Recovery**

### **§8-16 Purpose**

Consequence Management includes measures to protect public health and safety; restore essential government services; and provide emergency relief to governments, businesses, and people adversely affected by the event.

### **§8-17 Consequence Management (Command and Control)**

Command and Control – The NIIMS/ICS will be used to manage any event described in this appendix. A large-scale event will require all five management activities of Command, Operations, Planning, Logistics, and Finance/Administration.

### **§8-18 Emergency Operations**

In a small scale (level 1) event, the EOC will be the SCPHS. In a moderate or large scale event (level 2 or 3), the EOC will be activated and all responding agency representatives will convene at the designated area. SEMO and NYSDOH will be alerted as soon as the EOC is to be activated.

#### **A. Conditions for Activation:**

The Public Health Director or designee for Sullivan County is the official authorized to activate the Public Health provisions of the HEOP. Events that will trigger plan activation include but may not be limited to the following situations. Once confirmed or a highly suspected case of one of the following communicable diseases:

1. Smallpox, Inhalation Anthrax, Gastrointestinal Anthrax, Pneumonic Plague, Viral hemorrhagic fevers.
2. An epidemiologic investigation into one of the following diseases confirming that it is highly unlikely to be naturally occurring: Cutaneous anthrax, Staphylococcal Enterotoxin B disease, Tularemia, Glanders, Q- Fever, Venezuelan Equine Encephalitis,
3. Confirmed epidemic in the County of a previously unknown strain of influenza, and/or
4. Multiple casualties and/or fatalities caused by chemical, nuclear, or other causes for which county medical facilities are overwhelmed.

## **§8-19 Interagency Coordination**

The NYSDOH and SEMO will be contacted for assistance as soon as the event is recognized. In the event that a criminal act is likely (all but influenza) the local police agency of jurisdiction and/or public water supply will also be contacted immediately. They will advise and consult by either coming on site to the EOC or by telephone or any other available form of communication (radio, internet, satellite phone.) The SNS would be activated through a request to the state from the appropriate Sullivan County official. Also expected to respond will be local fire and rescue workers, hospital personnel, American Red Cross, local law enforcement, trained volunteers, and others as determined. The NIIMS/ICS structure will be used to coordinate agencies and efforts.

## **§8-20 Communications**

- A. The Public Health Director or her designee is to report to the EOC at the onset of level 2 or 3 emergencies. Currently, the SCPHS has access to several redundant forms of communication.
- B. Health Providers Network (HPN) use: Applications to access the HPN have been approved for hospital staff that has access to the HPN and includes physicians, the hospital Infection Control Nurses, ER nurses, 911 Coordinator, EMS Coordinator and the Director of SCOEM/HS.
- C. Health Information Network (HIN): The HIN Coordinators for the health department are the Public Health Director and Deputy Public Health Director, and the Health Emergency Planner. SCPHS staff has the capability to check emails, faxes, and the HIN/HAN/HPN. Quarterly updated contact information is sent to HIN up as well as the SC911.
- D. Health Alert Network (HAN): Secure website managed by the NSYDOH for health alerts and public health preparedness information, including a communications directory.
- E. Security/Procedures Plan for SCPHS and Government Center:  
The process of security management is to create, administer, and oversee formal documented security policies relative to personal health information in a health entity setting. The security process ensures the prevention, detection, containment and correction of security violations in order to maintain the confidentiality, integrity and availability of sensitive data.

SCPHS, Sullivan County MIS Department, and the NYSDOH have compiled the following implementation features regarding the security plan for this County.

1. Security policy- The County has an overall policy that protects the confidentiality, integrity and availability of data.
2. Sanction policy- The County has their own Sanction policy in place for security breaches.
3. Assigned security responsibility- The MIS Security Officer is responsible for ensuring that reasonable measures have and continue to be taken to protect the confidentiality, integrity and availability of sensitive personal health information.

## **§8-21 Incident Assessment**

The SCPHS Director or alternate as defined previously will be responsible for assessing the threat to the public health and consequences of the incident. Event related data will be provided at regular intervals to the EOC as determined by the IC. Information will be shared at regular briefings with Section Chiefs.

The SCPIO or designee will be responsible for any releases of information after approval of the IC. If this is a potential or likely Bio-Terrorism event, law enforcement should be consulted prior to any public release of information.

1. Damage and loss assessment will be handled according to the SCEMP, Chapter 1 “Recovery”, Part A, “Damage Assessment.” If public health or other health facilities or resources are impacted, SCPHS can play a role in assessment.
2. Notification Responsibility: As explained previously, the SCPIO or designee will be responsible for interagency notification, notification of the news media, and notification of the public.

## **§8-22 Notification Procedures**

SCPHS has a 24-hour answering service. The service has the contact information at all times (24/7) of the on call staff member, who is either a supervisor, or a public health nurse in the epidemiology department. In the event that the Public Health Director cannot be reached, next in line to receive this report, according to the agency bureaucratic structure will be contacted. Efforts to reach the PHS Director will however continue until she is reached. The SC911 also has 24-hour contact information.

## **§8-23 Public Alert / Public Information**

The PIO for SCPHS is the SCPIO. They will coordinate all media releases in consultation with the PH Director or designee. The SCPIO will be the contact to the NYDOH Public Affairs Group. In the event of a bioterrorism incident or other health emergency, the responsibility for providing news media with on going information rests with the SCPIO.

Depending on the severity of the event and the volume and intensity of media interest, a regularly scheduled series of press conferences will be established as conditions warrant. The County Manager upon advice from PHS, local, state, and federal law enforcement and public safety agencies and members of the County Legislature, will instruct the SCPIO as to the frequency of press conferences, the information disseminated and the expert spokespersons who will be made available to the media.

In addition to media releases, fact sheets with important health protective information will be made available to the county through SCPHS. In addition, posting information on the county’s web page will be an important way to share this information, of course, dependent on there being electricity and on the availability of the County Webmaster. Emergency alert systems for the county at large are addressed in the SCEMP, Chapter 4: “Emergency Alert System.”

## **§8-24 Worker Protection**

Personal Protective Equipment (PPE) will be made available as resources permit to all workers or volunteers assisting in a health related emergency. The IC in consultation with the Safety Officer will determine the need for and level of PPE and providing the same to responders. SCPHS staff will be available for consultation regarding the proper PPE needed and its appropriate use and disposal.

## **§8-25 Mental Health**

The Sullivan County Community Services Department will be responsible for coordinating and providing mental health care during and post event to the public. In the event of an emergency, the

Hudson Valley Critical Incident Management Team will be activated to provide care for the mental health of the first responders to an emergency. The BOCES CISM team will respond to mental health services needed during and following emergencies involving students and school personnel. In large scale incidents requiring additional resources, mental health response will be coordinated through the SCOEM/HS and SC911. In the event that that an emergency occur requiring mental health services to school district personnel or students, the BOCES CISM Team will be activated.

## **Article IV Response Guidelines**

### **§8-26 Bioterrorism Readiness and Response Guidelines**

#### **A. Anthrax**

##### **1. Description of Agent**

Anthrax is an acute infectious disease caused by *Bacillus anthracis*, a spore forming, gram-positive bacillus. Associated disease occurs most frequently in sheep, goats, and cattle, which acquires spores through ingestion of contaminated soil. In naturally acquired cases, organisms usually gain entrance through skin wounds (causing a localized infection), but may be inhaled or ingested. Intentional release by belligerents or terrorist groups would presumably involve the aerosol route, as the spore form of the bacillus is quite stable and possesses characteristics ideal for the generation of aerosols. Person to person transmission of inhalational disease does not occur.

##### **2. Diagnoses and Treatment**

Human anthrax infection can occur in three forms: Pulmonary, cutaneous and gastrointestinal, depending on the route of exposure. Detailed guidelines for diagnosis and treatment are available at SCPHS and also through the Health Alert Network, Centers for Disease Control websites. Consultation with SCPHS and NYSDOH regarding current diagnosis and treatment guidelines is highly suggested.

##### **3. Pulmonary:**

- a. Non-specific prodrome of flu like symptoms follows inhalation of infectious spores.
- b. Possible brief interim improvement.
- c. Two to four days after initial symptoms, abrupt onset of respiratory failure and hemodynamic collapse, possibly accompanied by thoracic edema and a widened mediastinum on chest radiograph suggestive of mediastinal lymphadenopathy and hemorrhagic mediastinitis.
- d. Gram-positive bacilli on blood culture, usually after the first two or three days of illness.
- e. Treatable in early prodromal stage. Mortality remains extremely high despite antibiotic treatment if it is initiated after onset of respiratory symptoms.

##### **4. Cutaneous:**

- a. Local skin involvement after direct contact with spores or bacilli.
- b. Commonly seen on the head, forearms or hands.
- c. Localized itching, followed by a papular lesion that turns vesicular, and within 2-6 days develops into a depressed black eschar.
- d. Usually non-fatal if treated with antibiotics.

5. Gastro-intestinal:
  - a. Abdominal pain, nausea, vomiting, and fever following ingestion of contaminated food, usually meat.
  - b. Bloody diarrhea, hematemesis
  - c. Gram-positive bacilli on blood culture, usually after the first two or three days of illness.
  - d. Usually fatal after progression to toxemia and sepsis.
  
6. Incubation period: The incubation period following exposure to *B. anthracis* ranges from 1 day to 8 weeks (average 5 days), depending on the exposure route and dose:
  - a. 2-60 days following pulmonary exposure.
  - b. 1-7 days following cutaneous exposure.
  - c. 1-7 days following ingestion.
  
7. Preventative Measures:
 

A licensed vaccine is available for use in those at risk of exposure. Vaccination is undertaken at 0, 2, and 4 weeks (initial series), followed by booster doses at 6, 12, 18 months and then yearly. Following confirmed exposure, all un-immunized individuals should receive the recommended doses of vaccine according to the NYSDOH & CDC over 30 days, while those vaccinated with <3 doses prior to exposure should receive an immediate 0.5 ml booster. Anyone vaccinated with the initial 3-dose series in the previous 6 months does not require boosters. All exposed personnel should continue antibiotic therapy for 4 weeks. If a vaccine is unavailable, antibiotics may be continued beyond 4 weeks and should be withdrawn only under medical supervision. Always refer to Centers for Disease Control and NYSDOH sources for current treatment guidelines for preventive measures and treatment.
8. Symptomatic patients with suspected or confirmed infections with *B. anthracis* should be managed according to current guidelines specific to their disease state.
  - a. Isolation precautions: Standard precautions are used for the care of patients with infections associated with *B. anthracis*. Standard Precautions include the routine use of gloves for contact with nonintact skin, including rashes and lesions.
  - b. Patient Placement: Private room placement for patients with anthrax is not necessary. Airborne transmission of anthrax does not occur. Skin lesions may be infectious, but requires direct skin contact only.
  - c. Patient Transport: Standard Precautions should be used for transport and movement of patients with *B. anthracis* infections.
  - d. Cleaning, disinfection, and sterilization of equipment and environment: Principles of Standard Precautions should be generally applied for the management of patient-care equipment and for environmental control. After an invasive procedure or autopsy is performed, the instruments and area used should be thoroughly disinfected with a sporicidal agent (chlorine).
  - e. Post-mortem care: Standard precautions should be used for post mortem care. These precautions include wearing appropriate personal protective equipment, including masks and eye protection, when generation of aerosols or splatter of body fluids is anticipated.
  
9. Post Exposure Management
 

Decontamination of patients/environment: Although anthrax spores may survive in the environment for many years, secondary aerosolization of such spores generally presents no problem for humans. In situations where the threat of gross exposure to *B. anthracis* spores exists, cleansing of the skin and potentially contaminated clothing or environmental surfaces

may be considered to reduce the risk for cutaneous and gastrointestinal forms of disease. The plan for decontaminating patients exposed to Anthrax may include the following:

- a. Instructing patients to remove contaminated clothing and store in labeled, plastic bags.
- b. Handling clothing minimally to avoid agitation.
- c. Instructing patients to shower thoroughly with soap and water.
- d. Instructing personnel regarding Standard Precautions and wearing appropriate barriers when handling contaminated clothing or other contaminated fomites.

10. Laboratory Support and Confirmation: Diagnosis of anthrax is confirmed by aerobic culture performed in a BSL-2 laboratory.

- a. Diagnostic samples to obtain include:
  - 1) Blood cultures
  - 2) Acute serum for frozen storage.
  - 3) Stool culture if gastrointestinal disease is suspected.
- b. Laboratory selection: Handling of clinical specimens should be coordinated with local and state health departments, and undertaken in BSL 2 or 3 laboratories. The FBI will coordinate collection of evidence and delivery of forensic specimens to FBI or Department of Defense laboratories.
- c. Transport requirements: Specimen packaging and transport must be coordinated with the local and state health departments, and the FBI. A chain of custody document should accompany the specimen from the moment of collection. Advance planning may include identification of appropriate packaging materials and transport media in collaboration with the clinical laboratory at individual facilities.

## B. Botulism

### 1. Description of Agent

Botulinum toxins are a group of seven related neurotoxins (types A-G) produced by the anaerobic bacterium, *Clostridium botulinum*. In humans, botulinum toxin inhibits the release of acetylcholine, resulting in characteristic flaccid paralysis. *C. botulinum* produces spores that are present in soil and marine sediment throughout the world. Food borne botulism is the most common form of disease in adults. An inhalational form of botulism is also possible. Botulinum toxin exposure may occur in both forms as agents of bioterrorism. Intentional release by terrorists would likely involve aerosolization of pre-formed toxin, which could then produce disease via the inhalational route. Deliberate contamination of food supplies is also possible.

### 2. Diagnosis and Treatment

a. The following are symptoms of botulinum:

Ptosis	Generalized weakness
Dizziness	Dry mouth and throat
Blurred vision and diplopia	Dysarthria
Dysphonia	Dysphagia

b. The final result of this would end up as symmetrical descending flaccid paralysis and development of respiratory failure. Incubation Period”

- 1) Neurologic symptoms of food borne botulism begin 12-36 hours after ingestion.
  - 2) Neurologic symptoms of inhalational botulism begin 24-72 hours after aerosol exposure.
- c. Period of Communicability: Botulism is not transmitted from person to person.

- d. Detailed guidelines for diagnosis and treatment are available at SCPHS and also through the Health Alert Network, Centers for Disease Control websites. Consultation with SCPHS and NYSDOH regarding current diagnosis and treatment guidelines is highly suggested.

### 3. Preventive Measures

#### a. Vaccine availability

A pentavalent toxoid vaccine has been developed by the Department of Defense. This vaccine is available as an investigational new drug. Completion of a recommended schedule (0, 2, 12 weeks) has been shown to induce protective antitoxin levels detectable at 1 – year post vaccination.

- b. Immunization recommendations: Routine immunizations of the public, including healthcare workers, are not recommended.

### 4. Infection Control Practices for Patient Management

Symptomatic patients with suspected or confirmed botulism should be managed according to current guidelines.

- a. Isolation precautions: Standard Precautions are used for the care of patients with botulism.
- b. Patient Placement: Patient to patient transmission of botulism does not occur. Patient room selection and care should be consistent with facility policy.
- c. Patient transport: Standard Precautions should be used for transport and movement of patients with botulism.
- d. Cleaning, disinfection, and sterilization of equipment and environment: Principles of Standard Precautions should be generally applied to the management of patient-care equipment and environmental control.
- e. Discharge management: No special discharge instructions are indicated.
- f. Post- mortem care: Standard Precautions should be used for post-mortem care.

### 5. Post Exposure Management

Suspicion of even single cases of botulism should immediately raise concerns of an outbreak potentially associated with shared contaminated food. In collaboration with the CDC and local/state health departments, attempts should be made to locate the contaminated food source and identify other persons who may have been exposed. Any individuals suspected to have been exposed to botulinum toxin should be carefully monitored for evidence of respiratory compromise.

#### a. Decontamination of patients/environment

Contamination with botulinum does not place persons at risk for dermal exposure or risk associated with re-aerosolization. Therefore, decontamination of patients is not required. Decontamination of surfaces contaminated by toxin can easily be accomplished by using soap and water.

#### b. Prophylaxis and post-exposure immunization

Trivalent botulinum antitoxin is available by contacting state health departments. This horse serum product has a <9% percent rate of hypersensitivity reactions. Skin testing should be performed according to the package insert prior to administration.

#### c. Triage and management of large scale exposures/potential exposures

Patients affected by botulinum toxin are at risk for respiratory dysfunction that may necessitate mechanical ventilation. Ventilatory support is required, on average, for 2 to 3 months before neuromuscular recovery allows unassisted breathing. Large-scale exposures to botulinum toxin may overwhelm an institution's available resources for mechanical ventilation. Sources of

auxiliary support and means to transport patients to auxiliary sites, if necessary, should be planned in advance with coordination among neighboring facilities.

#### 6. Laboratory Support and Confirmation

##### a. Obtaining diagnostic samples

Routine laboratory tests are of limited value in the diagnoses of botulism. Detection of toxin is possible from serum, stool samples, or gastric secretions. For advice regarding the appropriate diagnostic specimens to obtain, contact state health authorities or CDC.

##### b. Laboratory selection

Handling of clinical specimens should be coordinated with local and state health departments. The FBI will coordinate collection of evidence and delivery of forensic specimens to FBI or Department of Defense laboratories.

##### c. Transport requirements

Specimen packaging and transport must be coordinated with local and state health departments, and the FBI. A chain of custody document should accompany the specimen from the moment of collection.

#### 7. Patients, Visitor, and Public Information

Fact sheets for distribution should be prepared, including explanation that people exposed to botulinum toxin are not contagious. A clear description of symptoms including blurred vision, drooping eyelids, and shortness of breath should be provided with instructions to report for evaluation and care if such symptoms develop.

### C. Plague

#### 1. Description of Agent

Plague is an acute infectious bacterial disease caused by the gram-negative bacillus *Yersinia pestis*, which is usually transmitted by infected fleas, resulting in lymphatic and blood infections (bubonic and septicemia plague). An intentional bio-terrorism related outbreak may be expected to be airborne, causing a pulmonary variant, pneumonic plague or it could also involve the release of infected fleas. Plague may be considered a lethal agent in either case.

#### 2. Diagnosis and Treatment

Signs and symptoms, which appear within 2-3 days, of pneumonic plague, include:

- a. Fever, cough, chest pain
- b. Hemoptysis
- c. Muco-purulent or watery sputum with gram-negative rods on gram stain.

#### 3. Radiographic evidence of bronchopneumonia

a. Detailed guidelines for diagnosis and treatment are available at SCPHS and also through the Health Alert Network and Centers for Disease Control website. Consultation with SCPHS and NYSDOH regarding current diagnosis and treatment guidelines is highly suggested.

#### 4. Signs and symptoms, which appear within 2-10 days, of bubonic plague, include:

- a. Malaise
- b. High fever
- c. Tender lymph nodes (buboes)

#### 5. Diagnoses: Plague must be suspected clinically. A presumptive diagnose may also be made by Gram/Watson stain of lymph node aspirates, sputum, or CSF. The plague bacillus may be readily cultured from aspirates of buboes or from the blood of septicemic patients.

#### 6. Preventive Measures/Treatment

a. Vaccine availability: Formalin-killed vaccine exists for bubonic plague, but has not been proven to be effective for pneumonic plague. It is not currently available in the U.S.

- b. Immunization recommendations: Routine vaccination requires multiple doses given over several weeks and is not recommended for the general population.

Early administration of antibiotics is quite effective, but must be started within 24 hours of onset of symptoms in pneumonic plague.

## 7. Infection Control Practices for Patient Management

Symptomatic patients with suspected or confirmed plague should be managed according to current guidelines.

- a. Isolation precautions: For pneumonic plague, Droplet Precautions should be used in addition to Standard Precautions.
  - 1) Droplet Precautions are used for patients known or suspected to be infected with microorganisms transmitted by large particle droplets, generally larger than 5 $\mu$  in size, they can be generated by the infected patient during coughing, sneezing, talking, or during respiratory-care procedures.
  - 2) Droplet Precautions require health care providers and others to wear a surgical-type mask when within three feet of the infected patient. Based on local policy, some healthcare facilities require a mask be worn to enter the room of a patient on Droplet Precautions.
  - 3) Droplet Precautions should be maintained until patient has completed 72 hours of antimicrobial therapy.
- b. Patient placement: Patients suspected or confirmed to have pneumonic plague require Droplet Precautions. Patient placement recommendations for Droplet Precautions include:
  - 1) Placing infected patient in a private room.
  - 2) Cohort in symptomatic patients with similar symptoms and the same presumptive diagnosis (i.e. pneumonic plague) when private rooms are not available.
  - 3) Maintaining spatial separation of at least 3 feet between infected patients and others when cohorting is not achievable.
  - 4) Avoiding placement of patient requiring Droplet Precautions in the same room with an immunocompromised patient.
  - 5) Special air handling is not necessary and doors may remain open.
- c. Patient transport: Limit the movement and transport of patients on Droplet Precautions to essential medical purposes only. Minimize dispersal of droplets by placing a surgical-type mask on the patient when transport is necessary.
- d. Cleaning, disinfection, and sterilization of equipment and environment: Principles of Standard Precautions should be generally applied to the management of patient care equipment and for environmental control.
- e. Discharge management: Generally, patients with pneumonic plague would not be discharged from a healthcare facility until no longer infectious (completion of 72 hours of antimicrobial therapy) and would require no special discharge instructions. In the event of a large bioterrorism exposure with patients receiving care in their homes, home care providers should be taught to use Standard and Droplet Precautions for all patient care.
- f. Post-mortem care: Standard Precautions and Droplet Precautions should be used for post-mortem care.

## 8. Post Exposure Management

- a. Decontamination of patients/environment

The risk for re-aerosolization of *Y. pestis* from the contaminated clothing persons is low. In situations where there may be gross exposure to *Y. pestis* decontamination of skin and

potentially contaminated fomites may be considered to reduce the risk for cutaneous or bubonic forms of the disease.

The plan for decontaminating patients may include:

- 1) Instructing patients to remove contaminated clothing and storing in labeled, plastic bags.
- 2) Instructing patients to shower thoroughly with soap and water.
- 3) Handling clothing minimally to avoid agitation. Instructing personnel regarding Standard Precautions and wearing appropriate barriers when handling contaminated clothing or other contaminated fomites.
- 4) Performing environmental surface decontamination using an EPA registered, facility approved sporicidal/germicidal agent or 0.5% hypochlorite solution.

b. Prophylaxis

- 1) A licensed, killed vaccine is available. Facilities should ensure that policies are in place to identify and manage health care workers exposed to infectious patients.

Post exposure prophylaxis should be initiated following confirmed or suspected bioterrorism. *Y. pestis* exposure, and for post-exposure management of healthcare workers and others who had unprotected face to face contact with symptomatic patients. Recommendations for prophylaxis are subject to change. Up to date recommendations should be obtained in consultation with the local and state health departments and the CDC. Pediatric use of tetracycline's and fluoroquinolones is associated with the adverse effects that must be weighed against the risk of developing a lethal disease.

c. Triage and management of large scale exposures/potential exposures

Advance planning should include identification of sources for appropriate masks to facilitate adherence to Droplet Precautions for potentially large numbers of patients and staff.

Advance planning should also include identification of:

- 1) Sources of bulk prophylactic antibiotics and planning for acquisition on short notice.
- 2) Locations, personnel needs and protocols for administering prophylactic post-exposure care to large numbers of potentially exposed individuals.
- 3) Means for providing telephone follow-up information and other public communications services.

d. Patients, Visitor, and Public Information

Fact sheets for distribution should be prepared, including a clear description of Droplet Precautions, symptoms of plague, and instructions to report for evaluation and care if such symptoms are recognized. The difference between prophylactic antimicrobial therapy and treatment of an actual infection should be clarified. Decontamination by showering thoroughly with soap and water can be recommended.

## §8-27 Chemical Specific Readiness and Response Guidelines

**Additional information on chemical response can be found in Chapter 7 of the SCEMP.**

### A. Description of Nerve Agents

Nerve agents are the most toxic of the known chemical agents. They are hazardous in their liquid and vapor states and can cause death within minutes after exposure. Nerve agents inhibit acetyl cholinesterase in tissue, and their effects are caused by the result of excess acetylcholine.

### B. Nerve Agents: Tabun, Sarin, Soman, GF, VX

#### 1. Signs and symptoms of exposure:

##### a. Vapor:

- 1) Small exposure: constricted pupils, rhino rhea, mild difficulty breathing
  - 2) Large exposure: sudden loss of consciousness, bronchial constriction, apnea, convulsions, flaccid paralysis, copious secretions, and miosis.
- b. Liquid on skin:
- 1) Small to moderate exposure: localized sweating, local fasciculation, nausea, vomiting, and feeling of weakness
  - 2) Large exposure: sudden loss of consciousness, convulsions, apnea, flaccid paralysis, and copious secretions.

Agents are heavier than air (unless dispersed under pressure). G agents may have a fruity odor. V agents may have a sulfur odor.

#### C. Blood Agents: Hydrogen Cyanide, cyanogen chloride

##### 1. Description of Blood Agent

Cyanide is a rapidly acting, lethal agent that breaks down the use of oxygen at the cellular level. It must be present in a high concentration if used in an open, or enclosed space because it breaks down rapidly. Death occurs within minutes of inhaling a high dose. Sodium nitrite and sodium thiosulfate are effective antidotes, since cyanide will adhere to methemoglobin.

2. Signs and symptoms of exposure: Headaches, strong gasping breaths, loss of consciousness, convulsions, apnea, (normal pupil size/no secretions. If exposure is significant, seizures, respiratory and cardiac arrest may follow. Cyanogen chloride will also cause irritation to the eyes, nose, and airways.
3. Hydrogen cyanide is lighter than air, cyanogen chloride is heavier.

#### D. Choking/Pulmonary Agents: Phosgene (CG), Chlorine Oxime (CX)

##### 1. Description of Agents

2. Can be used alone or combined with chlorine gas. It can be produced as Phosgene Oxime, which as a vapor or liquid causes corrosive skin lesions, as well as inhalational damage.
3. Signs and symptoms of exposure: Phosgene Gas: Irritation of eyes, nose, throat, shortness of breath, coughing, frothy secretions, nausea, vomiting, pulmonary edema.
4. Phosgene Oxime: Burning and irritation followed by skin and airway damage.
5. CG has an odor of freshly mown hay. CX has no odor and Mark 1 detection kits are necessary to detect. Agents are heavier than air.

#### E. Blister/Vesicants Agents: Mustard, Lewisite

##### 1. Description of Agents

Vesicants are agents that cause blisters on exposed skin, but they also damage the eyes, airways, and lungs. Mustard gases also cause gastrointestinal and blood related problems.

2. Agents are heavier than air, no special characterizations for mustard; lewisite has an odor of geraniums.

#### F. EMS for Chemical Agents

There is no specific treatment for the vesicants except for supportive care for eye or skin irritation or terminating exposure to the agent.

Decontamination would entail the removal of clothing and using large amounts of soap and water for the following chemical agents: Sulfur Mustard, Lewisite, Cyanide, Phosgene, Ammonia, Chlorine, CN (Mace), CS (tear gas), and Capsicum (pepper/mace sprays).

#### G. Sullivan County Response

In the case of an overt terrorist incident, local law enforcement should be contacted immediately. The FBI should be contacted and would coordinate with local law enforcement. The Local Fire Department/EMS would respond to the scene and HAZMAT and DMAT would be requested to assist with the situation. Early into the incident, the proper PPE level should be determined and used. Those without PPE should not enter the hazard area. The first qualified person at the scene will assume the role of IC and establish a Command Post outside the Hazard Zone. A transfer of command may occur if a more qualified person arrives. If necessary, the EOC should be activated. A perimeter and staging area should be established and their location determined by the hazard area which may be affected by wind direction and weather conditions. The area inside the outer perimeter should be secured and entrance restricted to avoid further contamination.

#### H. Mass Care

The hospital will institute its normal disaster plan with special consideration for decontamination and ventilation sites. Although many patients will be decontaminated at the scene, there is a potential for many patients to arrive without proper decontamination or none at all. To prevent secondary contamination, it is essential to quickly identify those persons arriving at a facility prior to decontamination. These persons should be decontaminated prior to entering the care facility.

#### I. Treatment

1. General medical treatment guidelines will be followed according to NYSDOH and CDC recommendations. For a larger scale incident that could affect multiple jurisdictions throughout the state of New York, the HIN/HAN would have updated information.
2. For pulmonary agents, treatment involves supportive care. Nebulized sodium bicarbonate maybe beneficial after chlorine exposures and corticosteroids maybe of some benefit after phosgene or nitrogen oxide exposures.
3. For cyanide, treatment involves supportive care and the cyanide antidote package (obtained from the NYSDOH). This package contains nitrites (amyl and sodium) if intravenous access has been obtained you may skip the inhaled amyl nitrite. Sodium thiosulfate can also serve as an antidote. Antidotes should be administered as quickly as possible because ACLS practices are generally not successful for severely poisoned people.
4. For Vesicants, treatment involves supportive care. Anti-arsenicals can be used for systemic lewisite toxicity. Patients should be monitored for signs of vesicles or pulmonary toxicity from minutes after exposure up to 24 hours depending on the exposure parameters.
5. For nerve agents or pesticides, treatment involves a mixture of the antimuscarinic (atropine) along with an enzyme regenerator. Patients should be monitored for signs of cholinergic excess and treated using increased doses of atropine or pralidoxime in conjunction with supportive care.

#### J. Environmental

The NIIMS/ICS will delegate the decontamination and clean up of chemical materials to HAZMAT and SCOEM/HS. The Director of SCOEM/HS will notify SCPHS and the NYSDOH of any chemical incident that has the potential to risk the public's health or displace large numbers of people so that SCPHS would need to be notified to arrange for medical assessment or care in collaboration with other agencies.

## **§8-28 Radiological Specific Readiness and Response Guidelines**

The release of radioactive materials is considered a method that may be used by a terrorist to cause harm, panic and disruption of daily lives to a community. The first possible scenario in which a terrorist attacks a nuclear power plant is not a threat in Sullivan County.

A terrorist attack that involves radiological materials could affect Sullivan County in several ways:

1. Cross contamination from people who are affected by a power plant attack in Rockland County.
2. An attack on a medical or industrial setting or carrier, i.e. a truck carrying radioactive materials through the county.
3. Detonation of an explosive mixed with radioactive materials.
4. Detonation of a nuclear weapon.
5. The placement of highly radioactive material in an unprotected public place.

### **A. Response**

If a significant quantity of radiation is released, a national emergency-response plan that includes federal, state, and local agencies will be activated. In the case of a radiological event in Sullivan County, SCPHS will operate utilizing the NIIMS/ICS. Radiation guidelines include the principles of time, distance, shielding, and quantity. Shorten the length of time in the radiation field, use a rotating team of HAZMAT, EMS personnel to respond to the scene, utilize barriers to shield against radiation.

An immediate response includes evacuating those in the radiation field and sending them through a decontamination station. Local authorities will issue public health and safety statements advising precautions to take to avoid potential exposure to radiation. Those at risk would be directed to stay indoors and to take issued iodine tablets. Subsequent response includes: partnering with the Monticello district office to control food and water contamination, evaluate the extent of radioactive release and relocation of nearby residents as needed. Prepare for long-term decontamination if necessary.

### **B. Mass Care**

CRMC will institute its disaster plan. Trained monitoring teams will go through the area wearing special protective clothing and equipment to determine the extent of possible contamination. These teams will be wearing the gear as a precaution and not as an indication of the risks to those indoors. Decontamination sites will be set up in the field for people directly affected. Irradiation of the whole body or a specific body part does not constitute a medical emergency even if the amount of radiation received is high. Contamination accidents must be considered medical emergencies since they might lead to internal contamination and subsequent incorporation. Persons with internal contamination (by eating or drinking) should be given treatment to avoid subsequent incorporation of radioactive materials. SCPHS will abide by the direction of the treatment modalities from the NYSDOH.

## **§8-29 Small Pox Readiness and Response**

The SCPHS will advise local responders and health care providers in consultation with NYSDOH on specimen collection and treatment, quarantine, isolation and protective measures for the public and health care system. Detailed guidelines for diagnosis and treatment are available at SCPHS and also through the Health Alert Network and Centers for Disease Control website. Consultation with SCPHS and NYSDOH regarding current diagnosis and treatment guidelines is highly suggested.

## **§8-30 Isolation and Quarantine Plan**

### **A. Purpose:**

The purpose of this document is to outline the policies and procedures for the investigation of and, if appropriate, the isolation and quarantine of individuals, voluntary and involuntary, diagnosed with or suspected to have a communicable disease as listed in 10 NYCRR2.2.

### **B. Policy:**

Under certain circumstances, the SCPHS may be required to isolate individuals and/or quarantine a particular residence or building in order to prevent the spread of communicable disease. The first step that the SCPHS will take will be to solicit voluntary cooperation of individuals identified as needing isolation or quarantine. These individuals will be asked to cooperate with procedures designed to prevent the spread of communicable disease. In the event that the identified individual (s) is not compliant with the request for voluntary isolation or quarantine, the Sullivan County Public Health Director may need to seek and exercise legal authority for involuntary isolation and quarantine.

### **C. Authority: Article 21 of New York State Public Health Law and 10 NYCRR part 2**

### **D. Definitions:**

1. A "Case" is defined as a person who has been diagnosed to have a particular disease or condition. The diagnosis may be based solely on clinical judgment or solely on laboratory evidence, or both. (NYCRR Title 10 2.2 (b))
2. A "Suspect Case" is defined as a person who has been diagnosed to be likely to have a particular disease or condition. The suspected diagnosis may be based solely on signs and symptoms, or solely on laboratory evidence, or both criteria. (NYCRR Title 10 2.2 (c))
3. A "Communicable Disease" is defined as those set forth in NYCRR Title 10, 2.1.
4. "Isolation" shall consist of the separation from other persons, in such places, under such conditions, and for such time, as will prevent transmission of the infectious agent, of persons known or suspected of being infected. (NYCRR Title 10 2.25(d))
5. An "Outbreak" is defined as an increased incidence of disease above its expected or baseline level. As the number of cases which indicate the presence of an outbreak vary according to the infectious agent, size and type of population exposed, previous exposure to the disease and the time and place of occurrence, the expected or baseline level of disease shall be assessed by LHD and CRMC. While an outbreak usually involves several cases of illness, it may consist of just one case for certain rare and/or serious diseases. (NYCRR Title 10 2.2(d))
6. "Quarantine of Premises", except as specifically modified in other sections of this chapter, shall consist of:
  - a. Prohibition of entrance into or exit from the premises, as designated by the health officer where a case of communicable disease exists of any person other than medical attendants and such others as may be authorized by the health officer: and
  - b. Prohibition, without permission and instructions from the health officer, of the removal from such premises of any article liable to be contaminated with infective matter through contact with the patient or with his (her) secretions or excretions, unless said article has been disinfected. (NYCRR Title 102.25 (e))
7. "Personal Quarantine" shall mean restricting household contacts and or incidental contacts to premises designated by the health officer (10NYSSRR2.25 (f)).

## E. Considerations For Implementing Isolation And Quarantine

### 1. Documentation

The case file will reflect a thorough history and analysis of the likelihood of transmission, mode of transmission (airborne, respiratory droplet or direct contact) or where unrestricted movement of the infected individual would pose a public health threat, should be determined and properly documented. Members of the Public Health Response Team (PHIRT) and the EPI staff from the LHD would be asked to conduct the contact investigation, and provide thorough documentation of all those people who are exposed to infected individuals. The PHRT and or epidemiology staff would obtain contact information of all exposed and ill individuals.

### 2. Consultation

Isolation and quarantine should only be considered when it necessitates protecting the public health. Such consideration should be consistent with the national public health authorities' recommendations. Where the potential for a large outbreak or unusual disease exists, any consideration should be made after consultation with the NYSDOH.

### 3. Least Restrictive Measures

In considering isolation and quarantine, the least restrictive measures such as home isolation or quarantine should be used, to achieve the prevention of transmission of communicable disease.

## F. Voluntary Isolation and Quarantine

1. Request for voluntary isolation or quarantine: Subject to the clinical diagnosis and the mode of transmission, community providers within Sullivan County or LHD staff, may request that the Public Health Director notify a patient and request that the patient remain in isolation or that the premises be quarantined.
2. Determination of need for voluntary isolation or quarantine: When a request for voluntary isolation or quarantine is submitted, the Public Health Director or the designee will perform an investigation. The investigation will include the clinical diagnosis, the organism, mode of transmission and observed behavior of the patient. The Public Health Director or the designee will confer with the Medical Consultant and the NYSDOH, to consider Center for Disease Control (CDC) recommendations concerning the appropriateness of voluntary isolation or quarantine.
3. Notification for voluntary isolation or quarantine: Once the Public Health Director or the designee decides that a patient or premises present a public health risk, and that voluntary isolation or quarantine would greatly reduce the risk of transmission, the Public Health Director or designee will communicate in writing a request for voluntary isolation or quarantine. The request for voluntary isolation may be communicated to the patient, a family member, a parent or guardian or other responsible person, depending upon the particular circumstance. A request for voluntary quarantine will be made to the owner of the premises, the manager of the property or other responsible person.

**THE REQUEST FOR VOLUNTARY ISOLATION OR QUARANTINE MUST STATE THE IMPORTANCE OF THE REQUEST TO PREVENT FURTHER SPREAD OF DISEASE, TO PROTECT FAMILY AND FRIENDS, AND TO AVERT THE POSSIBILITY OF INVOLUNTARY ISOLATION OR QUARANTINE PURSUANT TO A COURT ORDER.**

Under ideal circumstances the request should be sent certified mail to the recipient. For the purpose of disease control, the request may be made verbally, and then followed up with a letter.

4. **Methods of Isolation or quarantine:** The method of voluntary isolation or quarantine will be specified and made in accordance with guidelines from the NYSDOH and/or the CDC.
5. **Transportation of patients:** The Public Health Director or the designee will arrange for necessary transportation of patients in voluntary isolation if not in the home when diagnosed. If the patient needs to be isolated in a negative pressure room, transportation will be arranged to an airborne infection isolation room (AIIR) at CRMC.
6. **Protection of Health Workers:** The Public Health Director or the designee will define the appropriate practices and protective equipment necessary for protection of health workers providing care to patients in voluntary isolation or facilities that are voluntarily quarantined.
7. **Personal needs of patients:** The Public Health Director or the designee, in Coordination with healthcare providers and public service agencies, will guarantee that arrangements are in place to provide medical treatment, food, and comfort measures to patients in isolation or quarantine. Resources that will be utilized include, but not exclusive to, are Sullivan County Department of Family Services, Sullivan County Office Of The Aging, Sullivan County Home Health Agency, American Red Cross and various churches affiliated with the Sullivan County Inter-faith Church Council.
8. **Compliance Monitoring Plan:** For each patient, the Public Health Director or designee will define a plan for monitoring compliance with the request for voluntary isolation or quarantine. This plan will define compliance and noncompliance in specific terms. The Public Health Director or the designee will assign Public Health staff to monitor compliance by means of face to face home/facility visits on a daily basis for 5 business days to verify compliance and daily phone contact after 5 days.
9. **Non-compliance:** If the determination is made by the Health Department staff that the patient is non-compliant with voluntary isolation or quarantine, said staff member will immediately notify the Public Health Director or the designee. A SCPHS nurse will interview the patient to review the reasons for non-compliance, and attempt to remedy the situation with the patient through voluntary compliance. If the patient remains non-compliant post- interview, involuntary isolation and/or quarantine will then be pursued.

#### G. Involuntary Isolation and Quarantine

Request for involuntary isolation and quarantine: Contingent to the clinical diagnosis, mode of transmission, the behavior exhibited by the patient, and the lack of cooperation or compliance with a voluntary isolation or quarantine, Public Health staff or community healthcare providers may request in writing that the Public Health Director or the designee commit the patient to involuntary isolation or the premises be involuntarily quarantined. The Public Health Director will consult with the NYSDOH and medical specialists, to determine the specific location for isolation or quarantine.

They may include:

- a. The patient's home
- b. Local hospital.

1. The written request for involuntary isolation/quarantine will include the following:
  - a. Patients, name, address, phone # and emergency contact of patient
  - b. Place of employment
  - c. Number of individuals residing in household
  - d. Diagnosis or symptoms demonstrating infection by a communicable disease, which presents a threat to the public health.
  - e. Description of efforts undertaken to persuade voluntary isolation/quarantine and the response of the patient.
  - f. A statement that the patient does present a risk to the public for spread of a communicable disease, and that involuntary isolation/quarantine would prove effective in reducing the spread of infection.
  - g. Name, title and contact information of reporter
  
2. Determination of need for involuntary isolation or quarantine: Once a request for involuntary isolation/ quarantine is received, the Public Health Director or the designee will perform an investigation to review the clinical diagnosis, the organism, and the mode of transmission and the reported behavior of the patient. The Public Health Director or the designee will consult with the Medical Consultant and the NYSDOH to consider CDC recommendations pertaining to the appropriateness of involuntary isolation or quarantine. The County Attorney shall determine the appropriate legal approach to assure that the civil rights of the patient or owner of the premises are protected, and that the public health is also protected. (10NYCRR 2.29) If appropriate, the Public Health Director or the designee will then issue a HEALTH ORDER for Isolation or Quarantine (see Attachment 1) while the legal process is underway. The Public Health Director or designee will consult with the NYSDOH and medical specialists, to determine the specific location for isolation or quarantine. They may include: the patient’s home or the CRMC.
  
3. Obtaining a Court Order for involuntary isolation or quarantine: If the Public Health Director or the designee determines that the patient or the premises pose a health risk to the public, and that involuntary isolation or quarantine will reduce the health risk to the public, the Public Health Director will confer with the County Attorney to prepare a Court Order for submission to a Justice of the New York Supreme Court, Sullivan County. The County Attorney will research and prepare the Court Order documents. The application for the Court Order will contain the specific isolation and quarantine procedures requested for the particular case by the Public Health Director. As part of the process to obtain a Court Order for isolation or quarantine, the Sullivan County Attorney will be requested to prepare the following:
  - a. Request for Judicial Intervention
  - b. Motion for Order to Schedule an expedited Hearing
  - c. Order for Respondent to Show Cause : As to why an Order for Isolation or Quarantine Should Not Be Made
  - d. Order for Temporary Continuing Isolation or Quarantine pending the return date of the order to show cause.

The petition to the Court will include the following:

- a. Identity of person or group of persons subject to isolation or quarantine
- b. Premises subject to isolation or quarantine
- c. Date and time at which isolation or quarantine commences
- d. The suspected communicable disease
- e. A compliance statement with the conditions and principles for isolation and quarantine
- f. Statement for justification for isolation or quarantine

- g. A sworn affidavit of the Public Health Director or the designee confirming the facts asserted in the petition together with other information that may be relevant to the consideration of the court.
4. Petitioning the Court and Serving the Order: In order to protect the civil rights of the patient or premises' owner and to protect the health and safety of all parties the following steps will be taken:
    - a. A SCSD will serve the Order for Isolation or Quarantine on the patient. Depending upon the status of the patient, transportation will be via car or ambulance to an AILR at CRMC until the location of the Court hearing is determined. The Public Health Director or the designee will coordinate the transfer with the hospital. (See (d) below)
    - b. The patient will be given written notice of the need for isolation and or quarantine and the right to legal counsel.
    - c. The patient will be entitled legal representation before the judge. If the individual does not have an attorney or cannot afford one, a public defender will be assigned by the Court.
    - d. The patient, Court officers and personnel, law enforcement personnel and any other individuals who might be exposed to the patient will be provided by Public Health staff with personal protective equipment (PPE) and instructions on the use of the equipment. The patient and all parties will wear PPE during transportation and the court hearing, and environmental measures relating to air circulation and surface disinfection will be in place.
    - e. The County Attorney will consult with the Administrative Judge, Supreme Court, to determine an appropriate location for the hearing so that infection control measures will be effective. Primary location for the hearing will be in an (AIIR) room at CRMC. In the alternative, the participation of the patient at the hearing may be arranged through such videoconferencing as may be accepted in the Court.
    - f. Depending upon the behavior of the patient, law enforcement escort may be requested by the County Attorney.
    - g. Transportation to the hearing will be provided via ambulance or SCSD vehicle, if needed. Instructions for proper disinfection of the vehicle used will be provided by the LHD.
    - h. In the interest of public safety, the Court will be asked to make an immediate Order for isolation or quarantine.
    - i. Any isolation or quarantine Order will be served immediately to the patient by a SCSD deputy. The Order will specify the location for isolation or quarantine, the mode and the intended duration; subject to medical release and authorization of the Public Health Director or designee.
    - j. When the hearing is finished, transportation will be arranged by the SCPHS, via ambulance or Sheriff's vehicle to the court designated isolation or quarantine location.
    - k. Provisions for food and medical treatment will be coordinated by the health department.
    - l. If the patient violates the Court Order for Isolation or Quarantine, or commits other violations of Public Health Law Section 12-b, the appropriate enforcement application will be submitted to the Court.
  5. Methods of isolation or quarantine: When considering involuntary isolation or quarantine for a patient, the least restrictive measure will be defined as a measure recommended by the CDC that protects the general public while causing the least restriction of the patient's activities of daily living and minimizing potential hardship for the individual and their family. This may be achieved by discussing the various CDC alternatives with the patient or their representative (s) to provide the opportunity for a choice of an effective method of isolation or quarantine.

6. Location for Involuntary Isolation: Sullivan County has AIIR rooms located at the CRMC with and additional portable HEPA units. In the event of mass isolation or quarantine, another facility will be identified to provide suitable mass care. The location is confidential, and planning has occurred in advance for appropriate emergency plans to be implemented with local facilities administrators if needed.
7. Monitoring Compliance: The Public Health Director or the designee will develop and implement a plan for each patient to monitor compliance of the involuntary patient. The plan will define what constitutes compliance and non-compliance. Public Health Staff will make phone and/or daily face to face contact visits if appropriate and safe, to verify compliance. Public Health staff, medical providers and law enforcement personnel will be instructed to report immediately to the Public Health Director or designee if there is non-compliance.
8. Law Enforcement Role: The SCSD along with local law enforcement agencies will be responsible for enforcing protocols and court orders related to involuntary isolation and quarantine. The SCSD will be responsible for:
  - a. Serving court orders for isolation or quarantine
  - b. Enforcing court orders, in conjunction with local law enforcement agencies

#### H. Protection of Personnel and Public:

1. The Public Health Director or the designee will develop a plan, subject to updates, for personnel and members of the public, who may be exposed to a communicable disease. This includes instructions on proper use of PPE prior to an exposure. Any individuals, who refuse to use specified PPE, will be denied entrance to the location of the patient.
2. Before any exposure, SCPHS will offer PPE training to other agencies and personnel who may be exposed to the patient.

See Attachment #1 for Public Health Directors Isolation or Quarantine Order.

**Attachment #1**  
**SULLIVAN COUNTY PUBLIC HEALTH DIRECTOR'S ORDER FOR**  
**ISOLATION OR QUARANTINE**

TO: \_\_\_\_\_ DATE: \_\_\_\_\_

Name:

Address:

SIR/MADAM:

Effective upon your receipt of this order, you are hereby directed by the Sullivan County Public Health Director to be isolated and/or quarantined at \_\_\_\_\_ due to the belief of the Sullivan County Public Health Services Department that you may suffer from a communicable disease as defined in the New York State Sanitary Code §10 NYCRR 2.1.

You are ordered to remain at \_\_\_\_\_ by the authority vested in the Sullivan County Public Health Director under the New York State Public Health Law and regulations. The Sullivan County Public Health Services Department has been advised that you possess, or are likely to be infected with \_\_\_\_\_ and that you have been unwilling or unable to voluntarily comply with the request for isolation or quarantine. The Sullivan County Public Health Services Department finds that there is a substantial likelihood, based on your past and present behavior, that you cannot be relied upon to voluntarily remain in isolation/quarantine until such time as your disease/suspected disease can be diagnosed or treated. The disease which you are suspected of having is highly contagious and poses a risk to the public's health.

In view of your inability or unwillingness to voluntarily remain isolated/quarantined in a less-restrictive setting, the Sullivan County Public Health Services Department finds there is no -appropriate, least restrictive alternative for you than \_\_\_\_\_ at the present time.

Except as described above, you may not leave \_\_\_\_\_ without further order from the Sullivan County Public Health Director or a Court of proper jurisdiction. This Order shall remain in effect until otherwise ordered by the Court; or until the Sullivan County Public Health Services Department has received notice that you are no longer contagious.

Please be advised that within five (5) days of service of this Order and if you continue to be isolated/quarantined at \_\_\_\_\_, the Sullivan County Public Health Services Department shall submit by affidavit and other supporting documents, an Order to Show Cause/Petition for a Court Order authorizing your continued isolation or quarantine and an expedited hearing to continue said isolation/quarantine on the grounds that you possess a health threat to yourself and to the general public. Your isolation/quarantine shall not continue for more than 10 business days after the filing of the petition in the absence of a hearing for a Court Order authorizing such isolation/quarantine. Moreover, the Sullivan County Public Health Director must obtain a Court Order authorizing your continuing isolation/quarantine, beyond said 10 days.

Please be advised that you have a right to be represented by legal counsel. If you cannot afford counsel, you may have counsel provided. Moreover, you may supply to the Sullivan County Public Health Services Department the addresses and/or telephone numbers of friends and/or relatives to receive notification of your isolation/quarantine. At your request, the Sullivan County Public Health Services Department shall provide notice to a reasonable number of such persons that you are being isolated/quarantined.

## **Article V References**

NYSDOH Local Health Department Interim Guide for Preparation and Evaluation of Terrorism Preparedness and Response Plans, 12/27/01

Health Alert Network (HAN), a section of NYSDOH's Health Information Network (HIN), a secure website; <https://commerce.health.state.ny.us/>

Radiation Emergency Assistance Center Training Site (REAC/TS): website accessed 1/28/02:  
<http://www.ornl.gov/reacts/manage.htm>.

“Bioterrorism and Disaster Planning at the State and Local Levels”: packet of information from November 1, 2001 Commissioner's Call; NYSDOH.

Centers for Disease Control: “Pandemic Influenza: A Planning Guide for State and Local Officials (Draft 2.1)”; <http://www.cdc.gov/od/nvpo/pandemicflu.htm>.

CDC /NCEH Radiation Studies- from website

CDC Website- Biological Agents, Chemical Agents, Chemical Agent Specimen Collection

Delaware County Preparedness Plan

**Chapter 8A**  
**Sullivan County Public Health Services**  
**Pandemic Influenza Plan**

**Article I**  
**Introduction and Acknowledgements**

- §8A-01 Acronyms**
- §8A-02 Introduction & Acknowledgements**
- §8A-03 What is Pandemic Influenza**
- §8A-04 World Health Organization Pandemic Periods/Phases**

**Article II**  
**Interpandemic Period**

- §8A-05 Command & Control**
- §8A-06 Surveillance & Laboratory Testing**
- §8A-07 Healthcare Planning**
- §8A-08 Infection Control**
- §8A-09 Clinical Guidelines**
- §8A-10 Vaccine Procurement, Distribution & Use**
- §8A-11 Antiviral Medication, Procurement, & Distribution**
- §8A-12 Travel related Disease Control & Community Prevention**
- §8A-13 Communications**
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- §8A-15 Workforce Support**
- §8A-16 Highly Pathogenic H5N1 (HPAI) Avian Influenza in Non-Human Animals**
- §8A-17 Public Health Preparedness Informatics**

**Article III**  
**Pandemic Alert Period**

- §8A-18 Command & Control**
- §8A-19 Surveillance & Laboratory Testing**
- §8A-20 Healthcare Planning**
- §8A-21 Infection Control**
- §8A-22 Clinical Guidelines**
- §8A-23 Vaccine Procurement, Distribution & Use**
- §8A-24 Antiviral Medication, Procurement, Distribution**
- §8A-25 Travel related Disease Control & Community Prevention**
- §8A-26 Communications**
- §8A-27 Training & Education**
- §8A-28 Workforce Support**
- §8A-29 Highly Pathogenic H5N1 (HPAI) Avian Influenza in Non-Human Animals**
- §8A-30 Public Health Preparedness Informatics**

**Article IV  
Pandemic Period**

<b>§8A-31</b>	<b>Command &amp; Control</b>
<b>§8A-32</b>	<b>Surveillance &amp; Laboratory Testing</b>
<b>§8A-33</b>	<b>Healthcare Planning</b>
<b>§8A-34</b>	<b>Infection Control</b>
<b>§8A-35</b>	<b>Vaccine Procurement, Distribution &amp; Use</b>
<b>§8A-36</b>	<b>Travel related Disease Control &amp; Community Prevention</b>
<b>§8A-37</b>	<b>Communications</b>
<b>§8A-38</b>	<b>Training &amp; Education</b>
<b>§8A-39</b>	<b>Workforce Support</b>
<b>§8A-40</b>	<b>Highly Pathogenic H5N1 (HPAI) Avian Influenza in Non-Human Animals</b>
<b>§8A-41</b>	<b>Public Health Preparedness Informatics</b>

**ACRONYMS**

ACIP	Advisory Committee on Immunization Practice
AE	Adverse Events
BHNSM	NYSDOH Bureau of Healthcom Network Systems Management
CDC	Centers for Disease Control and Prevention
CDESS	Communicable Disease Electronic Surveillance System
CDMS	Clinic Data Management System
CRMC	Catskill Regional Medical Center
DMORT	Disaster Mortuary Operation Response Team
DPC	New York State Disaster Preparedness Commission
EAS	Emergency Alert System
ECLRS	NYSDOH Electronic Clinical Laboratory Reporting System
EMS	Emergency Medical Service
EOC	Emergency Operations Center
EPI	Epidemiology
ER	Emergency Room
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HERDS	Health Emergency Response Data System
HEOC	Health Emergency Operations Committee
HEOP	Health Emergency Operations Plan
HHA	Home Health Agency
HIN	Health Information Network
HPAI	Highly Pathogenic Avian Influenza
HPN	Health Provider Network
IATA	International Air Transport Association
IC	Incident Commander
ILI	Influenza-like illness
IND	Investigational New Drug
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System

NVAC	National Vaccination Advisory Committee
NYSDOH	New York State Department of Health
NYSP	New York State Police
POD	Point of Dispensing
POD SOG	Point of Dispensing Standard Operations Guide
PPE	Personal Protective Equipment
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDPEM	Sullivan County Division of Planning & Environmental Management
SCDPW	Sullivan County Division of Public Works
SCMIS	Sullivan County Management Information Services
SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPHS	Sullivan County Public Health Services
SCPHRT	Sullivan County Public Health Response Team
SCPIO	Sullivan County Public Information Officer
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
VAERS	Vaccine Adverse Events Reporting System
VIS	Vaccine Information Statement
VMAT	Veterinary Medical Assistance Team
WHO	World Health Organization

## **§8A-02 Introduction & Acknowledgements**

This Sullivan County Pandemic Influenza Preparedness Plan is a specialized adjunct to Chapter 8, Sullivan County Health Emergency Operations Plan and the Sullivan County Comprehensive Emergency Management Plan (SCEMP). This document provides information for Public Health and Emergency Management Planners. It addresses issues warranting attention before and during a widespread Influenza outbreak.

This plan draws from several resources including:

- A. “New York State Department of Health Pandemic Influenza Plan, February 2006”
- B. “Sullivan County Comprehensive Emergency Management Plan”
- C. “Sullivan County Health Emergency Operations Plan”
- D. “Sullivan County Isolation and Quarantine Plan”

## **§8A-03 What is Pandemic Influenza?**

Pandemic influenza occurs when a novel influenza virus appears that causes readily transmissible human illness against which most of the population lacks immunity. Several features set pandemic influenza apart from other public health emergencies or community disasters:

1. Influenza pandemics are expected but arrive with very little warning.
2. Outbreaks can be expected to occur simultaneously throughout much of the U.S., preventing sharing of human and material resources that usually occur in the response to other disasters. Localities should be prepared to rely on their own resources to respond. The effect of pandemic

influenza on individual communities will be relatively prolonged (weeks to months) in comparison to disasters of shorter duration.

3. Because of widespread susceptibility to a pandemic influenza strain, the number of persons affected will be high.
4. Health care workers and other first responders will be at higher risk of exposure and illness than the general population, further straining the health care system.
5. Effective preventive and therapeutic measures, including vaccine and antiviral agents, are likely to be delayed and in short supply.
6. Widespread illness in the community could result in sudden and potentially significant shortages of personnel in other sectors that provide critical public safety services.

The SCPHS Pandemic Influenza Plan is divided into 13 sections for the Influenza period as outlined in the NYSDOH Influenza Plan as follows:

1. Command and Control
2. Surveillance and Laboratory Testing
3. Healthcare Planning
4. Infection Control
5. Clinical Guidelines
6. Vaccine Procurement, Distribution and Use
7. Antiviral Medication Procurement, Distribution and Use
8. Travel-Related Disease Control and Community Prevention
9. Communications
10. Training and Education
11. Workforce Support
12. Highly Pathogenic H5N1 Avian Influenza in Non-Human Animals
13. Public Health Preparedness and Informatics

**NOTE:** The Sullivan County Pandemic Influenza Plan is identified as Chapter 8A of SCEMP.

<b>Interpandemic Period</b>	<b>Phase 1</b>	No new influenza virus subtypes in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection or disease is considered to be low.
	<b>Phase 2</b>	No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.
<b>Pandemic Alert Period</b>	<b>Phase 3</b>	Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.
	<b>Phase 4</b>	Small clusters(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.
	<b>Phase 5</b>	Larger cluster(s) but human-to-human spread is still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).
<b>Pandemic Period</b>	<b>Phase 6</b>	Pandemic phase: increased and sustained transmission in general population.

**Article II  
Interpandemic Period**

**§8A-05 Command & Control**

Sullivan County has established a Public Health Emergency Planning Committee (as listed in the SCHEOP, § 8-05, Preparedness Activity, Section C), that consists of individuals from various Law Enforcement and Healthcare agencies. This committee and their subcommittees are relevant stakeholders in the planning of specific areas of need in emergencies.

**Health Emergency Planning Committee**

SCPHS  
 SCPIO  
 Director of SCOEM/HS  
 SC911 Coordinator  
 NYS  
 SCDPW  
 SC Community Services  
 CRMC

County Manager  
 County Coroner  
 Director of Community Services  
 EMS Coordinator  
 SCSD  
 BOCES Safety & Health Coordinator  
 SC Adult Care Center  
 The Center for Discovery

**NOTE:** It is understood that SCPHS, as a part of the HEPC, will be the appropriate agency to respond to a public health emergency in collaboration with other emergency response partners.

SCPHS have sub committees of the HEPC to plan for Influenza preparedness.

### **Health Emergency Planning Sub-Committees**

Vaccine/Antiviral Meds Distribution Committee  
Health Risk Communication Committee  
Special Populations Committee  
Summer Populations Committee  
Security Committee  
Mass Fatalities Committee  
Surge Capacity/Evacuation Committee

- A. National Interagency Incident Management System/Incident Command System (NIIMS/ICS)  
Sullivan County endorses the use of the NIIMS/ICS and formally adopted by the State of New York, for emergencies requiring multi-agency response. NIIMS/ICS allows flexibility in its implementation so that its structure can be tailored to the specific situation at hand. The emergency forces first responding to an incident should initiate NIIMS/ICS.

NIIMS/ICS are organized by functions. There are five:

1. Command
2. Operations
3. Planning
4. Logistics
5. Finance

Under NIIMS/ICS, an IC has the overall responsibility for the effective on-scene management of the incident, and must ensure that an adequate organization is in place to carry out all emergency functions. The IC directs emergency operations from an Incident Command Center, and the only command post is at the emergency scene.

In minor incidents, the five NIIMS/ICS functions may all be managed directly by the IC. Larger incidents usually require that one or more of the functions be set up as separate sections under the IC.

Within the command function, the IC has additional responsibilities for Safety, Public Information, and Liaison. These activities can be assigned to staff under the IC

B. Incident Command Post and EOC

1. The Sullivan County EOC is located at the Sullivan County 911 Communications Center (SC911), Sullivan County International Airport, CR 183A, White Lake, NY.
2. If a disaster situation renders the EOC inoperable, an auxiliary EOC may be established at the Sullivan County Division of Public Works, 100 North Street, Monticello, NY or at another location designated at the time.
3. County agencies and other organizations represented at the EOC will be organized according to NIIMS/ICS function under the direction of the Emergency Manager.

4. Though organized by NIIMS/ICS function, each agency's senior representative at the EOC will be responsible for directing or coordinating their agency's personnel and resources. Where the agency is also represented at the scene in an NIIMS/ICS structure, the EOC representative will coordinate the application of resources with the agency's representative at the scene.
5. The Emergency Manager is responsible for managing the EOC or auxiliary EOC during emergencies.
6. Each agency will identify its personnel assigned to the EOC. This identification is to be provided to the Emergency Manager and updated yearly.

#### C. Declaration of Public Health Emergency

When a novel influenza virus or pandemic occurs, there are several steps that may be taken by the State to prevent or stem the spread of illness.

1. The Commissioner, pursuant to 10 NYCRR 2.1, may designate influenza (both cases and suspected cases) as a communicable disease because it is significant threat to public health. Currently, laboratory-confirmed influenza is designated as a communicable disease.
2. Once the Commissioner designates influenza as communicable disease, the local health officers may exercise their authority under Public Health Law Article (PHL) 21 and 10 NYCRR Part 2 to isolate and/or quarantine individuals to prevent further spread of the virus (see Appendix 1-B: Quarantine Powers of Local Health Officers and Local Boards of Health).
3. The Public Health Director or designee for Sullivan County has the authority to declare a Public Health Emergency (per Public Health Law, Article 21 2100, 10 NYCRR, Part 2), and to activate the Public Health provisions as stated in Chapter 8 - SCHEOP, Article I, 8-04, Legal Authority & Article III – Response and Recovery, 8-18, Emergency Operations.

#### D. Activation

1. Each emergency in Sullivan County should be classified into one of three Response Levels, according to the scope and magnitude of the situation:
  - a. Response Level 1: A controlled emergency situation without a serious threat to life, health, or property, which requires no assistance beyond initial first responders.
  - b. Response Level 2: Limited emergency situations with some threat to life, health, or property, but confined to a limited area, usually within one municipality or involving small populations.
  - c. Response Level 3: Full emergency situations with a major threat to life, health, or property, involving large population and/or multiple municipalities.
2. Initial notification of an emergency is usually received at the Sullivan County 911 Communications Center (SC911)
3. Upon initial notification of an emergency (or a potential emergency), the SC911 will immediately ascertain if a Response Level has been assigned.
  - a. If a Response Level has been assigned, the Emergency Manager will notify the appropriate personnel.
  - b. If no Response Level has been assigned the Emergency Manager will, based upon all available information, assign a Response Level for the purposes of activating the appropriate personnel.
4. Initial notification of an emergency to a County office other than the SC911 requires the recipient to notify the SC911 at 911. The EOC will be activated according to the designated Response Level.

- a. For Response Level 0: no activation of the EOC is required.
- b. For Response Level 1: no additional activation of the EOC is required beyond the normal staffing during working hours. During off-hours, the Emergency Manager can operate from an alternate location site, if necessary.
- c. For Response Level 2: the full staff of the EOC, and selective representation from the County Emergency Response Organization. Will report to the EOC as determined by the Emergency Management depending on the type of emergency.
- d. For Response Level 3: the full County EOC staffing will report to the EOC. A staffing list from each agency is provided to the Emergency Manager on a quarterly basis.

In every situation, the Emergency Manager or designee can modify the EOC staffing as the situation requires. For every emergency, the Response Level can shift from one level to another as the event escalates or de-escalates. EOC staffing should also change accordingly.

#### E. Public Order and Control

Maintenance of Public Order and Control will be done by local law enforcement agencies, SCSD and NYSP as per their respective jurisdictions. A declared State of Emergency would deem Law Enforcement to maintain public order.

#### F. Special Populations

The Sullivan County Special Needs Population Committee consists of community representatives that are developing Influenza Emergency Plans within their own organizations.

1. Nursing Homes
2. Substance Abuse Facilities
3. Adult Homes
4. Developmentally Disabled (OMRDD)
5. Home Care Agencies (with sick or homebound patients)
6. Correctional Facilities and other special needs populations

#### G. Partner Organizations Contact Rosters

1. Designated Sullivan County Public Health employees have the ability to access the HIN (Health Information Network) and can obtain the Healthcare partners that are listed on the NYSDOH communication directory. A list of the employees can be found on the HIN.
2. Communication Systems<sup>1</sup>: Sullivan County 911 has an emergency contact roster for notification of SCPHS staff, and a call down list is available for NYSDOH personnel and on-call duty officers. Communication systems between the county, region and state are regularly tested by state and county public health personnel.

#### H. Training and Exercise, Review

1. SCPHS will conduct periodic drills that will consist of table top exercises and full scale drills to maintain skills and identify deficiencies. The Health Alert Network (HAN) maybe used during the drill. The exercise will consist of state and local personnel and release of the SNS, if applicable.

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<sup>1</sup> SCHEOP, §8-06, Training, Exercises and Drills

2. Annual Review Acknowledgement: This plan will be reviewed a minimum of yearly and will be updated as needed. The plan will be approved by the Public Health Emergency Committee annually.

#### **§8A-06 Surveillance**

The SCPHS has nurses that are responsible for coordinating health surveillance and epidemiology. Daily reports, ongoing from CRMC assist in early recognition of potential large scale health emergencies.<sup>2</sup>

NOTE: On call Supervising Public Health Nurse and EPI Nurse can be reached 24 hours a day.

##### **A. Surveillance Monitoring/Reporting**

1. NYSDOH Health Information Network (HIN) is monitored 7 days a week by the EPI staff for any report of significant Influenza or disease outbreaks.
2. Electronic Clinical Laboratory Reporting System (ECLRS)
  - a. Individual positive laboratory specimens are reported to NYSDOH via ECLRS.
  - b. Is monitored 7 days a week by the EPI staff for increase in patients presenting with possible Respiratory/Flu-like illnesses.
3. Blast Faxes: A clinical diagnosis survey form is sent once a month to medical healthcare providers by the EPI Nurse(s) to assess the endemic level of the flu.
4. Emergency Room (ER) Surveillance: EPI Nurse(s) contact the county's local Hospital ER's daily to ascertain the # of positive Influenza Rapid testing that is not otherwise reported on the HIN.

##### **B. Surveillance Criteria for LHD<sup>3</sup>**

1. LHD Surveillance and Control Activities during Periods of Individual Case Reporting:
  - a. Receive reports from healthcare providers of potential human novel influenza cases to determine if the patient meets the surveillance criteria using the Novel Influenza Case Screening Form (Appendix 2E) located in the NYSDOH Pandemic Influenza Plan.
2. If the patient meets the surveillance and reporting criteria for a novel influenza virus infection, review appropriate infection control precautions with the medical provider.
  - a. Respiratory hygiene and cough etiquette,
  - b. Droplet precautions when entering patient room, and
  - c. Standard precautions to include gloves and gowns when indicated. These precautions should be continued for a minimum of five days (See §8A-08, Infection Control).
3. Home isolation may be employed early during an influenza pandemic, as outlined in §8A-12, Travel-Related Disease Control and Community Prevention, to slow the spread of influenza in communities. Refer to §8A-12(?) for patient management in the home if the patient is discharged within five days of onset of symptoms or is symptomatic.
4. Patients meeting the current surveillance case definition, or those with an influenza infection with an unusual clinical presentation should be interviewed using the NYSDOH Novel Influenza Case Report Form (Appendix 2-B) or other form being used at that time of the report to determine possible risk factors and mode of transmission. When indicated in §8A, use the NYSDOH Pandemic Influenza Plan. Contact Record Form (Appendix 8-C) to identify close contacts.
5. Assess case information to determine if there is increased likelihood of a novel influenza infection:

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<sup>2</sup> SCHOEP, §8-09, Surveillance & EPI Investigation

<sup>3</sup> Reference NYSDOH Pandemic Influenza Plan, §8A-19, Surveillance & Laboratory Testing

- a. Interpandemic and Pandemic Alert Periods
    - 1) Direct contact with a case of suspected or confirmed human novel influenza.
    - 2) Direct contact with poultry (well, sick, or dead), consumption of uncooked poultry, or direct exposure to environmental contamination with poultry feces in affected area.
  - b. Pandemic Period and *No Documented Pandemic Influenza Virus in NYS*:  
Close contact in an affected area with an ill person or non-human animal suspected or confirmed to have novel influenza virus infection.
6. Report immediately by telephone to the appropriate NYSDOH Regional Epidemiologist or BCDC any patient who meets the novel influenza surveillance criteria based on the period of the pandemic (Appendix 2-A) from the NYSDOH Pandemic Influenza Plan (see attached).
  7. The report should be initiated on the NYSDOH CDESS. If influenza testing at Wadsworth is indicated, the HIN identification number generated needs to be included on all paperwork associated with the case, including the lab specimen submission form.
  8. In conjunction with the NYSDOH, ensure that appropriate specimens are collected and shipped for testing at Wadsworth (Attachment 2-C located in the NYSDOH Pandemic Influenza Plan.)
  9. Surveillance of contacts of cases infected with a novel influenza virus may be helpful in *early* control efforts. When contact identification and management is indicated, surveillance of contacts will be conducted by LHDs, with assistance from the NYSDOH as needed (see Section 8: Travel-Related Disease Control and Community Prevention).
  10. Quarantine may be employed early during a flu pandemic to slow the spread of influenza in communities (see §8A-12).

NOTE: See Attachment: Reference: NYSDOH Pandemic FLU Plan; Surveillance and Laboratory Testing, §8A-06  
Appendix 2-A – Novel Influenza Surveillance and Reporting Criteria

NOTE: Refer to NYSDOH Pandemic Influenza Plan for:  
Appendix 2-B – Surveillance and Laboratory Testing, §8A-06  
Attachment 2-C – Surveillance and Laboratory Testing, §8A-06  
Appendix 8-C – Travel –Related Disease Control and Community Prevention, §8A-12

#### C. Contact Investigation

The EPI staff will conduct contact investigation by telephoning the patient's primary Healthcare provider and obtain contact information following NYSDOH Guidelines<sup>4</sup>:

1. Large Scale Contact Investigations: the NYSDOH Regional and Central Office will be contacted and assistance of supplemental staff will be requested.

#### D. Collection of Specimen Consultation for Healthcare Providers

Local Healthcare providers will be directed by the LHD EPI Department Staff to follow the NYSDOH Pandemic Influenza Plan guidelines on collection of specimens<sup>5</sup>.

1. Method and timing of specimen collection
  - a. Respiratory specimens should be collected within 72 hours of symptom onset and transported quickly to the Wadsworth Center on ice packs at 4°C. If transport is not possible within 48 hours, sample should be frozen at -70°C and transported on dry ice. Do not freeze at -20°C.

<sup>4</sup> NYSDOH Pandemic Influenza Plan, §8A-12, Travel-Related Disease Control and Community Prevention, Appendix 8-B – Contact Identification and Management, Appendix 8-C – Contact Record Form

<sup>5</sup> NYSDOH Pandemic Influenza Plan, §8A-06, Surveillance and Laboratory Testing; Method and timing of specimen collection.

- b. Use only Dacron or rayon swabs with a plastic or wire shaft. Do not use calcium alginate or wooden-shafted swabs.
- c. All specimens must be clearly labeled with the patient identifier, type of specimen, and date and time of collection.
- d. Acceptable respiratory specimens for patients who do not have a history of travel to an area where the H5N1 avian influenza virus is endemic and are not suspected to be infected with a novel influenza virus include:
  - 1) **Nasopharyngeal aspirate:** Requires source of suction (syringe, vacuum pump, or wall suction), specimen trap with two outlets, and catheter (no. 6 to 14 depending on size of patient). Without applying suction, insert catheter through nose into posterior nasopharynx (approximately the distance from tip of the nose to the external opening of the ear when measured in a straight line). Apply gentle suction, leaving catheter in place for a few seconds, then withdraw slowly. Suction contents of a vial of viral transport medium or non-bacteriostatic saline through catheter tubing to assist in moving material from tubing into trap and to add viral transport media to specimen. Transfer specimen to a sterile screw cap tube for transport to laboratory.
  - 2) **Nasopharyngeal wash:** Use rubber bulb (1-2oz for infants) or syringe to instill 3-5 ml of non-bacteriostatic saline into one nostril while occluding the other. If patient is able to cooperate, instruct them to close glottis by making a humming sound with mouth open. If a rubber bulb is used release pressure on bulb to allow saline and mucus to enter bulb. Remove from nose and squeeze into vial of transport media. If syringe is used, apply suction to syringe to recover saline and nasal secretions. Alternately, hold sterile container, such as a urine cup, under patient's nose and ask patient to expel material into it. In either case, add recovered saline-nasal secretions to a vial of viral transport media.
  - 3) **Nasopharyngeal swab:** Use a swab with a fine, flexible metal shaft and Dacron or rayon tip. Insert swab into posterior nasopharynx. Rub swab against mucosal surface and leave in place for 5 seconds to absorb secretions. Collection of specimens from both nostrils increases amount of material available for analysis. Place both swabs in a vial of viral transport medium. Use scissors to cut the shaft so top of vial can be screwed on tightly.
  - 4) **Oropharyngeal swab:** Use only sterile Dacron or rayon swabs with plastic shafts, swab both posterior and tonsillar areas, avoiding the tongue. Place swab in a vial of viral transport medium and break shaft.
- e. Acceptable specimens for patients who have a history of travel to an area where the avian influenza virus is endemic or are suspected to be infected with a novel influenza virus:
  - 1) While it appears that lower respiratory tract secretions may have a higher viral load than upper respiratory secretions in patients infected with these strains of avian influenza virus (e.g., H5N1) or other novel viruses, collecting these samples may present a risk to health care providers. **If appropriate PPE is not available, lower respiratory tract secretions should NOT be collected and sample collection should be restricted to nasopharyngeal and oropharyngeal swabs collected as above.** Each sample should consist of one nasopharyngeal and one oropharyngeal swab contained in one sterile vial of at least 2ml of viral transport medium.
  - 2) The hospital laboratory may perform a rapid influenza antigen detection assay using standard BSL-2 work practices in a Class II biological safety cabinet. Regardless of the result, the specimens should still be referred to the Wadsworth Center for testing.
  - 3) Obtain a blood specimen (not anti-coagulated) from the suspect case and submit the serum, not the blood sample, along with the respiratory samples.
  - 4) In addition to the patient identifier, label the serum with the date and time of collection. Serum samples will be stored until appropriate reagents become available.

- f. Samples that will not be tested
  - 1) Samples with insufficient volume cannot be tested.
  - 2) Samples that are leaking since they are a safety hazard to laboratory staff.
  - 3) Samples shipped at room temperature because of the potential for false-negative results.
  - 4) Improperly labeled samples will be tested, but the report will not be released until the required information is obtained.
- g. Forms to be submitted with specimens sent to the Wadsworth Center. The Wadsworth Center Virus History Form must be completed. The form is available as Attachment 2-D. The completed form must be shipped with the sample. Place the completed form in a plastic bag on top of the outer shipping container but inside the cardboard box before sealing.

#### E. Shipping of Specimens to Wadsworth Center

Local Healthcare providers will be directed to follow the NYSDOH Pandemic Influenza Plan guidelines on the shipping of specimens: (see attached)<sup>6</sup>

##### 1. How to ship specimens to the Wadsworth Center

- a. It is essential that influenza virus specimens be sent to the Wadsworth Center as soon as possible after collection. If shipped within two days of collection, ship with cold packs to keep sample at 4°C. Do NOT use wet ice. If shipment is delayed >2 days, then the specimens should be frozen at -70°C and shipped on dry ice. All original paperwork must be complete and accompany each specimen.
- b. Packaging, shipping and transport of specimens from influenza cases must follow the current edition of the International Air Transport Association (IATA) Dangerous Goods Regulations. The following resources will be useful; (<http://www.iata.org/dangerousgoods/index>) and US DOT 49 CFR Parts 171-180 (<http://hazmat.dot.gov/rules.htm>).
- c. Note that it is the shipper's responsibility – not the transport company's – to provide the appropriate packaging materials and documentation that complies with the IATA regulations. Apart from the materials provided to participants in the Sentinel Provider Network, the Wadsworth Center does NOT routinely provide shipping materials.
- d. All influenza specimens must be shipped in accordance with IATA packing instructions 650 as a "Diagnostic Specimen". Appropriate UN/IATA certified shipping materials must be used. Diagnostic specimens transported under the IATA Regulations are assigned to UN Identification number 3373. Follow the step-by-step packaging guidelines given in "Packing Diagnostic Specimens for Transport: Summary Instructions" at <http://www.cdc.gov/ncidod/sars/pdf/packingspecimens-sars.pdf>. It should be noted that if shipment on dry ice is necessary, IATA hazardous material regulations should be followed.
- e. All specimens must be shipped "Priority Overnight" and received within 24 hours via chosen carrier. Confirm that the selected carrier guarantees next day, morning delivery for diagnostic specimens.
- f. Prior to shipment of a specimen from a patient with a travel history to a country with endemic novel influenza or suspected to be infected with a novel influenza virus, medical providers need to contact the LHD or appropriate NYSDOH Regional Epidemiologist, who will arrange testing with the Wadsworth Center if appropriate. **Do not send these specimens to the Wadsworth Center without prior notification.**

##### 2. When to ship specimens to Wadsworth Center

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<sup>6</sup> NYSDOH Pandemic Influenza Plan, Surveillance and Laboratory Testing; Section 2. How to ship specimens to Wadsworth Center, pg. 2-17 – 2-18.

At this time the Wadsworth Center laboratory will perform influenza testing only during regular working hours Monday to Friday. Specimens should therefore ONLY be shipped Sunday - Thursday so that appropriate laboratory personnel can be present to accept and process specimens. Samples should not be shipped to arrive on a public holiday. Arrangements may be made to perform after business hours testing under unusual circumstances. Please contact the NYSDOH Regional Epidemiologist and the Wadsworth Center to discuss.

3. Receipt of specimens

- a. When specimens for influenza testing are received at the Wadsworth Center, the specimen will be accessioned and entered into the clinical laboratory information management system
- b. Once accessioned, the record will be uploaded to the NYSDOH ECLRS daily.

F. Reporting of Specimen Results:

Results of specimens submitted will be reported to the LHD through ECLRS and a paper report will be sent to submitters: (see attached)<sup>7</sup>.

1. Reporting of results

Influenza test information will be reported through the ECLRS to the LHD and a paper report sent to submitters.

- a. Results will be uploaded to ECLRS daily.
- b. It should be noted that several reports will be available for each sample.
  - 1) The first report will be at the level of influenza A or B based on the real-time PCR assay.
  - 2) The second report will be for the sub-type.
  - 3) A third report will be issued only for isolates that are identified to the level of strain. Although all isolates will be sub-typed, not all isolates will be identified to the level of strain.
- c. The final report will be marked as such.

## **§8A-07 Healthcare Planning**

A. Surge Monitoring

1. HERDS will be activated as a way for Hospitals to report surge capacity and will be monitored closely by the EPI staff. If the NYSDOH activates HERDS the EPI staff will also monitor the status closely.
2. The Sullivan County Healthcare Emergency Planner and EPI staff will call and instruct the free standing clinics in the county to notify the LHD to report any surge capacity issues.
3. Blast faxes that are sent by the SC EPI staff to Health care providers, received back from Healthcare Providers and the Daily Emergency Room Surveillance from the local hospitals through ECLRS will be monitored by the above methods to identify for increase of Influenza symptoms/illness.
4. Syndromic Surveillance will be done daily via the HIN and ER surveillance by the EPI nurses and monitored for increase notification of influenza symptoms/illnesses.
5. Mass Care In the event of a large scale emergency, SCPHS will work with the SCOEM/HS and the American Red Cross to activate mass care facilities.<sup>8</sup>
6. SCPHS Homecare Emergency Plan

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<sup>7</sup> NYSDOH Pandemic Influenza Plan. Section 2; Surveillance and Laboratory Testing; page 2-18.

<sup>8</sup> SCHEOP, §8-12, Readiness, Mass Care, (A)

This plan is the written protocol for SCPHS Certified Home Health Agency and Long Term Home Health Care program to ensure safe continued care of patients and will be activated in the event of a Health or All-Hazards emergency.

#### B. Volunteer Services:

The Sullivan County Public Health Response Team (SCPHRT) consists of volunteer medical professionals that have received training for emergency preparedness.<sup>9</sup>

1. Deployment of Volunteers (SCPHRT): the Public Health Director in agreement with the SCOEM/HS will approve the deployment of the SCPHRT, if applicable in the event of a declaration of a Public Health Emergency.
  - a. The Emergency Preparedness Volunteer Coordinator will utilize the volunteer call down list.
2. Additional Volunteer Utilization (Public Health Preparedness Volunteer Practitioner Database).

In the event that additional volunteers are needed refer to: NYSDOH Pandemic Influenza Plan, Section 3, Healthcare Planning and Emergency Response, B., Volunteers, #2 and #3.

#### C. Emergency Medical Services (EMS)

##### 1. Point of Distribution

In the event that large numbers of people need to receive vaccinations or prophylaxis within a certain timeframe following an outbreak of disease or bioterrorism related events, SCPHS has identified potential facilities at which operations can be set up for points of distribution. Depending on the situation the site utilized will be determined. (Refer to the HIN for POD sites). This will be done in conjunction with the SCOEM/HS and County Manager. If the total county population had to be prophylaxed, additional personnel and resources would be called upon and arranged through the SEMO, NYSDOH, and neighboring county public health services.

In the event that both SCPHS and the American Red Cross need the same facilities for mass care and/or vaccine and distribution of medications, coordination efforts will be managed through the SCOEM/HS<sup>10</sup>.

2. POD Site Listing: SCHEOP, Contact Roster Section, HIN, Communications Directory
3. Strategic National Stockpile (SNS) – The SCPHS will request deployment from NYSDOH in the event of activation of a POD. This procedure will be followed:<sup>11</sup>

The SNS must be requested from CDC through the NYSDOH. This may be done through the County Manager's request to the Governor's office if a state of emergency has been declared. The SNS will be delivered to the county.

The County's responsibility will be readiness to receive the shipment, availability of staff resources to operate the distribution process, as well as a comprehensive plan to detail the process, including qualified personnel to serve in the various capacities (clerk, physician, pharmacist, nurse, security, etc.) The distribution sites are different from the storage and reception site, so the County will be responsible for making arrangements for the appropriate vehicles to move the supplies. In this case, security will be required at all sites.

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<sup>9</sup> SCPHS Home Care Emergency Plan, Section VIII, Community Partnerships

<sup>10</sup> SCHEOP, §8-12, Readiness, Mass Care, (B)

<sup>11</sup> SCHEOP, §8-12, SNS (4.4 SNS Activation Plan for Procedure and Policy?)

Upon notification of deploying the SNS, the following local department, division or agencies will be contacted:

SC911	SCEMS
SCDPW	SCMIS
Sullivan County Community College	SCSD

SCPHS has a complete pharmacy list of pharmacies in Sullivan County. Local pharmaceutical resources will be utilized prior to the delivery of the SNS.

Emergency POD's will be set up to Immunize and provide antivirals to health care staff, emergency and first responder personnel as recommended by the Public Health Director in conjunction with the NYSDOH guidelines. The County Health Emergency Preparedness Coordinator will be the liaison to the County EMS Coordinator.

The Public Health Director in conjunction with the County Emergency Manager and EMS Coordinator will appropriate the utilization of county vehicles for transportation of non-critically ill patients.

SCPHS employees will refer to the use of NYSDOH recommended infection control measures where applicable to prevent increased exposure in the health care setting.

**NOTE:** These Basic Infection Control Principles are to be followed for all Pandemic periods. (See attachment 21A – 22B)<sup>12</sup>

#### 4. Public Alert/Notification

Following information provided by the NYSDOH, SCPHS and the SCOEM/HS through the SCPIO will provide the public with consistent education and updates of Health Emergency<sup>13</sup>.

**NOTE:** NYSDOH Regional Epidemiology office will be notified of any suspected or diagnosed Influenza cases within the community that is reported to the SCPHS EPI Office.

#### D. Mass Fatality<sup>14</sup>

1. Mass Mortuary needs will be met after the county reaches its maximum care capacity. This number has been determined by the amount of morgues and funeral homes in Sullivan County. Once the determination has been made that mass mortuary care is needed, the county will set up a temporary morgue and utilize refrigerator trucks from businesses within the county to hold bodies until the DMORT group arrives. At this time the DMORT group will be briefed on the situation and they would make recommendations based upon the event and circumstances. The Coroner and/or designee would pronounce the site, ID if possible, secure any valuables of the deceased, take photos and chart information.
2. Mortuary and Refrigeration Capability: Surge Capacity of the Local Funeral Homes in the county and other local businesses has been determined for the mortuary services and

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<sup>12</sup> NYSDOH Pandemic Influenza Plan, Infection Control, Section 4, III-A, Basic Infection Control Principles

<sup>13</sup> SCHEOP, §8-23, Public Alert/Public Information & SCEMP, §3-05, Instructions for issuing Local Emergency Orders

<sup>14</sup> SCHEOP, §8-12, Readiness, (D)

refrigeration capacity in the event of an emergency. The listing is located in the SCHEOP Contact Roster

3. Mass Fatality Infection Control Guidelines

We anticipate that these guidelines will be provided by NYSDOH and it will be disseminated to the local Health Dept. at that time.

E. General Communication

1. SCPHS has key Administrative and EPI staff that have current HIN accounts and can also access the HERDS Communication Directory
2. Key Administrative staff at local hospitals also have access to the HERDS Communication Directory
3. HPN accounts have been assigned to key community partners (ex: District School Superintendent)<sup>15</sup>

**§8A-08 Infection Control**

SCPHS will provide epidemiological assistance and infection control consultation following NYSDOH Pandemic Influenza guidelines. Reference: Section 4, Infection Control to Non-Article 28 facilities and community settings.

When surveillance procedures determine that there is confirmed or suspected Influenza cases it is to be reported by the EPI staff to the Regional Office of the NYSDOH, Regional Epidemiology Program.

Adherence to Infection Control: will be practiced when performing duties within healthcare settings and/or health related functions by staff following where applicable the:

1. Reference: NYSDOH Pandemic Influenza Plan, Section 4, Infection Control, III-Recommendations for Infection Control in Healthcare settings, A.-Basic Principles, Appendix 4-A, Summary of Infection Control Recommendations for care of patients with Pandemic Influenza. – see attached
2. Reference: NYSDOH Pandemic Influenza Plan Infection Control Section 4 III-A, Basic Infection Control Principles

**§8A-09 Clinical Guidelines**

SCPHS Epidemiology Nurses notify and update the local Healthcare providers with information received from NYSDOH in the event of a disease outbreak via blast faxes.

Local Healthcare providers will be provided consultation, investigation, specimen collection and transfer procedures as indicated by following Section 2, Surveillance and Laboratory Testing, Part B, Surveillance Criteria for LHD in this plan.

SCPHS Epidemiology Nurses and/or staff will conduct contact investigations as indicated by following Section 2, Surveillance and Laboratory Testing, Part B., Contact Investigation in this plan.

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<sup>15</sup> SCHEOP, §8-20, Response and Recovery, Communications, A-D.

## §8A-10 Vaccine Procurement, Distribution and Use

### A. Enhancement of Annual Influenza Vaccine

1. SCPHS conducts multiple community wide Influenza clinics annually.
2. Pneumococcal vaccine is available at all immunization clinics to administer, where applicable.
3. Influenza vaccine is administered to LHD staff annually.
4. At the SCPHS bi-monthly clinics, Influenza vaccine is offered to the attendees through out the entire Influenza season.
5. SCPHS EPI Immunization Coordinator updates local healthcare providers regarding Immunization guidelines annually via mass mailings.
6. Influenza/Pneumococcal information is sent to local healthcare providers by the EPI Department via blast fax as changes warrant it throughout the influenza season.
7. Surveillance is done via blast faxes to primary healthcare providers for increase influenza like symptoms/illnesses. School Nurses are encouraged to report increase absenteeism rates including influenza like symptoms/illnesses. Influenza vaccination clinics will be held if an increase of illness is noted.
8. SCPHS EPI Department outreaches to Special Population Community Groups within the county. Working in conjunction with these groups, influenza vaccination clinics are held to vaccinate that population, ie, migrant workers, chicken farm workers, etc., Group Ex: Hudson River Health Partnership, Latino Services Providers

### B. Priority Groups

1. Priority for influenza vaccination is as follows:
  - a. SCPHS staff that are direct patient care workers and support staff positions essential for Public Health function and continuity of operations.
  - b. First Responders, Emergency Personnel
  - c. Law Enforcement, Public Safety workers
  - d. All other Healthcare workers essential to maintain services ex: Physicians, Pharmacists, Hospital direct patient care workers

### C. Additional Priority Groups

The Vaccine Priority Group Recommendation attachment (Appendix 6-A located in the NYSDOH Pandemic Influenza Plan -see attached) will then be followed after the initial Priority Group. These guidelines are subject to change per CDC modifications, and updates<sup>16</sup>.

### D. Vaccinations

1. Local Health Providers and other stake holders will be notified via blast fax by the Health Emergency Planner of SCPHS plans of mass vaccination clinics (PODS) being held.
2. Non-Licensed Persons – Consultation and approval with NYSDOH and New York State Department of Education will be obtained prior to the utilization of non-licensed persons administering vaccine in the event of a pandemic flu. Once approval is given and guidelines supplied, on time training will be done under the direction and supervision of a Registered Nurse.
3. Vaccine Distribution to the SCPHS to the public will be determined by the NYSDOH<sup>17</sup>.

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<sup>16</sup> NYSDOH Pandemic Influenza Plan, Section 6: Vaccine Procurement, Distribution and Use, III – Prioritization, A. - Priority Groups Vaccine Priority Group Recommendations Appendix 6-A

<sup>17</sup> New York State Pandemic Influenza Plan, Section 6, IV

E. Data Collection during mass vaccination clinics (PODS)

The data collection system provided by the NYSDOH will be followed; see specific references<sup>18</sup>

**§8A-11 Antiviral Medication Procurement, Distribution and Use**

A. Use of Antivirals

The use of Antivirals will be considered for use to contain small clusters of infection as a community-wide measure, such as a small outbreak or in a well- defined setting ie: Nursing home, etc<sup>19</sup>.

Implementation of Treatment, Prophylaxis, and Post-Exposure Protocol (~~PEP~~) will be according to what pandemic phase and type of group is being considered. Refer to: NYSDOH Pandemic Influenza Plan for specific guidelines to follow: Section 7: Antiviral Medication Procurement, Distribution and Use, III – V.

B. Safety of Antiviral Medication

1. Persons that will receive antivirals will be instructed to follow-up with their local health providers if any adverse event occurs.
2. Health care providers will be instructed to notify the SCPHS Health Department of any persons reporting an adverse event to the antiviral medication.
3. The EPI staff will report these notifications of adverse events to the NYSDOH antiviral safety monitoring system that is being currently developed.
4. Active surveillance will be conducted and case investigations will be done at the direction of the Sullivan County Public Health Director and NYSDOH<sup>20</sup>.

**§8A-12 Travel Related Disease Control and Community Prevention**

A. Travel Advisory

In the event to reduce the risk of pandemic influenza Sullivan County residents will be notified of CDC and WHO travel advisories through the Sullivan County EAS at the direction of the SCOEM /HS and the Sullivan County Public Health Director<sup>21</sup>.

B. Isolation and Quarantine Plan

1. SCPHS Isolation and Quarantine Plan will be enforced in the event of suspected increase in Pandemic Influenza as reported by CDC.
2. Case Investigations will be conducted by the EPI Department staff following Surveillance Criteria for LHD, Section 2-B in this plan.
3. Contact Identification and Management references will also be utilized from: NYSDOH Pandemic Influenza Plan Section 8; Appendix 8 A-C.

C. Community Containment will be determined by the SCOEM/HS and as per procedure documented in the SCEMP, Chapter 3 Declaring State of Emergency and Issuing Emergency Orders.

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<sup>18</sup> NYSDOH Pandemic Influenza Plan; Section 6, VI

<sup>19</sup> NYSDOH Pandemic Influenza Plan, Section 7, B. Timing of the use of Antiviral Medication; Section 5: Clinical Guidelines, III, B-5

<sup>20</sup> NYSDOH Pandemic Influenza Plan Section 7, VI-D

<sup>21</sup> SCEMP, Chapter 3

D. Community Support - this area will be planned in the future.

### **§8A-13 Communications**

SCPHS are conducting informational meeting with local businesses, schools, and other public community groups to educate them on Pandemic Influenza.

### **§8A-14 Training and Education**

Key personnel from the SCPHS, Emergency Manager, SCSD, SCDPW, EOC, Special Populations Groups and all other invitees will continue to participate in table top exercises and other collaborative preparations to assess preparedness.

### **§8A-15 Workforce Support**

Sullivan County Community Services Department will be responsible for coordinating and providing mental health during the response to a public health emergency. Additional resources activated will be the Hudson Valley Critical Incident Management Team to provide mental health to 1<sup>st</sup> responders.

Sullivan County BOCES has a Critical Incident Stress Management team that provides mental health support services to local school districts when there is a need. This team would provide coordinated care to school personnel, students and their families if needed, and would be coordinated through Sullivan County EMS.

In the event that need for mental health workforce support exceeds local capacity, the Public Health Director would request assistance for additional mental health resources through Personnel and the county's Employee Assistance Program for workforce support. All requests would be coordinated in consultation with the Sullivan County Emergency Management Services<sup>22</sup>.

Psycho social educational materials that are developed by NYSDOH, State and Federal agencies will be distributed to SCPHS employees and all 1<sup>st</sup> responders as on-time training at the time of the event.

### **§8A-16 Highly Pathogenic H5n1 Avian Influenza (HPAI) in Non Human Animals**

NYSDOH and Federal guideline material on HPAI in animals will be distributed to educate Healthcare Providers and the public when available.

All questions about HPAI in animals will be directed to NYSDOH Zoonoses Department.

### **§8A-17 Public Health Preparedness Informatics**

#### **A. Account Maintenance and Recruitment**

SCPHS maintains a log of active HIN accounts of all staff. A report of active and inactive HIN accounts and user permissions by type is accessed and printed by the BT Coordinator or HIN Coordinator (designated administrative staff) on a quarterly basis. Staff with key roles in public

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<sup>22</sup> SCHEOP, §8-25

health preparedness maintain active commerce accounts and log on the HIN on a regular basis. Staff whose accounts have become inactive are directed to secure a new password and log on to the HIN on a regular basis in order to keep these accounts active in the event of an emergency.

Local response partners in the community have been recruited through the DOC-L process to obtain accounts. Partners with sponsored accounts include Sullivan County BOCES and Cornell Cooperative Extension of Sullivan County.

**B. Training.**

The Public Health Director and Deputy Public Health Director have attended Commerce Strategic Rollout sessions to obtain training on use of the tools for alerting:

1. The use of the persons emergency contact screens in the communications directory for maintaining 24/7 emergency and business contact information.
2. Use of the list tool, for creating predefined contact lists for specific purposes which will help to expedite the alerting process during a pandemic.
3. Use of the notification system for creating open or targeted HAN postings and sending out notifications to specific roles and contact lists.

**C. Completion of Alerting Certification Process:**

SCPHS has completed the certification process for use of the Alert system. The Public Health Director, Deputy Public Health Director, Senior Supervising Public Health Nurse, and Health Emergency planner have all been certified by NYSDOH. This system will be tested a minimum of twice annually, and routinely accessed via receipt and review of Alerts sent by the state, neighboring counties and hospital facilities.

**D. Pre-recorded messages for alert tool have been developed in preparation for health emergencies for SCPHS' health information line- a phone voice message system the public can call into to obtain information on current health issues and alerts. These messages will be used and tailored for the alert tool. We will work with BHNSM to establish pre-recorded messages for use in the voice component of the alert system for Pandemic Influenza notifications.**

**Article III  
Pandemic Alert Period**

**§8A-18 Command and Control**

**A. Evaluate the Level of Preparedness**

The Sullivan County Public Health Emergency Planning Committee (see SCPHS Pandemic Influenza Plan Attachment- 2a, Interpandemic Period For Listing) will convene in the event that a pandemic unfolds. The Pandemic Influenza plan will be evaluated for effectiveness and preparedness and will be modified where applicable.

NOTE: This protocol will be activated depending on the severity of the event<sup>23</sup>.

**§8A- 19 Surveillance and Laboratory Testing**

*See Interpandemic §8A-06*

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<sup>23</sup> SCHEOP, §8-17 & §8-19

**§8A- 20 Healthcare Planning**

*See Interpandemic §8A-07*

**§8A- 21 Infection Control**

*See Interpandemic §8A-08*

**§8A- 22 Clinical Guidelines**

*See Interpandemic §8A-09*

**§8A- 23 Vaccine Procurement, Distribution and Use**

*See Interpandemic §8A-10*

**§8A- 24 Antiviral Procurement, Distribution and Use**

*See Interpandemic §8A-11*

**§8A- 25 Travel Related Disease Control and Community Prevention**

*See Interpandemic §8A-12*

**§8A- 26 Communications**

*See Interpandemic §8A-13*

**§8A- 27 Training and Education**

A. Dissemination of Educational Information on Pandemic Influenza, infection control measures as recommended by NYSDOH will be done through the LHD. This material will be sent to School Districts, local health providers, community organizations and businesses contacts to assist with distribution, via Blast Faxes by the EPI Department.

1. Public Alert/Public Information<sup>24</sup>

Following information provided by the NYSDOH, SCPHS, and the SCOEM/HS through the SCPIO will provide the public with consistent education and updates of the Health Emergency.

2. Travel Advisory Education

a. See Sullivan County Pandemic Influenza Plan, §8A-12, Interpandemic Period.

b. Instruction will be given to all Healthcare providers by the Sullivan County EPI Dept. to report any possible cases of novel virus identified.

NOTE: Further dissemination of information will be at the discretion of NYSDOH, Public Health Commissioner, PH Director and SCOEM/HS depending on severity of Health Emergency.

B. Public Health Provider Readiness<sup>25</sup>

The general responsibilities of Local, Regional, State and Federal sectors and their roles in a Public Health response are listed in the above reference.

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<sup>24</sup> SCHEOP, §8-23 & SCEMP, §1-22, Managing Emergency Response

<sup>25</sup> SCHEOP, §8-08, Operations, A-C

C. Notification of Educational Trainings

Public Health staff and Local Healthcare providers will be notified by the Health Emergency Planner via mass mailings, mass e-mail and blast faxes of any training to participate in for educational updates.

**§8A-28 Workforce Support**

*See Interpandemic §8A-15*

**§8A-29 Highly Pathogenic H5N1 Avian Influenza In Non-Human Animal**

*See Interpandemic §8A-16*

**§8A-30 Public Health Preparedness Informatics**

*See Interpandemic §8A-17*

**Article IV  
Pandemic Period**

**§8A-31 Command and Control**

In a moderate or large scale event (Level 2 or Level 3) the EOC will be activated and all responding agency representatives will convene at the designated area.

Daily briefings of updates and activities will be at the discretion of the SCOEM/HS and Public Health Director and transmitted to all key partners. These updates as appropriate will be disseminated at the EOC and through the EAS and SCPIO when applicable<sup>26</sup>.

The NYSDOH Electronic Commerce Notification and HAN will be utilized by the approved PHS staff for alerts to all key partners.

Staffing needs will be assessed at the activation of the EOC. Available staff will be reported to the Public Health Director by the Sr. Supervising Public Health Nurse and/or designee.

A. Interagency Coordination

The NYSDOH will be contacted for assistance as soon as the event is recognized. They will advise and consult by either coming on site to the EOC or by telephone or any other available form of communication (radio, internet, satellite phone), if needed. The SNS would be activated through a request to the state from the appropriate Sullivan County official. Also expected to respond will be local EMS workers, hospital personnel, American Red Cross, local law enforcement, trained volunteers, and others as determined. The NIIMS/ICS structure will be used to coordinate agencies and efforts.

Preparedness partners will be notified for coordination of services, as appropriate<sup>27</sup>.

B. Mass Care shelters may need to be set up in the event of a large scale emergency necessitating the displacement of large numbers of individuals. In such a case, healthcare volunteers would need to be

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<sup>26</sup> SCHEOP, §8-18 Emergency Operations, & Sullivan County Pandemic Influenza Plan, §8A-05, Command and Control

<sup>27</sup> SCHEOP, §8-19

assigned to each mass care facility to triage people who may need basic onsite medical care, or transportation to an appropriate facility for higher level medical care. SCPHS will work with the American Red Cross and the SCOEM/HS to prevent injury and illness among displaced persons, including the assurance of qualified health workers, credentialing, and necessary medical documentation procedures.

In the event that large numbers of people needed to receive vaccinations or prophylaxis within a certain timeframe following an outbreak of disease or bioterrorism related event, SCPHS will identify facilities at which operations can be set up for mass care. This will be done in conjunction with the SCOEM/HS and the County Manager or designee.

Utilization of the electronic resource tracking system (NYSDOH Health Emergency Related Data System) will play a major role in assisting the expedient assessment of local and regional hospital resources, beds, and medical personnel and needed support staff, and/or the need for diversion of patients to other facilities.

C. Points of Distribution (POD)

In the event that large numbers of people need to receive vaccinations or prophylaxis within a certain timeframe following an outbreak of disease or bioterrorism related event. SCPHS has identified facilities at which operations can be set up for points of distribution. Refer to the HIN or Sullivan County contact roster for POD Sites listing. This will be done in conjunction with the SCOEM/HS and County Manager. If the total county population had to be prophylaxed, additional personnel and resources would be called upon and arranged through the SEMO, NYSDOH, and neighboring county public health services.

In the event that both SCPHS and the American Red Cross need the same facilities for mass care and/or vaccine and distribution of medications, coordination efforts will be managed through the SCOEM/HS.

D. Mass Care of Animals will be handled by local veterinarians if possible. In the event that county resources approach capacity, a request for the deployment of a Veterinary Medical Assistance Team (VMAT) will be requested through the Director of SCOEM/HS.

E. Mass Mortuary needs will be met after the county reaches its maximum care capacity. This number has been determined by the amount of morgues and funeral homes in Sullivan County. Once the determination has been made that mass mortuary care is needed, the county will set up a temporary morgue and utilize refrigerator trucks from businesses within the county to hold bodies until the DMORT group arrives. At this time the DMORT group will be briefed on the situation and they would make recommendations based upon the event and circumstances. The Coroner and/or designee would pronounce the site, ID if possible, secure any valuables of the deceased, take photos and chart information<sup>28</sup>.

F. Public Warning and Emergency Information<sup>29</sup>

Activation of the Public Warning Systems in Level 1, 2, and 3 requires strict coordination with the EOC.

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<sup>28</sup> SCHEOP, §8-12, Mass Care, A-D

<sup>29</sup> SCEMP, §1-22, Managing Emergency Response, E

NOTE: For Protocol – Refer to the above reference.

G. Expenditures of Pandemic Response

All expenditures will be monitored and documented by the SCPHS Fiscal Officer conferred with the Public Health Director and approved after consultation of the County Manager.

**§8A-32 Surveillance and Laboratory Testing**

Healthcare Providers are to be updated via Blast Faxes sent by the EPI staff of updates on the Pandemic Phase.

- A. Health Surveillance and Epidemiological Investigations & Surveillance<sup>30</sup> and Reporting  
Daily reports ongoing from both CRMC and SC911 assist in early recognition of potential large-scale health emergencies. The SCPHS has nurses that are responsible for coordinating health surveillance and epidemiology. The on-call supervising nurse and EPI Nurse can be reached 24 hours a day. This information would be disseminated to the appropriate party depending on the incident. The local and area hospitals and SC911 would be called in any situation.

There are many other important surveillance partners in the community who may suspect or recognize the early signs of a pandemic or biologic event before it is known to local public health authorities at SCPHS, such as the EMS, Law Enforcement, Fire Department, or Veterinarians. CRMC, the only local hospital system (and their lab) has the criteria and 24 hour contact information for reporting to SCPHS.

The SCPHS would utilize epidemiologic and surveillance tools developed by NYSDOH in order to be consistent with the rest of the state. Such tools would include case investigation forms; contact tracing forms, case definitions and other necessary forms and investigation tools consistent with CDC forms and standards for data and sample collection.

B. Investigation and Testing of Pandemic Influenza Cases

Investigation of Pandemic Influenza cases will be done by EPI staff following the NYSDOH Pandemic Influenza Plan Guidelines<sup>31</sup>.

**§8A-33 Health Care Planning**

A. Surge

NYSDOH and the local Health Department Key staff will collaborate with the Health Care Facilities and determine their surge capacity and plans to refer the public for further triage.

1. Mass Care

Mass Care shelters may need to be set up in the event of a large scale emergency necessitating the displacement of large numbers of individuals. In such a case, health care volunteers would need to be assigned to each mass care facility to triage people who may need basic onsite medical care, or transportation to an appropriate facility for higher level medical care. SCPHS will work with the American Red Cross and the SCOEM/HS to prevent injury and illness among displaced persons, including the assurance of qualified health workers, credentialing, and necessary medical documentation procedures.

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<sup>30</sup> SCHEOP, §8-09

<sup>31</sup> SCPHS Pandemic Influenza Plan §8A-06

In the event that large numbers of people needed to receive vaccinations or prophylaxis within a certain timeframe following an outbreak of disease or bioterrorism related event, SCPHS will identify facilities at which operations can be set up for mass care. This will be done in conjunction with the SCOEM/HS and the County Manager for designee.

Utilization of the electronic resource tracking system (NYSDOH HERDS) will play a major role in assisting the expedient assessment of local and regional hospital resources, beds, and medical personnel and needed support staff, and/or the need for diversion of patients to other facilities<sup>32</sup>.

2. Deployment of Volunteers

The Public Health Director in agreement with the SCOEM/HS will approve the activation of the SCPHRT in the event of a pandemic event.

B. HERDS/Incident Command

The HERDS concept of operations will be followed upon release from the NYSDOH in the pandemic event.

C. Emergency Medical Services

1. Emergency POD's will be setup to Immunize and provide anti-viral to Healthcare staff (Direct and ancillary), emergency and first responder personnel as recommended by the Public Health Director in conjunction with the NYSDOH Guidelines.
2. Transportation of non-critically ill patients to and between facilities will be a collaborative effort of the SCOEM/HS, County EMS Coordinator, American Red Cross, and DOH. Any gaps in the EMS service and their availability to transport those patients will be reported by the county EMS Coordinator to the SCOEM/HS.

D. Surveillance and Laboratory Testing – Healthcare Providers

1. HPN Updates: Health care providers will be directed by LHD staff to access the HPN to be current of NYSDOH updates on case definitions, screening, laboratory testing, and treatment.
2. Healthcare Providers Reporting and Assessing Pandemic Influenza Cases  
LHD staff will instruct the healthcare providers to follow the NYSDOH Pandemic Influenza Plan protocol below for reporting and assessing Pandemic Influenza cases<sup>33</sup>.

E. Criteria for Assessing and Reporting Possible Pandemic Influenza Cases

NYSDOH will develop and distribute to healthcare providers the current CDC and NYSDOH recommendations for enhanced surveillance, case reporting, and laboratory testing. The criteria listed below are based on the current information known about the novel H5N1 influenza virus. These criteria may need to be modified throughout the pandemic phases according to the circulating virus and the known epidemiology of the infection at that time. It is anticipated that individual case reporting will not be feasible once pandemic influenza has been confirmed in New York State. Surveillance during the pandemic period will focus on data collection mechanisms to assess morbidity and mortality. Select individual case investigations may need to be conducted to guide prevention and control recommendations.

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<sup>32</sup> SCHEOP, §8-12

<sup>33</sup> NYSDOH Pandemic Influenza Plan Section 2, Surveillance and Lab Testing, C. pg(s) 2-9 – 2-11

F. Medical provider activities:

Providers should question all patients who present to health care settings with fever and respiratory symptoms regarding possible travel and occupational exposure to influenza A (H5N1) or other novel influenza virus (see §8A-35, Clinical Guidelines).

1. Criteria for Assessing a Possible Novel Influenza Case

a. Clinical Criteria:

- 1) Severe illness: Hospitalized with severe illness, including pneumonia or ARDS
- 2) Mild illness:
  - a) Fever (temperature  $> 38^{\circ}\text{C}$  or  $100.4^{\circ}\text{F}$ ) and
  - b) One or more of the following: sore throat, cough, or dyspnea

b. Epidemiologic Criteria:

- 1) Travel Risk (within 10 days of symptom onset)
  - a) Visited or lived in an area affected by highly pathogenic avian influenza. A outbreaks in domestic poultry or where a human case of novel influenza has been confirmed.
  - b) Had direct contact with poultry, in an area affected by highly pathogenic avian influenza A. Direct contact with poultry is defined as touching well, sick, or dead birds, poultry feces or contaminated surfaces, or consuming uncooked poultry.
  - c) Had close contact (within 3 feet) with a person with confirmed or suspected novel influenza.
- 2) Occupational Risk (within 10 days of symptom onset)
  - a) Work on a farm or in a live poultry market or process or handle poultry infected with known or suspected avian influenza viruses.
  - b) Work in a laboratory that contains live animal, bird, or novel human influenza viruses.
  - c) Healthcare worker in direct contact with suspected or confirmed novel influenza case.

G. Criteria for Reporting:

1. During the Interpandemic and Pandemic Alert Periods and *No Evidence of HPAI or Other Novel Influenza Virus in NYS*: Patients meeting the following clinical and epidemiologic criteria should be reported immediately to the local health department:
  - a. Severe illness AND, within 10 days of onset, either travel to an affected area (even if no direct contact with poultry or suspected or confirmed human cases) or occupational risk.
  - b. Mild illness AND, within 10 days of onset, one or more of the following: direct contact with ill poultry in an affected area, close contact with a suspected or confirmed human case of novel influenza, or occupational risk.
2. During the Interpandemic and Pandemic Alert Periods and *Documented HPAI or Other Novel Influenza Virus in non-human animals in NYS*: Patients meeting the following clinical and epidemiologic criteria should be reported immediately to the local health department:
  - a. Severe or mild illness AND
  - b. Reside in or travel within 10 days of onset to a locally affected area AND
  - c. Direct contact with ill poultry or other implicated animal in an affected area OR
    - 1) close contact with a suspected or confirmed human case of novel influenza
    - 2) OR occupational risk.
3. During the Pandemic Period and *No Documented Pandemic Influenza Virus in NYS*: Patients meeting the following clinical and epidemiologic criteria should be reported immediately to the local health department:
  - a. Severe or mild illness AND
  - b. Within 10 days of onset travel to a locally affected area (even if no direct contact with poultry or suspect or confirmed human cases) OR occupational risk.

Once an influenza pandemic has begun, it is expected that it would only be a brief period of time before the virus is identified in NYS. Therefore it is anticipated that individual case reporting of suspect cases during the pandemic will be brief.

4. During the Pandemic Period *and Documented Pandemic Influenza Virus in NYS*: Patients meeting the mild illness clinical criteria will be classified as a suspected pandemic influenza case. However, individual case reporting will likely be suspended. The local and/or state health department will investigate any unusual cases reported by medical providers. In NYC, web-based reporting will be available for provider reporting. Outside NYC, hospital infection control practitioners are able to report individual cases of influenza through the NYSDOH CDESS.

#### H. Reporting

Healthcare providers should immediately report any patient meeting the surveillance and reporting criteria for novel influenza based on the current pandemic period to the LHD.

If unable to reach the LHD, contact the NYSDOH: During business hours contact the appropriate Regional Epidemiologist. If unavailable, contact the Bureau of Communicable Disease Control at (518) 473-4436. Outside of business hours, contact the NYSDOH After-Hours Duty Officer at 1-866-881-2809.

In New York City, contact the New York City Department of Health and Mental Hygiene through the Provider Access Line at 1-866-NYC-DOH1 (1-866-692-3641) during business hours. At all other times, call the Poison Control Center at 1-212-764-7667.

The NYSDOH Pandemic Influenza Case Report Form (Appendix 2-B) or other form being used at that time of the report should be completed immediately and forwarded to the LHD.

1. Specimen Collection and Shipping by Healthcare Providers will be done in consultation with the LHD. Protocol for Specimen Collection/Shipping refer to NYSDOH Pandemic Influenza Plan; Section 2. Surveillance and Laboratory Testing, IV, pgs. 2-13 – 2-18.

#### I. Mass Fatality

Expectations of Mass Fatality will be discussed with the key partners, i.e. SCOEM/HS, Public Health Director, Funeral Directors, and CRMC Emergency Planner.

NOTE: Mass Mortuary and Refrigeration reference below will be followed<sup>34</sup>.

SCHEOP Contact Roster (\*see SCPHNS Pandemic Influenza Plan, Interpandemic Section # 3-D.)

Designated EPI staff will monitor HERDS for capacity availability of the local Hospitals, Skilled Nursing Facilities, etc. (Article 28 Facilities.)

#### J. Communication

The EPI staff and Health Emergency Planner will provide NYSDOH updates to Healthcare Providers utilizing the HIN, HPN, HERDS, where applicable.

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<sup>34</sup> SCHEOP, §8-12, D

## **§8A-34 Infection Control**

### **A. NYSDOH Health Alert Network (HAN)**

The EPI staff will monitor the HAN 7 days a week on a regular basis for new updates and guidance, in the event of a pandemic.

### **B. Dissemination of HAN Alerts to Healthcare Providers/Community**

Healthcare Providers will be sent updates as appropriate by the EPI staff via Blast Faxes

The SCPIO under direction of the SCOEM/HS and Public Health Director will inform the community applicable to the public NYSDOH updates.

### **C. Initiation of Conservative Infection Control Measures**

1. Healthcare facilities will be instructed to initiate the Basic Infection Control Principles when pandemic portions reach geographical borders by Blast Faxes.

Guidelines to follow: NYSDOH Pandemic Influenza Plan Section 4, Infection Control, III, A, See Attachment A.

### **D. Local Health Department EPI staff will consult with the NYSDOH regarding reports of any complex situations effecting infection control practices. NYSDOH recommendations to maintain infection control standards will be disseminated to the facilities.**

## **§8A-35 Vaccine Procurement, Distribution and Use**

### **A. Pre-Pandemic Phase**

1. Community wide Influenza Immunization Clinics will continue to be scheduled by SCPHS Epidemiology/Immunization Coordinator. Pneumococcal vaccine will be available for appropriate recipients at these clinics.
  - a. The EPI Department Staff/Immunization Coordinator will continue to collaborate with Health Care Providers to distribute routine Influenza vaccine as it is available.
2. Priority Groups
  - a. Priority Groups as listed in the SCPHS Pandemic Influenza Plan – located in Section 6-B; 6-C will be vaccinated. NYSDOH will be contacted if additional vaccine is needed.
  - b. Distribution, delivery and tracking of vaccine will be done by the Epidemiology staff and Health Emergency Planner.
3. Healthcare Providers and Healthcare Facility key staff will be informed of the projected time frame of vaccine availability By contacting the Agency’s Public Health Information Line (845-292-5364/292-0100 X2297), the SC PIO doing press releases and/or Blast Faxes being sent out.
4. Priority group designation changes as determined by NYSDOH are to be transmitted to all Healthcare providers via Blast Faxes and/or letters by the EPI Dept. staff.
5. The SCOEM/HS Director or designee will be responsible for the notification to Department Heads of Sullivan County Healthcare workers, 1<sup>st</sup> Responders, Law Enforcement, Public Safety workers and all others essential to maintaining county continuity of operations.
6. Pandemic Phase – Vaccine Availability
  - a. In early stages of vaccine availability, SCPHS will coordinate with pre-designated partners (ex: CRMC, Community Health Centers, etc.) to ensure distribution to selected priority groups, Refer to “PODS” in Emergency Plan.

- b. As more vaccine is manufactured and available, SCPHS will inform and collaborate with the wider Healthcare Provider Community to facilitate widespread distribution of vaccine. Communication will continue via already established methods previously identified in plan. There will be ongoing communication with NYSDOH on these areas, also.

NOTE: Refer to the operational guidance (Appendix 6-C) to request, receive, store, ship and the distribution of Pandemic Influenza vaccine and antivirals medications, necessitating the use of the SNS. See Attached: Appendix 6-C (NYSDOH Pandemic Influenza Plan, Section 6.

## 7. Tracking of Vaccine

Tracking will be maintained throughout these phases using software developed by NYSDOH, or if not available, by a created access database for this purpose.

## 8. Vaccine Safety Monitoring

### a. Adverse Event Reporting/Follow-up:

- 1) The Immunization Coordinator or designee will follow up on any reports of adverse events, (side effects) to the Influenza vaccine following the NYSDOH Guidelines, and utilizing the (VAERS) – Vaccine Adverse Event Reporting System Form(see attached)
- 2) The person with the adverse event will be referred to their medical provider or go to the local Hospital Emergency Room for medical evaluation.
- 3) In the event that the person was vaccinated at a POD site and had a reaction they would be evaluated by the Physician on site.
- 4) The NYSDOH IND/EUA protocols will be followed when developed by NYSDOH.
- 5) Healthcare Providers/Healthcare Facilities will be directed to report any adverse events from vaccine provided by the LHD to the Immunization Coordinator/or designee.
- 6) As provided by NYSDOH to the Local Health Departments the Healthcare Providers/Healthcare Facilities will be updated on vaccine adverse event profiles.

### b. Data Collection

- 1) The data collection system provided by the NYSDOH will be activated and followed see below:
  - a) Section 6: Vaccine Procurement, Distribution, and Use VI. Data Collection<sup>35</sup>

To ensure optimal use of a new pandemic influenza vaccine, data will need to be collected on vaccine effectiveness, vaccine supply and distribution, vaccine coverage, and vaccine safety. NYSDOH will provide a statewide data collection system to collect the following:

    - (1) Number of vaccine doses administered (first and second doses)
    - (2) Number of doses available
    - (3) Where doses were distributed
    - (4) Date administered
    - (5) Age of recipient
    - (6) Priority group of recipient
    - (7) County of recipient
    - (8) Zip code of recipient
    - (9) Adverse events

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<sup>35</sup> NYSDOH Pandemic Influenza Plan Section 6, VI.

## B. Antiviral Procurement, Distribution and Use

Use of Antivirals – NOTE: Refer to Appendix 6C (NYSDOH Pandemic Influenza Plan Section 6) for information using the operational guidance to request, receive, store, ship and distribute Pandemic Influenza Antiviral medication necessitating the use of the SNS.

1. No Detection or Sporadic Cases of Pandemic Influenza in United States
  - a. Antivirals will continue to be used to treat persons that are diagnosed with Influenza and prophylactically for contacts as determined by their providers and Healthcare Facility.
  - b. Public Health guidance on antiviral use as developed by NYSDOH will be sent to Healthcare providers via Blast Faxes and/or letters by the LHD staff.
2. Detection of Pandemic Influenza cases in the U.S.

SCPHS will coordinate with pre-designated partners (ex: CRMC, Community Health Centers, Skilled Nursing Facilities, etc) (Under NYSDOH and CDC guidelines) to ensure the distribution and administration of antivirals, to selected priority groups and contain outbreaks in contained settings.

  - a. Priority Groups

The selected priority group to receive antiviral medication is located in the SCPHS Pandemic Influenza Plan, Section 6B.
  - b. Additional Priority Groups

The established guidelines of priority groups See Attached – Appendix 7-C (NYSDOH Pandemic Influenza Plan Section 7) developed by the National Vaccine Advisory Committee (NVAC), CDC, Department of Health and Human Services (DHHS) and Advisory Committee on Immunization Practice (ACIP) will be followed.

NOTE: These guidelines are subject to change when specific virus strain is known. At that point NYSDOH, CDC, Healthcare Organizations and LHD's will determine Priority Groups to receive the antivirals. The priority list will then be the state wide guidance<sup>36</sup>.

- c. Mass distribution of antivirals, will be done in collaboration with the wider Healthcare Provider Community. (Refer to POD's in SC-HEOP)
- d. LHD staff will be directed to trace and prophylax close contacts of confirmed cases if authorized to do so by NYSDOH and CDC.

## C. Widespread Transmission Confirmation of Pandemic Influenza in the U.S.

1. Blast faxing and the Public Health Information Line will be used to inform the Healthcare Providers of changes in priority group guidelines, viral susceptibility, resistance and antiviral/vaccine supply per notification by the NYSDOH/CDC to the LHD.
2. Distribution and Administration to confirmed priority groups and Mass Clinics will be done by collaborating with our pre-designated Healthcare Partners and activation of the POD's (Refer to "POD's" in SCHEOP).

NOTE: For recommended daily dosage of antiviral medication refer to Appendix 7B; NYSDOH Pandemic Influenza Plan; Section 7. – see attachment

3. Vaccine availability notification and guidelines
  - a. Decreasing the use of Antiviral Medication

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<sup>36</sup> NYSDOH Pandemic Influenza Plan Section 7; Overview

- 1) The Healthcare Community will be notified via blast faxes by EPI staff, to decrease the use of antiviral medication following the NYSDOH Guidelines when vaccine becomes available.
- 2) The LHD will follow NYSDOH policies (when developed) and inform Healthcare providers of the NYSDOH recommendations to follow the specific utilization of the vaccine and antiviral medication.

#### D. SNS and POD Plan

1. Refer to: SCPHS Strategic National Stockpile receiving annex for request, receipt and distribution of Influenza Vaccine and Antiviral Medication.
2. Refer to: SCPHS POD (Point of Distribution) Annex

#### E. Antiviral Medication Safety

1. Antiviral Adverse Events  
Reports to the Local Health Dept. staff of persons having an adverse event will be referred to their own Healthcare Provider or Emergency Room for medical evaluation.
2. Non-insured persons will be referred to the Local Community Health Center(s) (ex: Hudson River Healthcare) for medical evaluation.
3. Healthcare Providers that require medical advice and support are to be directed to consult with the NYSDOH Physicians or the Medical Regional Resource Center in their area.
4. Active surveillance and investigation of antiviral adverse events in conjunction with NYSDOH will be done by LHD staff when the protocol is developed.
5. Healthcare Providers will be directed to report serious adverse events by using the Med Watch Monitoring Program. They will be encouraged to download Med Watch forms for distribution to patients<sup>37</sup>. (Available at: <http://www.fda.gov/medwatch>)

#### F. Data Collection

The NYSDOH Data Collection System provided will be followed: See example below

#### Section 7: Antiviral Procurement, Distribution and Use, VII. Data Collection<sup>38</sup>

The NYSDOH will develop a strategy for monitoring antiviral drug distribution by public health. Data elements that may be collected include:

1. The distribution of state or federal supplies of antiviral drugs:
  - a. Where antivirals are shipped;
  - b. Who has received them;
  - c. Type of administration: treatment, prophylaxis, PEP;
  - d. Dose and number of doses administered by person and in the aggregate;
  - e. Relevant medical history.
2. Adverse events following administration of antivirals.
3. Priority groups reached.
4. Rates of severe influenza illness and death among those treated and untreated.

### **§8A-36 Travel Related Disease and Control and Community Prevention**

*See Interpandemic §8A-12*

<sup>37</sup> NYSDOH Pandemic Influenza Plan, Section 7, VI-D

<sup>38</sup> NYSDOH Pandemic Influenza Plan, Section 7, VI-D

## **§8A-37 Communications**

- A. The Healthcare Providers will be instructed to channel into the HIN; HPN & HERDS to obtain regular updates by NYSDOH.
- B. The EPI staff will also provide updates to the Healthcare Providers when necessary, and to the Healthcare Community that does not have access via Blast Faxes.
- C. Public Alerts will be coordinated with the SCOEM/HS and the SCPIO.
- D. Information and warnings to the public that are a threatening condition can be accomplished by following the resources in the SCEMP, Chapter 3 Declaring State of Emergency & Issuing Emergency Orders.
- E. An Incident Command will be established in coordination with the Public Health Director, SCOEM/HS, and SCPIO to aid in dealing with the media and communication to the Public.
- F. Influenza Disease Prevention strategies will be given to the public through the JIC office.

NOTE: The NYSDOH Message Maps can be used as guidance for question and answers to address the public, (see attached Appendix 9-C). This guidance is subject to change<sup>39</sup>.

## **§8A-38 Training and Education**

SCPHS will coordinate with their pre-designated preparedness partners to do training and educational updates. This will be done by conducting Town Hall Meetings, initiating content-specific training sessions with partners and distributing materials to increase their knowledge base.

## **§8A-39 Workforce Support**

- A. Psychosocial Support Services
  - 1. The Sullivan County Community Services Department will be responsible for coordinating and providing mental health care during and post event to the public. In the event of an emergency, the Hudson Valley Critical Incident Management Team will be activated to provide care for the mental health of the first responders to an emergency. The BOCES CISM team will respond to mental health services needed during and following emergencies involving students and school personnel<sup>40</sup>.
  - 2. The LHD will collaborate with the SCOEM/HS, NYSDOH and Office for Mental Health for additional mental health resources.
  - 3. Informational preparation materials developed by NYSDOH will be distributed to the workforce families by their department heads/designee, as supplied to the LHD by NYSDOH
  - 4. Training for agency staff will be conducted in conjunction with Mental Health Disaster Partners. Utilization of the Psychological First Aid curriculum (when provided by NYSDOH) will be referred to in training staff to assist with identifying individuals in psychological distress, intervention and referral to appropriate Mental Health Resources.

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<sup>39</sup> NYSDOH Pandemic Influenza Plan Section 9

<sup>40</sup> SCHEOP, §8-25

B. Information to SC Employees/Emergency Responders

1. The SC Pandemic Flu Work Policy (Draft attached and awaiting approval by the direction of SC Personnel and the SC County Manager) will be followed by Sullivan County Employees.
2. “Just In-Time Training”, for essential tasks is to be provided to support staff and Emergency Responders, as needed.
3. All information will be disseminated to the responders through coordination with the SCOEM/HS, SCPHRT and their Department Heads/designee, regarding:
  - a. Vaccine Availability
    - 1) PPE
    - 2) Infection Control Practices
    - 3) Antiviral Medication
    - 4) Quarantine & Isolation Plan
    - 5) Mental Health Resources

**§8A-40 Highly Pathogenic – H5N1 Avian Influenza in Non-Human Animals**

Enhancement of education to Healthcare Providers will be followed: Refer to: Interpandemic Period – SCPHS Pandemic Influenza Plan §8A-42.

**§8A-41 Public Health Preparedness Informatics**

*See Interpandemic §8A-17*

**Appendix 2A**  
**Novel Influenza Surveillance and Reporting Criteria\***

A. Surveillance Criteria:

1. Clinical Criteria:

- a. Severe illness: Hospitalized with severe ILI, including pneumonia or ARDS
- b. Mild illness:
  - 1) Fever (temperature > 38° C or 100.4° F) and
  - 2) One or more of the following: sore throat, cough, or dyspnea

2. Epidemiologic Criteria:

- a. Travel Risk (within 10 days of symptom onset)
  - 1) Visited or lived in an area affected by highly pathogenic avian influenza A outbreaks in domestic poultry or where a human case of novel influenza has been confirmed.
  - 2) Had direct contact with poultry, in an area affected by highly pathogenic avian influenza A. Direct contact with poultry is defined as touching well, sick, or dead birds, poultry feces or contaminated surfaces, or consuming uncooked poultry.
  - 3) Had close contact (within 3 feet) with a person with confirmed or suspected novel influenza.
- b. Occupational Risk (within 10 days of symptom onset)
  - 1) Work on a farm or in a live poultry market or process or handle poultry infected with known or suspected avian influenza viruses.
  - 2) Work in a laboratory that contains live animal, bird or novel human influenza viruses.
  - 3) Healthcare worker in direct contact with suspected or confirmed novel influenza case.

B. During the Interpandemic and Pandemic Alert Periods and *No Evidence of HPAI or Other Novel Influenza Virus in NYS*: Patients meeting the following clinical and epidemiologic criteria should be reported immediately to the local health department:

1. Severe illness AND, within 10 days of onset, either: travel to an affected area (even if no direct contact with poultry or suspect or confirmed human cases) or occupational risk.
2. Mild illness AND, and within 10 days of onset, one of the following: direct contact with ill poultry in an affected area, close contact with a suspected or confirmed human case of novel influenza, or occupational risk.

C. During the Interpandemic and Pandemic Alert Periods and *Documented HPAI or Other Novel Influenza Virus in non-human animals in NYS*: Patients meeting the following clinical and epidemiologic criteria should be reported immediately to the local health department:

1. Severe or mild illness AND
2. Reside in or travel within 10 days of onset to a locally affected area AND
3. Direct contact with ill poultry or other implicated animal in an affected area OR close contact with a suspected or confirmed human case of novel influenza OR occupational risk.

D. During the Pandemic Period and *No Documented Pandemic Influenza Virus in NYS*: Patients meeting the following clinical and epidemiologic criteria should be reported immediately to the local health department:

1. Severe or mild illness AND
2. Within 10 days of onset: travel to a locally affected area (even if no direct contact with poultry or suspect or confirmed human cases) OR occupational risk.

Once an influenza pandemic has begun, it is expected that it would only be a brief period of time before the virus is identified in NYS. Therefore it is anticipated that individual case reporting of suspect cases during the pandemic will be brief.

E. During the Pandemic Period *and Documented Pandemic Influenza Virus in NYS*:

Patients meeting the mild illness clinical criteria will be classified as a suspected pandemic influenza case. However, individual case reporting will likely be suspended. The local and/or state health department will investigate any unusual cases reported by medical providers. In NYC, web-based reporting will be available for provider reporting. Outside NYC, hospital infection control practitioners are able to report individual cases of influenza through the DOH CDESS.

F. Reporting Requirements:

Medical providers identifying patients meeting the above surveillance criteria should:

1. Immediately report any suspect novel influenza cases to the LHD. If unable to reach the LHD, contact DOH:
2. During business hours contact the appropriate Regional Epidemiologist. If unavailable, contact the Bureau of Communicable Disease Control at (518) 473- 4436.
3. Outside of business hours, contact the NYSDOH After-Hours Duty Officer at 1-866-881-2809<sup>41</sup>.

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<sup>41</sup> NYSDOH Pandemic FLU Plan; Surveillance and Laboratory Testing, Section 2

## Appendix 2-C

### Diagnostic Laboratory Testing for Pandemic Influenza

Collect one specimen set for submission to the Wadsworth Center for molecular testing. The specimen set should consist of one nasopharyngeal swab, aspirate or wash and one oropharyngeal (throat) swab. **Use only Dacron or rayon swabs with a plastic shaft for oropharyngeal swab, and fine-tip flexible metal shaft swab for nasopharyngeal swab. Do not use calcium alginate or wooden-shafted swabs. Place both swabs in the same sterile vial containing 2ml of viral transport medium. You must keep samples cold (4°C) after collection.**

#### Collection Guidelines:

- A. Nasopharyngeal swab: Use a swab with a fine, flexible metal shaft and Dacron or rayon tip. Insert swab into posterior nasopharynx. Rub swab against mucosal surface and leave in place for 5 seconds to absorb secretions. Collection of specimens from both nostrils increases amount of material available for analysis. Place both swabs in a vial of viral transport medium. Use scissors to cut the shaft so top of vial can be screwed on tightly.
- B. Nasopharyngeal aspirate: Requires source of suction (syringe, vacuum pump, or wall suction), specimen trap with two outlets, and catheter (no. 6 to 14 depending on size of patient). Without applying suction, insert catheter through nose into posterior nasopharynx (approximately the distance from tip of the nose to the external opening of the ear when measured in a straight line). Apply gentle suction, leaving catheter in place for a few seconds, then withdraw slowly. Suction contents of a vial of viral transport medium or non-bacteriostatic saline through catheter tubing to assist in moving material from tubing into trap and to add viral transport media to specimen. Transfer specimen to a screw cap tube for transport to laboratory.
- C. Nasopharyngeal wash: Use rubber bulb (1-2oz for infants) or syringe to instill 3-5 ml of non-bacteriostatic saline into one nostril while occluding the other. If patient is able to co-operate, instruct them to close glottis by making a humming sound with mouth open. If a rubber bulb is used, release pressure on bulb to allow saline and mucus to enter bulb. Remove from nose and squeeze into vial of transport media. If syringe is used, apply suction to syringe to recover saline and nasal secretions. Alternately, hold sterile container such as urine cup under patient's nose and ask patient to expel material into it. In either case, add recovered saline-nasal secretions to a vial of viral transport media.
- D. Oropharyngeal swab: Use only sterile Dacron or rayon swabs with plastic shafts, swab both posterior and tonsillar areas, avoiding the tongue. Place swab in a vial of viral transport medium and break shaft.
- E. While it appears that lower respiratory tract secretions may have a higher viral load than upper respiratory secretions in patients infected with the avian influenza virus (H5N1) or other novel viruses, collecting these samples may present a risk to health care providers. **If appropriate personal protective equipment is not available, lower respiratory tract secretions should NOT be collected and sample collection should be restricted to nasopharyngeal and oropharyngeal specimens collected as above.** Each sample should consist of one nasopharyngeal swab, wash or aspirate and one oropharyngeal swab contained in one sterile vial of at least 2ml of viral transport medium.

- F. Obtain a blood specimen (not anti-coagulated) from the suspect case and submit the serum, not the blood sample, along with the respiratory samples. In addition to the patient identifier, label the serum with the date and time of collection. Serum samples will be stored until appropriate reagents become available.
- G. A rapid influenza antigen detection test may be performed on the nasopharyngeal/oropharyngeal sample using standard BSL2 work practices in a Class II biological safety cabinet. Regardless of the result, specimens should still be referred to the Wadsworth Center for further testing.
- H. Submit a completed Virus Reference and Surveillance Laboratory patient history form (Appendix 2-D) with the specimens. The form is also available on the HPN and HIN at: <https://commerce.health.state.ny.us/hpn/hanweb/flu/virusurvrefhistoryform.pdf>
- I. Obtain a clotted blood specimen from the suspect case, separate serum by centrifugation, and submit the serum, not the blood sample, along with the respiratory samples. In addition to the patient identifier, label the serum tube with the date and time of collection. Serum samples will be stored for serologic testing when appropriate reagents become available.
- J. Viral culture should not be performed on respiratory specimens from patients who meet the surveillance criteria as described in the advisory update. Highly pathogenic avian influenza A (H5N1) must only be cultured under Biosafety Level (BSL) 3+ laboratory conditions. This includes controlled access, double door entry with change room and shower, use of respirators, decontamination of all wastes, and showering out of all personnel. Laboratories working on these viruses must be certified by the U.S. Department of Agriculture.
- K. It is essential that specimens be sent to the Viral Reference and Surveillance Laboratory at the Wadsworth Center as soon as possible after collection. If shipped within two days of collection, store at 4°C post-collection and ship with cold packs to maintain temperature at 4°C. Do not use wet ice. If shipment is delayed >2days, then the specimens should be stored frozen at -70°C and shipped on dry ice.
- L. Contact the Wadsworth Center laboratory prior to shipping samples for testing for influenza A (H5N1).
- M. It is the shipper's responsibility to ensure that appropriate shipping materials are used. Please contact your carrier for shipping and packaging information. Patient specimens must be shipped as "Diagnostic Specimens." All specimens must be shipped "Priority Overnight" and received within 24 hours via chosen carrier. Specimens should ONLY be shipped Sunday - Thursday so that appropriate laboratory personnel can be present to accept and accession specimens Monday - Friday.

## Appendix 4-A

### Basic infection control principles for preventing the spread of pandemic influenza for all pandemic periods

- A. Limit exposure to infectious/potentially infectious persons (i.e., febrile respiratory symptoms).
  - 1. Identify potentially infectious individuals and physically isolate if possible/indicated for the setting.
  - 2. Promote spatial separation in common areas (i.e., maintain at least 3 feet from symptomatic persons).
  
- B. Protect healthcare workers from exposure to the influenza virus while delivering care.
  - 1. Wear a surgical or procedure mask for close contact with infectious patients (i.e., within 3 feet).
  - 2. Wear personal protective equipment (i.e., gloves, gowns, mask and eye protection) to prevent contact with respiratory secretions and skin, mucous membranes and clothing (i.e., standard precautions).
  - 3. Perform hand hygiene after contact with infectious patients or their immediate environment. Reinforce compliance with hand hygiene by:
    - a. Educating on the importance of hand hygiene for the prevention of transmission of infectious agents;
    - b. Providing easy access to hand hygiene products at the point of care.
    - c. See CDC *Guideline for Hand Hygiene in Health Care Settings* (<http://www.cdc.gov/handhygiene/>) for more details on guidance and suggestions for improving adherence.
  - 4. Educate healthcare workers to avoid touching their eyes, nose or mouth with contaminated hands (gloved or ungloved) while delivering care and until they perform hand hygiene.
  - 5. Food and drink should not be consumed by healthcare workers in patient care areas where contamination is likely.
  
- C. Contain infectious respiratory secretions
  - 1. Implement the use of respiratory hygiene/cough etiquette
  - 2. Promote the use of masks by symptomatic persons in common areas (e.g., waiting areas) or when being transported (e.g., in emergency vehicles).
  
- D. Assure adequate cleaning of the patient care environment by<sup>42</sup>:
  - 1. Assessing the protocols used by your facility for daily and discharge cleaning to assure adequacy. They should minimally include:
    - a. Daily cleaning of:
      - 1) horizontal surfaces (e.g., over-bed table, night stand).
      - 2) frequently touched surfaces (e.g., bed rails, phone);
      - 3) lavatory surfaces.
    - b. Discharge cleaning of:
      - 1) surfaces described above
      - 2) visibly soiled vertical surfaces (e.g., walls, curtain dividers).
      - 3) frequently touched surfaces such as light switches and door knobs.
  - 2. Assess compliance with daily and discharge cleaning by identifying a person(s) in the facility to perform daily rounds to inspect cleanliness.

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<sup>42</sup> NYSDOH Pandemic Influenza Plan Infection Control Section 4 III-A

3. Assuring the product used for daily routine and discharge cleaning of patient areas is an Environmental Protection Agency (EPA) registered low- or intermediate-level disinfectant and it is used as per the manufacturer's instructions.
4. See CDC *Guideline for Environmental Control in Health-Care Facilities*, 2003 (<http://cdc.gov/ncidod/hip/enviro/guide.htm>) for specific guidance for maintaining a safe environment for patients.

#### E. Surveillance/Monitoring of Healthcare Personnel

1. All personnel are to report Influenza-like illness to their department supervisor immediately.
2. If an employee exhibits Influenza symptoms during a Pandemic flu epidemic (fever, cough, runny nose, body aches, and/or headache) he or she will be sent home immediately. **This will be mandatory.**
3. If onset of illness occurs at home, instruct the employee to not report to work, and stay home until symptoms resolve for 24 hours.
4. After being asymptomatic for 24 hours, the employee will be allowed to return to work. No physicians note will be required.
5. The supervisor will inform the EPI department staff of the employee with Influenza-like illnesses.
6. The EPI staff will investigate any clusters of Influenza-like illnesses identified and report to the NYSDOH Regional EPI Program.

NOTE: For further recommendations and information: Refer to: NYSDOH Pandemic Influenza Plan Section 4, Infection Control, III, Recommendations in Healthcare Settings, C-D, and Occupational Health Issues.

#### F. Personal Protective Equipment (PPE)

PPE will be made available as resources permit to all workers or volunteers assisting in a health related emergency. The IC in consultation with the Safety Officer will determine the need for and level of PPE and providing the same to responders SCPHS staff will be available for consultation regarding the proper PPE needed and its appropriate use and disposal<sup>43</sup>.

**Strict Adherence to hand washing/hand antisepsis recommendations is the cornerstone of Infection prevention and will be encouraged for all staff to abide by.**

#### G. Home Healthcare Agency Infection Control

All direct care staff employed by the Sullivan County Public Health Certified Home Health Agency and Long Term Care Agency will follow the guidelines where applicable below<sup>44</sup>:

1. Outbreaks identified in specific high populated areas and communities within the county will require infection control practices to be enhanced. These areas for example are: Hasidic/Orthodox Community, Chicken/Duck farm/Migrant workers, etc.

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<sup>43</sup> SCHEOP, §8-24, Worker Protection

<sup>44</sup> NYSDOH Pandemic Influenza Plan, Section 4, Infection Control, VII – Specific Home Healthcare Infection Control Guidance, A-D.& Appendix 4-B, Respiratory Hygiene/Cough Etiquette (see attachment 15A)

## **Appendix 4B**

### **Respiratory Hygiene/Cough Etiquette**

- A. To contain respiratory secretions, all persons with signs and symptoms of a respiratory infection, regardless of presumed cause, should be instructed to:
1. Cover the nose/mouth when coughing or sneezing.
  2. Use tissues to contain respiratory secretions.
  3. Dispose of tissues in the nearest waste receptacle after use.
  4. Perform hand hygiene after contact with respiratory secretions and contaminated objects/materials.
- B. Healthcare facilities should ensure the availability of materials for adhering to respiratory hygiene/cough etiquette in waiting areas for patients and visitors:
1. Provide tissues and no-touch receptacles for used tissue disposal.
  2. Provide conveniently located dispensers of alcohol-based hand rub.
  3. Provide soap and disposable towels for hand washing where sinks are available.
- C. Masking and separation of persons with symptoms of respiratory infection
- During periods of increased respiratory infection in the community, persons who are coughing should be offered either a procedure mask (i.e., with ear loops) or a surgical mask (i.e., with ties) to contain respiratory secretions. Coughing persons should be encouraged to sit as far away as possible (at least 3 feet) from others in common waiting areas. Some facilities may wish to institute this recommendation year-round<sup>45</sup>.

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<sup>45</sup> Last revised: December 2, 2005

## Appendix 6-A Vaccine Priority Group Recommendations

<b>Tier</b>	<b>Subtier</b>	<b>Population</b>	<b>Rationale</b>
1	A	<ul style="list-style-type: none"> <li>• Vaccine and antiviral manufacturers and others essential to manufacturing and critical support (~40,000)</li> <li>• Medical workers and public health workers who are involved in direct patient contact, other support services essential for direct patient care, and vaccinators (8-9 million)</li> </ul>	<ul style="list-style-type: none"> <li>• Need to assure maximum production of vaccine and antiviral drugs</li> <li>• Healthcare workers are required for quality medical care (studies show outcome is associated with staff-to-patient ratios). There is little surge capacity among healthcare sector personnel to meet increased demand</li> </ul>
1	B	<ul style="list-style-type: none"> <li>• Persons &gt; 65 years with 1 or more influenza high-risk conditions, not including essential hypertension (approximately 18.2 million)</li> <li>• Persons 6 months to 64 years with 2 or more influenza high-risk conditions, not including essential hypertension (approximately 6.9 million)</li> <li>• Persons 6 months or older with history of hospitalization for pneumonia or influenza or other influenza high-risk condition in the past year (740,000)</li> </ul>	<ul style="list-style-type: none"> <li>• These groups are at high risk of hospitalization and death. Excludes elderly in nursing homes and those who are immunocompromised and would not likely be protected by vaccination</li> </ul>
1	C	<ul style="list-style-type: none"> <li>• Pregnant women (approximately 3.0 million)</li> <li>• Household contacts of severely immunocompromised persons who would not be vaccinated due to likely poor response to vaccine (1.95 million with transplants, AIDS, and incident cancer x 1.4 household contacts per person = 2.7 million persons)</li> <li>• Household contacts of children &lt;6 month olds (5.0 million)</li> </ul>	<ul style="list-style-type: none"> <li>• In past pandemics and for annual influenza, pregnant women have been at high risk; vaccination will also protect the infant who cannot receive vaccine.</li> <li>• Vaccination of household contacts of immunocompromised and young infants will decrease risk of exposure and infection among those who cannot be directly protected by vaccination</li> </ul>
1	D	<ul style="list-style-type: none"> <li>• Public health emergency response workers critical to pandemic response (assumed onethird of estimated public health workforce=150,000)</li> <li>• Key government leaders</li> </ul>	<ul style="list-style-type: none"> <li>• Critical to implement pandemic response such as providing vaccinations and managing/monitoring response activities</li> <li>• Preserving decision-making capacity also critical for managing and implementing a response</li> </ul>
2	A	<ul style="list-style-type: none"> <li>• Healthy 65 years and older (17.7 million)</li> <li>• 6 months to 64 years with 1 high-risk condition (35.8 million)</li> <li>• 6-23 months old, healthy (5.6 million)</li> </ul>	<ul style="list-style-type: none"> <li>• Groups that are also at increased risk but not as high risk as population in Tier 1B</li> </ul>

2	<b>B</b>	<ul style="list-style-type: none"> <li>• Other public health emergency responders (300,000 = remaining two-thirds of public health work force)</li> <li>• Public safety workers including police, fire, 911 dispatchers, and correctional facility staff (2.99 million)</li> <li>• Utility workers essential for maintenance of power, water, and sewage system functioning (364,000)</li> <li>• Transportation workers transporting fuel, water, food, and medical supplies as well as public ground public transportation (3.8 million)</li> <li>• Telecommunications/IT for essential network operations and maintenance (1.08 million)</li> </ul>	<ul style="list-style-type: none"> <li>• Includes critical infrastructure groups that have impact on maintaining health (e.g., public safety or transportation of medical supplies and food); implementing a pandemic response; and on maintaining societal functions</li> </ul>
3		<ul style="list-style-type: none"> <li>• Other key government health decision-makers (estimated number not yet determined)</li> <li>• Funeral directors/embalmers (62,000)</li> </ul>	<ul style="list-style-type: none"> <li>• Other important societal groups for a pandemic response but of lower priority</li> </ul>
4		<ul style="list-style-type: none"> <li>• Healthy persons 2-64 years not included in above categories (179.3 million)</li> </ul>	<ul style="list-style-type: none"> <li>• All persons not included in other groups based on objective to vaccinate all those who want protection</li> </ul>

\*The committee focused its deliberations on the U.S. civilian population. ACIP and NVAC recognize that Department of Defense needs should be highly prioritized. DoD Health Affairs indicates that 1.5 million service members would require immunization to continue current combat operations and preserve critical components of the military medical system. Should the military be called upon to support civil authorities domestically, immunization of a greater proportion of the total force will become necessary. These factors should be considered in the designation of a proportion of the initial vaccine supply for the military.

Other groups also were not explicitly considered in these deliberations on prioritization. These include American citizens living overseas, non-citizens in the U.S., and other groups providing national security services such as the border patrol and customs service.

(Source: HHS Pandemic Influenza Plan, Part 2-Public Health Guidance Supplements, Supplement 6)

## **Appendix 6-C**

### **Vaccine and Antiviral Medication Procurement**

Appendix 6-C is intended to serve as an operational guide to the request, receipt, storage, shipment and distribution of pandemic influenza vaccine and antiviral medications. It should be recognized that supplies of both vaccine and antivirals may be limited during a pandemic. Access to these products will be through the State of New York and will be controlled at the local level by county health departments. In all cases, the disposition of these items must be carefully tracked to ensure their appropriate use and efficacy.

#### **I. Levels of Supply**

A public health crisis involving pandemic influenza necessitating the need for distributing vaccine/antiviral medications may be similar to most events that may require activation of the NYS SNS plan. Vaccine/antiviral availability will change during the course of a pandemic. Pandemic response strategies will vary with vaccine/antiviral supply. Four vaccine/antiviral supply levels can be defined.

##### **Stage 1: No Vaccine/Antiviral Supply**

At the beginning of a pandemic, it is possible that no vaccine will be available. Depending on the particular viral strains that make up the pandemic, there may or may not be a supply of effective antiviral medications available for distribution and use.

##### **Stage 2: Limited Vaccine/Antiviral Supply**

When first available, the vaccine/antiviral supply may be less than that required to protect the susceptible population. Priority groups for vaccine/antivirals will need to be identified. Plans for distribution of vaccine/antivirals will need to be formulated. Approaches to inform priority groups about the availability of vaccine/antivirals and where to receive it; and to educate the public regarding vaccine/antiviral priorities and their rationale will be needed. Allocation plans for counties that are to receive vaccine/antivirals need to be developed, based on priority populations. Vaccine/antiviral effectiveness and safety need to be monitored. Depending on amounts of vaccine/antivirals available, a State SNS Mobilization Site may be activated. Repackaging may be required.

##### **Stage 3: Adequate Vaccine/Antiviral Supply**

Vaccine/antiviral supply will match the need and ability to distribute vaccine/antivirals. This will allow a shift from priority groups to the wider population. Strategies are developed to assure equitable distribution to special needs populations. The State SNS Plan may be activated to facilitate distribution of the vaccine/antivirals.

##### **Stage 4: Excess Vaccine/Antiviral Supply**

Vaccine/antiviral supplies exceed that needed to protect the NYS population. The State SNS Plan may be activated to facilitate distribution of the vaccine/antivirals. With less demand and abundant supply vaccine/antiviral distribution may return to normal pre-pandemic supply strategies that include the use of private distribution and/or private providers.

#### **II. Operational Assumptions**

- All SNS vaccine/antiviral materiel will be procured by CDC and arrive at a State Mobilization Site (NYSDOH Vaccine Depot or designated site) after CDC's decision to deploy the vaccine/antivirals.
- NYS will activate its SNS Plan to facilitate the widespread distribution of vaccines/antivirals.

Influenza vaccine will be distributed rapidly to the public sector through partnership arrangements with LHDs.

- Multiple shipments of vaccine/antivirals may be requested and deployed.
- There may be multiple local requests for vaccine/antiviral assets.
- There may be competing requests for vaccine/antiviral assets from neighboring states.
- Upon receipt of the vaccine/antivirals from the CDC, New York State will assume responsibility for the vaccine/antivirals until they are delivered to the affected locality.
- State agency resources and personnel will likely be needed to support local distribution and dispensing efforts.
- The affected locality will be responsible for vaccine/antivirals delivered to it and will have identified suitable locations for storage and distribution.
- The State may return all undistributed supplies to the federal authorities.
- NYS maintains a supply of antivirals in the State Medical Emergency Response Cache (MERC).
- If vaccines with applicable influenza strains are not immediately present during initial stages of the pandemic, it will take 4 to 8 months between the pandemic alert and vaccine availability.
- No more than 20% of the total vaccine needs for New York State will be available to immunize the population on a monthly basis.

### **III. Vaccine and Antiviral Deployment**

The goal of deployment is to quickly and orderly deliver needed supplies to local agencies to allow them to immunize, treat or prophylax members of their communities. When appropriate, distribution will be via the State's SNS plan. Receipt and distribution of vaccine/antiviral assets will involve numerous local, State, Federal, volunteer, and private agencies. There are five critical centers that must coordinate actions and ensure a smooth flow of information:

1. State Emergency Coordination Center
2. EOC
3. State Mobilization Site/Vaccine Storage Depot
4. Local Staging Sites
5. Points of Dispensing/Treatment Centers.

The deployment of vaccine/antivirals to NYS will be broken down into four distinct phases.

#### **1. Request Phase**

The request phase includes the local and State analysis of the situation potentially requiring the deployment of vaccine/antivirals and the request itself. Assets may be requested by the State or CDC may allocate certain amounts to the state. The NYSDOH will assume the lead role in requesting the assets with support from SEMO. Local jurisdictions can request vaccines/antivirals through the local emergency management offices to the State Emergency Coordination Center after coordination among appropriate local agencies. State Emergency Management will coordinate all local requests with the NYSDOH.

#### **2. Mobilization and Staging Phase**

The mobilization phase of distributing vaccine/antiviral assets involves all activities associated with the receipt, off-loading, staging, processing, repackaging, and transportation of materiel. NYS agencies, regional agencies, and some counties will be responsible for all activities associated with the mobilization effort. Local resources may also be utilized, where available, to assist with mobilization efforts. Local resources, when utilized, will be integrated into State activities. Counties should plan for establishing a local staging site within the county limits that will receive shipments from the State

Mobilization Site. This staging site should have the ability to maintain cold chain management of vaccines or proper environmental conditions for storage of antivirals.

### 3. Immunization/Dispensing Phase

The immunization/dispensing phase includes those activities associated with the set-up and operation of POD and treatment center facilities, which provide immunization, treatment and/or prophylactic medications to affected members of the public, or provide medications to treatment centers, such as hospitals, clinics, etc. NYSDOH will provide guidance to counties detailing priority groups, duration of prophylaxis, etc.

Collection, storage and transmission of information on individuals who are vaccinated will be undertaken by local public health agencies using the HERDS framework under the supporting architecture of the NYS Commerce System. Information concerning administration of vaccine and tracking of vaccine supplies will be achieved through the use of a countermeasures response system that is integrated with the Clinic Data Management System (CDMS) and HERDS. A description of this system and the detailed requirements for data collection are included in the Informatics section of this plan.

The NYSDOH will provide specific guidance on the disposition of vaccine and antiviral medications to local public health authorities to ensure that circumstances surrounding their use and administration are consistent with established priorities. All recipients of State supplied vaccine and antivirals will be required to follow the guidance provided by the NYSDOH.

### 4. Recovery Phase

The recovery phase includes those activities associated with the returning of unused assets to State control. Local public health agencies will be advised by New York State on how excess supplies will be collected and redistributed (if necessary).

## **IV. Logistics**

### 1. Facilities

The primary vaccine reception point will be the NYSDOH Vaccine Depot located in Wadsworth Center,. This Albany Vaccine Depot consists of 924 cubic feet of refrigeration space. In addition, 1,000 cubic feet of refrigeration space has been identified for use in Wadsworth Center for a combined total of 1924 cubic feet. Capabilities of the depot to store and distribute vaccine are as follows:

- Current storage capabilities are approximately 1.5 million doses in the Albany Vaccine Depot and an additional 1.5 million doses using the additional storage capacity identified in Wadsworth Center for a total of 3 million doses.
- Vaccine will be distributed through normal commercial carriers up to 150,000 doses per day for a total of 5 days per week assuming security requirements permit.
- Beyond 150,000 doses per day or 3,000,000 doses per month, FedEx custom critical or similar refrigerated vehicles will be used. These vehicles may include or necessitate the use of State identified equipment consistent with assets identified by the State Emergency Management Plan.

The primary storage site for antiviral medications available through the MERC is in Albany. However, New York State is in the process of establishing additional MERC storage sites in other areas of the State.

- Antiviral supplies requested by local health authorities may be shipped from the New York State operated storage site closest to the county making the request.
- Locally maintained sites for storage of antivirals should be temperature controlled (not subject to temperature extremes) and be secure against unauthorized access.
- Package inserts for antiviral drugs should be consulted to determine if all FDA established storage criteria have been met.

## 2. Ground Support

Local transportation resources, supported by State assets as required, will transport bulk and/or repackaged medications and supplies to designated local staging. Security will be coordinated by State Police.

## 3. Receipt and Sign-off

A designated NYSDOH physician or representative will be dispatched to the mobilization site to meet and sign for assets. The State Health Commissioner may designate a local physician, working under the auspices of the affected LHD, as the SNS receiving physician.

## 4. Repackaging

In consultation with local officials, the determination will be made as to where repackaging efforts will be undertaken. Repackaging may be required if short-term prophylaxis of individuals is directed. Staffing for repackaging efforts will be provided by State agency personnel and/or by local agencies per local plans (if existing), as required.

## 5. Long-term Dispensing Operations

NYSDOH officials will work with local health officials to determine the need for extended or long-term dispensing efforts. Plans will be developed utilizing pharmacies, postal service, health care facilities and PODs to accomplish these objectives.

## **Appendix 7B**

### **Daily Dosage of Antiviral Medication**

1. The drug package insert should be consulted for dosage recommendations for administering amantadine to persons with creatinine clearance  $<50$  ml/min/1.73m<sup>2</sup>.
2. 5 mg/kg body weight of amantadine or rimantadine syrup = 1 tsp/2.2 lbs.
3. Children aged  $>10$  years who weigh  $<40$  kg should be administered amantadine or rimantadine at a dosage of 5 mg/kg body weight /day.
4. A reduction in dosage to 100 mg/day of rimantadine is recommended for persons who have severe hepatic dysfunction or those with creatinine clearance  $<10$  mL/min. Other persons with less severe hepatic or renal dysfunction taking 100 mg/day of rimantadine should be observed closely, and the dosage should be reduced or the drug discontinued, if necessary.
5. Approved by FDA only for treatment among adults.
6. Not applicable.
7. Rimantadine is approved by FDA for treatment among adults. However, certain experts in the management of influenza consider it appropriate for treatment among children. (See American Academy of Pediatrics, 2003 Red Book.)
8. Older nursing-home residents should be administered only 100 mg/day of rimantadine. A reduction in dosage to 100 mg/day should be considered for all persons aged  $>65$  years if they experience possible side effects when taking 200 mg/day.
9. Zanamivir administered via inhalation using a plastic device included in the medication package. Patients will benefit from instruction and demonstration of the correct use of the device.
10. Zanamivir is not approved for prophylaxis.
11. A reduction in the dose of oseltamivir is recommended for persons with creatinine clearance  $<30$  ml/min.
12. The dose recommendation for children who weigh  $<15$  kg is 30 mg twice a day. For children who weigh  $>15$  to 23 kg, the dose is 45 mg twice a day. For children who weigh  $>23$  to 40 kg, the dose is 60 mg twice a day. And for children who weigh  $>40$  kg, the dose is 75 mg twice a day.

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1. Information on seasonal outbreaks of interpandemic influenza, including public health measures to contain outbreaks, can be found at <http://www.cdc.gov/flu/>.
  2. McKimm-Breschkin JL. Resistance of influenza viruses to neuraminidase inhibitors - a review. *Antiviral Res.* 2000, 47:1-17.
  3. Tisdale M. Monitoring of viral susceptibility: new challenges with the development of influenza NA inhibitors. *Rev Med Virol*, 2000, 10:45-55.

Last revised: November 8, 2005

**Appendix 7-C**  
**Antiviral Medication Priority Group Recommendations**

	Group	Estimated Population (millions)	Strategy**	# Courses (millions)		Rationale
				For Target Group	Cumulative	
<b>1</b>	Patients admitted to Hospital***	10.0	T	7.5	7.5	Consistent with medical practice and ethics to treat those with serious illness and who are most likely to die.
<b>2</b>	Health care workers(HCW) with direct patient contact and emergency medical service (EMS) providers	9.2.	T	2.4	9.9	Healthcare workers are required for quality medical care. There is little surge capacity among healthcare sector personnel to meet increased demand.
<b>3</b>	Highest risk outpatients—immunocompromised persons and pregnant women	2.5	T	0.7	10.6	Groups at greatest risk of hospitalization and death; immunocompromised cannot be protected by vaccination.
<b>4</b>	Pandemic health responders (public health, vaccinators, vaccine and antiviral manufacturers), public safety (police, fire, corrections), and government decision-makers	3.3	T	0.9	11.5	Groups are critical for an effective public health response to a pandemic.
<b>5</b>	Increased risk outpatients— young children 12-23 months old, persons >65 yrs old, and persons with underlying medical conditions	85.5	T	22.4	33.9	Groups are at high risk for hospitalization and death.
<b>6</b>	Outbreak response in nursing homes and other residential settings	NA	PEP	2.0	35.9	Treatment of patients and prophylaxis of contacts is effective in stopping outbreaks; vaccination priorities do not include nursing home residents.
<b>7</b>	HCWs in emergency departments, intensive care units, dialysis centers, and EMS providers	1.2	P	4.8	40.7	These groups are most critical to an effective healthcare response and have limited surge capacity. Prophylaxis will best prevent absenteeism.
<b>8</b>	Pandemic societal responders (e.g., critical infrastructure groups as defined in the vaccine priorities) and HCW without direct patient contact	10.2	T	2.7	43.4	Infrastructure groups that have impact on maintaining health, implementing a pandemic response, and maintaining societal functions.
<b>9</b>	Other outpatients	180	T	47.3	90.7	Includes others who develop influenza and do not fall within the above groups.
<b>10</b>	Highest risk outpatients	2.5	P	10.0	100.7	Prevents illness in the highest risk groups for hospitalization and death.

<b>11</b>	Other HCWs with direct patient contact	8.0	P	32.0	132.7	Prevention would best reduce absenteeism and preserve optimal function.
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\*The committee focused its deliberations on the domestic U.S. civilian population. NVAC recognizes that Department of Defense (DoD) needs should be highly prioritized. A separate DoD antiviral stockpile has been established to meet those needs. Other groups also were not explicitly considered in deliberations on prioritization. These include American citizens living overseas, non-citizens in the U.S., and other groups providing national security services such as the border patrol and customs service.

\*\*Strategy: Treatment (T) requires a total of 10 capsules and is defined as 1 course. Post-exposure prophylaxis (PEP) also requires a single course. Prophylaxis (P) is assumed to require 40 capsules (4 courses) though more may be needed if community outbreaks last for a longer period.

\*\*\*There are no data on the effectiveness of treatment at hospitalization. If stockpiled antiviral drug supplies are very limited, the priority of this group could be reconsidered based on the epidemiology of the pandemic and any additional data on effectiveness in this population.

(Source: HHS Pandemic Influenza Plan, Part 2-Public Health Guidance Supplements, Supplement 7)

## Appendix 8-B Contact Identification and Management

Surveillance of contacts of cases infected with a novel influenza virus may be helpful in *early* control efforts. Through rapid identification, evaluation, and monitoring of exposed contacts, further transmission of disease may be prevented or reduced. Contacts who are found to be clinically ill can be quickly isolated to avoid further novel influenza virus transmission. When contact identification and management is indicated, surveillance of contacts will be conducted by LHDs, with assistance from NYSDOH as needed. NYSDOH, in consultation with CDC and LHDs, will provide guidance regarding if and when contact tracing should be conducted.

### A. Definitions

1. **Close Contact:** A person who cared for or lived with a person with a novel influenza virus or who had a high likelihood of direct contact with respiratory secretions and/or body fluids of a person with a novel influenza virus (during encounters with the patient or through contact with materials contaminated by the patient), during the period of 24 hours prior to the patient's onset to 14 days after onset of symptoms (*note: the definition of the infectious period is under discussion with the CDC*). Examples of close contact include kissing or embracing, sharing eating or drinking utensils, close conversation (< 3 feet), physical examination, and any other direct physical contact between persons. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a brief time.
2. **Infectious Period:** Period of time from the 24 hours prior to onset symptoms to up to 14 days after the onset of symptoms (*note: the definition of the infectious period is under discussion with the CDC*).

### B. Contact Identification and Tracing

1. Determine the time period in which the case was infectious.
2. Initiate identification of a case's contacts as soon as possible after a diagnosis of probable or confirmed infection with a novel influenza virus.
3. Obtain information about the case and all contacts from the case, next of kin, workplace representatives, or others with appropriate knowledge of the case-patient's recent whereabouts and activities.
4. Attempt to locate and contact all close contacts within 12 hours of the case/contact report.
5. Use work and school contact numbers, telephone directories, voting lists, neighborhood interviews, site visits, etc. to trace contacts when locating information is unknown or incomplete.
6. If having difficulty locating a contact, consult with STD and/or TB staff that has contact tracing experience.
7. If the contact has left the county and/or state, notify the NYSDOH Regional Epidemiologist.

### C. Contact Evaluation and Monitoring

1. Alert contacts of their potential exposure to a novel influenza virus.
2. Verify exposures.
  - a. Verify exposure to index case during the period of infectiousness.
  - b. Verify the type of exposure.
3. If initial contact is made at a home or workplace visit, the appropriate personal protective equipment (PPE) should be utilized since the contact's health status will be unknown.
4. Evaluate contact's health status using the Pandemic Influenza Contact Record
5. Ensure prophylaxis is provided, if indicated.
6. Identify any additional contacts that may not have been listed by the index case.

7. Enter data from the Contact Record Form on the HIN.
8. Consider quarantine of contacts based on the level of influenza activity:

#### D. Ill Contacts

1. If the contact is febrile or has respiratory symptoms, make arrangements for a medical evaluation by a healthcare provider.
  - a. Ensure that the medical facility staff are informed and prepared to handle a suspect novel influenza virus case.
  - b. Ensure that the contact does not take public transportation en route to their medical evaluation.
  - c. Advise the contact to remain at home and use respiratory precautions until they are evaluated by a healthcare provider.
2. Ill contacts should be counseled, interviewed, and reported as a suspected novel influenza virus case using the Pandemic Influenza Case Reporting Form (see Section 2: Surveillance and Laboratory Testing), and his/her contacts should be identified using the Pandemic Influenza Contact Record Form (Appendix 8-C).

#### E. Well Contacts

1. Initiate plans for ongoing symptom monitoring for 10 days after their last exposure to a novel influenza virus case. Monitoring of contacts may be active (e.g., regular workplace body temperature monitoring by a supervisor) or passive (e.g., self monitoring of symptoms and temperature by the contact with reporting to the local health department at least once a day).
  - a. Determine the time period in which the contact must be monitored (10 days after last exposure).
  - b. Provide thermometers to any contacts that do not have and are not willing to purchase one.
  - c. Provide contact with a daily temperature/symptom log (Appendix 8-D).
  - d. Complete the Pandemic Influenza Contact Daily Temperature Log Tracking Form (Appendix 8-E). Update the form each day.
  - e. Enter contact monitoring/symptom data on the HIN.
2. Provide information on seeking medical care should the contact develop fever and/or respiratory symptoms while they are being monitored.
  - a. Immediately notify the LHD.
  - b. Seek medical evaluation by a healthcare provider.
  - c. Ensure the medical facility is informed and prepared to handle a suspect novel influenza virus case.
  - d. Ensure the contact does not take public transportation en route to their medical evaluation.
  - e. Advise the contact to remain at home and use respiratory precautions until they are evaluated by a healthcare provider. Modify, as needed, existing procedures for locating contacts who are lost to follow-up during the monitoring period.

**Appendix 8A – C**  
**Contact Record Form**

Original Patient Serial No: \_\_\_\_\_ Index Case No: \_\_\_\_\_  
Name: \_\_\_\_\_  
Sex: \_\_\_\_\_ DOB: \_\_\_\_\_ Race/Ethnicity: \_\_\_\_\_  
Pregnant: \_\_\_\_\_ Underlying Medical Conditions: \_\_\_\_\_

**Contact Information:**

Home Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

Work Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

Cellular Phone: \_\_\_\_\_

If HCW, PPE Used:  
Eye Protection: Y / N  
Respiratory: Y / N  
Gown: Y / N  
Gloves: Y / N  
Aerosol Generating Procedure? Y/N  
Describe: \_\_\_\_\_

**Exposure History:**

First Exposure: \_\_\_\_\_ Last Exposure: \_\_\_\_\_  
Frequency/Duration: \_\_\_\_\_ Exposure Ongoing? \_\_\_\_\_  
Type of Exposure: \_\_\_\_\_  
Exposure Timing: \_\_\_\_\_

**Outcome:**

Date Notified: \_\_\_\_\_ Symptoms Present? \_\_\_\_\_  
If Yes, Date of Onset: \_\_\_\_\_ Symptom Type: \_\_\_\_\_  
Date of Resolution: \_\_\_\_\_  
Medical Exam? \_\_\_\_\_ If Yes, Date of Exam: \_\_\_\_\_  
Start of Quarantine: \_\_\_\_\_ End of Quarantine: \_\_\_\_\_

**Administrative Data:**

Supervisor: \_\_\_\_\_ Initiating Agency: \_\_\_\_\_  
Investigating Agency: \_\_\_\_\_ Disposition: \_\_\_\_\_  
Disposition Date: \_\_\_\_\_  
Assigned To: \_\_\_\_\_ Dx. \_\_\_\_\_  
Dx. Date: \_\_\_\_\_  
Worker No. \_\_\_\_\_ If New Case Enter HIN#: \_\_\_\_\_

**Notes:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Appendix 9-C**  
**New York State Department of Health Draft Message Maps**

<i>MESSAGE MAP: AVIAN FLU</i>		
What is Avian Flu?		
Key Message 1	Key Message 2	Key Message 3
<b>Avian influenza (bird flu) is normally found in birds</b>	<b>It's possible for avian influenza to spread to humans, but not easily</b>	<b>An outbreak is possible, if the virus changes to a form that is spread easily from person to person</b>
<b>Supporting Fact 1-1</b>	<b>Supporting Fact 2-1</b>	<b>Supporting Fact 3-1</b>
A severe form of bird flu is widespread in Asia	Bird flu rarely affects humans, because it requires <u>close contact</u> with infected birds	Disease <u>in birds</u> can be spread from country to country through bird migration
<b>Supporting Fact 1-2</b>	<b>Supporting Fact 2-2</b>	<b>Supporting Fact 3-2</b>
Outbreaks of a less severe strain of avian influenza in birds have occurred previously in the US and have been contained	The avian influenza virus may change so it could spread more easily and cause a pandemic	Plans are being developed to produce vaccine quickly if a pandemic begins
<b>Supporting Fact 1-3</b>	<b>Supporting Fact 2-3</b>	<b>Supporting Fact 3-3</b>
US is strengthening surveillance to identify disease	Avian influenza can cause serious disease and death in humans	Tamiflu will be stockpiled to help treat avian influenza in humans

<i>MESSAGE MAP: AVIAN FLU</i>		
Avian Flu Confirmed in NY Birds		
Key Message 1	Key Message 2	Key Message 3
<b>H5N1 avian influenza (bird flu) has been confirmed in (event specific) birds in NYS</b>	<b>This does NOT mean that people will get sick</b>	<b>There are things to do to protect yourself</b>
<b>Supporting Fact 1-1</b>	<b>Supporting Fact 2-1</b>	<b>Supporting Fact 3-1</b>
The discovery was made (event specific, when/where)	Bird flu rarely affects humans, because it requires <u>close contact</u> with infected birds	Don't handle any wild birds or poultry with your bare hands
<b>Supporting Fact 1-2</b>	<b>Supporting Fact 2-2</b>	<b>Supporting Fact 3-2</b>
Officials are moving fast to limit the spread of avian flu in birds	Officials are watching closely for any increase in flu-like illnesses, just as a precaution	Don't attract wild birds with bird feeders or bird baths
<b>Supporting Fact 1-3</b>	<b>Supporting Fact 2-3</b>	<b>Supporting Fact 3-3</b>
Outbreaks of a less severe strain of avian influenza in birds have occurred previously in the US and have been contained	There have been no avian influenza cases in people in NYS	ALWAYS cook poultry thoroughly and wash your hands and any surfaces that have come into contact with raw poultry.

*PRE-EVENT MESSAGE MAP:*

*PANDEMIC FLU*

What is pandemic flu?

<b>Key Message 1</b>	<b>Key Message 2</b>	<b>Key Message 3</b>
<b>Pandemic influenza is a worldwide flu outbreak</b>	<b>If the current Asian bird flu changes so it spreads easily to humans, a pandemic could occur</b>	<b>We are prepared to respond with a flu pandemic plan in place</b>
<b>Supporting Fact 1-1</b>	<b>Supporting Fact 2-1</b>	<b>Supporting Fact 3-1</b>
Avian flu and pandemic influenza are not the same thing.	There were 3 pandemics during the 20 <sup>th</sup> century and scientists think we're overdue for the next	We have stepped up surveillance (disease tracking capabilities) through statewide electronic information sharing with public health and hospital partners
<b>Supporting Fact 1-2</b>	<b>Supporting Fact 2-2</b>	<b>Supporting Fact 3-2</b>
An influenza pandemic could be caused by a new flu virus <b>other</b> than avian flu	It is likely that vaccine against a pandemic influenza strain will not be available initially or will be in limited supply	We have trained staff and partners to respond through local mass dispensing drills based on county plans
<b>Supporting Fact 1-3</b>	<b>Supporting Fact 2-3</b>	<b>Supporting Fact 3-3</b>
Pandemic influenza is expected to have a high death rate	Any available vaccine will go FIRST to _____(Plan specific) because _____(Plan specific)	We are coordinating with federal agencies and local partners to receive and distribute vaccine broadly as soon as it becomes available

*EVENT MESSAGE MAP:*

*PANDEMIC FLU ARRIVES*

What should the public know about an outbreak of pandemic flu?

<b>Key Message 1</b>	<b>Key Message 2</b>	<b>Key Message 3</b>
<b>A worldwide outbreak of influenza virus has now reached New York State</b>	<b>Vaccine supply is limited, and additional vaccine may not be available for 3-6 months</b>	<b>We want to reduce contact and slow the spread of disease</b>
<b>Supporting Fact 1-1</b>	<b>Supporting Fact 2-1</b>	<b>Supporting Fact 3-1</b>
This flu is highly contagious and is spread by coughing and sneezing	Since vaccine supply is limited, only _____(Event specific) will receive the flu shot	We might have to close schools for a while and limit public gatherings
<b>Supporting Fact 1-2</b>	<b>Supporting Fact 2-2</b>	<b>Supporting Fact 3-2</b>
Past influenza pandemics have caused many serious illnesses and deaths so we must work together to try to stop the spread of this disease	It's vital that these people get vaccinated first because _____(Event specific)	To protect people who have not gotten sick, NYSDOH is quarantining those who have been exposed to ill individuals for as long as the incubation period of the disease

<b>Supporting Fact 1-3</b>	<b>Supporting Fact 2-3</b>	<b>Supporting Fact 3-3</b>
Cases have been reported in _____ counties	To reduce risk, do the following _____ (Event specific, e.g. avoid close contact with the sick, wash hands often, cover your cough, bolster immune system, wear a mask in public, limit time spent in public, especially if you have flu symptoms)	Sick individuals must remain in isolation until ____ days after the end of fever

<p><i>PROTECTIVE MESSAGE</i>  <i>MAP: PANDEMIC FLU</i></p> <p>Now that there's an outbreak, what can people do to protect themselves?</p>		
<b>Key Message 1</b>	<b>Key Message 2</b>	<b>Key Message 3</b>
<b>Avoid close contact between sick and well people</b>	<b>Stay home from work, school or errands when you are sick</b>	<b>Wash your hands with soap often and use a hand sanitizer if soap and water aren't available</b>
<b>Supporting Fact 1-1</b>	<b>Supporting Fact 2-1</b>	<b>Supporting Fact 3-1</b>
Limit attendance at public events	You can spread flu to coworkers, resulting in severe staff shortages	Flu can be spread by direct contact
<b>Supporting Fact 1-2</b>	<b>Supporting Fact 2-2</b>	<b>Supporting Fact 3-2</b>
Cover mouth and nose with your sleeve or tissue every time you sneeze or cough	If you need food or medicines, ask others who are healthy to bring them to you rather than going to the store yourself	Soap or hand sanitizer can kill the flu virus
<b>Supporting Fact 1-3</b>	<b>Supporting Fact 2-3</b>	<b>Supporting Fact 3-3</b>
Put used tissue in the trash	Friends or helpers can leave supplies outside your door so that you do not expose them to the flu	Hand washing is helpful to reduce the spread of flu

*SYMPTOM MESSAGE MAP:  
PANDEMIC FLU*

What are symptoms of  
pandemic flu?

<b>Key Message 1</b>	<b>Key Message 2</b>	<b>Key Message 3</b>
<b>Typical signs and symptoms of flu are well known</b>	<b>Signs and symptoms of a pandemic influenza strain may differ</b>	<b>If you believe you have the flu, contact a physician or call the NYSDOH call center for information about symptoms</b>
<b>Supporting Fact 1-1</b>	<b>Supporting Fact 2-1</b>	<b>Supporting Fact 3-1</b>
Symptoms include fever, headache, body aches and cough	Event specific	The number is _____ and the hours of operation are _____
<b>Supporting Fact 1-2</b>	<b>Supporting Fact 2-2</b>	<b>Supporting Fact 3-2</b>
Signs and symptoms appear approximately 2-5 days after exposure	Event specific	Additional information is available on NYSDOH website: <a href="http://www.nyhealth.gov">www.nyhealth.gov</a> and on <a href="http://www.pandemicflu.gov">www.pandemicflu.gov</a>
<b>Supporting Fact 1-3</b>	<b>Supporting Fact 2-3</b>	<b>Supporting Fact 3-3</b>
Illness may last 1-2 weeks	Event specific	If you think you have the flu, telephone your doctor for advice and ask for a mask as soon as you arrive at his/her office

*TREATMENT MESSAGE  
MAP: PANDEMIC FLU*

What is treatment of  
pandemic flu?

<b>Key Message 1</b>	<b>Key Message 2</b>	<b>Key Message 3</b>
<b>Since this is a new strain of flu, no vaccine is available right now</b>	<b>Tamiflu may be available, but will probably be reserved for treatment of the sick</b>	<b>Those who are ill should remain at home</b>
<b>Supporting Fact 1-1</b>	<b>Supporting Fact 2-1</b>	<b>Supporting Fact 3-1</b>
A vaccine is being developed	It is in limited supply	Drink plenty of fluids and get plenty of rest
<b>Supporting Fact 1-2</b>	<b>Supporting Fact 2-2</b>	<b>Supporting Fact 3-2</b>
It will be distributed as soon as it is made available	It may or may not be effective	Discard used tissues properly and wash your hands frequently after coughing or sneezing
<b>Supporting Fact 1-3</b>	<b>Supporting Fact 2-3</b>	<b>Supporting Fact 3-3</b>
Watch the media for updates	When effective, it can lessen symptoms if taken within 24 hours of onset of symptoms	Limit exposure to family members and friends

*QUARANTINE MESSAGE*  
*MAP: PANDEMIC FLU*

Why have you **imposed/lifted**  
a quarantine during the  
pandemic?

<b>Key Message 1 (Impose)</b>	<b>Key Message 2 (Impose)</b>	<b>Key Message 3 (Lift)</b>
<b>Because flu is so contagious, aggressive action is necessary</b>	<b>Initially, quarantine may possibly slow down spread of flu</b>	<b>Flu is now too widespread for quarantine to make a difference</b>
<b>Supporting Fact 1-1</b>	<b>Supporting Fact 2-1</b>	<b>Supporting Fact 3-1</b>
Flu can be spread by air (coughing or sneezing) or direct contact	Quarantine limits personal contact	Quarantine means keeping people who are not sick, but who have been exposed to the flu, away from anybody else
<b>Supporting Fact 1-2</b>	<b>Supporting Fact 2-2</b>	<b>Supporting Fact 3-2</b>
An infected person can spread flu before developing symptoms	Slowing the spread of flu may allow time to develop and dispense a vaccine	Efforts now are better directed in caring for the sick, rather than making sure exposed people remain in quarantine
<b>Supporting Fact 1-3</b>	<b>Supporting Fact 2-3</b>	<b>Supporting Fact 3-3</b>
People who have been exposed may pose a risk of illness to others	Slowing the spread of flu may allow additional time to prepare for the outbreak	Flu is so widespread that people will be exposed to flu despite quarantine efforts

*BUSINESS CONTINUITY*  
*PREPAREDNESS MESSAGE*  
*MAP: PANDEMIC FLU*

What can the public or a  
business do to prepare for  
pandemic flu?

<b>Key Message 1</b>	<b>Key Message 2</b>	<b>Key Message 3</b>
<b>Determine the impact a pandemic would have on your business</b>	<b>Develop an emergency plan to operate during a pandemic</b>	<b>Network with external partners to ensure continued services</b>
<b>Supporting Fact 1-1</b>	<b>Supporting Fact 2-1</b>	<b>Supporting Fact 3-1</b>
Determine the impact for a large number of employees getting sick	Train personnel, identify critical positions and test plan	Set up brainstorm sessions to meet and begin discussion
<b>Supporting Fact 1-2</b>	<b>Supporting Fact 2-2</b>	<b>Supporting Fact 3-2</b>
Determine the impact from a customer perspective	Cross-train for critical positions	Develop strategies
<b>Supporting Fact 1-3</b>	<b>Supporting Fact 2-3</b>	<b>Supporting Fact 3-3</b>
Determine the impact on your inventory of products or services	Prioritize personnel for possible vaccination (if available)	Practice these strategies

## A. Attachment

### Basic infection control principles for preventing the spread of pandemic influenza for all pandemic periods

- A. Limit exposure to infectious/potentially infectious persons (i.e., febrile respiratory symptoms).
  - 1. Identify potentially infectious individuals and physically isolate if possible/indicated for the setting.
  - 2. Promote spatial separation in common areas (i.e., maintain at least 3 feet from symptomatic persons).
  
- B. Protect healthcare workers from exposure to the influenza virus while delivering care.
  - 1. Wear a surgical or procedure mask for close contact with infectious patients (i.e., within 3 feet).
  - 2. Wear personal protective equipment (i.e., gloves, gowns, mask and eye protection) to prevent contact with respiratory secretions and skin, mucous membranes and clothing (i.e., standard precautions).
  - 3. Perform hand hygiene after contact with infectious patients or their immediate environment. Reinforce compliance with hand hygiene by:
    - a. Educating on the importance of hand hygiene for the prevention of transmission of infectious agents;
    - b. Providing easy access to hand hygiene products at the point of care.
    - c. See CDC *Guideline for Hand Hygiene in Health Care Settings* (<http://www.cdc.gov/handhygiene/>) for more details on guidance and suggestions for improving adherence.
  - 4. Educate healthcare workers to avoid touching their eyes, nose or mouth with contaminated hands (gloved or ungloved) while delivering care and until they perform hand hygiene.
  - 5. Food and drink should not be consumed by healthcare workers in patient care areas where contamination is likely.
  
- C. Contain infectious respiratory secretions
  - 1. Implement the use of respiratory hygiene/cough etiquette
  - 2. Promote the use of masks by symptomatic persons in common areas (e.g., waiting areas) or when being transported (e.g., in emergency vehicles).
  
- D. Assure adequate cleaning of the patient care environment by<sup>46</sup>:
  - 1. Assessing the protocols used by your facility for daily and discharge cleaning to assure adequacy. They should minimally include:
    - a. Daily cleaning of:
      - 1) horizontal surfaces (e.g., over-bed table, night stand)
      - 2) frequently touched surfaces (e.g., bed rails, phone)
      - 3) lavatory surfaces
    - b. Discharge cleaning of:
      - 1) surfaces described above
      - 2) visibly soiled vertical surfaces (e.g., walls, curtain dividers)
      - 3) frequently touched surfaces such as light switches and door knobs
    - c. Assess compliance with daily and discharge cleaning by identifying a person(s) in the facility to perform daily rounds to inspect cleanliness.

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<sup>46</sup> NYSDOH Pandemic Influenza Plan Section 6, VI.

- d. Assuring the product used for daily routine and discharge cleaning of patient areas is an Environmental Protection Agency (EPA) registered low- or intermediate-level disinfectant and it is used as per the manufacturer's instructions.
- e. See CDC *Guideline for Environmental Control in Health-Care Facilities*, 2003 (<http://cdc.gov/ncidod/hip/enviro/guide.htm>) for specific guidance for maintaining a safe environment for patients.

SECTION		Pg	CROSS REFERENCE
<b>I</b>	<b>World Health Organization Pandemic Periods/Phases</b>	1	NYSDOH Pandemic Influenza Plan Introduction, pg. i
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	<b>a. Incident Command System</b>		SC Emergency Management Plan, Section III Standard Operation Guide A, Section III (Attachment B)
	<b>b. Declaration of Public Health Emergency</b>		Public Health Law Article 21; 10 NYCRR 2.1; 10 NYCRR Part 2; SC HEOP I 8-4, Legal Authority Article III-Response and Recovery, 8-18, Emergency Operations
	<b>c. Public Order and Control</b>		SC Public Health Services Isolation and Quarantine Plan
	<b>d. Special Populations</b>		SCPHS Community Health Assessment
	<b>e. Training Exercise and Review</b>		HEOP-Article I, 8-06, Training Exercises and Drills
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	<b>b. Surveillance Criteria for LHD</b>		NYSDOH Pandemic Influenza Plan, Section 2, pg. 2-11 – 2-12 Appendix
	<b>c. Contact Investigation</b>		NYSDOH Pandemic Influenza Plan, Section 8, Appendix 8-B, Appendix
	<b>d. Collection/Shipping/Reporting of Specimen</b>		NYSDOH Pandemic Influenza Plan, Section 2, pg. 2-15 – 2-18
	<b>3. Healthcare Planning</b>	9-13	
	<b>a. Surge Monitoring</b>		SC-HEOP, Article II, Readiness, 8-12 Mass Care (A)
	<b>b. Volunteer Services</b>		SCPHS Homecare Emergency Plan, Section VIII, Comm. Partnerships NYSDOH Pandemic Influenza Plan, Section 3, Healthcare Planning Emergency Response B, Volunteers, #2 and #3
	<b>c. Emergency Medical Services</b>		SC-HEOP, Article II, 8-12, Mass Care, (B)
	<ul style="list-style-type: none"><li>• Point of Distribution</li></ul>		SC-HEOP, Contact Roster Section
	<ul style="list-style-type: none"><li>• Strategic National Stockpile</li></ul>		SC-HEOP, 4.4 SNS Activation Plan for Procedure and Policy
	<ul style="list-style-type: none"><li>• Public Alert/Notification</li></ul>		SC-HEOP, Article III, 8-22 SCEMP, Section III, Response B-5, A
	<b>d. Mass Fatality</b>		SC-HEOP, Article II, 8-12 (D)
	<ul style="list-style-type: none"><li>• Mortuary and Refrigeration Capabilities</li></ul>		SC-HEOP Contact Roster
	<b>e. General Communication</b>		SC-HEOP, Article III, 8-20, A-D
	<b>4. Infection Control</b>	14-15	NYSDOH Pandemic Influenza Plan, Section 4, III A-D, Appendix 4-A, Appendix
	<b>a. Surveillance/Monitoring of Healthcare Personnel</b>		NYSDOH Pandemic Influenza Plan, Section 4 III, C-D; SC-HEOP, Article III, 8-24
	<b>b. Personal Protective Equipment</b>		SC-HEOP, Article III, 8-24, Worker Protection
	<b>c. Home Healthcare Agency Infection Control</b>		NYSDOH Pandemic Influenza Plan, Section 4, VII, A-D Appendix
	<b>d. High Populated Areas/Communities</b>		
<b>II</b>	<b>5. Clinical Guidelines</b>	16	NYSDOH Pandemic Influenza Plan, Section 2 pg 2-11 – 2-12
	<b>6. Vaccine Procurement, Distribution and Use</b>	17-18	NYSDOH Pandemic Influenza Plan, Section 6
	<b>a. Enhancement of Annual Influenza vaccine</b>		
	<b>b. Priority Groups</b>		
	<b>c. Additional Priority Groups</b>		NYSDOH Pandemic Influenza Plan, Section 6: Vaccine Procurement, Distribution And Use, III-Prioritization, A.-Priority Groups Vaccine Priority Group Recommendations Appendix 6-A

	<b>d. Vaccinations</b>		New York State Pandemic Influenza Plan, Section 6, IV
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	<b>b. Safety of Antiviral Medication</b>		NYSDOH Pandemic Influenza Plan, Section 7, VI-D
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	<b>b. Isolation &amp; Quarantine Plan</b>		Sullivan County Isolation + Quarantine Plan (2005) Sullivan County Pandemic Influenza Plan, Surveillance Criteria for Section 2-B
	• Case Investigation		
	• Contact Identification & Management		NYSDOH Pandemic Influenza Plan, Section 8, Appendix 8 A –
	<b>c. Community Containment</b>		S.C.E.M.P. Section III, B-4
	<b>d. Community Support</b>		
	<b>9. Communications</b>	19	
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	<b>e. Public Warnings and Emergency Information</b>		SC EMP, B. – Managing Emergency Response, #5
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	<b>f. Pandemic Phase – Vaccine Availability</b>		
	<ul style="list-style-type: none"> <li>• Tracking of Vaccine</li> <li>• Points of Distribution</li> </ul>		NYSDOH Pandemic Influenza Plan, Section 6; Appendix 6C
	<b>g. Vaccine Safety Monitoring</b>		VAERS – Vaccine Adverse Event Reporting System

	<ul style="list-style-type: none"> <li>Adverse Event Report</li> </ul>		VAERS – Vaccine Adverse Event Reporting System
	<ul style="list-style-type: none"> <li>Data Collection</li> </ul>		NYSDOH Pandemic Influenza Plan, Section 6, VI
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	<b>d. SNS/POD Plan</b> <ul style="list-style-type: none"> <li>Request, Receipt and Distribution of Influenza Vaccine + Antiviral Medication</li> </ul>		SCPHS Strategic National Stockpile Plan SCPHS Point of Distribution (POD) Plan
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# **Multi-Jurisdictional Hazard Mitigation Plan Update**



*Fred Fries, 2006 Flood, Livingston Manor*

**Sullivan County, New York**

**Revised October 2012**

Multi-Jurisdictional Hazard Mitigation Plan Update  
Sullivan County, New York

Revised October 2012

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### Appendices (No Changes Since Original Submission)

Appendix A	Example Resolution to Approve Plan Updates, Resolutions Approving 2005 Sullivan County Hazard Mitigation Plan, and 2010 Sullivan County Hazard Mitigation Plan Update (when available)
Appendix B	Sullivan County HIRA-NY 2010 Risk Assessment
Appendix C	Critical Facilities Tables for Participating Jurisdictions
Appendix D	2010 Plan Update Meeting Agendas and Meeting Minutes

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Appendices

Appendix E	Blank Sullivan County Hazard Mitigation Questionnaire and Tabulated Results of Completed Questionnaires
Appendix F	Articles and Announcements Detailing Release of Draft HMP Update for Public Comment
Appendix G	Comments Received by Local, State, and Federal Stakeholders
Appendix H	NYSDEC 2009 Spill Database Records for Sullivan County
Appendix I	Asset Identification and Hazard Impacts (Included in 2005 Plan as Tables D-1 and D-4)
Appendix J	Completed Projects and Proposed Upcoming County Mitigation Projects (2010) (Included in 2005 Plan as Table D-3)
Appendix K	Mitigation Action Prioritization and Comparison Worksheets
Appendix L	Sullivan County Hazard Mitigation Plan Monitoring, Evaluation, & Update Checklist
Appendix M	2005 & 2010 Sullivan County Hazard Mitigation Plan Comparison

## **1.0 Introduction**

### **1.1 Background**

The purpose of this Multi-Jurisdictional Hazard Mitigation Plan (HMP) is to effectively reduce future disaster damages, public expenditure, private losses, and community vulnerability to natural, technological, and man-made hazards. This plan provides an opportunity for Sullivan County, in conjunction with the communities included in the County, to develop a comprehensive multi-jurisdictional risk assessment and to outline proposed mitigation actions that would minimize the costs and impacts of future disasters.

Sullivan County is comprised of fifteen (15) Towns (Bethel, Callicoon, Cochecton, Delaware, Fallsburg, Forestburgh, Fremont, Highland, Liberty, Lumberland, Mamakating, Neversink, Rockland, Thompson, and Tusten) and six (6) Villages (Bloomingburg, Jeffersonville, Liberty, Monticello, Woodridge, and Wurtsboro). All fifteen Towns and six Villages are recognized as participating jurisdictions under the 2005 Hazard Mitigation Plan and the 2010 Hazard Mitigation Plan Update. There are also 49 hamlets recognized within Sullivan County: Barryville, Burlingham, Callicoon Center, Claryville, Cochecton Center, Divine Corners, Eldred, Ferndale, Fosterdale, Fremont Center, Glen Spey, Glen Wild, Grahamsville, Hankins, Harris, Highland Lake, High View, Hortonville, Hurleyville, Kauneonga Lake, Kenoza Lake, Kiamesha Lake, Lake Huntington, Lew Beach, Livingston Manor, Loch Sheldrake, Long Eddy, Mileses, Mongaup Valley, Mountaindale, Narrowsburg, North Branch, Obernberg, Parksville, PhillipSPORT, Pond Eddy, Rock Hill, Roscoe, Smallwood, South Fallsburg, Summitville, Swan Lake, Thompsonville, Westbrookville, White Lake, White Sulphur Springs, Woodbourne, Youngsville, and Yulan.

This document represents the first update to Sullivan County's Multi-Jurisdictional All Hazard Pre-Disaster Mitigation Plan, dated July 2005. The efforts made to update the original plan were made possible by a grant from the Federal Emergency Management Agency (FEMA) that was administered by the Sullivan County Division of Planning & Environmental Management (DPEM). Jill Weyer, Assistant Commissioner and Hazard Mitigation Coordinator, and Jennifer Mall, Jr. Planner/Environmental Specialist, both from DPEM, oversaw the administration of the plan. The consulting firm Barton & Loguidice, P.C. (B&L), who was hired through a formal Request For Proposal (RFP) process, worked to revise and compile the information included in this document.

The continued monitoring and evaluation of this updated Hazard Mitigation Plan will be progressed by the Sullivan County DPEM, under the supervision of Jill Weyer. Future five-year Plan updates will be procedurally organized and executed by the Sullivan County Emergency Management Committee/Local Emergency Planning Committee (SCEMP/LEPC), under the direction of the Sullivan County DPEM.

A matrix documenting the significant changes between the 2005 Hazard Mitigation Plan and the 2010 HMP Update is included as Appendix M.

## **1.2 Purpose**

The intention of this plan is to meet the New York State and Federal hazard mitigation planning requirements established and managed by the New York State Emergency Management Office (NYSEMO) and the Federal Emergency Management Agency (FEMA). Sullivan County and jurisdictions will benefit from the planning and implementation of the proposed mitigation actions included in this Plan. The Pre-Disaster Mitigation Program (PDM) and the Flood Mitigation Assistance Program (FMA) continue to require communities to have a

FEMA-approved multi-hazard mitigation plan prior to requesting project implementation funds. Having an approved hazard mitigation plan provides access to potential sources of federal funding through the Hazard Mitigation Grant Program (HMGP). Participating jurisdictions that are granted funding opportunities are able to implement and complete their proposed mitigation actions to minimize impacts to their communities from a hazard event. The following are key documents which authorize and provide guidance for the preparation of this plan and plan update:

- Section 404 of Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended by Public Law 100-707
- Federal Disaster Mitigation Act (DMA) of 2000
- Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program (PDMP), Flood Mitigation Assistance Program (FMA), Repetitive Floodplain Claims Program (RFC), Severe Repetitive Loss Program (SRL)
- Code of Federal Regulations (CFR) - 44 Part 201
- Hazard Mitigation and Relocation Assistance Act of 1993
- FEMA - 44 CFR Part 9 - Floodplain Management and Protection of Wetlands and 44 CFR Part 10 - Environmental Considerations
- New York State Executive Law, Article 2-B, Sections 23 and 28-a
- New York State Multi-Hazard Mitigation Plan (2008)

### 1.3 Hazard Mitigation Planning Process

The jurisdictions included in the Sullivan County Multi-Jurisdiction Hazard Mitigation Plan consist of 15 Towns and 6 Villages, aside from the County. All jurisdictions were recognized as fully participating members of the 2005 HMP process. In order for each jurisdiction to be included as a participating member of the HMP Update, the participation criteria outlined in Table 1 needed to be met.

<b>Table 1 – Participation Criteria</b>	
<b>Criterion</b>	<b>How to Meet</b>
Jurisdiction representation at meeting with B&L personnel	Attend meeting to brainstorm and revise plan details applicable to each jurisdiction
Jurisdiction to research and provide information to be included in the plan update	Provide demographic information, critical facility identification, and hazard data and cost information to SCEMP/LEPC or Sullivan County
Jurisdiction to provide list of potential mitigation goals and actions	Provide examples of mitigation actions that could be implemented to SCEMP/LEPC or Sullivan County
Jurisdiction representatives reviewed and commented on the plan update	Provide comments of draft plan update to County Planning Dept.
Jurisdiction representatives assisted in acquiring public involvement of the update process	Invite public to meetings, educate public of plan update process and plan availability, encourage comments on draft plan update
Jurisdiction agreed to pass a resolution to adopt the HMP Update	Example of resolution to be passed is included in Appendix A – these resolutions will be passed and will be included in the plan

Given these criteria, the jurisdictions participating in the 2010 Sullivan County HMP Update include: Sullivan County, Towns of Bethel, Callicoon, Cohecton, Delaware, Fallsburg, Forestburgh, Fremont, Highland, Liberty, Lumberland, Mamakating, Neversink, Rockland, Thompson, and Tusten, and the Villages of Bloomingburg, Jeffersonville, Liberty, Monticello, Woodridge, and Wurtsboro. Figure 1.1 shows the location of Sullivan County within New York

State. Figure 1.2 depicts the municipal boundaries of the Towns and Villages located within Sullivan County.

Figure 1.1 – Location of Sullivan County in Relation to Other Counties in New York State

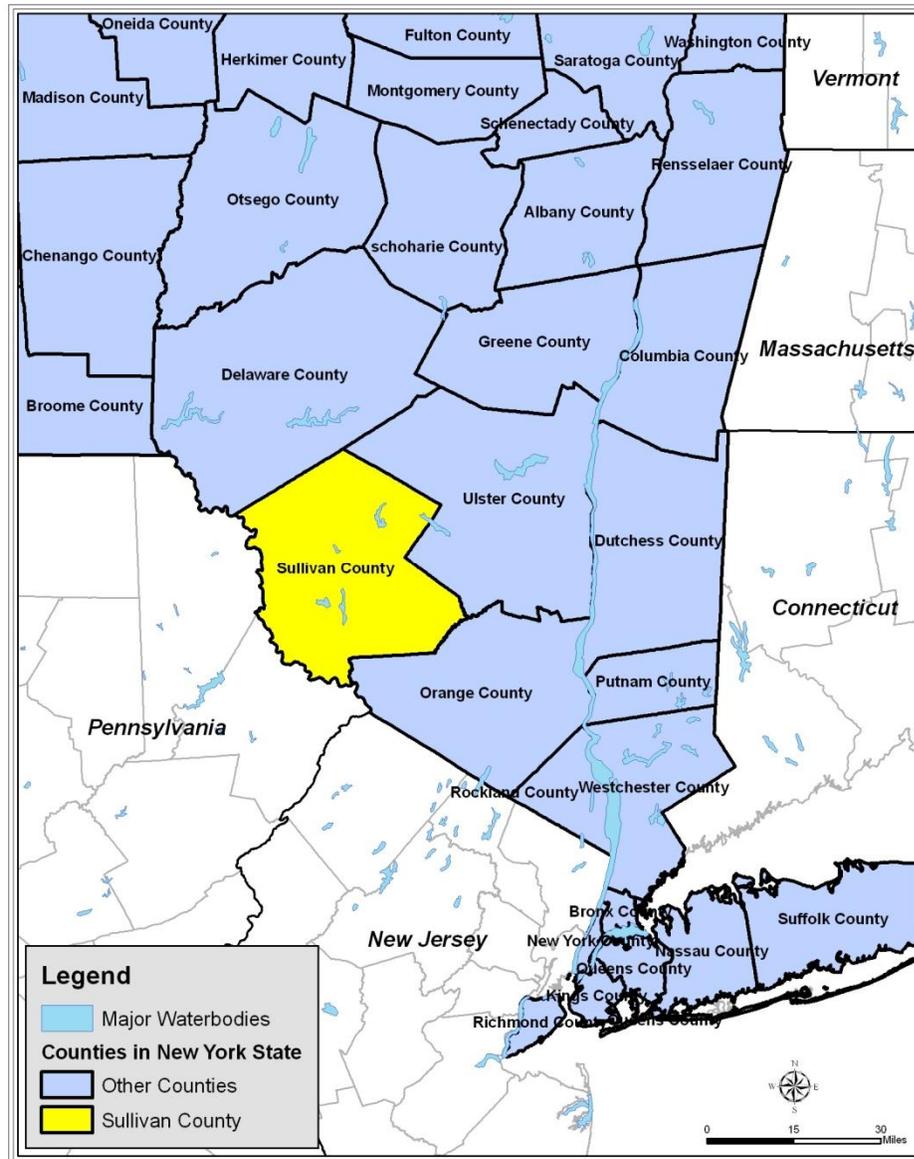
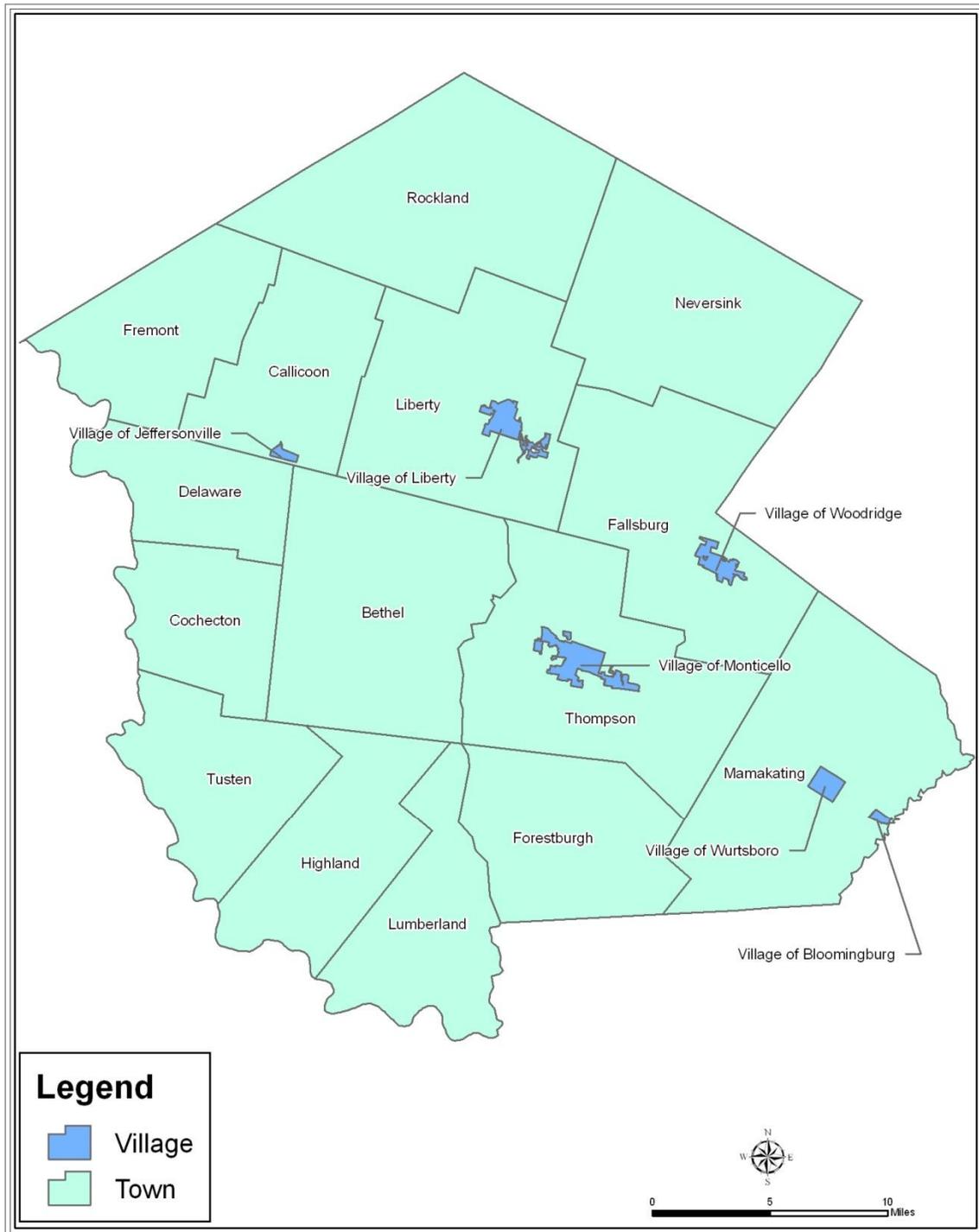


Figure 1.2 - Municipal Boundaries within Sullivan County



Each participating jurisdiction provided updated information about the hazards that have historically impacted each municipality and the costs and damage associated with each hazard event, if available. All participating municipalities reviewed and revised their list of critical facilities and the estimated damages that each facility could potentially incur based on the occurrence of a variety of hazard events. Various demographic data and regulatory and code enforcement information was also provided by each participating jurisdiction to be included in the plan update. All provided information and data was forwarded to the SCEMP/LEPC Committees, Sullivan County, or B&L to include in the plan update.

A wide variety of additional resources were utilized to gather information concerning historic occurrences of hazard events within the County, vulnerabilities within the County related to future hazard events, and costs and damages likely to occur as a result of a hazard event within the County. Goals were created to establish a foundation for the formulation of potential mitigation actions that the County and each individual jurisdiction could implement. These mitigation actions are proposed in order to minimize the damage that could occur to life, property, and the environment as a result of hazard events within Sullivan County. Further details regarding the historic hazard events within the County are located in Section 5 of the Plan Update. Section 7 includes the hazard mitigation goals and the suggested mitigation actions that are proposed by each participating jurisdiction.

#### **1.4 Sullivan County HIRA-NY Risk Analysis**

Sullivan County updated its County hazard analysis on March 9, 2010, using the program Hazard Identification and Risk Assessment (HIRA or HIRA-NY). This update was completed so that the most up-to-date information would be considered and included in the County's Hazard Mitigation Plan Update.

HIRA-NY is an automated program that was developed by the American Red Cross and the NYS Emergency Management Office (NYSEMO) to analyze types of hazards, natural, human-caused, and technological, that may impact an area and to specify details such as the longevity, severity, frequency, etc. of such hazard events. Sullivan County's hazard analysis forms the basis for the participating jurisdiction's risk and vulnerability assessment included in this plan update. In addition to this assessment, the Town of Bethel is the only jurisdiction to have completed a single-jurisdiction risk assessment analysis.

The HIRA-NY program evaluates five (5) factors related to the hazard analysis process:

- *Scope* – looks at areas that could be impacted by the hazard and whether this hazard could trigger another hazard causing a cascade effect;
- *Onset* – looks at how much time there is between when a hazard is identified and when it begins to impact a community;
- *Impact* – looks at the extent that an area's infrastructure, private property, and people would be impacted from a hazard event;
- *Duration* – looks at how long the hazard remains active, how long it takes emergency operations to continue after the occurrence of a hazard, and how long the recovery process takes; and
- *Frequency* – looks at how often a particular hazard has occurred, the severity of these occurrences, and the probability of future occurrences. Historical events are documented and researched to aid in this analysis.

During this analysis, the participants determined that some of the natural, human-caused, and technological hazards included in the HIRA-NY program were not applicable to Sullivan County. Therefore, only eight (8) hazards were evaluated during this risk assessment event. The participants analyzed all hazards that were determined to potentially affect Sullivan County. The selected hazards were categorized as follows:

Rating of 321 to 400 = High Hazard

Rating of 241 to 320 = Moderately High Hazard

Rating of 161 to 240 = Moderately Low Hazard

Rating of 44 to 160 = Low Hazard

The 8 hazards that were identified as a result of this exercise are listed below in Table 2, along with their associated HIRA-NY numerical ratings and risk categories.

<b>Table 2 – Sullivan County HIRA-NY Program Rating Results</b>		
<i>This table lists the hazards analyzed by Sullivan County during their HIRA-NY 2010 revision event (Sullivan County, HIRA-NY, 2010)</i>		
<b>Hazard</b>	<b>HIRA-NY Numerical Rating</b>	<b>HIRA-NY Category</b>
<i>Flood</i>	317	Moderately High
<i>Fire</i>	262	Moderately High
<i>Severe Storm</i>	255	Moderately High
<i>Winter Storm (severe)</i>	253	Moderately High
<i>Earthquake</i>	251	Moderately High
<i>Ice Storm</i>	234	Moderately Low
<i>Hurricane</i>	201	Moderately Low
<i>Terrorism</i>	180	Moderately Low

Detailed profiles of these 8 hazards are included in Section 5 of this plan.

## **1.5 Public and Agency/Organization Input**

Aside from review by Sullivan County, participating jurisdictions, and SCEMP/LEPC committee members, the Multi-Jurisdictional Hazard Mitigation Plan Update was also available in hard copy and electronic format for public review throughout the plan update process. Additional details provided in Section 3.3. In addition, the following agencies and organizations were formally invited to review the draft HMP Update and provide their comments:

- Catskill Regional Medical Center
- National Park Service
- New York State Department of Health (NYSDOH)
- Sullivan County Board of Cooperative Educational Services (BOCES)
- American Red Cross
- New York State Department of Transportation (NYSDOT)
- Cornell Cooperative Extension
- State University of New York (SUNY) Sullivan
- Eldred Central School
- Fallsburg Central School
- Liberty Central School
- Livingston Manor Central School
- Monticello Central School
- Sullivan West Central School
- Roscoe Central School
- Tri-Valley Central School

Multiple comments and suggestions were received as a result of this outreach effort; all agencies and groups were provided a minimum of 30 days to

respond with any comments on the HMP Update. Written comments received by participating agencies and groups are provided in Appendix G.

## 2.0 Sullivan County Profile

This section details the existing environmental features, transportation networks, demographics, history, and available facilities within Sullivan County. A profile of Sullivan County and its existing features and facilities was not included in the original 2005 HMP. Section 2.0 is a new section that has been added as part of the HMP Update.

The Sullivan County Databook, prepared in December of 2002 by the Sullivan County Division of Planning and Community Development, states that Sullivan County was established through an act of the New York State Legislature on March 27, 1809.

### 2.1 Geographic Location

Sullivan County is located in southern New York State, southeast of the City of Binghamton and southwest of the City of Albany. The Delaware River forms the southwestern boundary of the County, separating it from the state of Pennsylvania. Sullivan County is located in the Catskill Mountains, and the northeastern portion of the County is located in the Catskill Park. The highest point in the County, unofficially named Beech Mountain, near Hodge Pond in the Town of Rockland, is located within the Catskill Park at an elevation of 3,118 feet above sea level.

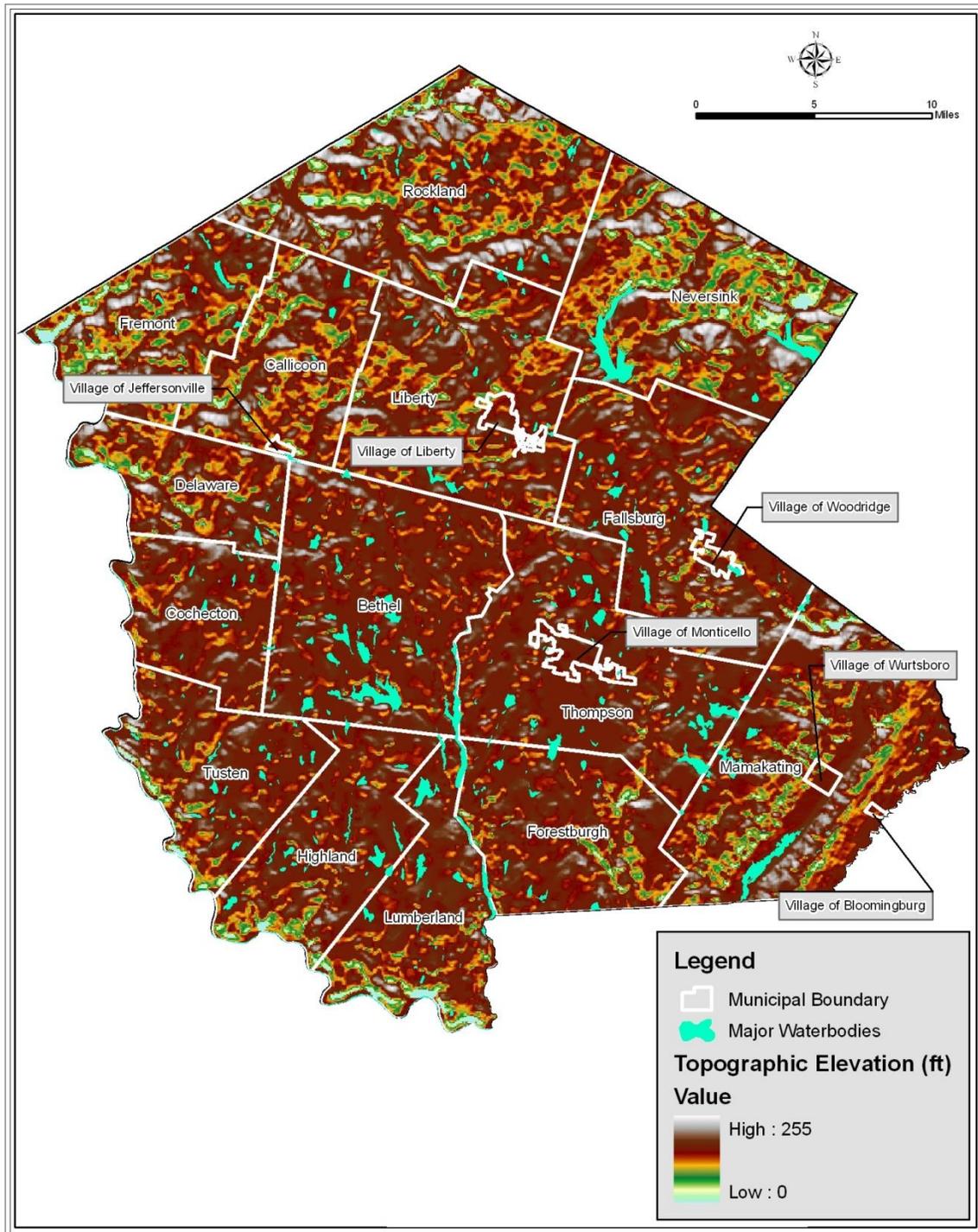
The Sullivan County seat is in the Village of Monticello. The County includes 15 Towns, 6 Villages, and 49 Hamlets. Sullivan County has a total area of 1,011 square miles (Sullivan County Division of Planning and Environmental Management, 2010). In terms of land area, the Town of Mamakating has the largest within Sullivan County with 100.0 square miles in total area, almost one-tenth of the total area of the County. The Town of Delaware is the smallest town with a total area of 35.1 square miles, making up only 3.5% of the total area of

Sullivan County. Table 3 provides the total area (in square miles), acreage, and percent of the total County, for each Town included within Sullivan County.

<b>Table 3 – Land Areas for Towns Within Sullivan County</b> (Sullivan County Division of Public Works)			
<b>Jurisdiction</b>	<b>Total Area (square miles)</b>	<b>Acres</b>	<b>% of Total Land in County</b>
Sullivan County	1,011.3	647,212.8	100.0%
Bethel	93.5	59,846.4	9.2%
Callicoon	49.6	31,769.6	4.9%
Cochecton	38.1	24,358.4	3.8%
Delaware	35.1	22,444.8	3.5%
Fallsburg	79.2	50,713.6	7.8%
Forestburgh	56.7	36,262.4	5.6%
Fremont	51.4	32,876.8	5.1%
Highland	50.6	32,390.4	5.0%
Liberty	81.9	52,403.2	8.1%
Lumberland	50.4	32,268.8	5.0%
Mamakating	100.0	64,019.2	9.9%
Neversink	86.9	55,584.0	8.6%
Rockland	97.3	62,252.8	9.6%
Thompson	90.5	57,907.2	8.9%
Tusten	50.2	32,115.2	5.0%

The terrain is generally hilly, with higher elevations in the northern portion of the County, ranging from 460 to over 3,000 feet above sea level. Figure 2.1 illustrates the topographic relief of Sullivan County and the locations of major water bodies within the County limits.

Figure 2.1 - Topographic Relief of Sullivan County



## 2.2 Historical Overview

The Hope Farm Press and Bookshop has compiled a history of Sullivan County. According to Hope Farm Press, the earliest inhabitants of Sullivan County were the Esopus tribe of the Lenape, Native Americans living in the regions around the Delaware and Hudson Rivers. They referred to themselves as the Lenni Lenape, or “the true people”, and used the land for agriculture, hunting, and fishing. Early settlers to the region include Dutch, British, and German immigrants in the 17<sup>th</sup> and 18<sup>th</sup> centuries (Between the Lakes, 2010). The Lenape became heavily involved with the fur trade, and large tracts of land were purchased from the Lenape by the early settlers in the 17<sup>th</sup> and 18<sup>th</sup> centuries (Hope Farm Press and Bookshop, 1996).

Sullivan County was on the frontier of the American Revolution, and settlers were frequently attacked by raiding parties of Indians allied to the British. Sullivan County was home to one battle of the Revolutionary War, the Battle of Minisink. Joseph Brant, a Mohawk warrior commissioned as a colonel in the British Army, led a raid at Minisink in July of 1779. Following this raid, two groups of militia followed Brant up the Delaware River into what is now southern Sullivan County, in order to recover the food and supplies Brant had taken during the raid. The militia was unable to take Brant by surprise, and Brant defeated the militia in a short battle. Approximately 45 Americans were killed, while Brant lost only about seven men. Minisink Battleground Park, found at Minisink Ford in the Town of Highland, is located at the site of the battle as a way to commemorate the soldiers that were killed during the event (Minisink Valley Historical Society, 2009). Sullivan County was later named for Major General John Sullivan, the officer directed by George Washington to drive out the Mohawks and Tories from the region.

Settlement increased after the war, as travelers through the region found that it was a good place for planting crops, with game to hunt, and forests to build homes. The large tracts of land that had been purchased before the war were split up for sale or lease. The rapid increase in population after the war led to a demand for creating a separate county for the region. Hence, Sullivan County was split from the southwestern corner of Ulster County on March 27, 1809.

The Delaware & Hudson Canal (D&H Canal), which opened in 1828 in order to carry coal from Pennsylvania to the Hudson River for shipment to New York City, provided the first great population boom in the County. The canal also played an instrumental role in tanning; the region's other major industry. Local hemlock forests produced high quality tannins that led to a thriving tanning trade in Sullivan County. However, by the end of the 1880s, the hemlock stands were scarce and the tanneries had all but vanished (Sullivan County Historical Society, 2010). Figure 2.2 depicts a current photograph of the Delaware & Hudson Canal located within the Town of Mamakating in Sullivan County.

**Figure 2.2 – Photograph of the Delaware & Hudson Canal in Sullivan County, New York** (*Sullivan County Historical Society, 2010*)



With its timber supplies depleted and the tanneries closed, Sullivan County turned to tourism as its primary industry. The region was well known for recreational opportunities such as fishing and hunting. Railroads provided access to the growing number of summer hotels and resorts in the Catskills, of which the County housed approximately 200 hotels by the end of the 19<sup>th</sup> century. In the early part of the 20<sup>th</sup> Century, the tourism industry in Sullivan County began to suffer. Local hotel owners attributed the decline to the establishment of the Loomis Sanitarium and other tuberculosis treatment facilities within the County. However, by 1940, more than 300 hotels were in operation in Sullivan County once again, and at the peak of the tourism era (1953), the County contained 538 hotels, 1,000 rooming houses, and 50,000 bungalows (Sullivan County Historical Society, 2010).

By the 1970s, tourism had again slowed in Sullivan County. Air conditioning and suburbia meant fewer people needed to escape the summer heat of the nearby cities, and air travel opened up vacation destinations further from home. Many of the resorts and hotels were forced to close. While tourism remains the County's main industry today, visitors primarily own or rent vacation homes. These visitors enjoy the region's natural beauty, play golf, ski, and visit the Monticello Motor Club for racing (members only).

Sullivan County is also home to the original Woodstock Festival that took place during August 1969. Concert organizers had originally planned to hold the festival in Woodstock, located in nearby Ulster County, but residents ultimately refused to have the festival be held there (Woodstock, 2010). A dairy farmer in Bethel allowed the organizers to use his land for the festival, making Sullivan County home to "one of the most significant concerts in history," according to Rolling Stone Magazine (2009). Over three days, dozens of artists performed while 500,000 visitors camped in muddy conditions without adequate food or medical facilities. So many people flocked to the concert that nearby roads were

shut down and the County declared a State of Emergency (Woodstock, 2010 and Sullivan County Historical Society, 2010). The Bethel Woods Center for the Arts is now located at the site of the original festival (Bethel Woods Center for the Arts, 2010). Figure 2.3 shows a 2006 view of the field where the main stage of the 1969 Woodstock Festival was located.

**Figure 2.3 - Location of the 1969 Woodstock Festival  
that took place in the Town of Bethel**  
*(Wikipedia, October 2006)*

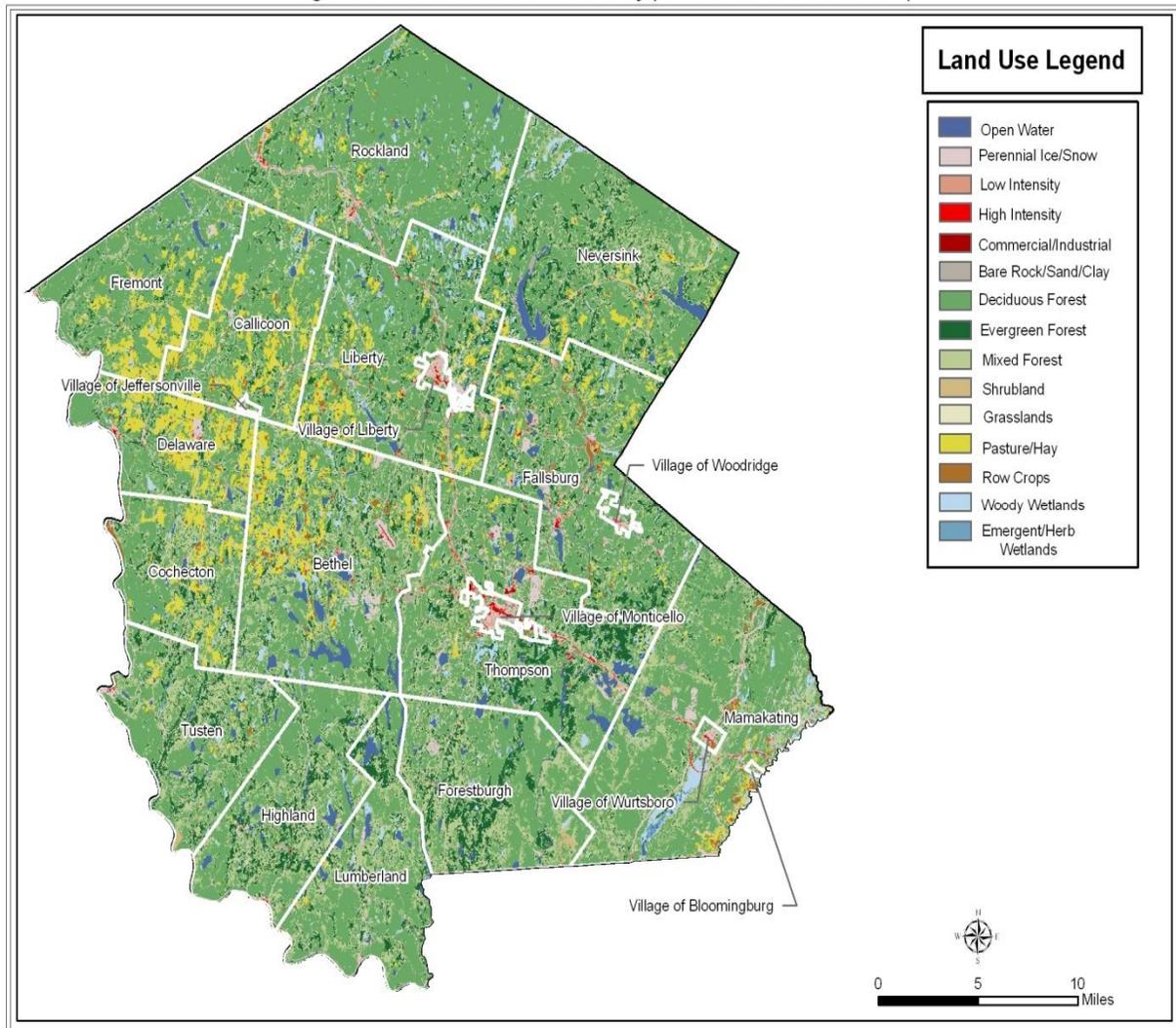


## 2.3 Land Use

Land use within Sullivan County ranges from densely populated areas and farming communities to a vast open space network including the Catskill Park, the Upper Delaware Scenic and Recreational River, Basha Kill Wildlife Management Area, and Shawangunk Ridge (Sullivan County Division of Planning and Environmental Management, 2010). Areas of disturbance are primarily attributed to residential areas and those with active agriculture uses include or consist of livestock, poultry, and their products, orchards, and row

cropping. Other land uses include commercial, industrial, recreational, conservation, and vacant land. The general land uses classified in the County are shown on Figure 2.4. Table 4 shows the assessed property values for different land use categories for each jurisdiction within Sullivan County. This data was provided by the Sullivan County Office of Real Property Tax Services. The NYS Hazard Mitigation Plan (2009) reflects that the total value of infrastructure within Sullivan County is estimated at \$515,000,000.

Figure 2.4 - Land Use in Sullivan County (National Land Cover Dataset)



**Table 4 – Assessed Property Values (\$) for Different Land Use Categories***(Sullivan County Office of Real Property Tax Services, 2010)*

Jurisdiction	Agricultural	Residential	Commercial	Industrial	Vacant	Utilities	Recreation & Entertainment	Government	Institutional, Educational, Religious Uses	Total Value
(T) Bethel	413,653	84,876,621	16,829,515	279,800	22,312,840	6,184,464	8,759,540	91,300	6,011,557	145,759,290
(V) Bloomingburg	0	868,000	58,000	0	295,300	3,800	40,400	0	200	1,265,700
(T) Callicoon	1,554,000	20,588,900	3,450,000	310,000	1,504,000	0	52,000	615,000	3,758,500	31,832,400
(T) Cochection	630,500	8,853,610	363,800	0	2,425,525	3,955,030	359,200	100,400	84,500	16,772,565
(T) Delaware	1,178,611	18,932,996	8,078,724	0	5,042,185	4,087,500	206,400	306,800	227,500	38,060,716
(T) Fallsburg	20,600	21,801,245	12,470,800	167,600	5,432,485	4,833,800	25,766,750	4,549,600	6,835,100	81,877,980
(T) Forestburgh	0	0	0	0	0	0	0	0	0	0
(T) Fremont	0	25,062,850	175,000	0	3,322,190	3,237,300	1,601,600	0	223,500	33,622,440
(T) Highland	0	63,240,951	3,762,663	0	15,452,548	316,125	7,323,750	647,850	2,507,850	93,251,737
(V) Jeffersonville	91,500	4,676,900	3,590,250	0	197,800	0	1,000	440,000	1,430,500	10,427,950
(T) Liberty	749,300	14,504,000	8,360,100	22,700	3,582,200	2,010,900	1,092,000	0	7,086,200	37,407,400
(V) Liberty	0	1,931,400	15,876,900	0	280,600	348,400	0	188,700	4,214,400	22,840,400
(T) Lumberland	0	46,075,000	1,750,431	0	16,640,464	6,025,842	18,595,734	127,462	417,150	89,632,083
(T) Mamakating	0	0	0	0	0	0	0	0	0	0
(V) Monticello	0	0	0	0	0	0	0	0	0	0
(T) Neversink	5,000	620,095	13,800	0	229,650	21,569,230	135,599	99,750	28,250	22,701,374
(T) Rockland	0	45,965,200	13,268,800	157,000	5,014,700	1,880,400	3,955,300	858,700	7,535,600	78,635,700
(T) Thompson	45,200	133,650,400	42,919,100	3,687,000	21,076,100	38,479,090	14,918,600	156,600	45,629,900	300,561,990
(T) Tusten	99,000	19,987,200	1,355,000	0	7,980,050	5,026,200	2,019,000	100	5,875,700	42,342,250
(V) Woodridge	0	1,881,800	0	0	58,100	0	174,400	1,707,500	14,300	3,836,100
(V) Wurtsboro	0	5,601,400	954,700	0	467,500	73,100	16,400	0	2,842,000	9,955,100
Sullivan County	4,787,379	519,119,376	133,277,815	4,624,102	111,314,407	98,031,371	85,017,772	9,889,822	94,722,826	1,060,783,175

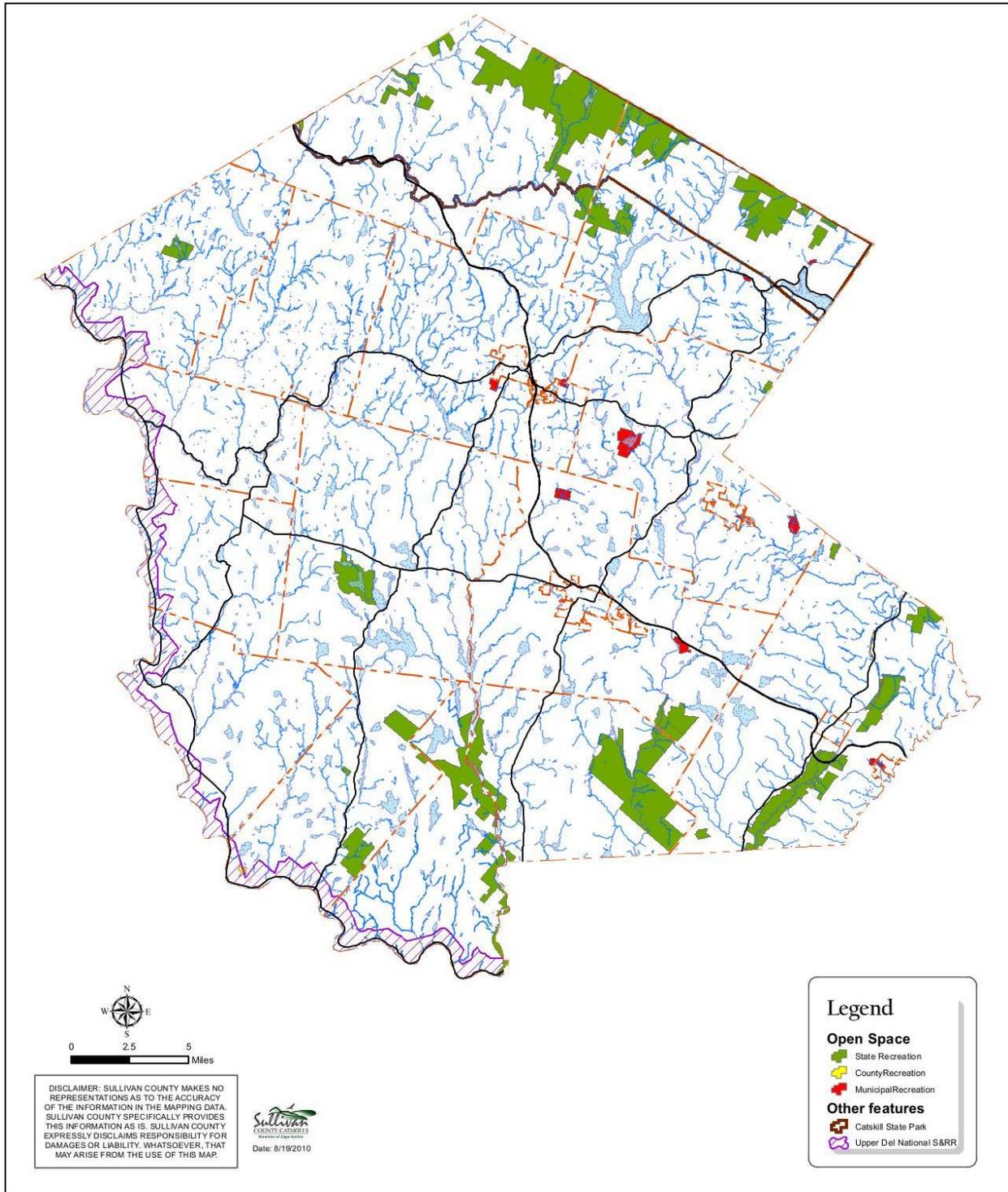
Large portions of Sullivan County remain undeveloped, creating large areas of open space. Sullivan County is 78% forested, placing it among the more forested counties in New York State (Sullivan 2020 Toolbox Volume II, 2010). The Catskill New York Forest Preserve is comprised of State-owned land within the Catskill Park and is designated as forever wild to serve as a watershed, recreation area, and ecologic and scenic reserve (Catskill Park, 2008). The remainder of the Park is privately owned and is home to about 50,000 permanent residents. The Basha Kill Wildlife Management Area (WMA) contains over 3,000 acres of wetlands, upland areas, and other wildlife habitat and is the largest freshwater wetland in southeastern New York State (Basha Kill Area Association, 2010).

The Shawangunk Ridge is located in the southeast corner of the County, adjacent to Basha Kill WMA. The Ridge contains many rare plant and animal species and provides a pristine watershed for public drinking water supplies. The Ridge contains many large tracts of undisturbed forestland, due to the thousands of acres purchased by the Open Space Institute and The Nature Conservancy. The area also includes the Wurtsboro Ridge State Forest, which protects Basha Kill WMA and the Shawangunk Ridge watershed (Shawangunk Ridge Coalition, 2010).

The Upper Delaware Scenic and Recreational River (S&RR) is located along the Delaware River corridor between the boundaries of New York State and Pennsylvania. The Delaware River provides numerous recreational opportunities while supporting a healthy ecosystem for wildlife and providing water for over 17 million people. The Upper Delaware S&RR provides sightseeing, boating, camping, hunting, fishing, hiking, and bird watching opportunities. National Park Service contact information and emergency numbers for this recreational area are included in Appendix G.

Figure 2.5 shows the availability of protected open space and other important recreational areas within Sullivan County. This figure does not take into consideration conservation easements or protected lands under private ownership.

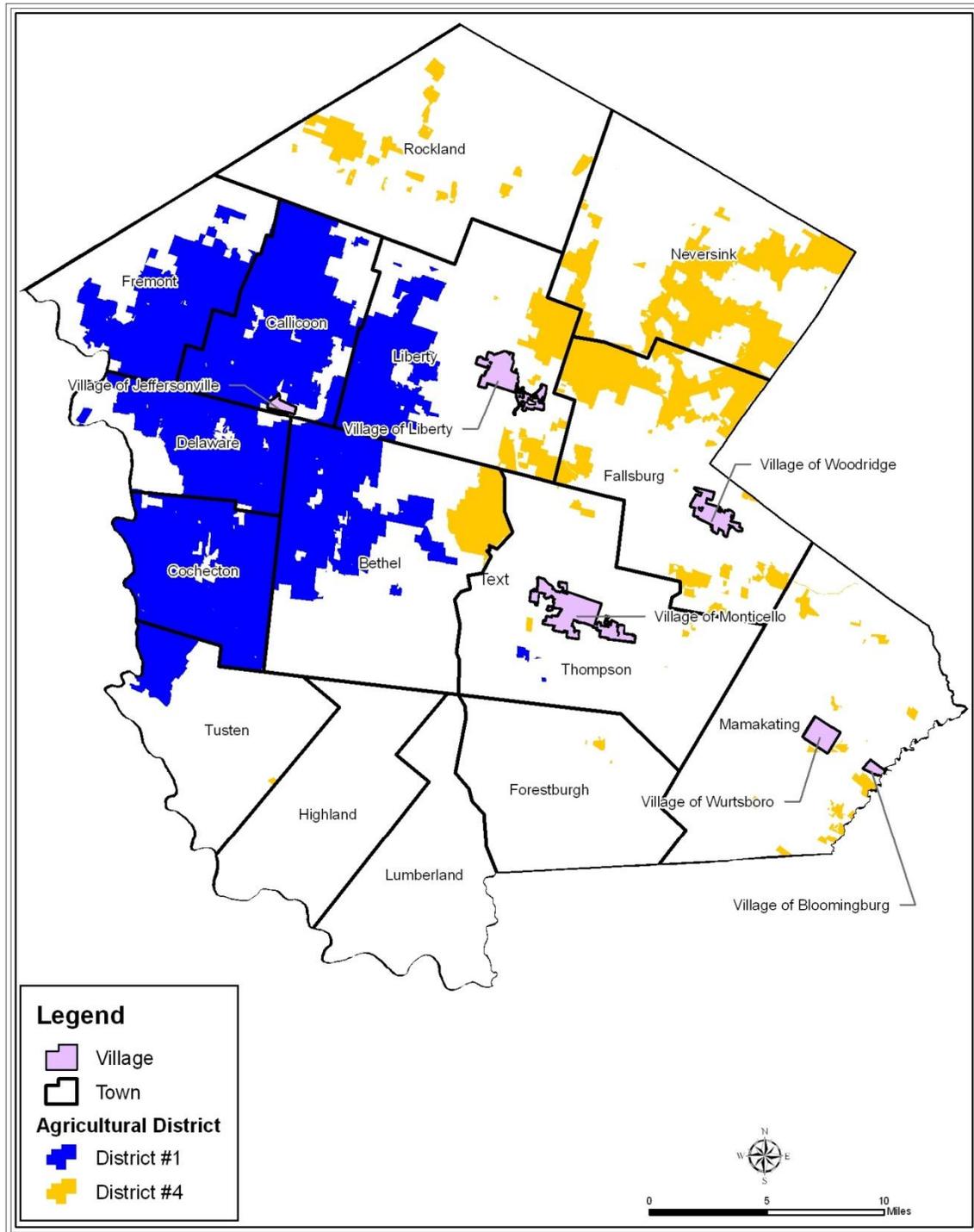
**Figure 2.5 – Open Space and Recreational Areas in Sullivan County**  
(Sullivan County GIS, 2010)



Areas with the highest residential densities are located in the villages and hamlets within the County. A housing unit is determined to be occupied if it is the normal place of residence of the person(s) living in it, including if said persons are temporarily absent. A vacant housing unit is classified as such if no one is living in it on a permanent basis, excluding temporary absence. Vacancy rates are calculated during U.S. Census years as a potential indicator of distressed regions. In 2000, Sullivan County had a vacancy rate of 38.2%, and the estimated rate for 2006-2008 is 39.6% (U.S. Census Bureau, 2008). The high vacancy rates are likely attributable to Sullivan County's desirability as a vacation destination; many homes are considered vacant because they are only used as vacation homes or are rented out to tourists for most of the year. The greatest vacancy rates were reported in the Towns of Thompson and Fallsburg (U.S. Census Bureau, 2008).

Due to the high level of agricultural influence in Sullivan County, active agricultural lands were mapped and included in New York State Agricultural Districts #1 and 4. Agricultural District #1 was created in December 1973 and certified in June 2006, while Agricultural District #4 was created in October 1975 and certified in February 2008. Figure 2.6 below shows the extent to which these Agricultural Districts are mapped throughout Sullivan County in 2010. Though a substantial amount of agricultural lands are mapped within Sullivan County, because of changes in technology and the urban sprawl and popularity of the County as a vacation destination, the number of farms within the County have been decreasing over the past few decades.

Figure 2.6 – Mapped Location of Sullivan County Agricultural Districts (2010)



In 2005, Sullivan County developed a comprehensive plan for the County called Sullivan 2020. According to its Land Use Planning and Zoning goals, the County aims to establish regional cooperation in zoning that encourages mixed-use development with a design and scale compatible with the existing neighborhood character, while preserving viewsheds, natural resources and environmentally sensitive areas (Sullivan 2020 Volume II, 2005). Jurisdictions within the County develop their own planning and zoning regulations, often fashioned to meet the County's goals. The goals and objectives of the Sullivan County Hazard Mitigation Plan and the 2010 Plan Update will be incorporated into these future land use plans and zoning regulations.

## 2.4 Economic Characteristics

Unemployment in the County has increased over the past two years, mirroring the statewide economy. The April 2010 unemployment rate in Sullivan County was 8.8%, compared to a statewide rate of 8.2% at the same time period (NYS Department of Labor, 2010). The change in the number of jobs for various industries is shown in Table 5 below. The data reported in the table is from the Hudson Valley Region, which includes Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester Counties. Overall, 19,520 jobs, or 1.9%, have been lost in the Hudson Valley Region since 2008.

<b>Table 5 – Change Observed in Total Amount of Jobs in Various Industries from 2008 to 2010 Within the Hudson Valley Region</b> <i>(NYS Department of Labor, 2010)</i>	
<b>Industry</b>	<b>Change Observed in 2010</b>
Government	-1080
Agriculture, Forestry, Fishing, Hunting	-200
Education & Health Services	+8190
Manufacturing	-5160
Trade, Transportation, Utilities, Warehousing	-8520
Professional & Business Services	-3470

<b>Table 5 – Change Observed in Total Amount of Jobs in Various Industries from 2008 to 2010 Within the Hudson Valley Region</b> (NYS Department of Labor, 2010)	
<b>Industry</b>	<b>Change Observed in 2010</b>
Financial Activities	-1490
Information Services	-1830
Natural Resources, Mining, Construction	-2390
Leisure & Hospitality	-170
Real Estate	-470
Other Services	-200
Self Employed	+90

The industry trends illustrated in Table 5 are also true for New York State. New York has seen 2.7% of all jobs lost overall, and only the education and health sectors and self employment have increased (NYS Department of Labor, 2010). Working residents of Sullivan County are primarily employed in government, trade, health care, and hospitality positions. Table 6 shows the percentages of employment by industry for Sullivan County's employed population, based on data from 2009.

<b>Table 6 – Sullivan County Employment by Industry, 2009</b> (NYS Department of Labor, 2010)	
<b>Industry</b>	<b>Percent Employment</b>
Government	25%
Education & Health Services	21%
Trade, Transportation, Utilities, Warehousing	17%
Leisure & Hospitality	11%
Other Services	8%
Manufacturing	5%
Natural Resources, Mining, Construction	4%
Financial Activities	3%
Professional & Business Services	2%
Real Estate	2%
Agriculture, Forestry, Fishing, Hunting	1%
Information Services	1%

Sullivan County typically has above-average employment in government, health care, and hospitality positions when compared to New York State, and below average numbers for professional and business services, finance, information, real estate, and manufacturing. These trends are a reflection of Sullivan County's relative lack of private sector industry and historic reliance on tourism. The County's Economic Development Strategy, adopted in 1997, encouraged the development of other service industries, including the development of manufacturing, agricultural, and other industrial sites. Sullivan 2020 is intended to update and expand upon the 1997 Strategy by incorporating new trends, like legalized gaming, and new facilities, like the Bethel Woods Center for the Arts (Sullivan 2020 Volume II, 2005).

The declining economy and rising rate of unemployment in recent years has placed a significant hardship on many families and households in Sullivan County. Those individuals that are unemployed take home below average earnings, compared to New York State overall average earnings. Table 7 shows the average weekly earnings in 2009 for various employment industries within Sullivan County.

<b>Table 7 – Sullivan County Average Weekly Earnings by Industry, 2009</b> <i>(NYS Department of Labor, 2010)</i>	
<b>Industry</b>	<b>Average Weekly Earnings</b>
Financial Activities	\$1216
Government	\$912
Information Services	\$821
Natural Resources, Mining, Construction	\$758
Education & Health Services	\$695
Professional & Business Services	\$627
Agriculture, Forestry, Fishing, Hunting	\$565
Manufacturing	\$564
Trade, Transportation, Utilities, Warehousing	\$529
Other Services	\$506
Real Estate	\$449
Leisure & Hospitality	\$360
<b>Overall Average</b>	<b>\$681</b>

Table 8 below details other economic characteristics for Sullivan County in comparison to New York State. The table includes data from the 2000 U.S. Census and estimated data for 2006-2008. The income of Sullivan County residents is considerably less than that of New York State, for both individuals and families. The County also has a greater proportion of individuals below the poverty line than the State statistics show. Data listed in Table 8 was gathered from the County population that is 16 years or older.

<b>Table 8 – Economic Characteristics of Sullivan County, 2000 and 2006-2008</b> (U.S. Census Bureau)						
	2000			2006-2008		
	Sullivan County	County (% of total pop. over 16 yrs)	New York State	Sullivan County	County (% of total pop. over 16 yrs)	New York State
Labor Force	33,330	57.6%	61.1%	36,933	60.2%	63.5%
Travel Time to Work (min)	29.3	-	31.7	26.0	-	31.4
Median Household Income (\$)	\$36,998	-	\$43,393	\$48,873	-	\$55,401
Median Family Income (\$)	\$43,458	-	\$51,691	\$56,209	-	\$67,229
Per Capita Income (\$)	\$18,892	-	\$23,389	\$23,073	-	\$30,804
Families Below Poverty Line	2,143	11.6%	11.5%	-	9.8%	10.5%
Individuals Below Poverty Line	11,559	16.3%	14.6%	-	15.8%	13.8%

Sullivan County is strategically located since it is within 75 miles of New York City and also not a far drive from the cities of Albany and Binghamton. This strategic location is confirmed through an analysis of the commuting patterns of those that reside in Sullivan County. Table 9 indicates the places of work for Sullivan County's residents. Though the vast majority of workers that live within Sullivan County also work within the County, commuting patterns to nearby metropolises in other Counties are apparent.

<b>Table 9 – Work Commuting Patterns for Residents of Sullivan County, 2006-2008</b> (U.S. Census Bureau)	
Working Location	Percentage of Total Working Population
Works Out of State	2.4%
Works in New York State	97.6%
Works in Sullivan County	72.6%
Works in Another County in NYS	25.0%

As indicated, most workers that reside within Sullivan County also work within the County limits. An analysis of more detailed commuting data shows

that outside of New York State, the next state where the most Sullivan County residents work is New Jersey. Other states represented in this data include: Alabama, Arkansas, California, Connecticut, Washington D.C., Illinois, Indiana, Maine, Massachusetts, and Missouri. Aside from Sullivan County, Orange County has the most Sullivan County resident commuters with well over half of the “Works in Another County in NYS” commuters. Other Counties within New York State where Sullivan County residents work include: Albany, Allegany, Bronx, Columbia, Delaware, Dutchess, Greene, Kings, Madison, Nassau, New York City, Oneida, Onondaga, Ontario, Otsego, Putnam, Queens, Richmond, Rockland, Saratoga, Suffolk, Ulster, Washington, Wayne, and Westchester. A small handful of workers included in the “Works out of State” category are listed as working in Italy and the United Kingdom.

## **2.5 Climate**

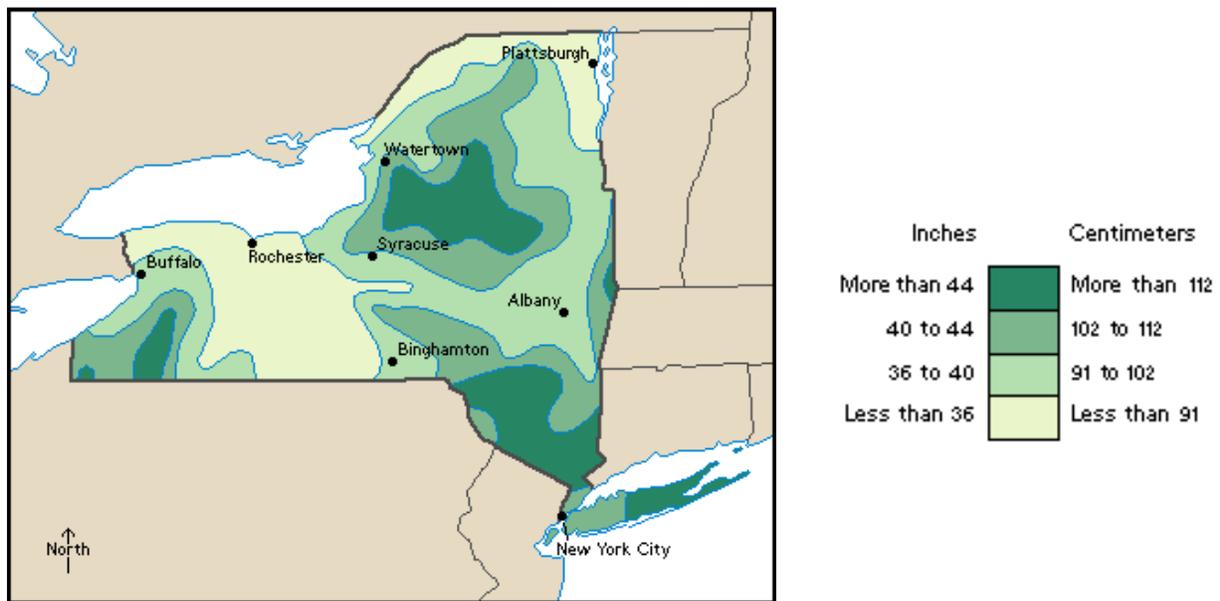
The climate of Sullivan County is of the humid continental type, with warm summers and cold winters, typical of the interior northeastern United States (Sustainable Sites Initiative, 2008). Humid continental climates are known for their variable weather conditions, due to their location between the polar and tropic air masses (Ritter, 2006). Polar air masses collide with tropical air masses, causing uplift of the moist tropical air and resulting in precipitation. Since Sullivan County is far removed from the moderating effects of the ocean, the climate experiences great swings in seasonal temperature (Ritter, 2006). Temperatures average 80°F in July with lows of about 10°F in January, and the year-round average temperature is about 45°F. Rainfall is well distributed throughout the year and averages 47 inches annually, while annual snowfall exceeds 70 inches and provides snow cover in the Catskill Mountains for the majority of winter (Weatherbase, 2010). Upland portions of the Catskills in northern Sullivan County receive up to 120 inches of snowfall (NYS Climate Office, 2010). Figures 2.7, 2.8, and 2.9 below illustrate Sullivan County’s climate

compared to the rest of New York State. The location of Sullivan County on these figures is indicated by the purple star symbol.

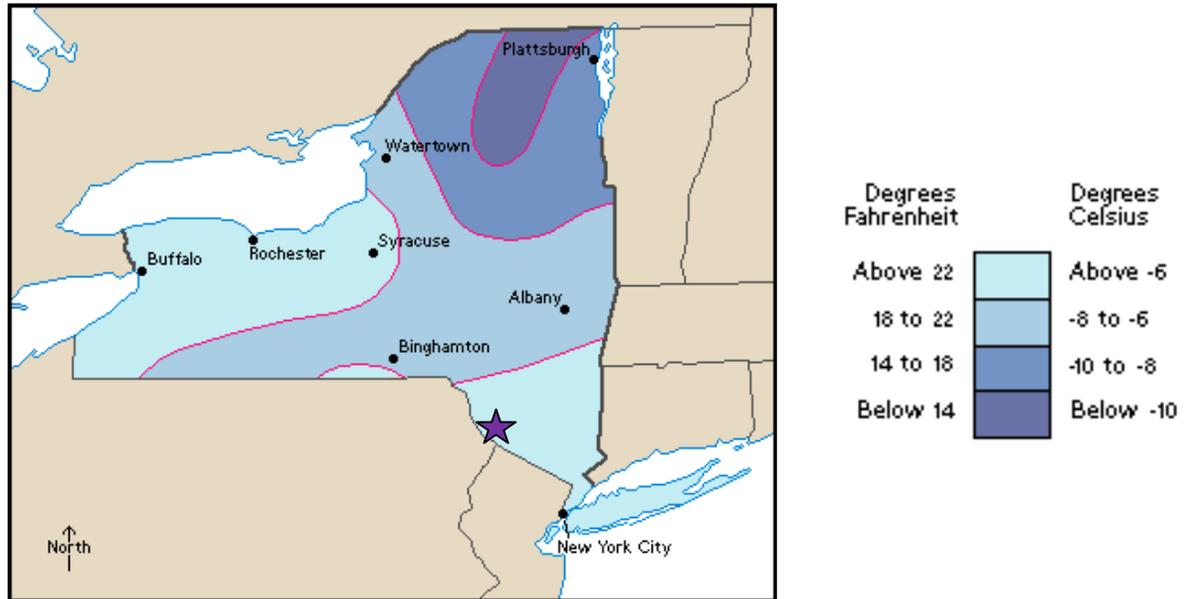
Historic flooding events have been documented along the Delaware River and its tributaries, particularly Callicoon Creek, Willowemoc, and Little Beaverkill. These flooding events are typically caused by prolonged periods of rainfall or short periods of heavy rainfall (NYS Climate Office, 2010). Thunderstorms occur about 30 days per year on average, accompanied by strong winds and lightning strikes, but extensive damage to property and crops is not common. Tornadoes are infrequent, with only three or four each year throughout all of New York State. The freeze-free season between the last spring and first fall freeze is about 100 to 120 days in the Catskills, with longer seasons of 120 to 150 days in the lower elevations of the County (NYS Climate Office, 2010).

**Figure 2.7 – Average Annual Precipitation for New York State**

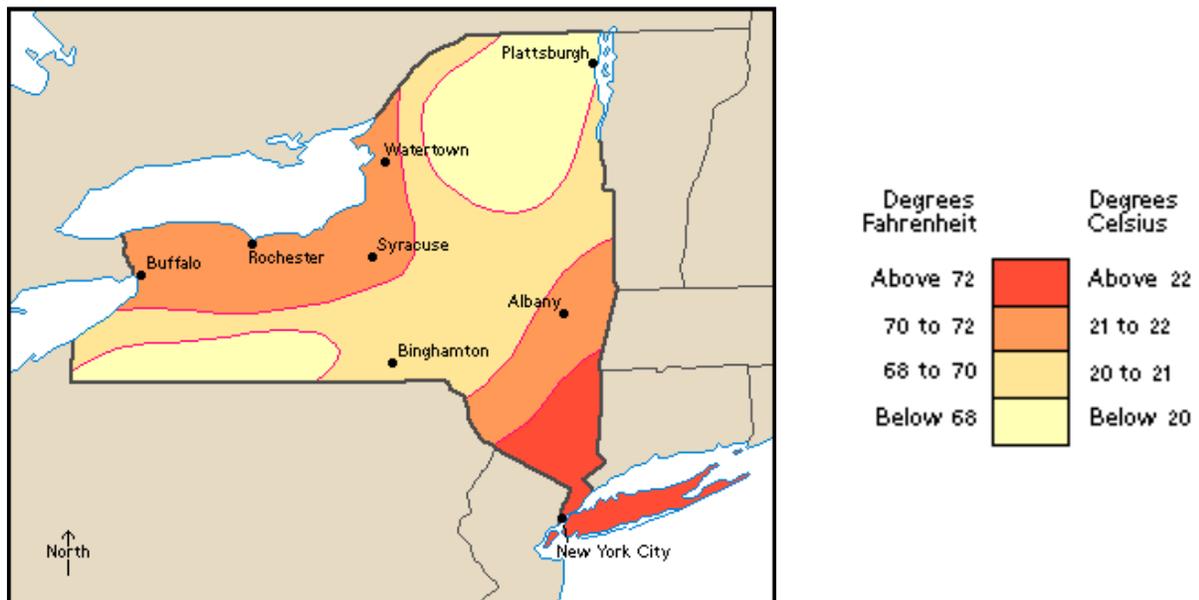
(World Book)



**Figure 2.8 – Average January Temperatures for New York State**  
(World Book)



**Figure 2.9 – Average July Temperatures for New York State**  
(World Book)

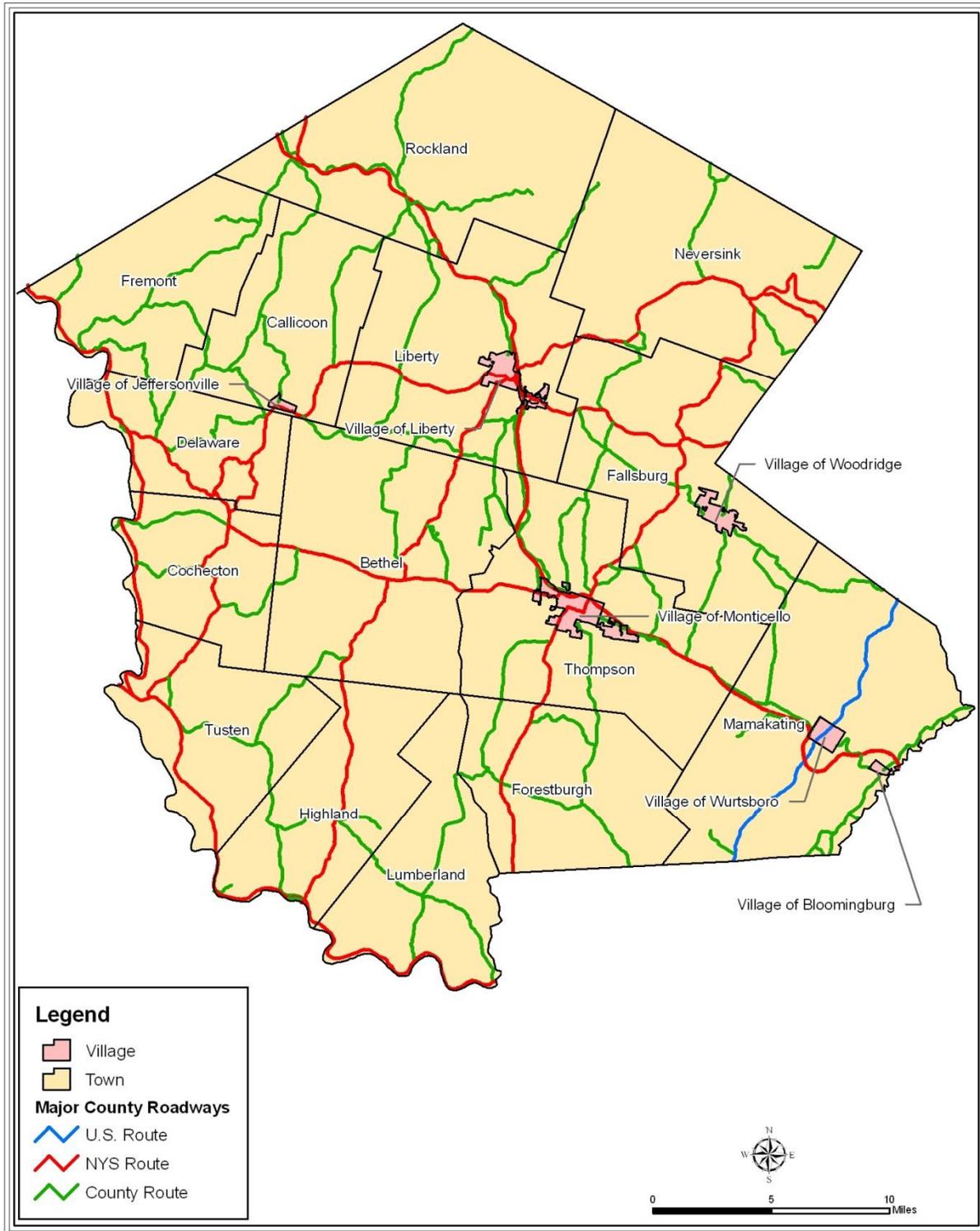


## 2.6 Transportation

The purpose of a transportation network is to move people and/or goods safely and efficiently. In Sullivan County, roadway, rail, and limited air transportation options are available. State Route 17 travels through the heart of Sullivan County, stretching from the northwest corner at the border with Delaware County to the southeast corner at the border with Orange County. State Route 17 passes through the following jurisdictions within Sullivan County: Town of Rockland, Hamlet of Roscoe, Town of Liberty, Village of Liberty, Town of Bethel, Hamlet of Harris, Town of Thompson, Village of Monticello, Hamlet of Rock Hill, and Town of Mamakating. This is the main access route to reach Sullivan County from the north and south, and the main evacuation route to exit the County in the event of a disaster. State Route 17 is scheduled to become part of Interstate 86 in the future, as part of a major New York State Department of Transportation construction project (NYS Department of Transportation, 2010).

Sullivan County contains 9 State Routes (17, 17B, 42, 52, 52A, 55, 55A, 97, and 206). U.S. Route 209 runs in a southerly direction across the southeast portion of the County; no other Interstate Routes or U.S. Routes are located within Sullivan County. The County highway system is composed of roughly 140 routes. For the most part, State Routes are maintained by the County and are also signed with County Routes (Eckers, 1999). Many County Routes overlap with portions of State Routes. The locations of the major roadways in Sullivan County are shown on Figure 2.10.

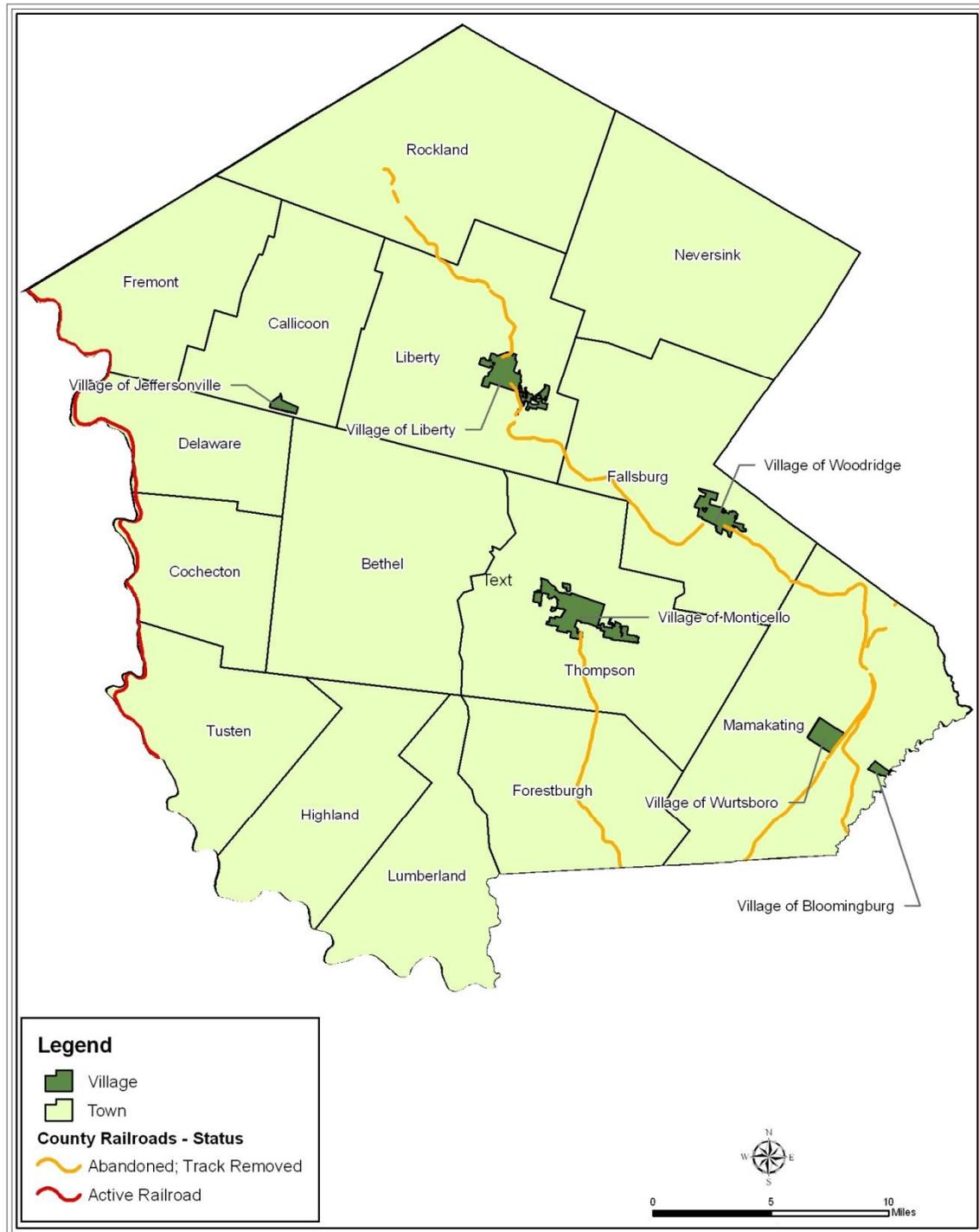
Figure 2.10 - Major Roadways Located within Sullivan County



The Sullivan County Division of Public Works (DPW) maintains more than 400 miles of County roads and more than 100 bridges and is responsible for snow removal, maintaining County buildings and parks, and maintaining the County's vehicle fleet. The DPW also operates the Sullivan County Sanitary Landfill and transfer stations, as well as the Sullivan County International Airport. According to Sullivan County Legislative Chairman Jonathan F. Rouis' 2010 State of the County Address, the County currently has joint purchasing and equipment sharing programs in place with other levels of government (such as local and state highway departments). In 2010, the County plans to review the structure and services of the DPW, in order to identify areas where shared services could be added or increased (Rouis, 2010). The DPW has maintenance facilities in the Hamlets of Maplewood and Barryville, as well as storm stations in Livingston Manor, Callicoon, Liberty, Wurtsboro, and Kenoza Lake.

Only one active railroad remains in Sullivan County. The Norfolk Southern Railway Company operates a freight-only line that runs along the western boundary of Sullivan County, parallel to the Delaware River. The remaining historic railroad segments have been abandoned and the tracks removed. Figure 2.11 depicts Sullivan County's rail system and the status of all railroad tracks in the County.

Figure 2.11 - Railroad Tracks Located within Sullivan County



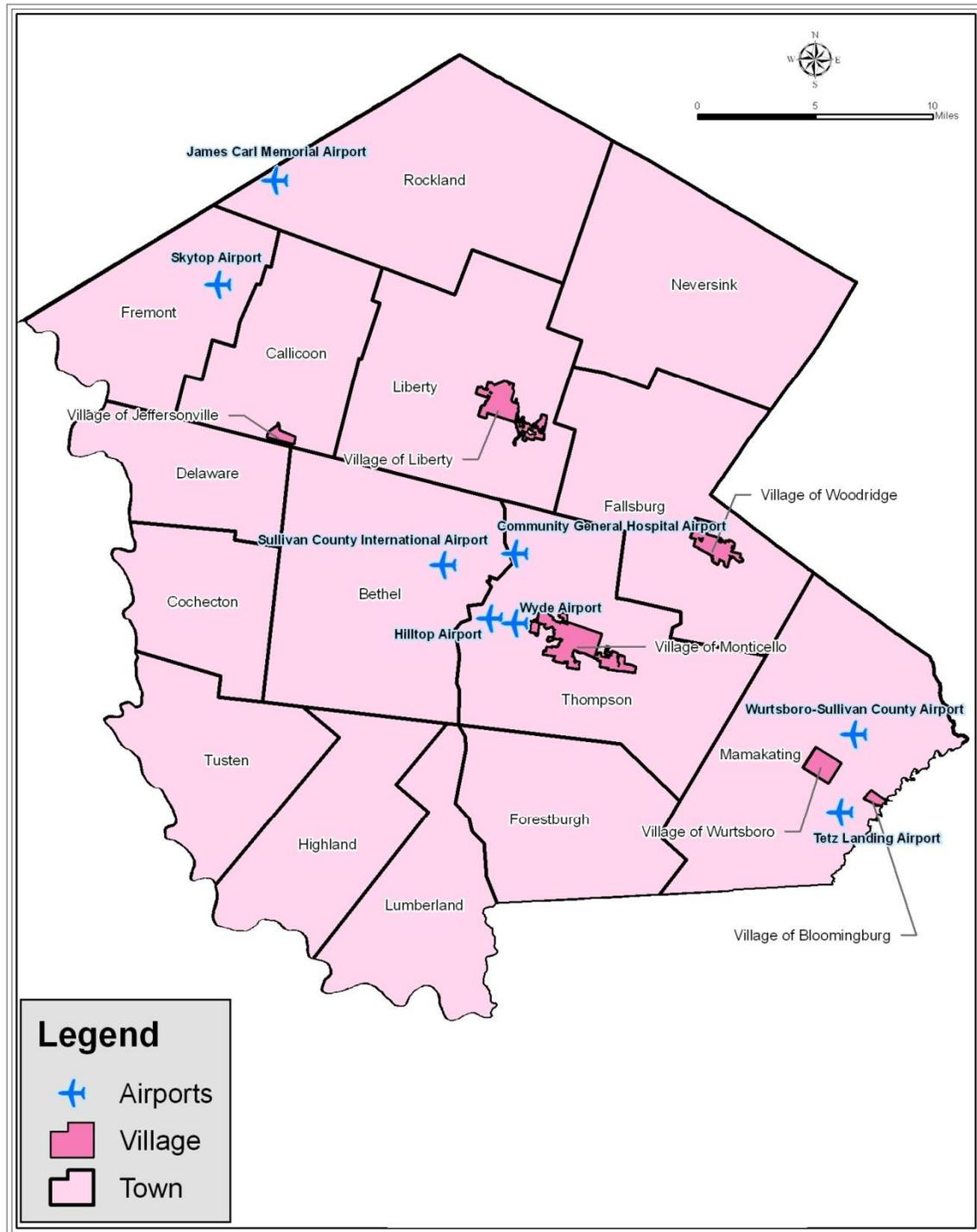
Air transportation within Sullivan County is limited. There are 8 airports, including the Sullivan County International Airport, which is the only publicly owned airport in the County (Global Aviation Navigator, 2010). The Monticello Airport, which was a privately-owned airport for public use, was decommissioned in 2006. Table 10 details the active airport facilities, and Figure 2.12 depicts the locations of airport facilities within the County.

<b>Table 10 – Airport Facilities Located Within Sullivan County</b> (Global Aviation Navigator, Inc.)					
<b>Name</b>	<b>Location</b>	<b>ICAO ID No.*</b>	<b>IATA ID No.*</b>	<b>Ownership</b>	<b>Runway(s)</b>
Community General Hospital Airport	Town of Thompson	3NK1	3NK1	Private	1 (asphalt)
Hilltop Airport	Town of Thompson	NY30	NY30	Private	1 (asphalt)
James Carl Memorial Airport	Town of Rockland	8NY1	8NY1	Private	1 (asphalt)
Skytop Airport	Town of Fremont	NY03	NY03	Private	1 (turf)
Sullivan County International Airport	Town of Bethel	KMSV	MSV	Public	1 (asphalt)
Tetz Landing Airport	Town of Mamakating	NK23	NK23	Private	1 (concrete)
Wurtsboro-Sullivan County Airport	Town of Mamakating	N82	N82	Private	4 (1 asphalt, 3 turf)
Wyde Airport	Town of Thompson	NY14	NY14	Private	1 (asphalt)

\*ICAO = International Civil Aviation Organization

\*IATA = International Air Transport Association

Figure 2.12 - Location of Airports within Sullivan County



The Sullivan County International Airport is owned by Sullivan County and operated by the County Division of Public Works. The airport was originally built in the late 1960s to serve the Catskill region and is now capable of handling small general aviation aircraft, as well as larger business jets (Sullivan County Division of Public Works, 2010). The airport includes one asphalt runway 6,300 ft by 100 ft, taxiways, eight hangars, and approximately 600 acres of land. The airport also hosts an 8,000 square foot terminal, restaurant, flight school, fueling facility, and aircraft maintenance and repair facility. Figure 2.13 depicts an aerial image of the Sullivan County International Airport.

**Figure 2.13 – Aerial Image of the Sullivan County International Airport**  
(Sullivan County Division of Public Works, 2010)



## 2.7 Populations

According to the U.S. Census, the population of Sullivan County was 73,966 in 2000, reflecting a growth of 4,689 people in comparison to the 1990 U.S. Census (U.S. Census Bureau, 2008). The U.S. Census population estimate for 2008 is 76,189, reflecting steady growth within the County. According to Sullivan 2020, current population forecasts for the County indicate that the County could reach 100,000 residents by the year 2020 (Sullivan 2020 Volume II, 2005). Table 11 provides population data for the County and its Towns from the 2000 U.S. Census, as well as annual estimates through 2008.

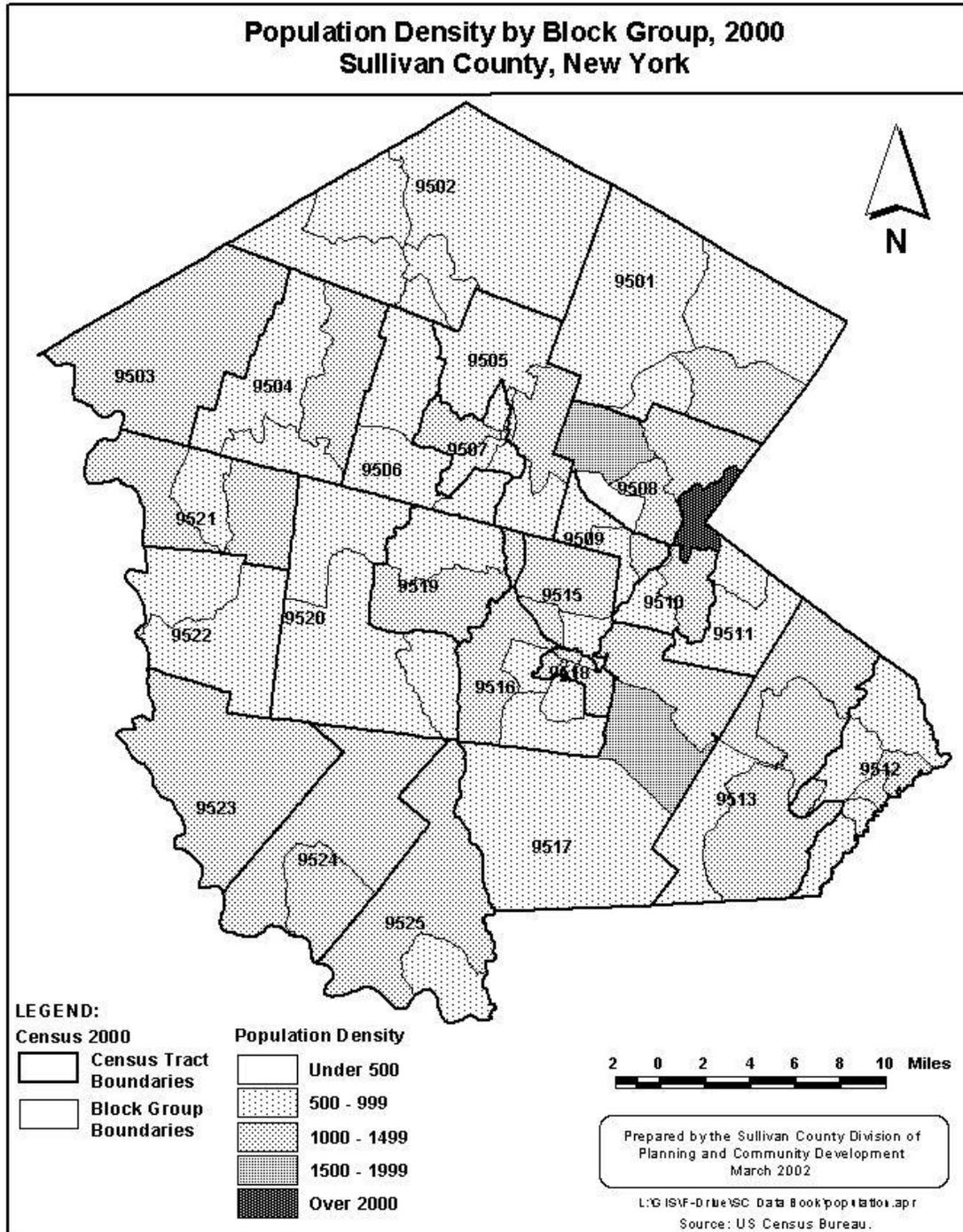
<b>Table 11 – Sullivan County Population Data</b> (U.S. Census Bureau, 2010)									
<b>Jurisdiction</b>	<b>2008</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>	<b>2002</b>	<b>2001</b>	<b>2000</b>
Sullivan County	76,173	76,418	75,911	75,539	75,299	74,722	74,026	73,980	73,966
Town of Bethel	4,543	4,537	4,478	4,455	4,431	4,402	4,368	4,347	4,362
Town of Callicoon	3,116	3,088	3,085	3,096	3,102	3,085	3,064	3,054	3,052
Town of Cochection	1,335	1,353	1,351	1,359	1,360	1,350	1,337	1,330	1,328
Town of Delaware	2,799	2,821	8,821	2,817	2,815	2,795	2,764	2,747	2,719
Town of Fallsburg	13,366	13,290	13,017	12,813	12,632	12,574	12,439	12,486	12,234
Town of Forestburgh	871	882	865	851	836	826	824	826	833
Town of Fremont	1,338	1,356	1,354	1,374	1,379	1,374	1,373	1,377	1,391
Town of Highland	2,495	2,499	2,490	2,481	2,469	2,447	2,420	2,406	2,404
Town of Liberty	9,394	9,441	9,447	9,442	9,517	9,522	9,519	9,541	9,632
Town of Lumberland	2,076	2,084	2,061	2,030	1,993	1,957	1,932	1,922	1,939
Town of Mamakating	11,403	11,462	11,332	11,315	11,277	11,182	11,010	10,983	11,002
Town of Neversink	3,541	3,565	3,565	3,584	3,599	3,589	3,549	3,544	3,553
Town of Rockland	3,859	3,888	3,900	3,926	3,942	3,928	3,902	3,895	3,913
Town of Thompson	14,589	14,681	14,651	14,527	14,497	14,254	14,104	14,109	14,189
Town of Tusten	1,464	1,471	1,464	1,469	1,450	1,437	1,421	1,413	1,415

As shown in Table 11, most of the large communities in Sullivan County have experienced population growth, while the smaller towns have stagnated or even declined in total population estimates. Overall growth within the County is

limited, but steady. The Towns of Fremont, Liberty, Neversink, and Rockland experienced declines in population over the course of the last decade.

Figure 2.14 depicts population density within Sullivan County by census block group. The Hamlets of Woodbourne and South Fallsburg in the Town of Fallsburg have the greatest population density. Other areas of high population density include the Towns of Lumberland, Highland, Tusten, Cohecton, Thompson, and Fremont, as well as portions of the Towns of Delaware and Callicoon. The Villages of Liberty and Monticello also have high population densities.

**Figure 2.14 – Population Density of Sullivan County by Census Block**  
 (Sullivan County Databook, 2002)



The U.S. Census Bureau's 2006-2008 population estimates indicate that the total population of Sullivan County was 76,173, with 38,668 males (50.8%) and 37,505 females (49.2%). The median age for the County's population is 39.7 years; 4,373 people were estimated to be under 5 years (5.7%), 58,899 18 years or older (77.3%), and 10,846 over the age of 65 (14.2%). Overall, Sullivan County's population is older than that of the New York State's, and the County's ratio of males to females is also higher than that of the state distribution.

The 2006-2008 population estimates indicate that 83.5% of Sullivan County's population was White, 8.5% of the population was Black or African American, 1.3% Asian, 0.6% American Indian and Alaska Native, 3.4% some other race, and 2.7% two or more races. In addition, 11.6% of Sullivan County residents reported themselves as being Hispanic or Latino (of any race).

## **2.8 Critical Community Facilities**

The critical facilities within Sullivan County were identified by representatives of each jurisdiction, as well as by County representatives. Many of the critical facilities identified for each participating jurisdiction are clustered around Villages and Hamlets within the County. A listing of the identified critical facilities and their specific locations within each participating jurisdiction are included in Appendix C. These tables have been updated and revised since the 2005 Plan. Within most jurisdictions, additional facilities were added as being critical to the surrounding community.

### 2.8.1 Education

There are eight (8) public school districts located within Sullivan County. These districts and the schools they encompass are detailed in Table 12 and mapped on Figure 2.15. Small portions of Sullivan County are also included in the following four (4) districts located in surrounding Ulster, Orange, and Delaware Counties: Pine Bush, Ellenville, Minisink Valley, and Port Jervis.

<b>Table 12 – Public School Districts Within Sullivan County</b>	
<b>Eldred School District</b>	
Eldred Central School	600 Route 5, PO Box 249, Eldred, NY 12732
George Ross Mackenzie Elementary School	1045 Proctor Road, PO Box 249, Glen Spey, NY 12737
<b>Fallsburg Central School District</b>	
Benjamin Cosor Elementary School	15 Old Falls Road, Fallsburg, NY 12733
Fallsburg Junior-Senior High School	115 Brickman Road, Fallsburg, NY 12733
<b>Liberty Central School District</b>	
District Office	115 Buckley Street, Liberty, NY 12754-1601
Liberty High School	125 Buckley Street, Liberty, NY 12754-1601
Liberty Middle School	145 Buckley Street, Liberty, NY 12754-1601
Liberty Elementary School	201 North Main Street, Liberty, NY 12754-1828
<b>Livingston Manor Central School District</b>	
Livingston Manor Central School	19 School Street, Livingston Manor, NY 12758
<b>Monticello Central School District</b>	
Monticello High School	39 Breakey Avenue, Monticello, NY 12701
Robert J. Kaiser Middle School	45 Breakey Avenue, Monticello, NY 12701
Kenneth L. Rutherford Elementary School	26 Patricia Place, Monticello, NY 12701
George L. Cooke Elementary School	Franklin Avenue, Monticello, NY 12701
Emma C. Chase Elementary School	28 Pennsylvania Avenue, Wurtsboro, NY 12790
<b>Roscoe Central School District</b>	
Roscoe Central School	6 Academy Street, Roscoe, NY 12776
<b>Sullivan West School District*</b>	
Delaware Valley Campus (currently vacant)	6240 Route 97, Callicoon, NY 12723

<b>Table 12 – Public School Districts Within Sullivan County</b>	
Jeffersonville-Youngsville Campus	33 Schoolhouse Road, Jeffersonville, NY 12752
Lake Huntington Campus	PO Box 6604, Lake Huntington, NY 12752
Narrowsburg Campus (currently vacant)	5 Erie Avenue, Narrowsburg, NY 12764
<b>Tri-Valley Central School</b>	
Tri-Valley Central School	34 Moore Hill Road, Grahamsville, NY 12740

\*In 1999, Delaware Valley, Jeffersonville-Youngsville, and Narrowsburg School Districts were combined to form the Sullivan West School District. The Delaware Valley and Narrowsburg schools are currently vacant, but are still owned by the District.

In addition to the public schools recognized above, Sullivan County also offers a Board of Cooperative Educational Services (BOCES) educational alternative and alternate attendance at four (4) private schools.

There are five (5) BOCES campuses within Sullivan County:

Administration Building  
6 Wierk Avenue  
Liberty, NY 12754

St. John Street Education Center  
22 St. John Street  
Monticello, NY 12701

White Sulphur Springs School  
(owned by Liberty School District)  
29 Schoolhouse Road  
White Sulphur Springs, NY 12787

Youngsville School  
1815 Shandeele Road  
Youngsville, NY 12791

Rubin Pollack Education Center (Main Campus)  
52 Ferndale-Loomis Road  
Liberty, NY 12754

The four (4) private schools located within Sullivan County include:

St. Peter's Regional School  
121 Lincoln Place  
Liberty, NY 12754

Hebrew Day School of Sullivan  
4718 State Route 42  
Kiamesha Lake, NY 12751

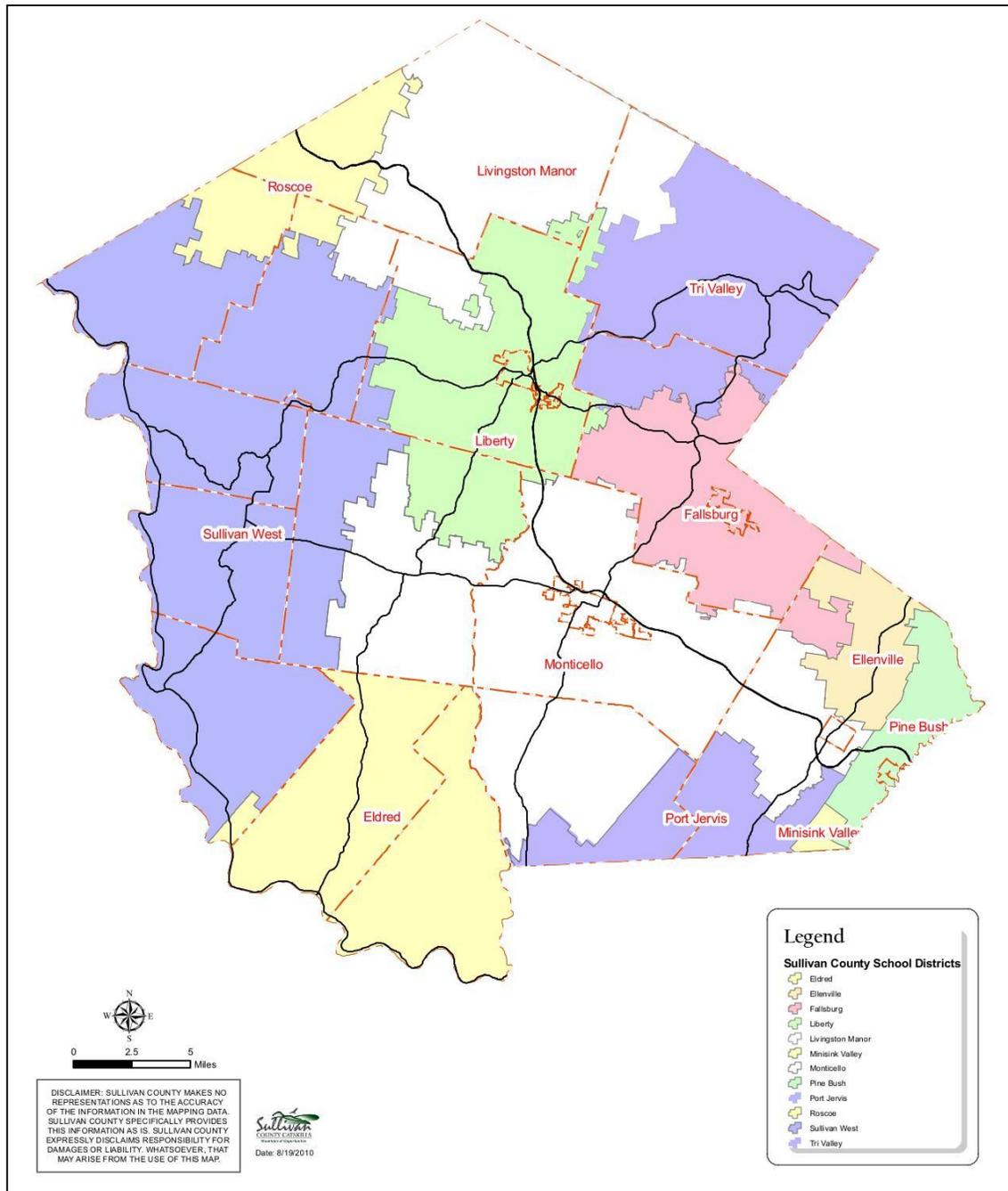
The Homestead School  
428 Hollow Road  
Glen Spey, NY 12737

The Center for Discovery  
P.O. Box 840, Benmoshe Road  
Harris, NY 12742

The only public college campus located in Sullivan County belongs to Sullivan County Community College (SUNY Sullivan). This is a small two-year community college that is part of the State University of New York (SUNY) system. As of fall 2009, 1,735 students were enrolled (1,113 full-time and 622 part-time) at the 405-acre college campus. Two-thirds of the fall 2009 student enrollment were residents of Sullivan County. The SUNY Sullivan campus is located at 112 College Road, Loch Sheldrake, NY 12759. The Delaware Valley Job Corps, located at P.O. Box 845, Callicoon, NY 12723, provides a private higher education alternative within Sullivan County.

All of the public school districts located within Sullivan County are depicted on Figure 2.15.

**Figure 2.15 Mapped School Districts within Sullivan County**  
(Sullivan County GIS, 2010)



### 2.8.2 Medical Facilities and Ambulance Response

There are two facilities associated with the Catskill Regional Medical Center (CRMC) located within Sullivan County. One is the medical center located at 68 Harris-Bushville Road, Harris, NY 12742 and the other is the Grover M. Hermann Hospital Division, located at 8881 Route 97, Callicoon, NY 12723. CRMC is an affiliated member of the Greater Hudson Valley Health System. CRMC's main facility in Harris has 228 beds and 64 skilled nursing care beds. The CRMC's Grover M. Hermann Division in Callicoon is a 25 bed facility with 10 beds that can be used as either acute care or skilled nursing care. The Grover M. Hermann Hospital primarily serves patients from Sullivan County, while also supporting residents of nearby communities in Delaware County, eastern Wayne County, Pennsylvania and the New York City area.

Eighteen (18) ambulance corps' are located within Sullivan County. These response facilities include: American Legion Ambulance Corps, Bethel Volunteer Ambulance Corps, Town of Cochection Volunteer Ambulance Corps, Grahamsville First Aid Squad, Catskill Hatzalah, Jeffersonville Volunteer First Aid Squad, Town of Liberty Volunteer Ambulance Corps, Volunteer Ambulance Corps of Livingston Manor, Lumberland Fire Department Ambulance Corps, Mamakating First Aid Squad, Mobile Medic, Mountindale Fire Department First Aid Squad, Neversink Fire Department Ambulance Auxiliary, Rock Hill Volunteer Ambulance Corps, Roscoe/Rockland Volunteer Ambulance Corps, Town of Tusten Volunteer Ambulance Corps, Upper Delaware Volunteer Ambulance Corps, and Woodbourne Fire Department First Aid Squad.

### 2.8.3 Fire Departments

There are 39 fire departments recognized within Sullivan County. Basically, every jurisdiction within the County has multiple departments because almost every Hamlet has its own fire department, most of which are volunteer-based. A listing of the 39 fire departments within Sullivan County includes:

- Beaverkill Valley Fire Department
- Bloomingburg Fire Company #1
- Callicoon Volunteer Fire Department
- Callicoon Center Volunteer Fire Company
- Fallsburg Fire Department
- Forestburgh Fire Company #1
- Grahamsville Fire Department
- Hankins-Fremont Center Fire Department
- Highland Lake Volunteer Fire Company
- Hortonville Volunteer Fire Company
- Hurleyville Fire Department
- Jeffersonville Fire Department
- Kauneonga Lake Fire Department
- Kenoza Lake Fire Department
- Lake Huntington Fire Department
- Lava Fire Department
- Liberty Fire Department
- Livingston Manor Fire Department
- Loch Sheldrake Fire Company #1
- Long Eddy Fire Department
- Lumberland Fire Company

- Mountindale Fire Department
- Monticello Fire Department
- Narrowsburg Fire Department, Inc.
- Neversink Fire Department
- North Branch Fire Department
- Rock Hill Fire Department
- Roscoe/Rockland Fire Department
- Smallwood-Mongaup Valley Fire Company
- Summitville Fire Company #1
- Swan Lake Fire Department
- Westbrook Fire Company
- White Lake Fire Department
- White Sulphur Springs Fire Department
- Woodbourne Fire Department
- Woodridge Fire Department
- Wurtsboro Fire Department
- Youngsville Fire Department
- Yulan Fire Department

## **2.9 Sullivan County Office of Emergency Management and Homeland Security**

According to the County's Draft Strategic Plan 2010-2012, the mission of the Office of Emergency Management is to act as the lead agency for organized response of County resources and to assist all residents and visitors during natural or manmade disasters and incidents that involve Homeland Security. The Office of Emergency Management will also act as the liaison agency for county government, local organizations, the New York State Office of Emergency Management, and any federal agency that may assist the County during an

emergency incident. The Office of Emergency Management is located at the Sullivan County Government Center at 100 North Street in the Village of Monticello.

The Sullivan County Emergency Management Plan is the core document detailing how the Office of Emergency Management will function. The Emergency Management Plan was developed by the Sullivan County Emergency Management Planning Committee/Local Emergency Planning Committee (SCEMP/LEPC). The SCEMP/LEPC membership is comprised of the leadership of the towns and villages, as well as other public officials within the County, State officials, and representatives from private entities. Members from outside Sullivan County include the State Department of Health, State Police, Cornell Cooperative Extension, Catskill Regional Hospital, New York State Emergency Management Office, American Red Cross, and National Park Service. The SCEMP/LEPC members provide input to the County's emergency response planning and coordinate the numerous agencies involved in emergency response. Current members of the SCEMP/LEPC Committees are included in Table 13.

The Office of Emergency Management provides planning and training resources, response and warning coordination, and information distribution for the local governments within Sullivan County. The Office coordinates plans for emergency response, including county-wide and local comprehensive emergency management and hazard mitigation plans. The plans in development include local plans to address the first 72 hours of an incident with local resources, followed by assistance from the County and ultimately assistance from New York State as required.

## **2.10 NY-Alert**

NY-Alert is an all hazards alert and notification system that provides residents with information concerning various risks and threats that they may have to face. NY-Alert contains critical emergency related information developed in real-time by emergency service providers. This information is posted on the NY-Alert website and is also distributed through various communication systems such as email, phone, news media, etc., to those who sign-up to receive these updates. Sullivan County utilizes the NY-Alert program to disseminate important messages to County residents (NY-Alert, 2010).

## **2.11 National Incident Management System (NIMS)**

The National Incident Management System (NIMS) provides guidance to public, private, and government agencies, departments, and individuals to prevent, protect against, respond to, recover from, and mitigate the effects of hazard incidents, with the end result of reducing the loss of life and property and minimizing harm to the environment. Individuals involved in emergency response and management are required to have NIMS training. This requirement provides a common standard for overall incident management and aims to improve coordination and cooperation among private and public entities. All the municipalities within Sullivan County follow NIMS and comply with the guidance of this system before, during, and after the occurrence of hazard events.

### **3.0 Planning Process**

This planning process section has been revised from the original 2005 HMP planning process section. SCEMP/LEPC members, titles, and meeting dates have been revised and added, along with additional details regarding the public participation and agency coordination that was conducted since 2005.

The planning process generally followed for the development of the Sullivan County Multi-Jurisdiction Hazard Mitigation Plan and 2010 Update is consistent with the guidelines provided in the State and Local Mitigation Planning, how-to guides (FEMA Report 386-2) and the Local Multi-Hazard Mitigation Planning Guidance (FEMA, July 1, 2008). These documents provide a step-by-step logical procedure for identifying hazards, profiling hazard events, creating an inventory of assets and estimating losses. Through the use of these documents, participating jurisdictions were better able to organize resources, assess risks, develop recommendations for pre-disaster mitigation measures, and also make recommendations for implementing the plan.

Also key to the development of a Multi-Jurisdiction Hazard Mitigation Plan was the review of previous work which was completed by the County. In particular, the County's Comprehensive Emergency Plan, Sullivan County's Sullivan 2020 Toolbox Volume II, and the County of Sullivan Draft Strategic Plan 2010-2012 were reviewed to determine what aspects of these resources might be applicable to the County's Hazard Mitigation Plan and the 2010 Update. The County's Comprehensive Emergency Plan was prepared by the Sullivan County Emergency Management Committee/Local Emergency Planning Committee (SCEMP/LEPC).

The County's Comprehensive Emergency Management Plan contains the results of the hazard analysis which was performed by the Committee with the assistance of NYSEMO. This analysis utilized the State's HAZNY program, which is an automated interactive risk assessment tool that enables the quantitative assessment of risks. The

HAZNY program facilitated the ranking of natural and man-made risks based upon the consideration of (1) the extent of areas impacted, (2) cascade effects, (3) frequency of occurrence, (4) amount of advance warning, (5) degree of impact, and (6) duration of events. The HAZNY program was a precursor to the currently used HIRA-NY risk assessment program. The 2010 HIRA-NY risk assessment completed by the County was used as a tool by the Towns and Villages to assist them in identifying and prioritizing hazard risks on a local level, specific to their communities.

Another important component of the planning process was the solicitation of ideas from the public and from other agencies. To this end, several public meetings were held during the 2005 Hazard Mitigation Planning process in which the public and other agency members were invited to participate. Efforts were also made during the HMP Update process to include the public, including the transmission of a Hazard Mitigation Questionnaire.

### **3.1 Steering Committee Members**

The Sullivan County 2005 All Hazard/Pre-Disaster Mitigation Plan was developed by the County of Sullivan and the Towns & Villages located within the County, with input from the public. A similar process was followed to complete the requisite 5-year plan Update in 2010. The Plan Update Steering Committee consists of members of the SCEMP and LEPC Committees. These members are provided in Table 13.

The SCEMP/LEPC is a County Committee made up of County, State, and Private sector committee members inclusive of representatives from NY State Emergency Management Office. Several meetings were held with this committee to obtain assistance and multi-jurisdictional input during the preparation of the 2005 plan. A list of the SCEMP committee members that

participated in providing input to the original Sullivan County HMP is provided as follows:

Representative, 98 <sup>th</sup> District Assemblyman .....	District Liaison
WVOS Radio Station .....	General Manager
New York State Department of Health.....	District Director
New York State Police .....	Com. Vehicle Enforcement Unit
S. C. Division of Public Safety .....	Commissioner
S. C. Cornell Cooperative Extension.....	Executive Director
Sullivan County Bureau of Fire .....	Secretary
Catskill Regional Hospital .....	Director of Facilities Management
Sullivan County Sheriff Department .....	Sheriff/Deputy Sheriff
New York State SEMO-Region II.....	Regional Coordinator
Sullivan County EMS .....	Coordinator
Sullivan County 911 Center .....	911 Coordinator
New York State Department of Health.....	Hazmat Representative
New York State Encon Police .....	Representative
American Red Cross.....	Director
National Park Service .....	Superintendent, Upper Delaware S&RR
S.C. Department of Public Health .....	Director
Town of Fallsburg .....	Public Works; Engineering Department
Sullivan County Division of Public Works.....	Engineering Department
BOCES, Health, Safety, & Risk Management ..	Representative
Town of Liberty .....	Supervisor

The SCEMP/LEPC was revamped in anticipation of the 2010 HMP Update. Current members of this committee are included in Table 13 below.

<b>Table 13 – SCEMP/LEPC Members</b>		
<b>Name</b>	<b>Title/Role</b>	<b>Jurisdiction/Agency/ Stakeholder Represented</b>
Michael Bastone	Fire Hazmat Coordinator	Sullivan County Bureau of Fire
Rolland Bojo	Emergency Preparedness	Catskill Regional Medical Center
Capt. James Boylan	Zone Commander	New York State Police
Chief John Cavello	Chief Of Police	Fallsburg Police Department
Sgt. Kevin Cunningham	Troop "F" Emergency Management Office	New York State Police
Mark Ferrari	Director	NYS SEMO-Region II
Sean McGuinness	Superintendent, Upper Delaware S&RR	National Park Service
BJ Gettel	Secretary	Sullivan County Bureau of Fire
Robert Imbornoni	Deputy Response Officer	American Red Cross
Mark Knudsen	Director	NYS Department of Health
Michael LaFountain	Health, Safety & Risk Management	Sullivan County BOCES
Lynda Levine	Commissioner, Real Property	Sullivan County Government Center
Lt. Deming Lindsley	Lieutenant	NYS EnCon Police
Helena Manzine	General Manager	Watermark Communications
Richard Martinkovic	Emergency Manager	Sullivan County Government Center
Ed McAndrew	Deputy Commissioner	SC Division of Public Works
Nancy McGraw		Public Health Nursing
Alex Rau	911 Coordinator	Sullivan County Government Center
Cesar Rivera	Director of Response	American Red Cross
Demaris Rundle	Coordinator of Response	American Red Cross
Sheriff Michael Schiff	Sheriff	Sullivan County Sheriff Dept.
Dean Smith	Director	NYS Dept of Transportation
Greg Tavormina	Public Works	Town Of Fallsburg
Robert Trotta	Commissioner, Division of Public Works	Sullivan County Government Center
Kevin Waldron	Emergency Preparedness	O & R Utilities
Joe Walsh	Director	Cornell Cooperative Extension
Jill Weyer	Div of Planning & Environ Management	Sullivan County Government
James Willis	Chief Of Police	NYS&W Railway

Over the past five years, there have been changes regarding representatives of participating jurisdictions and other County and stakeholder participants. Table 14 lists the mitigation planning contributors that have participated in the 2010 HMP Update process for Sullivan County. The information and knowledge that all members have provided has been instrumental in creating a well-rounded plan that accurately represents Sullivan County.

<b>Table 14 – Hazard Mitigation Planning Representatives and Participants</b>	
<b>Name</b>	<b>Title/Role</b>
<b>Sullivan County</b>	
David Fanslau	County Manager
Ed McAndrew	Deputy Commissioner Division of Public Works
Joshua Potosek	Commissioner of Management and Budget
Luiz Aragon	Planning & Environ. Management Commissioner
Jill Weyer	Assistant Planning Commissioner
Jennifer Mall	Jr. Planner/Environmental Specialist
Richard Martinkovic	Commissioner of Public Safety
Robert Meyer	Public Works Commissioner
Robert Trotta	Public Works, Bridge Engineer
Michael Schiff	County Sheriff
Eric Chaboty	County Undersheriff
<b>Sullivan County Soil and Water Conservation District (SWCD)</b>	
Brian Brustman	Sullivan County SWCD
John Kilne	Sullivan County SWCD
<b>Town of Bethel</b>	
Lynden Lilley	Highway Superintendent
Bette Jean Gettel	Code Enforcement Officer
<b>Village of Bloomingburg</b>	
Mark Berentsen	Village Mayor
<b>Town of Callicoon</b>	
Tom Bose	Town Supervisor
Kris Scullion	Highway Superintendent
Gregg Semenetz	Deputy Code Enforcement Officer

<b>Table 14 – Hazard Mitigation Planning Representatives and Participants</b>	
<b>Name</b>	<b>Title/Role</b>
<b>Town of Cocheton</b>	
Gary Maas	Town Supervisor
Brian DuBois	Highway Superintendent
Gregg Semenetz	Code Enforcement Officer
Edwin Grund	Town Council Member
<b>Town of Delaware</b>	
Jim Scheutzow	Town Supervisor
Kara McElroy	Grants Administrator
Howard Fuchs	Code Enforcement Officer
<b>Town of Fallsburg</b>	
William Jakaitis	Highway Superintendent
Allen Frishman	Code Enforcement Officer
Greg Tavormina	Disaster Preparedness Coordinator
<b>Town of Forestburgh</b>	
James Galligan	Town Supervisor
Daniel Hogue, Jr.	Highway Superintendent
<b>Town of Fremont</b>	
James Greier	Town Supervisor
Robert Theodore	Emergency Management Coordinator
<b>Village of Jeffersonville</b>	
Edward Justus	Village Mayor
Daniel Hendrickson	Highway Superintendent
Colleen Freitas	Village Clerk
<b>Town of Highland</b>	
Scott Hallock	Town Council
Doreen Hanson	Town Clerk
Keith Blaut	Yulan Fire Chief
Norm Sutherland	Highway Superintendent
Charlie Hallock	Highland Lake Fire Chief
<b>Town of Liberty</b>	
John Schmidt	Town Supervisor
Mark Van Etten	Code Enforcement Officer
John Lennon	Highway Department
<b>Village of Liberty</b>	
Richard Winters	Village Mayor
Peter Parks	Highway Superintendent

<b>Table 14 – Hazard Mitigation Planning Representatives and Participants</b>	
<b>Name</b>	<b>Title/Role</b>
Pam Winters	Code Enforcement Officer
<b>Town of Lumberland</b>	
Nadia Rajsz	Town Supervisor
Charles Hallock, Jr.	Highway Superintendent
Dave Kuebler	Code Enforcement Officer
Jay Shafer	Town Council Member
Joe Carr	Town Council Member
<b>Town of Mamakating</b>	
Harold Baird	Town Supervisor
Richard Johnson, Jr.	Highway Superintendent
JoAnn Salamone	Deputy Highway Superintendent
James Steinberg	DPW Director
<b>Village of Monticello</b>	
Gordon Jenkins	Village Mayor
Stanley Calhoun	Highway Superintendent
Sue Flora	Code Enforcement Officer
James Steinberg	DPW Director
Bill Masters	DPW Foreman
Walter Fedun	Code Enforcement Officer
<b>Town of Neversink</b>	
Greg Goldstein	Town Supervisor
Preston Kelly	Highway Superintendent
John Perrella	Code Enforcement Officer
<b>Town of Rockland</b>	
Ed Weitman	Town Supervisor
Theodore Hartling	Highway Superintendent
Charles Irace	Code Enforcement Officer
Robert Eggleton	Town Councilman
Chris Teimpidis	Fire Chief
<b>Town of Thompson</b>	
Thomas Brawley	Code Enforcement Officer, Building Inspector
William Culligan	Water/Sewer Department
Richard McGoey, P.E.	Town Engineer
<b>Town of Tusten</b>	
Margaret Harrison	Town Supervisor
George Kinch	Highway Superintendent

<b>Table 14 – Hazard Mitigation Planning Representatives and Participants</b>	
<b>Name</b>	<b>Title/Role</b>
David Sparling	Code Enforcement Officer
George Strumpfner	Assistant Fire Chief, Lava FD
Dave Casey	Assistant Chief, Narrowsville FD
Jocelyn Strumpfner	Assistant Building Inspector
<b>Village of Woodridge</b>	
Allen Frishman	Code Enforcement Officer
<b>Village of Wurtsboro</b>	
Barbara Semonite	Village Trustee

Information and data from multiple outside and County agencies was obtained and used in the completion of the County's original Hazard Mitigation Plan and the 2010 Plan Update. Many of the following agencies were also involved in the public review process of one or both documents:

- Sullivan County Emergency Management Planning Committee (SCEMP)
- Local Emergency Planning Committee (LEPC)
- American Red Cross
- Catskill Regional Medical Center
- Catskill Mountainkeeper
- Catskill Watershed Corporation
- Center for Discovery
- Delaware River Basin Commission
- Delaware Riverkeeper
- Friends of the Shawangunks
- Frost Valley YMCA
- New York City Department of Environmental Protection (NYCDEP)
- Salvation Army
- Sullivan County BOCES

- Sullivan County Partnership for Economic Development
- Sullivan County Soil & Water Conservation District (SWCD)
- Trout Unlimited
- Upper Delaware Council
- Alliance Energy
- Central Hudson
- New York State Electric & Gas (NYSEG)
- Orange and Rockland Utilities
- Frontier Communications
- Verizon Communications
- WJFF – Radio Catskill
- WSUL – FM Radio Station
- Thunder 102 (WDNB)
- Sullivan County Democrat
- The River Reporter
- Times-Herald Record

### **3.2 Plan Update Timeline of Events**

The progression of events and tasks completed to update the Sullivan County HMP follows the guidelines for plan maintenance that were included in Plan Maintenance Procedures section of the 2005 Plan (Section 4). The following timeline of events illustrates the tasks that have been initiated and completed in association with Sullivan County's Hazard Mitigation Plan Update. This timeline includes individual meetings that Glenn Gidaly (Barton & Loguidice, PC) held with each participating jurisdiction. The purpose of these conferences was to discuss specific hazards that affected each jurisdiction and revise the information for each jurisdiction that was included in the County's 2005 HMP. The HMP Plan Update process timeline is as follows:

- **December 2009:** Meeting with SCEMP/LEPC to inform of process.
- **January 26, 2010:** Letters sent to all Town Supervisors and Village Mayors, Town and Village code enforcement officers, building inspectors, and highway superintendents, and County officials, inviting them to attend the plan update kick-off meeting on February 3, 2010
- **February 2, 2010:** Email reminder to same individuals above about meeting
- **February 3, 2010:** Sullivan County Hazard Mitigation Plan Update Kick-off Meeting (meeting agenda provided in Appendix D)
  - Participants and Affiliations:
    - Luiz Aragon (County Planning)
    - Tom Bose (Town of Callicoon)
    - Thomas Brawley (Town of Thompson)
    - William Culligan (Town of Thompson)
    - Sue Flora (Village of Monticello)
    - Allen Frishman (Town of Fallsburg, Village of Woodridge)
    - Howard Fuchs (Town of Delaware)
    - James Galligan (Town of Forestburgh)
    - BJ Gettel (Town of Bethel)
    - James Greier (Town of Fremont)
    - Margaret Harrison (Town of Tusten)
    - Daniel Hogue, Jr. (Town of Forestburgh)
    - William Jakaitis (Town of Fallsburg)
    - Gordon Jenkins (Village of Monticello)
    - Richard Johnson, Jr. (Town of Mamakating)
    - Preston Kelly (Town of Neversink)

- Jennifer Mall (County Planning)
  - Richard Martinkovic (County Emergency Mgmt, Public Safety, & Fire)
  - Pete Parks (Village of Liberty)
  - John Perrella (Town of Neversink)
  - Nadia Rajsz (Town of Lumberland)
  - Jim Scheutzow (Town of Delaware)
  - Kristofer Scullion (Town of Callicoon)
  - Gregg Semenetz (Town of Cochection)
  - David Sparling (Town of Tusten)
  - Robert Trotta (County DPW)
  - Mark VanEtten (Town of Liberty)
  - Richard Winters (Village of Liberty)
  - James Steinberg (Village of Monticello)
  - Walter Fedun (Village of Monticello)
  - Ed McAndrew (County Deputy Commissioner)
  - Glenn Gidaly (Barton & Loguidice, P.C.)
  - Norman Sutherland (Town of Highland)
- **February 4, 2010:** Email to Steering Committee members, including link to 2005 plan location
  - **February 8, 2010:** Letter inviting Supervisors, Mayors, and County officials to February 17, 2010 meeting – letter also informed them of where to locate the 2005 plan on the County website
  - **February 17, 2010:** Steering Committee Meeting (meeting minutes included in Appendix D)
    - Participants and Affiliations:
      - Thomas Brawley (Town of Thompson)

- Allen Frishman (Town of Fallsburg, Village of Woodridge)
  - Bette Jean Gettel (Town of Bethel)
  - Ted Hartling (Town of Rockland)
  - Kara McElroy (Town of Delaware)
  - John Perrella (Town of Neversink)
  - Nadia Rajszyk (Town of Lumberland)
  - Kris Scullion (Town of Callicoon)
  - Bob Theodore (Town of Fremont)
  - Pam Winters (Village of Liberty)
  - Bob Trotta (County Dept. Public Works)
  - Dick Martinkovic (County Emerg. Mgmt., Public Safety Commissioner)
  - Mark Van Etten (Town of Liberty)
  - Jennifer Mall (County Planning)
  - Glenn Gidaly (Barton & Loguidice, PC)
- **February 18, 2010:** Email to Town and Village officials asking them to distribute the Sullivan County Hazard Mitigation Questionnaire
  - **February 18, 2010:** Questionnaire was forwarded via email to all fire chiefs, EMS captains, police, and other emergency responder agencies in the County
  - **March 1, 2010:** Email to Steering Committee members, including copy of Feb. 17<sup>th</sup> meeting minutes
  - **March 5, 2010:** Those officials without email addresses received faxed copies of information from March 1<sup>st</sup>

- **March 9, 2010:** Steering Committee Meeting/County HIRA-NY Assessment (meeting minutes included in Appendix D)
  - Participants and Affiliations:
    - Thomas Brawley (Town of Thompson)
    - Ted Hartling (Town of Rockland)
    - Kara McElroy (Town of Delaware)
    - John Perrella (Town of Neversink)
    - Bob Theodore (Town of Fremont)
    - Pam Winters (Village of Liberty)
    - Charlie Hallock (Town of Lumberland)
    - Daniel Hendrickson (Village of Jeffersonville)
    - Dave Kuebler (Town of Lumberland)
    - Gregg Semenez (Town of Cochection)
    - Charles Fallon (Town of Lumberland)
    - Bob Trotta (County Dept. Public Works)
    - Dick Martinkovic (County Emerg. Mgmt., Public Safety Commissioner)
    - Jennifer Mall (County Planning)
    - Glenn Gidaly (Barton & Loguidice, PC)
    - Eugene Lucchese (NYSEMO)
    - Dave Sparling (Town of Tusten)
    - Norman Sutherland (Town of Highland)
- **March 11, 2010:** Presentation about plan update to Sullivan County Legislature's Planning, Environmental Management and Real Property Committee

- **April 16, 2010:** B&L meeting with representatives from Town of Tusten
- **April 17, 2010:** B&L meeting with representatives from Town of Callicoon
- **April 20, 2010:** B&L meeting with representatives from Town of Delaware
- **April 22, 2010:** B&L meetings with representatives from Town of Liberty, Village of Liberty, and Town of Rockland
- **April 27, 2010:** B&L meeting with representatives from Sullivan County Soil & Water Conservation District
- **April 28, 2010:** B&L meetings with representatives from Town of Lumberland and Town of Cochecton
- **April 30, 2010:** B&L meeting with representatives from Village of Monticello
- **May 3, 2010:** B&L meetings with representatives from Town of Thompson, Town of Forestburgh, and Town of Bethel
- **May 5, 2010:** B&L meeting with representatives from Town of Fremont
- **May 6, 2010:** B&L meetings with representatives from Town of Fallsburg and Village of Woodridge
- **May 7, 2010:** B&L meeting with representatives from Town of Neversink
- **May 10, 2010:** B&L meeting with representatives from Village of Wurtsboro

- **May 19, 2010:** B&L meeting with representatives from Village of Jeffersonville
- **May 20, 2010:** B&L meeting with representatives from Town of Mamakating
- **June 2, 2010:** Emails or letters to all hazard mitigation members sending the County's HIRA-NY report and notes from the March 9<sup>th</sup> meeting
- **June 24, 2010:** B&L meeting with representatives from Village of Bloomingburg
- **August 3, 2010:** B&L meeting with representatives from Town of Highland
- **August 30, 2010:** Draft Sullivan County HMP Update released for public review and comment
- **September 7, 2010:** Sullivan County Hazard Mitigation Plan public outreach meeting at 5:30 p.m. in the Government Center, 100 North Street, Monticello, New York
- **November 19, 2010:** Additional request made to identified agencies and organizations to review the HMP Update and provide comments

### 3.3 Public Participation

#### 3.3.1 Sullivan County All Hazard Pre-Disaster Mitigation Plan (2005)

During the 2004/2005 Sullivan County Mitigation Planning process, public involvement was included at two levels. At the local level, each participating Town and Village held board meetings which were open to

the public, in order to discuss the development of the All Hazard/Pre-Disaster Mitigation Plan. These board meetings allowed the public to obtain information about the planning process, discuss hazards, risks, and critical facilities, discuss the rankings of different hazards, and provide comments on potential mitigation goals for the plan.

The second level of public involvement for the County HMP was provided through three (3) formal public meetings, held at the County's Government Center. The first meeting was held at the start of the planning process in order to acquaint the public and committee members with the planning process, project objectives, and goals of the All Hazard/Pre-Disaster Mitigation Plan. This meeting also served to obtain initial public comments and to answer questions. The second meeting was held to obtain public comment and input with respect to: (1) the ranking of risks for each individual Town and Village; (2) obtain comment on geographic areas subject to the impacts of hazards and to obtain public information regarding the severity of such; and (3) obtain public input regarding the identification of critical facilities. The third public meeting was held at the end of the planning process in order to receive public comment and input on the Draft All Hazard/Pre-Disaster Mitigation Plan.

### *3.3.2 Sullivan County Multi-Jurisdictional Hazard Mitigation Plan Update (2010)*

During the February 17, 2010 Steering Committee Meeting, Sullivan County Hazard Mitigation Questionnaires were distributed. This questionnaire was designed to gather the public's perceptions of hazard mitigation, figure out where they obtain their information related to hazard events and pre-disaster mitigation actions, and collect comments regarding their personal experiences with historic hazard events. Copies

of this questionnaire were left at the Town and Village Halls, emailed to committee members for easy distribution to planning and zoning board members, posted on municipal websites, and handed out at the Sullivan Renaissance Winter Expo. Ninety-eight (98) completed questionnaires were received either electronically or in hard copy form. The results of the completed questionnaires were tabulated by jurisdiction; these tables are included in Appendix E, along with a blank copy of the questionnaire for reference. The geographic distribution of completed surveys is included in Table 15.

<b>Table 15 – Total Completed Surveys Based on Zip Code</b>			
<b>Jurisdiction</b>	<b>Total No. of Surveys Completed</b>	<b>Jurisdiction</b>	<b>Total No. of Surveys Completed</b>
Barryville	1	Livingston Manor	3
Bethel	2	Monticello	6
Bloomingsburg	1	Mountaindale	1
Callicoon	7	Narrowsburg	3
Callicoon Center	3	Neversink	1
Fallsburg	1	Parkville	1
Ferndale	1	Rock Hill	5
Fremont	2	Roscoe	1
Glen Spey	2	Smallwood	2
Grahamsville	6	Swan Lake	2
Highland Lake	2	White Lake	6
Hortonville	3	White Sulphur Springs	4
Hurleyville	1	Woodbourne	2
Jeffersonville	6	Woodridge	1
Kauneonga Lake	1	Wurtsboro	2
Kiamesha Lake	1	Youngsville	5
Liberty	13		

In addition to the public comments and data collected as part of the questionnaire effort, other opportunities for public input and review were

made available. A public meeting was held on September 7, 2010, to discuss the Draft Sullivan County HMP Update. The public was invited to review the draft document and to provide comments and input on hazards, hazard response, and hazard mitigation during the public meeting. This meeting also provided a favorable forum in which to answer any questions about the planning process or hazard mitigation in general that the public had.

Aside from being available for review in hard copy form during the public meeting and at the Sullivan County Division of Planning and Environmental Management office, the Draft Sullivan County HMP was also available for review electronically at the DPEM's website ([www.co.sullivan.ny.us/website/tabid/3225/default.aspx](http://www.co.sullivan.ny.us/website/tabid/3225/default.aspx)) and at an additional web location ([www.scribd.com/doc/36642881/2010-Hazard-Mitigation-Plan-DRAFT](http://www.scribd.com/doc/36642881/2010-Hazard-Mitigation-Plan-DRAFT)). A minimum of 30 days was provided to the public for the review of the Draft HMP Update. Multiple comments on the Plan were received during the public review period.

Many announcements regarding the issuance of the HMP Update for public review and the scheduling of a County-wide public meeting were included in area newspapers. These announcements include:

- Article on DPEM website, posted August 30, 2010
- Article published in Times Herald-Record on September 6, 2010
- Article on Mid-Hudson News website, posted August 31, 2010
- Article published in Sullivan County Democrat on September 7, 2010

Copies of all of these announcements and articles are provided in Appendix F. The Times Herald-Record is a regional newspaper that also supports a readership in Orange and Ulster Counties.

### **3.4 Coordination with Agencies**

County, regional, state, and federal agencies were consulted for relevant information and recommendations with regard to the Sullivan County Hazard Mitigation Plan Update planning effort. The contributions from agencies and organizations that supported the update planning process are briefly summarized below:

**FEMA:** Involved in the review of the Sullivan County Multi-Jurisdictional Hazard Mitigation Plan; also obtained information through their website.

**Local Emergency Planning Committee (LEPC):** Attended planning meetings, reviewed minutes, provided recommendations, and answered numerous hazard questions.

**NOAA:** Accessed information available from NOAA with respect to weather through their online website (National Climatic Data Center).

**NYSDEC:** Coordination with DEC's Floodplain Management Section was completed. Information regarding repetitive loss properties within Sullivan County was obtained.

**NYSEMO:** Region representative attended planning meetings, provided guidance as needed, and is involved in the review of the 2010 Plan Update.

**Sullivan County Division of Public Works:** Attended hazard meetings and provided information on County transportation mitigation actions. Also provided plan update assistance and insight.

**Sullivan County Planning Department:** Head of the 2010 Plan Update effort. Scheduled and sponsored meetings with Steering Committee and public, planned County 2010 HIRA-NY event, and provided numerous amounts of data.

**Sullivan County Soil and Water Conservation District:** Provided information and answered questions; also attended meetings to provide detailed information on hazard events and mitigation actions.

In addition, as previously detailed in Section 1.5, a large group of local, State, and Federal stakeholders were formally invited by Sullivan County to review and submit comments on the Draft HMP Update. Multiple comments and suggestions were received as a result of this outreach effort; all agencies and groups were provided a minimum of 30 days to respond with any comments on the HMP Update. Written comments received by potential stakeholders are provided in Appendix G.

## 4.0 Risk Assessment

Much of the historic documentation associated with hazard events in Sullivan County that was included in the County's 2005 HMP has been expanded upon as part of this Plan update. The results of Sullivan County's 2010 HIRA-NY assessment, profiles of new natural and technological hazards, and the establishment of updated hazard rankings and hazard mitigation planning goals are just some of the revisions that have been updated in the risk assessment section and hazard profile section of the Plan.

The risk assessment process is made up of:

- Identifying Hazards
- Profiling Hazard Events
- Assessing Vulnerability:
  - identifying assets
  - estimating potential losses
  - analyzing development trends

### 4.1 HIRA-NY Program

Sullivan County is vulnerable to numerous natural, human-caused, and technological hazards. Potential hazards were ranked using the HIRA-NY automated program. The selections made in HIRA-NY are based on information entered into preformatted Microsoft Excel spreadsheets. In order to complete this risk assessment process, consideration was given to details like location or geographic area that could be affected, extent or magnitude of each hazard, records of previous occurrences, and probability of future occurrences. Within HIRA-NY, there are five (5) factor areas where the answers provided during the

risk assessment directly impact the ultimate hazard ranking of each hazard. These five factor areas are detailed below.

### Scope

This factor looks at two aspects of hazard scope: what area or areas in your jurisdiction could be impacted by the hazard and what are the chances of the hazard triggering another hazard causing a cascade effect. A cascade effect is when the onset of one hazard triggers the effects of another, or multiple, hazard(s). Once the potential area of impact is determined, one of the following options is selected in the HIRA-NY program:

- *A single location* – several hazards can impact a single location.
- *Several individual locations* – many hazards are capable of impacting several individual locations. This does not mean that the hazards occur simultaneously at these locations, but that they could occur at one or several locations at the same time.
- *Throughout a small region* – where a single location or several individual locations actually comprise a significant area, the impact area should be classified as throughout a small region.
- *Throughout a large region* – a larger region would extend for miles and comprise a significant portion of the community being assessed.

The next part of the scope factor is to determine whether the hazard could potentially trigger another hazard. There are many hazards that trigger the occurrence of additional hazards. When assessing this factor, evaluate various severity levels including a credible worst-case scenario. The options for the cascading effect potential of a hazard are as follows:

- *No, highly unlikely.*
- *Yes, some potential.*
- *Yes, highly likely.*

### Frequency

Frequency indicates how often a hazard has resulted in an emergency or disaster, or can be a prediction of how often a hazard may occur in the future. The frequency of a hazard should not be based on the worst-case scenario, but rather how often an event would cause various types of damage to the community that would require activation of the emergency response forces. History is a good indicator of the potential for future events and should be reviewed before determining the frequency of a hazard. The HIRA-NY program provides the following options when deciding the frequency of a hazard event:

- *A rare event* – occurs less than once every 50 years.
- *An infrequent event* – occurs between once every 8 years and once every 50 years (inclusive).
- *A regular event* – occurs between once a year and once every 7 years (inclusive).
- *A frequent event* – occurs more than once a year.

### Impact

The impact of a hazard should be assessed on various severity levels, including a credible worst-case scenario. There are three types of impacts that are included in the HIRA-NY program: impacts on the population, impacts on private property, and impacts on community infrastructure.

The first impact type concerns the ability of a hazard to seriously injure or kill people. How might this hazard impact the population?

- *Serious injury or death is unlikely* – a serious injury is one that would require immediate medical attention, without which the injured person’s life or limb is threatened.
- *Serious injury or death is likely, but not in large numbers* – this determination should apply when the casualties of a hazard can be adequately treated through the normal operation of a community’s emergency medical system.
- *Serious injury or death is likely in large numbers* – this determination should apply when the number of casualties requires a full or near full activation of a community’s medical facilities’ disaster plans.
- *Serious injury or death is likely in extremely large numbers* – this option denotes a catastrophe and applies when the numbers of casualties overwhelms the local emergency medical system and substantial outside assistance is required.

The second impact type concerns the potential for a hazard to physically or economically damage private property, including industrial structures, homes and contents, commercial businesses, and belongings in a community. The list and type of private property that may be impacted will vary based on the characteristics of the community. The HIRA-NY options to denote a hazard’s impact on private property include:

- *Little or no damage*
- *Moderate damage*
- *Severe damage*

Beyond the actual classification of the impact on private property as little or none, moderate, or severe, the risk assessment process requires the identification of precise types and numbers of properties and structures that have the potential to be impacted.

The third impact type is related to the potential for a hazard to specifically cause structural damage to the infrastructure that serves the community, including government buildings, roads, bridges, and public utility lines, plants, and substations. The options provided in HIRA-NY to indicate a hazards impact on the community infrastructure include:

- *Little or no structural damage*
- *Moderate structural damage*
- *Severe structural damage*

As with private property, the above classification of damage should be supported by detailed information regarding the type of public property likely to be impacted.

### Onset

The onset factor is related to the amount of time between the initial recognition of an approaching hazard and when the hazard begins to impact the community. This is a very important factor because for some hazards ample warning time is available so that if plans and procedures have not been developed, there is still time to accomplish such tasks. Other hazards provide no warning, so the response to a hazard event depends on existing plans, if any. The choices for time of onset are:

- *No warning*

- *Several hours warning*
- *One day warning*
- *Several days warning*
- *A week or more warning*

For a few hazards there may be different warning times depending on location. In this case, the shortest warning time that is credible and associated with a credible worst-case event should be used.

### Duration

There are two types of duration analyzed in the HIRA-NY program: how long does the hazard remain active and how long do emergency operations continue after the hazard event has ended. A third duration addressed in HIRA-NY, but not included in a community's hazard analysis report, is how long it takes the community to fully recover from the hazard event. The recovery process continues until the community returns to normal. The options provided by HIRA-NY for the duration of the hazard are:

- *Less than one day*
- *One day*
- *Two to three days*
- *Four days to a week*
- *More than one week*

The HIRA-NY program offers the following options for recovery time of a community after a hazard event:

- *Less than one day*
- *One to two days*

- Three days to one week
- One week to two weeks

#### **4.2 Sullivan County HIRA-NY Risk Assessment**

On March 9, 2010, a group of County and Municipal representatives completed a formal risk assessment for Sullivan County using the HIRA-NY program described above. No mention of a previously completed risk assessment is mentioned in the 2005 Hazard Mitigation Plan. A NYSEMO Region II representative facilitated this event, recording the results of the assessment in the HIRA-NY program. The following individuals represented a variety of jurisdictions at this event:

- Thomas Brawley, Town of Thompson, Building Inspector
- Charlie Hallock, Town of Lumberland, Highway Superintendent
- Theodore Hartling, Town of Rockland, Highway Superintendent
- Daniel Hendrickson, Village of Jeffersonville, Water Plant Operator or Highway Superintendent
- Dave Kuebler, Town of Lumberland, Code Enforcement Officer
- Kara McElroy, Town of Delaware, Grants Administrator
- Gregg Semenetz, Town of Callicoon, Deputy Code Enforcement Officer and Town of Cochection, Code Inforcement Officer
- Charlie Fallon, Town of Lumberland, Deputy Fire Chief
- Pam Winters, Village of Liberty, Code Enforcement Officer
- Dave Sparling, Town of Tusten, Code Enforcement Officer
- Robert Trotta, Sullivan County DPW

Those present decided on eight (8) hazards that were the most likely to affect Sullivan County. These 8 hazards were selected based on the five factors discussed earlier: scope, frequency, impact, onset, and duration. Table 16

shows the selections that were made for these five factors in relation to the 8 hazards that were analyzed during the County's risk assessment event.

<b>Table 16 – Risk Assessment Ratings, Sullivan County, March 2010</b>							
<b>Hazard</b>	<b>Rating</b>	<b>Potential Impact</b>	<b>Cascade Effects</b>	<b>Frequency</b>	<b>Onset</b>	<b>Hazard Duration</b>	<b>Recovery Time</b>
Flood	317	Throughout a large region	Highly likely	A frequent event	Several hours warning	Two to three days	One to two days
Fire	262	Single location	Highly likely	A frequent event	No warning	Less than one day	Less than one day
Severe Storm	255	Throughout a large region	Highly likely	A frequent event	Several days warning	One day	One to two days
Winter Storm (severe)	253	Throughout a large region	Highly likely	A frequent event	Several days warning	Two to three days	Three days to one week
Earthquake	251	Throughout a large region	Highly likely	A rare event	No warning	Two to three days	More than two weeks
Ice Storm	234	Throughout a large region	Highly likely	A regular event	One day warning	Two to three days	One to two days
Hurricane*	201	Throughout a large region	Highly likely	A rare event	One day warning	Less than one day	More than two weeks
Terrorism	180	Several locations	Some potential	A rare event	No warning	Less than one day	One to two days

\*As further detailed in Section 4.3, hurricane is not a profiled hazard included in this plan update. Severe thunderstorms and strong winds are included under the severe storm hazard.

Some hazards included in the HIRA-NY program were not assessed during this event because the participants felt that these hazards were unlikely to occur within and affect Sullivan County. This determination was based on infrequent historic occurrence and low future probability. In contrast, upon further analysis and data review, a couple hazards that were not assessed through the HIRA-NY program have been included in the Hazard Mitigation Plan Update

because the data shows that they have a higher potential to occur within Sullivan County. These two groups of hazards are detailed in the following section.

The HIRA-NY Program was utilized, in cooperation with NYSEMO, to conduct a precursory review of the hazards that affect Sullivan County and the vulnerabilities that the County has in relation to these hazards. During future Plan updates, the additional use of HAZUS, FEMA's methodology for estimating potential losses from earthquake, hurricane, and flood events, as an assessment tool will be considered. Due to the substantial effort required to update Sullivan County's previously approved Plan (2005) to meet FEMA's current guidelines, there were time and monetary constraints which prevented the inclusion of a HAZUS analysis in this document. For each profiled hazard, a realistic estimate of the impacts that would occur throughout the County was made. The level of analysis for each type of hazard was dependent on the amount and detail of historic data available for each. The estimated impacts that could result from the occurrence of each profiled hazard within Sullivan County are included in Section 5.0.

### **4.3 Hazard Identification**

In order to ascertain which hazards were prevalent in Sullivan County, several resources for information were accessed. One source involved a literature search of the information available from the local newspapers; namely the Sullivan County Democrat, the River Reporter and the Times Herald Record. Other sources included reviews of available reports or plans, consultation with community experts, accessing available information online, and documenting information provided by the public during the public meetings.

On the basis of this review, the most prevalent and potentially the most damaging hazards that could afflict the County were included in the County's

HIRA-NY risk assessment. The chosen hazards are mainly caused by various types of storms, especially those that create cascading effects like power outages, flooding, or structural damage. Additionally, structural damage due to fire also appeared to be a frequent hazard event within the County. Other hazards appear to occur on a less frequent basis or have had a lesser impact, based on the historic data collected. The following hazards are those included in the HIRA-NY program. These descriptions, which include natural and technological hazards, summarize the types of hazards and their applicability to Sullivan County. This section of the plan is mirrored after the step-by-step process outlined in FEMA's publication 386-2 entitled "Understanding Your Risks, identifying hazards and estimating losses."

**Air Contamination** – Air contamination is indicative of pollution caused by atmospheric conditions such as temperature inversion induced smoggy condition sufficiently serious to create some danger to human health. Given Sullivan County's rural atmosphere and lack of large industrial areas and business parks, air contamination is not a concern at this time within Sullivan County. This hazard is not included in this plan update.

**Avalanche** – An avalanche occurs when a significant amount of snow slides off mountainous terrain. Although Sullivan County is subject to significant snow storms, no avalanches were found to be an issue at this time. Therefore, this hazard is not profiled further in this mitigation plan update.

**Civil Unrest** – Civil unrest is when an individual or collective action causes serious interference with the peace, security, and/or functioning of a community. Sullivan County is the site of the historic Woodstock music festival of 1969, which has had commemorative re-occurrences over the

decades. Because of this event, civil unrest is further analyzed in later sections on this plan.

**Coastal Storm** – Coastal storms cause increases in tidal elevations, wind speed, and erosion, caused both by extra-tropical events and tropical cyclones. Sullivan County is a mainland County in New York State, with no portions adjacent to any tidal waters. Coastal storms are not recognized as an issue within the County.

**Dam Failure** – Dam failures consist of flood damage specifically caused by the structural failure of a man-made water impoundment structure. Sullivan County has several significant water impoundments that are controlled by dams. Based upon historic information and the prevalence of dams within the County, this hazard was added to the plan update for assessment, even though it was not included in the HIRA-NY risk assessment process.

**Drought** – Drought is the loss of water supply due to the lack of rainfall. The majority of water supply in Sullivan County is obtained from groundwater wells. Groundwater levels are less susceptible to seasonal and droughty conditions than surface waters. None the less, drought impacts have been felt in Sullivan County based upon information from certain Towns & Villages. These impacts affect shallow water wells and have historically impacted public water supplies. This hazard was added to the plan update.

**Earthquake** – Earthquakes are described as a shaking or trembling of the earth that is volcanic or tectonic in origin describes an earthquake event. There is potential for earthquake tremors to be felt within Sullivan County. Though this hazard is not likely to cause extensive damage within Sullivan

County, because of the County's location within New York State it was included in the HIRA-NY risk assessment.

**Epidemic** – An epidemic is the spreading of a contagious disease on a mass basis. No wide spread diseases have been found to impact the County, based upon a review of historic records. Residential locations within the County are still fairly spread out, making it harder for an epidemic event to occur. Outbreaks of the H1N1 virus and Legionnaires have previously been documented within the County; however, neither of these outbreaks reached epidemic proportions. This hazard was determined to not frequently affect the County.

**Explosion** – Explosions included the rapid burning of material and gases yielding the violent release of energy. There is no known history of explosions within the County. Therefore, this hazard is not analyzed further in regards to its potential impacts on Sullivan County.

**Extreme Temperatures** – Extreme temperatures include extended periods of excessive hot or cold weather with a serious impact on human and/or animal populations. Cascade effects can include enhanced fire possibility and drought. Generally, the climate of Sullivan County does not experience periods of extreme heat or cold, hence this is a non-issue at this time, but may be included in future plan updates.

**Fire** – Fire is the uncontrolled burning of residential, commercial, industrial, institutional, or other property. On the basis of the review of numerous newspaper articles, structural fires have been frequent in the County. Though this hazard was not profiled in the County's original plan, it is included in the update because it was identified as a moderately high hazard during the County's HIRA-NY analysis.

**Flood** – Flooding is the submergence of lands in the vicinity of rising waterway levels generally adjacent to water bodies and drainage areas. Such an event may be caused by excessive rainfall, rapid thaw of snow packs, failure of liquid impoundments, etc. This is one of the most prevalent hazard events that impact Sullivan County. This hazard was included in the County’s risk assessment.

**Food and Fuel Shortage** – A food or fuel shortage occurs when the normal distribution pattern and/or timely delivery of foodstuffs or fuel to retail establishments for normal consumer demand is interrupted for a substantial period of time. There is no historic documentation pointing to a food or fuel shortage within Sullivan County. This hazard is not analyzed further.

**HAZMAT – Fixed Sites** – Hazardous materials at fixed site locations is defined as the discharge of hazardous materials (toxic, flammable or corrosive) into the environment from a facility located at a specific location. Generally, HAZMAT issues from fixed sites in the County are limited in nature and infrequent in occurrence; however, concern remains over the potential of such an event. This hazard was included in further assessments because of the concern that multiple jurisdictions raised related to this hazard.

**HAZMAT – In Transit** – Hazardous materials in transit is the discharge of hazardous materials (toxic, flammable or corrosive) during their transport via a variety of transportation means (motor vehicle, truck, train, boat or plane). This hazard was included in the 2010 plan update because multiple jurisdictions expressed concerns over trail derailments that could occur within their municipal boundaries.

**Hurricane** – A hurricane is a type of tropical cyclone with winds exceeding 74 miles per hour (mph) accompanied by rain, thunder and lightning. This hazard was included in the County’s original plan as a severe rain storm coupled with high winds. Such events are routinely encountered in Sullivan County, but do not meet the definition of a hurricane. Weather patterns and events that begin as hurricanes are often re-classified as tropical storms or tropical depressions (two other types of tropical cyclones) by the time they reach New York State. Tropical storms are organized systems of strong thunderstorms with a defined circulation and maximum sustained winds of 39 to 73 mph. Tropical depressions are organized systems of clouds and thunderstorms with a defined circulation and maximum sustained winds of 38 mph or less.

The only Presidential Disaster Declaration associated with a tropical cyclone that included Sullivan County was when Tropical Depression Ivan made its way up the eastern United States in 2004. This storm system began as a Hurricane but was classified as a Tropical Depression by the time it affected New York State. The coastal areas of the state, which include Rockland, Kings, Queens, Richmond, Westchester, Bronx, New York, Suffolk, and Nassau Counties, are the most susceptible to storm surges (water pushed toward the shore by the force of strong winds) and strong winds associated with tropical cyclone events. Sullivan County is not included in the 100-year peak gust wind probability area for hurricane events and winds higher than 85 mph (NYSEMO, 2007). Sullivan County is not included within a hurricane storm surge area (NYSEMO, 2007).

For the purposes of this plan update, hurricane will not be profiled further in Section 5.0. Severe thunderstorm events and high wind events will be included in the severe storm hazard and will be further detailed as such within Section 5.0. This determination was made because no historic

occurrences of hurricanes were found for Sullivan County and the County is not included in a high susceptibility area for such a hazard event.

**Ice Jam** – Ice jams occur when water bodies are clogged with large blocks of ice. The ice is normally formed by the freezing of the water body and becomes dislodged due to hydraulic conditions whereby the ice floats and may jam at sections of the water body that have a limited cross section (i.e., at bridges and natural channel contractions). Ice jams events have been reported by the public on multiple occasions. This hazard is detailed further in the next section of the plan.

**Ice Storm** – Ice storms include freezing rains which cause icing of roads, structures, and vegetation, and can cause structural damages and create hazardous slippery conditions. Ice storms have frequently occurred in the County based upon conversations with Public Works Officials. These events routinely cause trees to topple due to the weight of the ice which has the potential to cause structural damage and utility failures. This hazard is profiled further in this plan.

**Infestation** – An infestation event is characterized by 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. No records of infestations were uncovered for Sullivan County. Localized environmental harm or crop destruction has likely occurred, especially in the agricultural setting; however, these minor incidents are not large enough to be considered a hazard. Due to the lack of infestation data recorded for Sullivan County, this hazard is not profiled in the plan.

**Landslide** – Landslides are defined as the downward movement of a sloped land mass under the force of gravity. Based upon historic

information, landslides have occurred in the County on a localized basis, in particular in Craigie Clair, located in the Town of Rockland. Based on information from the County's Soil & Water Conservation District, landslides also have a potential to occur in parts of the North Branch which is located in the Town of Callicoon. This hazard is profiled further in this plan.

**Mine Collapse** – Mine collapse is the structural failure of an underground mine used to harvest minerals from the earth. There are no known active mines in Sullivan County, although there are abandoned copper mines and railroad tunnels which may have some potential for issues. As no historical problems are known to have occurred based upon our review of articles and information, mine collapse is not included in further analyses.

**Oil Spill** – Oil spills include the discharge of oil into the environment by a fixed site or mobile site (vehicles). This hazard is similar to what has been mentioned with respect to hazardous material hazards. Historically, it is known that fuel oil spills have resulted due to the lack of maintenance of oil storage facilities or due to damage as a consequence of a cascade effect resulting in the structural damage of an oil containing vessel. Though minor spills occur, large scale oil spills are not a concern within Sullivan County. Concerns related to oil spills will be applied to the hazardous materials hazard analyses.

**Radiological – Fixed Site** – Radiological materials at fixed sites is defined as the release or threat of release of radioactive material from a nuclear power generating station or research reactor or other stationary source of radioactivity. No nuclear power locations exist within Sullivan County; therefore, this hazard is not profiled in the next section of the plan.

**Radiological – In Transit** – Radiological materials in transit constitutes a release of radioactive material into the environment while in transit due possibly to an accident or malfunction in the container which holds the material. No historical data was found to be available to indicate the release of any radioactive material within the County. Certain Towns in the County expressed a concern with respect to radioactive discharges from both rail and vehicles, due to the transport of such materials through the County. As no history of losses is known, this hazard is not afforded further consideration in this plan.

**Severe Storm** – A severe storm hazard event includes hail storms, windstorms, and severe thunderstorms (with associated severe wind events such as derechos, gustnados, and downbursts). Severe storm was included in the HIRA-NY risk assessment completed by Sullivan County. This hazard will be detailed further in the next section of this plan.

**Severe Thunderstorm** – Severe thunderstorms can produce tornados, hail, flooding, or high winds. These three potential side effects of severe thunderstorms are fully described and included under the hazards severe storm (includes hail events and high winds) and tornado. Therefore, this additional hazard will not be analyzed as part of this plan. Severe thunderstorms will be incorporated under the severe storm hazard.

**Structural Collapse** – Structural collapse is the failure and caving in of a structure. In and of itself, potential for the structural collapse of a structure within the County was not historically found to be an issue, unless it was caused by another hazard. Generally, building code enforcement prevents fragrant issues from arising. In addition, programs for the demolition of abandoned structures have helped to remove abandoned structures before they collapse. Because programs are in place to mitigate this potential hazard, structural collapse is analyzed in this plan.

**Terrorism** – Terrorism is the systematic use of violence committed by groups in order to intimidate a population or government into granting their demands. As a result of the programs implemented by FEMA stemming from the September 11<sup>th</sup> disaster, a study was conducted in Sullivan County to identify the potential for terrorism in the County. This study found that there are no significant targets in the County, when compared to other areas across the Country. Other areas outside of the County contain national landmarks, facilities, and governmental establishments which would be more prone to terrorism due to the close proximity of dense population areas. However, because of the increased threat of terrorism within the past decade and the proximity of Sullivan County to New York City, this hazard will be profiled further in this plan. Terrorism was included in the County's HIRA-NY risk assessment.

**Tornado** – Tornados are violent destructive whirling winds accompanied by a funnel-shaped cloud that progresses in a narrow path over the land. Historic tornados have been recorded within New York State. Though a rare event within in Sullivan County, such an event has the potential to create a large amount of damage. This hazard was originally assessed in the 2005 plan, and is also included in this plan update as a profiled hazard.

**Tsunami-wave Action** – Tsunamis are a series of enormous waves created by an underwater disturbance such as an earthquake, landslide, volcanic eruption, or meteorite. Due to Sullivan County's distance from the ocean, there is no potential for tsunamis to occur within Sullivan County. No historic data was uncovered to show otherwise. This hazard is not included further in this plan update.

**Transportation Accident** – A transportation accident is an unexpected happening causing loss or injury which is not due to any fault or

misconduct on the part of the person injured, but for which legal relief may be sought while using a means of conveyance or travel from one place to another. Historically, as is typical for much of the County, traffic accidents are typical for Sullivan County. Some of these are due to the cascade effect caused by other hazards such as severe winter weather, ice storms, or other severe storms. This hazard is included in subsequent sections of this plan since it was included in the original plan from 2005.

**Utility Failure** – Utility failure is defined as the loss of electric and/or natural gas supply, telephone service, or public water supply, as a result of an internal system failure and not by the effects of disaster agents.

Although new equipment and information is now available to prevent such utility failures, power outages are still considered a frequent event. This hazard is afforded further consideration under this plan.

**Water Supply Contamination** – Water supply contamination includes the contamination or potential contamination of surface or subsurface public water supply by chemical or biological materials that results in restricted or diminished ability to use the water source. Water supply contamination within Sullivan County is infrequently documented. The Village of Liberty has historically encountered issues with methyl tertiary butyl ether (MTBE) in their water supply, but aside from these incidents, no other historic information was uncovered related to this hazard. This hazard is not profiled in the next section of the plan.

**Wildfire** – Wildfires are described as the uncontrollable combustion of trees, brush, or grass involving a substantial land area which may have the potential for threatening human life and property. Though some areas of Sullivan County are heavily forested, only one historic wildfire event was uncovered for Sullivan County. A minor wildfire occurred in the Town

of Mamakating in 2008. Because of the low incidence and low probability of this hazard to occur within the County, it is not included in further assessments.

**Winter Storm (severe)** – Winter storms include heavy snowfall and extreme cold and can immobilize an entire region. Major snowstorms have occurred in Sullivan County in the past, putting high demands upon the Public Works Department of the County, Towns, and Villages. This hazard is included in the County's risk assessment due to its frequent occurrence.

## 5.0 Hazard Data and Profiles

Based on the information collected during the data review and risk assessment portion of this plan, 18 hazards were determined to have potential to affect Sullivan County. These 18 hazards include 7 that were assessed as part of Sullivan County's HIRA-NY event. These hazards are listed in Table 17, below.

<b>Table 17 – Hazards Determined to Affect Sullivan County</b>	
<b>Hazard</b>	<b>Type of Hazard</b>
Civil Unrest	Technological/Human-caused
Dam Failure	Technological/Human-caused
Drought	Natural
Earthquake	Natural
Fire	Technological/Human-caused
Flood	Natural
Hazardous Materials – fixed site	Technological/Human-caused
Hazardous Materials – in transit	Technological/Human-caused
Ice Jam	Natural
Ice Storm	Natural
Landslide	Natural
Severe Storm	Natural
Structural Collapse	Technological/Human-caused
Terrorism	Technological/Human-caused
Tornado	Natural
Transportation Accident	Technological/Human-caused
Utility Failure	Technological/Human-caused
Winter Storm (severe)	Natural

The analyses included in Section 4.3 eliminated the need for further discussion on the following hazards: air contamination, avalanche, coastal storm, epidemic, explosion, extreme temperatures, food and fuel shortage, hurricane, infestation, mine collapse, oil spill, radiological – fixed site, radiological – in transit, severe thunderstorm,

tsunami-wave action, water supply contamination, and wildfire. Though these hazards are not included in the 2010 HMP Update, they can be incorporated in the future during subsequent updates of Sullivan County's Plan. The remaining 18 hazards were deemed applicable to the County. These hazards are profiled below in order to describe their historic occurrence within the County, County and individual jurisdiction vulnerability and susceptibility, and historic cost damage estimates from previous hazard events. Based on each hazard's profile and associated details, a qualitative probability of occurrence (i.e., low, medium, or high) was determined for each. The overall vulnerabilities associated with each hazard are also included in Section 5.1. The level of detail included for each hazard was limited by the amount of historical data and prior cost and damage estimates available.

## 5.1 Natural, Technological, and Human-Caused Hazards

### 5.1.1 Civil Unrest

**Description** – Civil unrest is defined as an individual or collective action causing serious interference with the peace, security, and/or functioning of a community.

**Historic and Current Details** – Civil unrest has been particularly expressed as a concern to the Town of Bethel. This is due to the inclusion of the 1969 Woodstock Festival location in the municipal limits of the Town. In recent decades, commemorative visits and smaller events have taken place at the original Woodstock site. Though a large-scale commemorative event is not currently planned within the Town of Bethel, such an event cannot be ruled out. No other specific locations within the County were acknowledged as being sites of a large gathering or event. The preparedness of the County for such an event would depend on the

onset. Even with warning, an event as large as Woodstock would require a lot of planning and man power.

**Costs and Damage Estimates** – In the past, it is estimated that the financial impact upon the County, Town, and State to provide emergency services and temporary facilities to handle such an event is in the several hundred thousand dollar range. Based on the minimal historic data associated with civil unrest events, this hazard was determined to have a low probability of occurrence within the County. No impacts to structures or critical facilities would likely occur as a result of civil unrest. The County resources that would be needed during such an event consist of law enforcement personnel and emergency services.

#### 5.1.2 Dam Failure

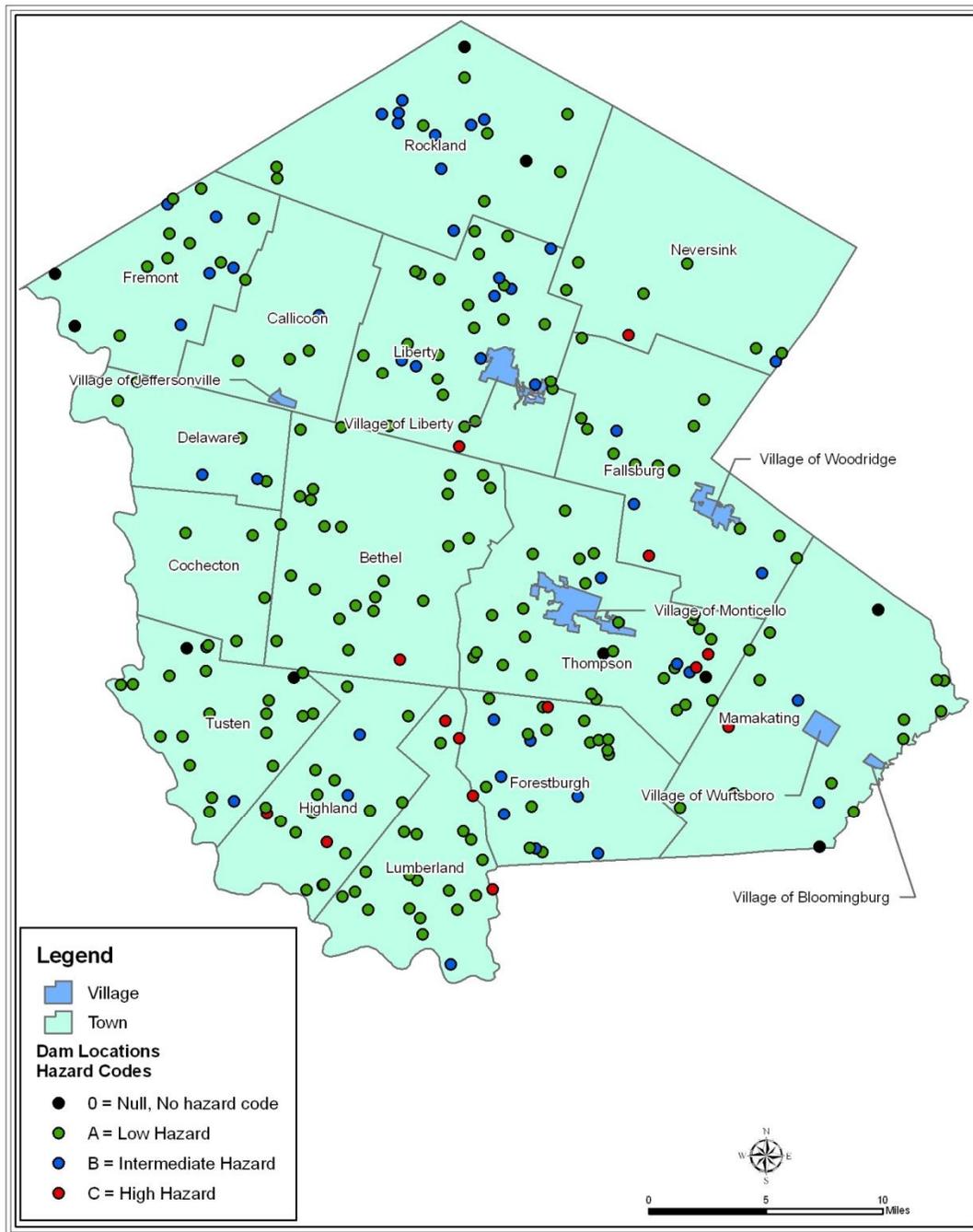
**Description** – Dam failure is identified as structural deterioration, either gradual or sudden, that results in the inability to control impounded water as designed. This deterioration poses a danger to people and/or property in the potential inundation area. Dam failure can occur with little warning. Intense storms may produce a flood in a few hours or even minutes for upstream locations. Flash floods occur within six hours of the beginning of heavy rainfall, and dam failure may occur within hours of the first signs of breaching.

Dam failure can result from many factors such as natural disasters, structural deterioration, or actions caused by man, including terrorism. For concrete dams, the major reason for failure is associated with foundations. For earthen dams, piping is the main reason for failure. Over topping affects both concrete and earthen

dams which do not have adequate spillways to allow for high water levels to pass through without damaging the structure (HIRA-NY, Definitions of Hazards).

**Location** – Dams may be either man-made or exist because of natural phenomena, such as landslides or glacial deposits. The majority of dams are man-made structures normally constructed of earth or concrete. There are 266 dams located within Sullivan County, of which many are small and do not constitute a serious threat to the downstream area if they were to fail. Figure 5.1 shows the locations of dams within Sullivan County, displayed by their hazard code designation. Table 18 lists the total numbers of dams located within each individual jurisdiction in the County.

Figure 5.1 - Dam Locations within Sullivan County Displayed by Hazard Code



<b>Table 18 – Information on Dams Located Within Sullivan County</b>					
<b>Jurisdiction</b>	<b>Class A Hazard Dams (#)</b>	<b>Class B Hazard Dams (#)</b>	<b>Class C Hazard Dams (#)</b>	<b>No Hazard Class (breached or removed)</b>	<b>Total Dams (#)</b>
(T) Bethel	24	0	1	0	25
(T) Callicoon	4	1	0	0	5
(T) Cochecton	4	0	0	0	4
(T) Delaware	4	2	0	0	6
(T) Fallsburg	11	3	1	0	15
(T) Forestburgh	14	7	1	0	22
(T) Fremont	10	5	0	2	17
(T) Highland	15	2	2	0	19
(T) Liberty	22	8	1	0	31
(T) Lumberland	18	1	4	0	23
(T) Mamakating	12	2	1	2	17
(T) Neversink	6	1	1	0	8
(T) Rockland	8	9	0	2	19
(T) Thompson	24	3	2	2	31
(T) Tusten	19	1	0	2	22
(V) Bloomingburg	0	0	0	0	0
(V) Jeffersonville	0	0	0	0	0
(V) Liberty	0	0	0	0	0
(V) Monticello	1	0	0	0	1
(V) Woodridge	1	0	0	0	1
(V) Wurtsboro	0	0	0	0	0
Sullivan County	197	45	14	10	266

The NYSDEC classifies dams based on their physical characteristics and location (Part 673 of Environmental Conservation Law). The possible hazard classifications that a dam can have include:

- Class A (low hazard): A dam failure is unlikely to result in damage to anything more than isolated or unoccupied buildings, undeveloped lands, minor roads such as town or county roads; is unlikely to result in the interruption of

important utilities, including water supply, sewage treatment, fuel, power, cable, or telephone infrastructure; and/or is otherwise unlikely to pose the threat of personal injury, substantial economic loss or substantial environmental damage.

- Class B (intermediate hazard): A dam failure may result in damage to isolated homes, main highways, and minor railroads; may result in the interruption of important utilities, including water supply, sewage treatment, fuel, power, cable, or telephone infrastructure; and/or is otherwise likely to pose the threat of personal injury and/or substantial economic loss or substantial environmental damage. Loss of human life is not expected.
- Class C (high hazard): A dam failure may result in widespread or serious damage to home(s); damage to main highways, industrial or commercial buildings, railroads, and/or important utilities, including water supply, sewage treatment, fuel, power, cable or telephone infrastructure; or substantial environmental damage; such that the loss of human life or widespread substantial economic loss is likely.
- Class D (negligible or no hazard): A dam that has been breached or removed, or has failed or otherwise no longer materially impounds waters, or a dam that was planned but never constructed. Class D dams are considered to be defunct dams posing negligible or no hazard. The NYSDEC may retain pertinent records regarding such dams.

**Historic and Current Details** – Major man-made water impoundments in Sullivan County include New York City’s Neversink Dam, Swinging Bridge Reservoir, Rio Reservoir, Toronto Reservoir, Cliff Lake Dam, Mongaup Falls Reservoir, Lake Superior, and Silver Lake. Other lakes have controlled discharges such as Morningside Lake, which would create similar impacts if it failed.

Based upon conversations with the Sullivan County Soil & Water Conservation District, a check of the available FEMA records and other information; large dam failure has not been an occurrence that resulted in major losses in the County. Minor smaller agricultural impoundments and other man-made privately owned impoundments have the highest dam failure rates within the County. One minor private dam upstream of Seminary Creek was reported to have failed, which increased flooding in the Hamlet of Callicoon in 1996. Another private dam near Cooley was reported by the Soil & Water Conservation District to have been a minor contribution to the flooding of Livingston Manor in the Town of Rockland that occurred in 2000. The Silver Lake Dam in the Town of Fallsburg reportedly failed in 1999 and was subsequently re-built in 2002. Multiple jurisdictions reportedly identified dam failure as a major concern during their meetings for this plan update.

A search of the National Performance of Dams Program (NPDP) website was completed to determine the frequency of reported dam failures within the County. Table 19 shows the results of the NPDP website search.

<b>Table 19 – National Performance of Dams Program (NPDP) Dam Failure Records, Sullivan County</b>							
<b>NPDP ID</b>	<b>Dam Name</b>	<b>Location (Town)</b>	<b>Incident Date</b>	<b>Incident Type</b>	<b>Dam Failure?</b>	<b>Controlled Breach?</b>	<b>Comments</b>
NY00497	Rio Dam	Lumberland	1994	Unknown	Unknown	Unknown	Earth embankment did not meet reqs. of FERC
NY00696	Swinging Bridge Dam	Lumberland	April 1995	Unknown	Unknown	Unknown	Buckled steel penstock running through the bridge
NY00696	Swinging Bridge Dam	Lumberland	May 2005	Piping; Sinkhole on crest and upstream slope	No	N/A	Group put together to develop investigation plan for future remedial actions
NY00539	Triple L Lake Dam	Liberty	March 2006	Embankment flood-hydro event; operator error	No	Yes	Town ordered breaching of dam due to high rainfall and condition of dam
NY00991	Fred Denman Lake Dam	Liberty	June 2006	Flood-hydro event; embankment erosion	Yes	No	None
NY00205	Lake Jefferson	Callicoon	June 2006	Flood-hydro event	No	N/A	Overtopping event eroded right embankment
NY12591	Kramer Pond Dam	Liberty	July 2006	Flood-hydro event; deterioration	Yes	No	Breach to right of spillway

None of the above dam failures resulted in any known damages to public or private properties. None of these events are considered to be significant. Dam failures are often times directly related to flooding events, as illustrated in Table 19. Due to the prevalence of flooding events and high number of dams within Sullivan County, the qualitative probability of a dam failure event is high.

The NYSDEC Dam Safety Bureau keeps records of all dams within New York State. The DEC also keeps track of high priority dams that have one or more structural deficiencies. As of December

2006 in New York State, Dam Safety's database identified 133 (52 high hazard dams (Class C) and 81 intermediate hazard dams (Class B)) as having at least one structural deficiency that requires further engineering studies and/or remedial work. Fifteen dams included on this deficient dam list are located within Sullivan County. The results of this database review are provided in Table 20.

<b>Table 20 – NYSDEC Dam Safety Deficient Dam Database Results, Sullivan County</b>			
<b>Dam Name</b>	<b>Municipality</b>	<b>Hazard Code</b>	<b>Ownership</b>
Coon Rock Rod & Gun Club Dam	(T) Delaware	B	Private
Tanzville Lake Dam	(T) Liberty	B	Private
Edgewood Lake Upper Dam	(T) Rockland	B	Private
Lake Uncas Dam	(T) Rockland	B	Private
Edgewood Lake Lower Dam	(T) Rockland	B	Private
Nimrod Lake Dam	(T) Rockland	B	Private
Swamp Pond Dam	(T) Tusten	B	Private
Trojan Lake Dam	(T) Rockland	B	Private
Gossweyler Lake Dam	(T) Fremont	B	Private
Mud Pond Dam	(T) Rockland	B	Private
Sidwell Lake Dam	(T) Highland	B	Private
Pleasure Lake Dam	(T) Fallsburg	C	Private
St. Joseph's Lake Dam	(T) Forestburgh	C	Private
Swan Lake Dam	(T) Liberty	C	Private

**Cost and Damage Estimates** – The financial costs to replace or repair a dam obviously depend on the type of dam, use of dam, size of dam, and amount of damage or deterioration. No specific costs were recovered from dam replacement or repair projects that have occurred within Sullivan County in the past. No damage estimates were found related to any dam failure incidents. Recently, the NYSDEC amended its dam regulations to require

additional plans and reports for all Class B and C dams under private and public ownership. The required submission of these documents will hopefully help to identify dams that are in need of repair before they fail and allow the DEC to better monitor the condition of dams in the State, particularly those under private ownership. Substantial damage to residential and agricultural properties could occur if a hazard code B or C dam were to fail. Small-scale evacuations would be needed if such a failure was determined to be likely. Smaller dam failures, hazard code A, are not anticipated to cause damage to structures or property or anticipated to require evacuations.

### 5.1.3 Drought

**Description** – A drought is defined as a prolonged period of limited precipitation affecting the supply and quality of water (HIRA-NY Definitions of Hazards). An absolute drought consists of a period of at least 15 consecutive days where none of the days experience 0.01 inches of rain or greater. A partial drought is a period of at least 20 consecutive days where the mean daily rainfall does not exceed 0.01 inches. A dry spell consists of a period of at least 15 consecutive days where none of the days experience 0.04 inches or more of rainfall (USGS, 2009).

Four type of drought are generally recognized by the climatological community (NOAA, NCDRC, 2010):

1. **Meteorological drought:** occurs when dry weather patterns dominate the area;

2. **Hydrological drought:** occurs when low water supply becomes evident, especially in streams, reservoirs, and groundwater levels, usually after many months of meteorological drought;
3. **Agricultural drought:** occurs when crops become affected; and
4. **Socioeconomic drought:** relates the supply and demand of various commodities to drought.

Drought periods progress through stages and drought intensity may vary considerably during the drought period. The time of occurrence and duration of a drought event can cause significant variations in drought impacts (HIRA-NY Definitions of Hazards).

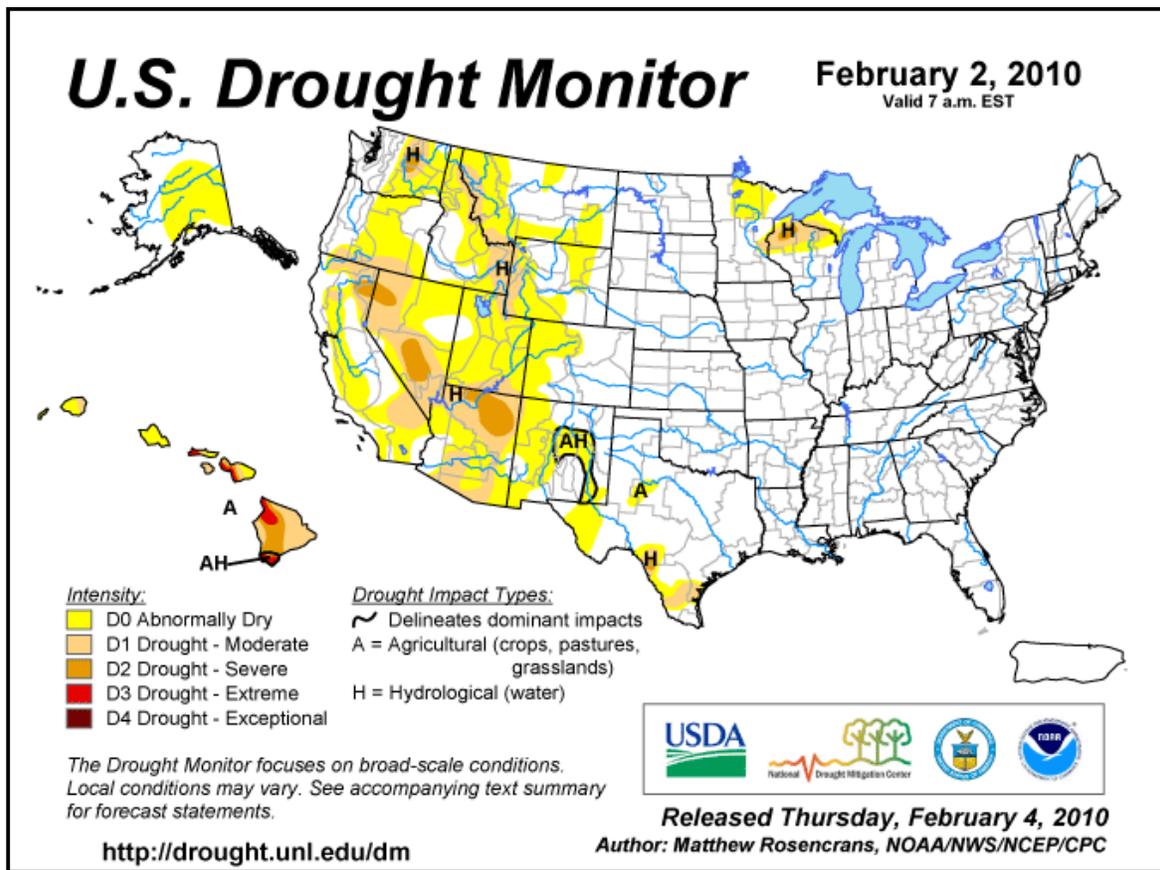
**Historic and Current Details** – Periods of drought have had limited and localized impacts in the County. At times, inadequate water supply has been an issue for the Village of Liberty and the Village of Woodridge. With respect to Woodridge, seasonal demands are problematic due to a high seasonal population. In the Village of Liberty, a surface water supply is used, which is susceptible to drought impacts.

**Costs and Damage Estimates** – No major losses resulting from droughts are known to be documented and no disaster declarations are known to be applicable to drought in Sullivan County. Therefore, drought was determined to have a low probability of occurrence within the County. As illustrated by Figure 5.2, drought is a much more common hazard in other parts of the United States than the Northeast and Mid-Atlantic Regions. According to Sullivan

County's Real Property Tax Service, the total value of property classified as agricultural is \$4,787,379. In a year of persistent drought, normal agricultural production may decrease by as much as 60%, which would result in damages of approximately \$2,872,427 in Sullivan County. Many residential areas and agricultural properties would be negatively impacted if a persistent drought event occurred. An increase in County resources (money and personnel) would be required to make sure that all affected populations had access to drinking water.

Based on the limited data regarding historic drought events in the County, widespread or long-term effects from drought are not common. Years with very little drought damage (\$10,000 or less) are typical. Small-scale drought events would temporarily affect agricultural opportunities within the County, but are not likely to have any infrastructure impacts. Sullivan County was recently designated a *contiguous disaster county* by the USDA, following drought conditions that were experienced in 2012. Farmers within the County will therefore be eligible to apply for USDA-Rural Development low-interest disaster loans.

Figure 5.2 – U.S. Drought Monitor Map



#### 5.1.4 Earthquake

**Description** – 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 effects of an earthquake can be felt at distances beyond its actual occurrence, though the effects are less severe as the distance increases. Earthquakes often occur without warning and can quickly cause extensive damage and extensive casualties. Common effects of earthquakes include ground motion and shaking, surface fault ruptures, and ground failure (HIRA-NY, Definitions of Hazards).

Ground Motion – Ground motion is the vibration or shaking of the ground during an earthquake event. When a fault ruptures, seismic waves radiate, causing the ground to vibrate or shake. Soft soils can amplify the ground motions.

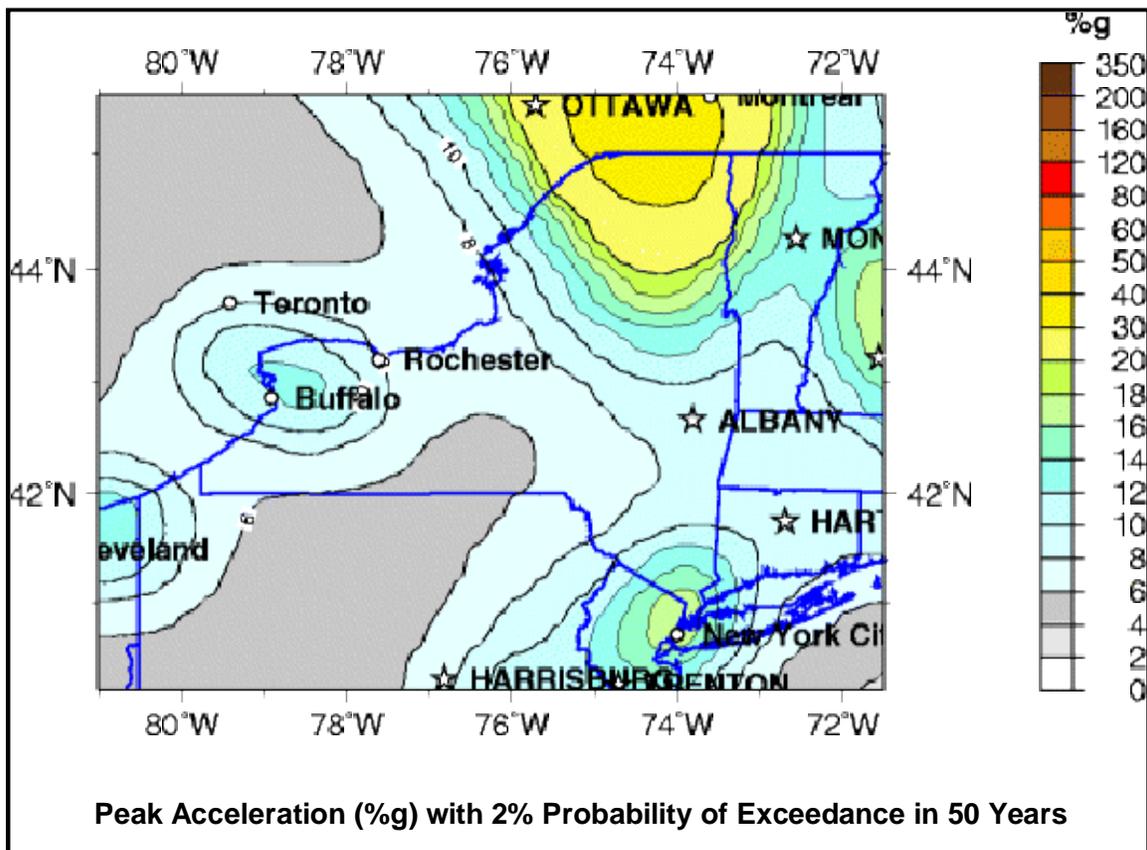
Surface Fault Ruptures – Surface faulting is the differential movement of two sides of a fracture. Surface faults are characterized by their length, width, and displacement of the ground.

Ground Failure – Sometimes the shaking of the ground causes loose soils to lose strength and act like viscous liquid, an occurrence called liquefaction. This incident can cause two types of ground failure, lateral spread and loss of bearing strength. Lateral spread failures develop on gentle slopes and involve the sidelong movement of large masses of soil as an underlying layer becomes liquefied. Loss of bearing strength failures result when the soil supporting structures liquefies, causing the structures to tilt and collapse.

**Historic and Current Details** – Sullivan County is located adjacent to the Ramapo Fault, an inactive fault line that runs through New York, New Jersey, and Pennsylvania. Despite being located approximately 30 miles from the fault, no records detailing earthquake events within the County were found. Multiple events of ground shaking from earthquakes have occurred as a result of earthquakes in other part of New York State, particularly along the fault to the southeast, as well as northern parts of New York State. Figure 5.3 below depicts the seismic hazard map for New York

State, which is based on predictions of earthquake ground shaking. Sullivan County is located in an area of low peak acceleration, likely due to a low incidence rate and small maximum magnitude for nearby earthquakes.

**Figure 5.3 – Peak Ground Acceleration Values for New York State**  
 (USGS, Earthquake Hazard Program, 2010)

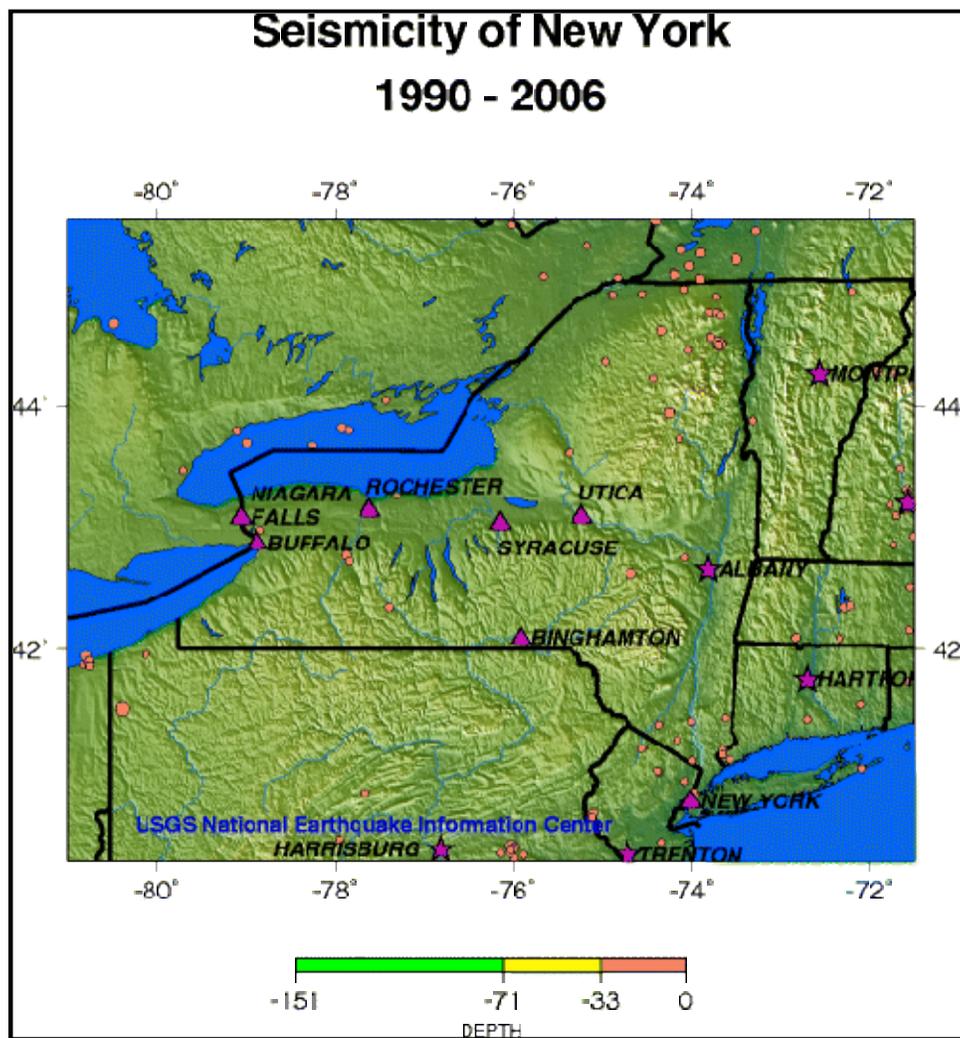


The values shown in Figure 5.3 are peak ground acceleration (PGA) values in percent of g (% g) with 10% probability of exceedance in 50 years. PGA is expressed in “g”, which represents the acceleration due to Earth’s gravity. The map represents the ground motion that can be reasonably expected in a

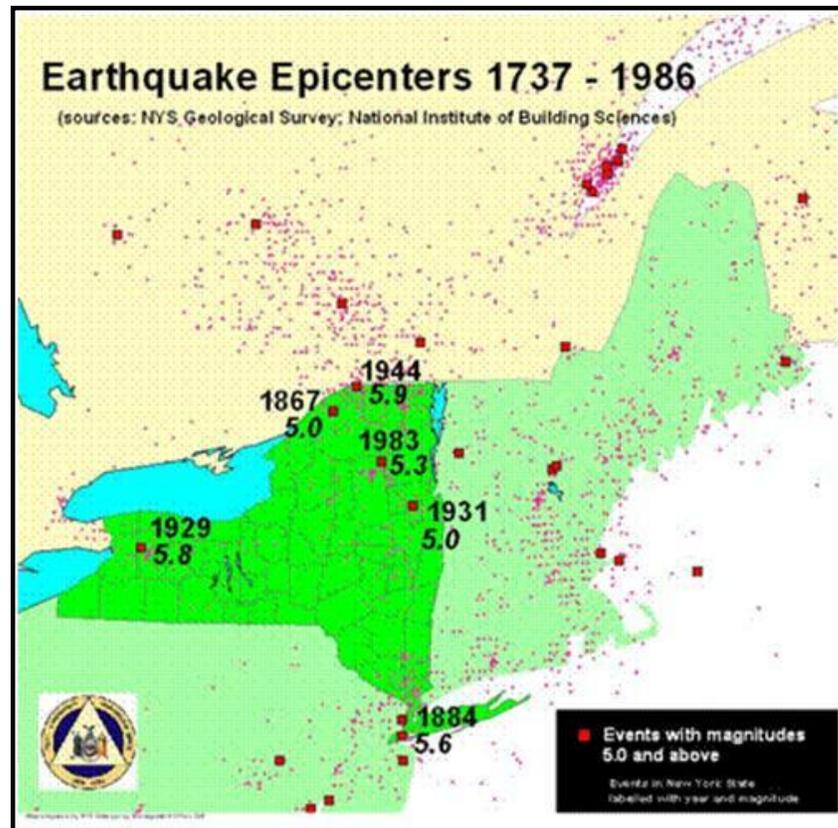
50 year period. Sullivan County, as shown in the above figure, is located in the six (6) to eight (8) %g region.

Figure 5.4 illustrates the seismicity, defined as the frequency or magnitude of earthquake activity in a given area, of earthquakes within New York and surrounding areas between 1990 and 2006.

**Figure 5.4 – Frequency of earthquake activity within New York State and surrounding areas, 1990-2006**  
 (USGS, Earthquake Hazard Program, 2010)



**Figure 5.5 – Locations of historic earthquake activity within the Northeast United States, 1737-1986** (2011 NYS Hazard Mitigation Plan)



As shown in Figures 5.4 and 5.5, many earthquakes, though minor, have occurred in other parts of New York State. Effects from these events have been felt in Sullivan County. Historic earthquakes that have affected the County are detailed in Table 21. Earthquake events are measured by magnitude using the Richter Scale and intensity using the Mercalli Scale. Table 22 details these rating scales so that they may be referenced when reviewing Table 21.

<b>Table 21 – Historic earthquakes that have effected or been felt in Sullivan County, mid-1600’s – March 2010</b> (USGS, <i>Historic U.S. Earthquakes, 2010</i> )				
<b>Epicenter Location</b>	<b>Date of Event</b>	<b>Magnitude</b>	<b>Intensity</b>	<b>Details</b>
New York City	12/18/1737	5.2	VII	Shock was reportedly felt at Boston and Philadelphia-assumed to have also been felt in Sullivan County
NE NYS	11/4/1877	Unk	VII	Total area that felt event covered 233,000 sq km, which would include Sullivan County
New York City	8/10/1884	5.5	VII	Total area that felt event covered 181,000 sq km, which would include Sullivan County
NE NYS	5/27/1897	4.5	VI	Felt over a greater portion of NYS, assumed to include Sullivan County
Quebec, Canada	2/28/1925	7.0	VIII	Total area that felt event covered 4,200,000 sq km, which would include Sullivan County
Attica, NY	8/12/1929	5.2	VIII	Total area that felt event covered 250,000 sq km, which would include Sullivan County
Lake George, NY	4/20/1931	4.8	VII	Total area that felt event covered 155,000 sq km, which would include Sullivan County
Quebec, Canada	11/1/1935	6.3	Unk	Event felt throughout most of New York State, assumed to include Sullivan County
Near Massena, NY	9/5/1944	5.8	VIII	Event felt throughout most of NYS, assumed to include Sullivan County
Rockland County, NY	9/3/1951	3.6	Unk	Event felt throughout southeastern NYS and NJ, assumed to include Sullivan County
Wappingers Falls, NY	6/7/1974	3.0	Unk	Event felt throughout southeastern NYS, assumed to include Sullivan County
Blue Mt Lake, NY	10/7/1983	5.3	VI	Event felt throughout NYS and Northeast US, assumed to include Sullivan County
Ardasley, NY	10/19/1985	4.0	Unk	Event felt throughout southeastern NYS, assumed to include Sullivan County
Richmondville, NY	6/17/1991	4.1	IV-V	Event felt throughout southeastern NYS, assumed to include Sullivan County
Au Sable Forks, NY	4/20/2002	5.1	VII	Event felt throughout NYS and Northeast US, assumed to include Sullivan County
Altamont, NY	7/24/2007	3.1	Unk	Event felt throughout eastern NYS, assumed to include Sullivan County

<b>Table 22 – Richter Magnitude Scale and Mercalli Intensity Scale Ratings</b> (USGS, Earthquake Hazards Program, 2010)		
<b>Richter Magnitude Scale</b>	<b>Mercalli Intensity Scale</b>	<b>Intensity Scale Details</b>
1.0 – 3.0	I	Not felt except by a few persons at rest under favorable conditions
3.0 – 3.9	II – III	Felt only by some at rest – felt noticeably indoors, especially on upper floors
4.0 – 4.9	IV – V	Felt by many indoors, some/many outdoors, minor damage occurs
5.0 – 5.9	VI – VII	Felt by all, damage to inadequate structures, many frightened
6.0 – 6.9	VIII – IX	Considerable damage to many types of structures, structural collapse
7.0 and higher	X or higher	Structures destroyed, bridges and rails bent, objects thrown, line of sight & level distorted

Though not yet included on the USGS Historic Earthquake database, a recent earthquake occurred in Southern Canada that was felt in Sullivan County. The earthquake, which was located 35 miles north-northeast of Ottawa, occurred on June 23, 2010. This earthquake had a magnitude of 5.0. No damage from this earthquake was reported in Sullivan County.

**Costs and Damage Estimates** – Though ground motion is sometimes felt during earthquakes events in nearby regions, no records of damaging earthquakes have occurred in Sullivan County. There is a low probability of occurrence of earthquakes originating within the limits of Sullivan County. No damage reports were noted during the data review for this hazard. Although special pre-disaster consideration regarding seismic needs does not appear to be needed, it is recommended that projects involving the construction of new infrastructure strictly follow the existing Building Code of New York State with respect to where seismic design should be incorporated into a facility design.

Though unlikely, the occurrence of an earthquake within Sullivan County has the potential to greatly impact existing infrastructure and critical facilities County-wide. Site access and mobility impacts would occur due to fallen debris, hindering the response time of emergency personnel. Such an event would have the potential to cause over 5 million dollars in personal property and public infrastructure damages. The small tremors that are more commonly experienced in Sullivan County often do not result in significant impacts to structures or critical facilities within the County, but are estimated to result in potential losses of \$72,961 per year.

#### 5.1.5 Fire and Structural Collapse

**Description** – Fire is defined as the uncontrolled burning in residential, commercial, industrial, institutional, or other structures in developed areas. It is important to note the fire spreads quickly. Heat and smoke from fire can be more dangerous than the flames themselves. Inhaling the super-hot air can sear a person’s lungs. Fire produces poisonous gases that make a person disoriented and drowsy. Asphyxiation is the leading cause of fire deaths (HIRA-NY, Definitions of Hazards). The potential impact of this hazard is injury, death, damage, and/or loss of private property, and cost of manpower or resources to put the fires out and to treat injuries.

Structural collapse is a sudden structural failing, partially or fully, of building, bridges, or tunnels, threatening human life and health.

**Historic and Current Details** – Fires in Sullivan County are typically accidental, although there are exceptions such as natural

causes, arson, and neglect. Minor fires, such as those contained to a single structure, are common; several residential fires occur each year.

The most destructive fire in the County's history took place in Monticello in August of 1909. An explosion at a local power plant caused a fire that ended up spreading to more than 70 properties and caused approximately \$1 million in damages (approximately \$20 million in today's dollars). The electric plant was eventually moved outside the business district and the damaged properties were rebuilt. No injuries or deaths were reported (Rue, 2001). No significant and unintended structural collapses have been documented within Sullivan County that were not associated with a fire event. The qualitative probability of occurrence of a fire event within the County was determined to be high.

**Costs and Damage Estimates** – In a review of newspapers from the last few years, structural fires, on average, tend to occur every few months. These fires are generally residential fires on homes that average in value of approximately \$95,000. If six homes, of average value, burned down completely, this would estimate to be an annual expense of nearly \$600,000. This figure does not include the numerous minor fires that may occur on a monthly, or even bi-monthly, basis. A realistic estimate of annual expenses including the minor fire expenses would be somewhere around \$750,000.00. Time and fire department personnel are needed to put out fires, often with extensive damage to at least one structure. Fire response within Sullivan County is acceptable with numerous fire departments located within the County and neighboring counties. Structural collapse is common during fire events, but is

not otherwise documented to occur often. Fires and structural collapse events are normally confined to a single property, but may include precautionary actions such as the evacuation of adjacent structures.

#### 5.1.6 Floods

**Description** – Floods are natural events for rivers and streams where excess water from snowmelt, rainfall, or storm surges accumulates and overflows onto the banks and adjacent floodplains of these waterbodies. Floodplains are lowland areas located adjacent to waterbodies that are subjected to recurring flood events.

Several factors determine the severity of floods, including intensity and duration of rainfall or other water sources. A large amount of rainfall over a short period can result in flash flood conditions. Even a small amount of precipitation can result in flood events in locations where the soil is already saturated or in areas with large amounts of impervious surfaces (i.e., large parking lots, roadways, developments, etc.). Topographic and cover type characteristics are also factors that contribute to the severity of flood events. Water runoff is greater in areas with steep slopes and little or no vegetative ground cover. Frequency of inundation depends on the climate, soil, and channel slope of a particular area.

In regions where substantial precipitation occurs during a particular season each year, or in regions where annual flooding occurs mainly from snowmelt, the floodplains may be inundated almost every year. In regions without extended periods of below-freezing

temperatures, floods usually occur in the season of highest precipitation. In areas where flooding is primarily caused by melting snow, the flood season is spring or summer (HIRA-NY, Descriptions of Hazards).

Flash Flooding – Flash floods can develop very quickly, often in just a few minutes and without any visible signs of rain. Flash floods are known to have a high velocity of water that carries rocks, mud, and other debris with it and can sweep away most items in its path (FEMA, Flood, 2009). Flash flood damage tends to occur in areas immediately adjacent to a stream or arroyo (gulch that temporarily fills with water after a heavy rain), due to a combination of heavy rain, dam failure, levee failure, rapid snowmelt, and ice jams. Additionally, heavy rain falling on steep terrain can weaken soil and cause debris flow, damaging homes, roads, and property.

Mountains and steep hills produce rapid runoff and quick stream response. Rocks and clay soils do not allow much water to infiltrate the ground. Steep narrow valleys generate rapid flowing waters that can rise quickly to a considerable depth. Saturated soil also can lead rapidly to flash flooding. Other high risk areas include canyons, low water crossings, recent burn areas in mountains, and developed areas from pavement and roofs which concentrate rainfall runoff (NOAA, NWS, 2005).

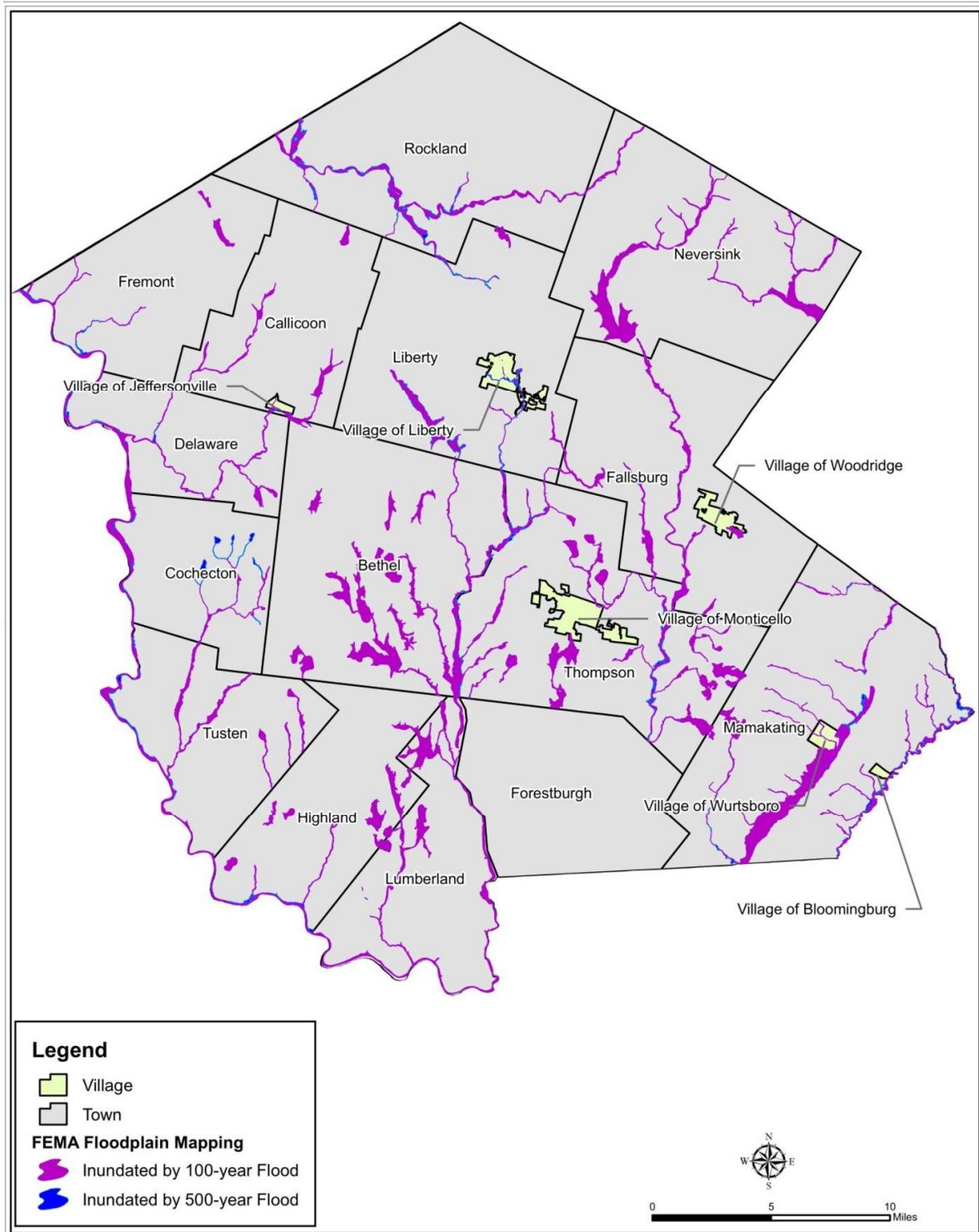
National Flood Insurance Program – The Federal Emergency Management Agency (FEMA), which is the

government entity that administers the National Flood Insurance Program (NFIP), has mapped the known floodplains within much of the United States. When a flood study is completed for the NFIP, the information and maps are assembled into a Flood Insurance Study (FIS). A FIS compiles flood risk data for specific waters or hazard areas within specific communities and includes the main causes of flooding in these areas. The FIS delineates Special Flood Hazard Areas (SFHAs), designates flood risk zones, and establishes base flood elevations (BFEs) within certain areas. BFEs are based on the flood event that has a 1-percent (1%) chance of occurring annually, or the 100-year flood (HIRA-NY, Definitions of Hazards). More information regarding the NFIP within Sullivan County can be found in Section 7.6.

100-year Floodplain – The 100-year floodplain designates an area that has, on average, a 1-percent chance of flooding in any given year. It is important to note that a 100-year flood could occur during subsequent years or once every 10 years. The 100-year flood, or base flood, is the standard that has been adopted for use in the NFIP. As indicated on Federal Insurance Rate Maps (FIRMs), base flood elevations (BFEs) indicate the elevation of surface water resulting from a flood that has a 1-percent chance of occurring in any given year. The BFE is the height of the base flood, normally in feet, relative to the geographic datum referenced in the FIS report (i.e. National Geodetic Vertical Datum (NGVD) of 1929, North American Vertical Datum (NAVD) of 1988, etc.) (HIRA-HY, Definitions of Hazards).

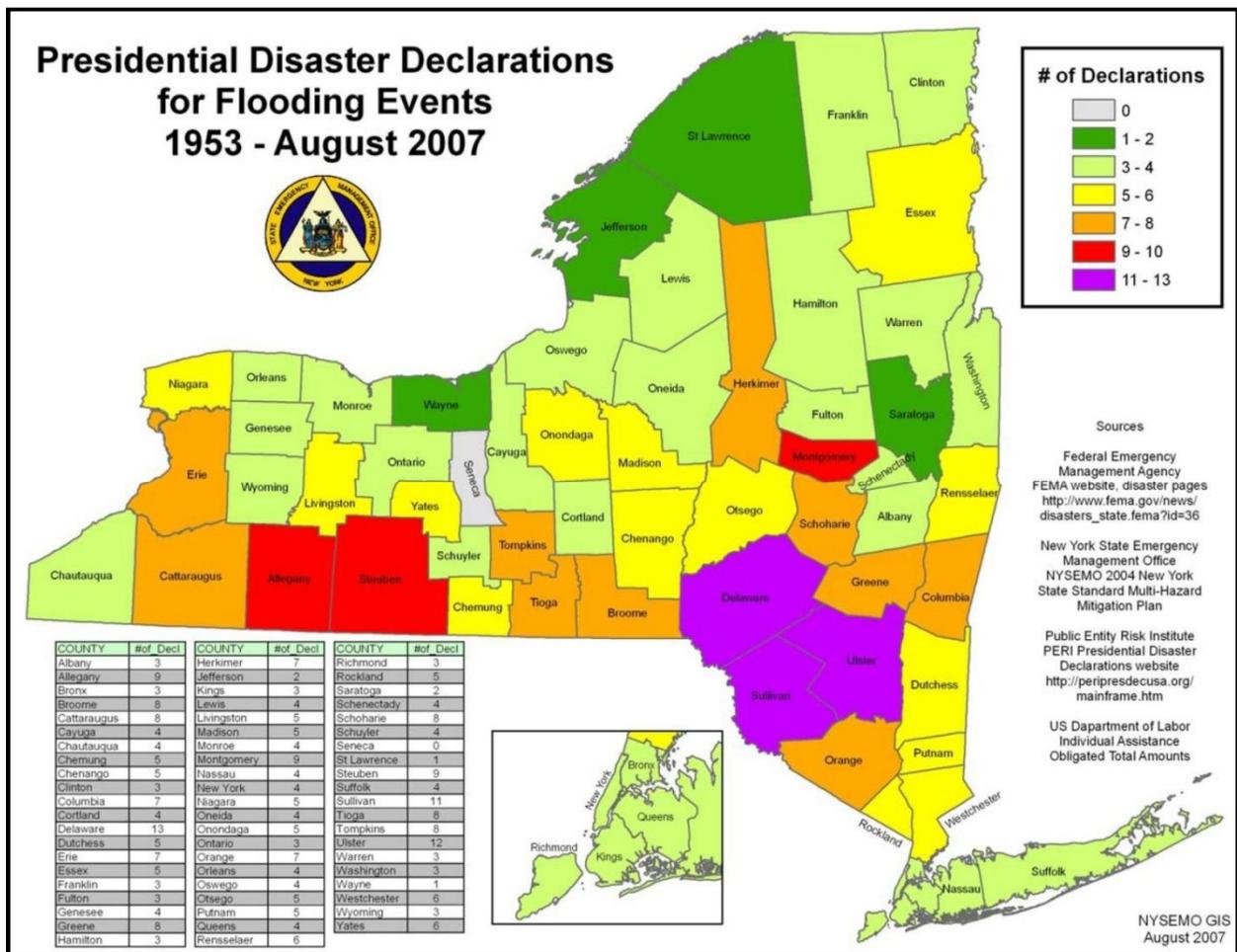
Figure 5.6 shows the 2006 FEMA mapped floodplains within Sullivan County. FEMA and Sullivan County worked to revise the County's floodplain mapping during 2009 and 2010. The updated FIRMs took effect in February 2011. Municipalities located within Sullivan County are currently in the process of officially adopting the revised mapping and re-enrolling in the National Flood Insurance Program. The vulnerability review and assessment included in this Plan Update incorporates the 2006 data, as the 2011 revised mapping is still being adopted. The 2011 FIRMs will be incorporated into the next five-year Plan Update by Sullivan County. Any changes in County vulnerabilities associated with flood hazards will be reviewed and discussed as part of the next update process. The floodplains depicted on Figure 5.6 depict FEMA's 1996 digital floodplain mapping for the County.

Figure 5.6 - FEMA Mapped Floodplains within Sullivan County



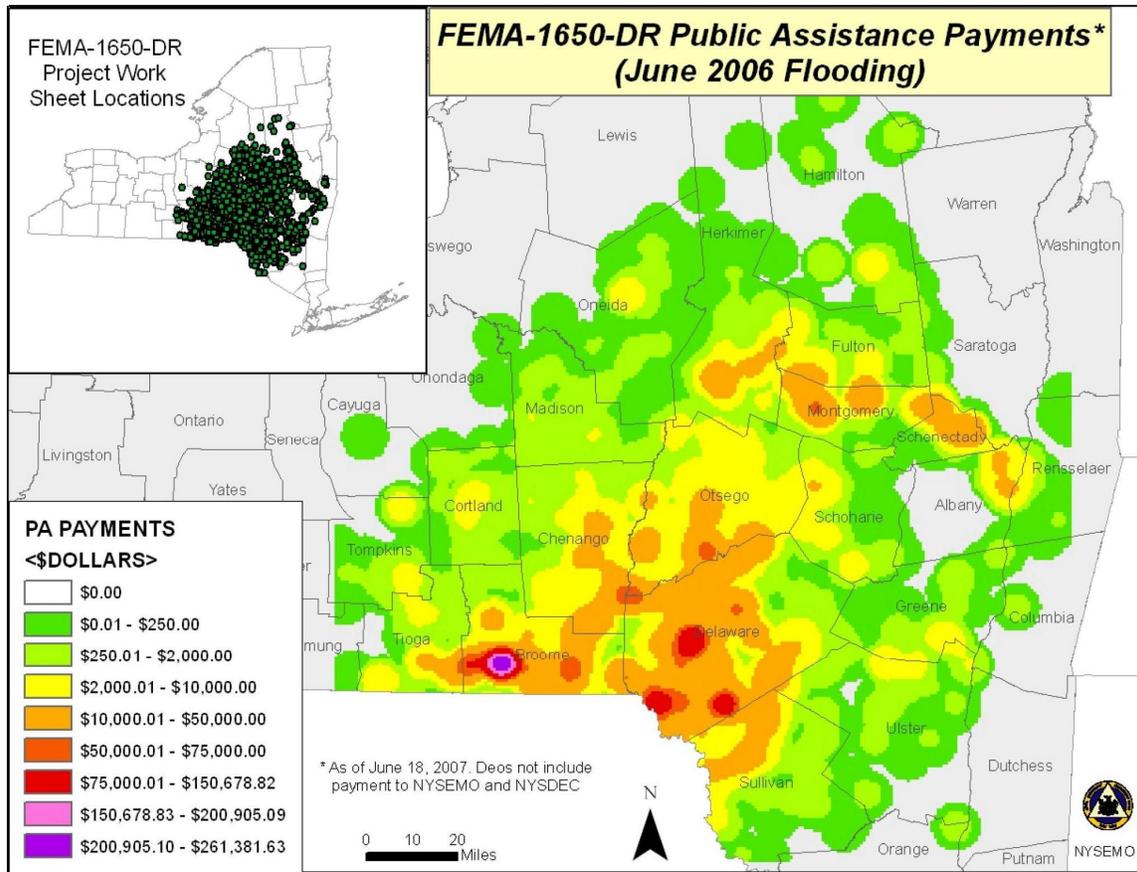
**Historic and Current Details –** Floods have historically plagued the County on a frequently re-occurring basis. Between 1953 and 2007, a total of 11-13 Presidential Disaster Declarations were issued for Sullivan County, solely for flooding events (as shown by Figure 5.7).

**Figure 5.7 – Presidential Disaster Declarations for Flooding Events in New York State, 1953-August 2007**  
(NYSEMO, NYS Hazard Mitigation Plan, 2009)



The most recent declared disaster, number DR-1650, occurred on took place from June 26<sup>th</sup> through July 10<sup>th</sup>, 2006 in central and southern New York. The eligible damages from this flood event totaled more than \$227 million dollars statewide. Within Sullivan County, flooding occurred along the Delaware River and various streams, causing property damage and forcing evacuations of nearby communities. More than 1,500 homes were flooded, and bridges and roads were damaged in the flooding. The Village of Jeffersonville and Hamlet of Narrowsburg were forced to evacuate, and the Roscoe Firehouse flooded and was forced to relocate following the flood. One person was killed when flood waters washed through her home. The flash flooding was described as the worst in at least 40 years, and by some reports, the worst ever in Sullivan County. Figure 5.8 shows the range of public assistance funding that was issued by FEMA as a result of the June 2006 flooding event.

**Figure 5.8 - Public Assistance Payments Associated with June 2006 Flood Hazard Event**



Another notable flood event was the result of the “Blizzard of 1996”. Several storms within a week led to more than 48 inches of snow cover in the County. The weather turned unseasonably warm a week later and more than 3 inches of rain fell, causing rapid snowmelt. Widespread flooding throughout New York and Pennsylvania resulted, claiming 10 lives, destroying thousands of homes and businesses, and closing hundreds of roads in the region. Forty-one (41) New York counties were declared federal disaster areas, and more than \$6 million in individual and public assistance went to Sullivan County.

Severe flooding also occurred within the County in July 2009. This hazard event was a New York State declared disaster and did not receive any federal funding.

Aside from the disaster events described above, 44 other records of extensive flood events were reported for Sullivan County. Given the prevalence of flood events within the County, this hazard is determined to have a high probability of occurrence. Table 23 includes information describing these additional hazard events.

<b>Table 23 – Historic flood events reported to occur in Sullivan County between 1635 and June 2010</b>						
<i>(NOAA, NCDC, Storm Events Search, 2010 and NYSEMO, NYS Hazard Mitigation Plan, 2009)</i>						
<b>Location</b>	<b>Date</b>	<b>Event</b>	<b>Deaths (#)</b>	<b>Injuries (#)</b>	<b>Property Damage (\$)</b>	<b>Crop Damage (\$)</b>
Delaware River	10/1903	Flood	Unk	Unk	Unk	Unk
Southern NY	8/1955	Flood	Unk	Unk	Unk	Unk
Southern NY	10/1955	Flood	Unk	Unk	Unk	Unk
Sullivan County	8/29/1969	Flood	Unk	Unk	Unk	Unk
Sullivan County	2/1970	Flood	Unk	Unk	Unk	Unk
Sullivan County	10/1970	Flood	Unk	Unk	Unk	Unk
Sullivan County	7/20/1973	Flood	Unk	Unk	Unk	Unk
Sullivan County	7/1975	Flood	Unk	Unk	Unk	Unk
Sullivan County	1/1976	Flood	Unk	Unk	Unk	Unk
Sullivan County	4/17/1984	Flood	Unk	Unk	Unk	Unk
Sullivan County	11/28/1993	Flood	0	0	\$50,000	0
<i>Heavy rains caused the Beaver Kill and Willowemoc to flood, and many roads flooded.</i>						
Sullivan County	4/13/1994	Flood	0	0	\$5,000	0
Sullivan County	7/7/1994	Flash Flood	0	0	\$5,000	0
Sullivan County	9/27/1994	Flash Flood	0	0	\$500,000	0
<i>A 100-foot section of Route 97 and 40 feet of fill were washed away during torrential rains near Pond Eddy.</i>						
Sullivan County	1/19/1996	Flood/ Flash Flood	0	0	\$8.7M	0
Minisink Ford	1/27/1996	Flash Flood	0	0	0	0
Sullivan County	11/9/1996	Flood	0	0	\$50,000	0
Neversink	12/2/1996	Flash Flood	0	0	\$10,000	0
<i>Major stream and roadway flooding occurred in northern Sullivan County, as well as on the East Branch of the Delaware River near the Beaver Kill and Callicoon Creek.</i>						

<b>Table 23 – Historic flood events reported to occur in Sullivan County between 1635 and June 2010</b> (NOAA, NCDC, Storm Events Search, 2010 and NYSEMO, NYS Hazard Mitigation Plan, 2009)						
<b>Location</b>	<b>Date</b>	<b>Event</b>	<b>Deaths (#)</b>	<b>Injuries (#)</b>	<b>Property Damage (\$)</b>	<b>Crop Damage (\$)</b>
Monticello	7/7/1998	Flash Flood	0	0	0	0
<i>Nearly 5 inches of rain fell during the evening of June 30, causing severe flooding on Route 17. Flash flooding resulted as thunderstorms continued during the evening. A Federal Disaster Declaration was issued later.</i>						
Sullivan County	9/17/1999	Flood	0	0	0	0
<i>The remnants of Hurricane Floyd caused minor flooding of small streams in the County, as well as road washouts.</i>						
Sullivan County	7/21/2000	Flood	Unk	Unk	Unk	Unk
<i>Road flooding and downed trees were reported in Neversink, and runoff from prolonged heavy rainfall affected the Rondout Creek basin.</i>						
Sullivan County	8/11/2000	Flash Flood	0	0	\$1.3M	0
<i>Extensive flooding was reported in Cochection, Delaware, and Tusten, and a State of Emergency was declared due to numerous road and bridge washouts. A stone bridge at Ten Mile River, constructed in 1895, was destroyed, as were other bridges built above the 100-year flood level. Flash flooding also occurred throughout the County.</i>						
Sullivan County	12/17/2000	Flash Flood	0	0	\$1M	0
<i>Heavy rain and snowmelt caused flooding and washed out roads. Jeffersonville was evacuated, and a State of Emergency was declared in the Towns of Rockland, Liberty, and Callicoon.</i>						
Sullivan County	5/28/2002	Flash Flood	0	0	\$50,000	0
Sullivan County	9/4/2003	Flash Flood	0	0	\$500,000	0
<i>Many roads were undermined or closed due to flooding. Stewart Road in the Town of Callicoon was washed out with a 10-foot hole in the road.</i>						
Northeastern Sullivan County	7/24/2004	Flash Flood	0	0	\$50,000	0
Barryville	8/12/2004	Flash Flood	0	0	\$520,000	0
<i>Several road washouts due to heavy rain. A private bridge collapsed in the Town of Tusten, and a car fell into a sink hole in the bridge.</i>						
West Brookville	8/30/2004	Flash Flood	0	0	\$20M	0
<i>Numerous roads flooded, and power poles were washed out of the ground. One residence was undermined enough to partially collapse. Evacuations were required.</i>						
Sullivan County	10/1/2004	Flash Flood	0	0	\$18M	0
<i>3 to 6 inches of rain caused flash flooding as part of the remnants of Tropical Depression Ivan. The Delaware River, as well as most streams and creeks, flooded beyond its banks. 300 homes and dozens of businesses were damaged, and 1,200 people were evacuated County-wide. 10 people were rescued in Roscoe and 19 in Callicoon.</i>						
Bloomington	3/29/2005	Flash Flood	0	0	\$10,000	0
Sullivan County	4/19/2005	Flood/ Flash Flood	0	0	\$12M	0
<i>The Delaware River flooded to a record high 17.97 feet at Callicoon as a result of 4 inches of rain over two days. Flash flooding occurred in all Sullivan County towns, but Livingston Manor, Roscoe, and Jeffersonville were the jurisdictions most affected. All streams and creeks flooded, and buildings, roads, and bridges were damaged.</i>						

<b>Table 23 – Historic flood events reported to occur in Sullivan County between 1635 and June 2010</b> (NOAA, NCDC, Storm Events Search, 2010 and NYSEMO, NYS Hazard Mitigation Plan, 2009)						
<b>Location</b>	<b>Date</b>	<b>Event</b>	<b>Deaths (#)</b>	<b>Injuries (#)</b>	<b>Property Damage (\$)</b>	<b>Crop Damage (\$)</b>
Southeast Sullivan County	10/8/2005	Flash Flood	0	0	\$50,000	0
Sullivan County	11/30/2005	Flood	0	0	\$10,000	0
Liberty	6/26/2006	Flash Flood	0	0	\$25,000	0
Northern Sullivan County	6/27/2006	Flash Flood	1	0	\$100M	0
<i>Tropical moisture caused heavy rain and flash flooding. Catastrophic flash flooding affected Livingston Manor, Roscoe, and Jeffersonville. The flooding was described as the worst in at least 40 years, and possibly the worst ever. One person was killed when her home was flooded.</i>						
Monticello	11/16/2006	Flash Flood	0	0	\$5,000	0
Bridgeville	4/16/2007	Flood	0	0	0	0
Rockland	6/19/2007	Flash Flood	0	0	\$300,000	0
<i>Beaver Kill Road was washed out in the Town of Rockland, causing extensive damage to the road.</i>						
Bloomington	3/8/2008	Flood	0	0	0	0
Rockland	7/23/2008	Flash Flood	0	0	\$15M	0
Liberty	7/24/2008	Flash Flood	0	0	\$5,000	0
Widespread	7/30/2009	Flash Flood	0	0	0	0
<i>Moderate rainfall with localized heavy showers brought isolated areas of flooding to the County.</i>						
Jeffersonville	7/31/2009	Flash Flood	0	0	\$20,000	0
Jeffersonville	8/2/2009	Flash Flood	0	0	\$5,000	0
Roscoe	8/9/2009	Flash Flood	0	0	\$5,000	0
Livingston Manor	8/10/2009	Flash Flood	0	0	\$2,000	0
<i>10 homes in Livingston Manor were evacuated as a precaution at Finch and River Streets.</i>						
<b>Totals:</b>	--	--	<b>1</b>	<b>0</b>	<b>\$178.2M</b>	<b>0</b>

The Delaware River and the Callicoon Creek are common areas of concern when it comes to flooding events. These waters have a few low areas that surround them in the Village of Jeffersonville, Town of Delaware, and Town of Tusten. The Town of Highland also reports the Delaware River as a flood hazard. Some specific areas which have been identified by the Towns and Villages as particularly susceptible to flooding include:

- *Town of Callicoon: Flooding due to Callicoon Creek.*
- *Town of Delaware: Flooding due to the Delaware River and the Callicoon Creek.*
- *Town of Fremont: Washout areas due to Flooding are found on Ruebman Road, Weiss Road, Karow Road, the intersection of Specht Road and Glen Ellyn Road, the intersection of McColly Road and Deer Lake Road, Basket Road and Winkler Road.*
- *Town of Highland: Approximately twenty areas of flooding within the Town.*
- *Village of Jeffersonville: The low areas surrounding the Callicoon Creek and Laundry Brook are areas where flooding occurs.*
- *Town of Tusten: Flooding due to the Delaware River and the Ten Mile River and its stems.*
- *Town of Rockland: Frequent flooding issues along the Beaverkill and Willowemoc.*

**Costs and Damage Estimates – Based on the above NCDC data, average flood impacts for Sullivan County are estimated at \$10,400,000 in damages annually. The Town of Rockland reports the highest annual losses from flooding events.** Flood is Sullivan County’s most prevalent hazard event. A total of 122 repetitive flood loss properties were identified within Sullivan County. The general locations and losses associated with these properties are detailed in Table 36 in Section 7.6. Table 24 lists loss estimates for damages that were reported to the NFIP as a result of flooding events between 1978 and 2002.

<b>Table 24 – NFIP Flood Damage Data for Sullivan County, 1978-2002</b> <i>(FEMA, NFIP, 2002)</i>		
<b>Town/Village</b>	<b>Total Flood Loss 1/1/78 - 12/31/02</b>	<b>Average Annual Loss</b>
Bethel	\$2,607.94	\$173.86
Bloomingsburg	\$0,000.00	\$0,000.00
Callicoon	\$28,469.22	\$1,897.95
Cochecton	\$1,209.12	\$80.61
Delaware	\$39,380.89	\$2,625.39
Fallsburg	\$250.00	\$16.67
Forestburgh	\$8,370.22	\$558.01
Fremont	\$7,630.71	\$508.71
Highland	\$22,314.07	\$1,487.60
Jeffersonville	\$53,061.15	\$3,537.41
(T) Liberty	\$11,881.12	\$792.07
(V) Liberty	\$55,527.21	\$3,701.81
Lumberland	\$1,649.98	\$110.00
Mamakating	\$62,156.16	\$4,143.74
Monticello	\$0,000.00	\$0,000.00
Neversink	\$20,273.65	\$1,351.58
Rockland	\$987,027.32	\$65,801.82
Thompson	\$105,939.31	\$7,062.62
Tusten	\$19,815.99	\$1,321.07

<b>Table 24 – NFIP Flood Damage Data for Sullivan County, 1978-2002</b> <i>(FEMA, NFIP, 2002)</i>		
<b>Town/Village</b>	<b>Total Flood Loss 1/1/78 - 12/31/02</b>	<b>Average Annual Loss</b>
Woodridge	\$118.00	\$7.87
Wurtsboro	\$11,340.45	\$756.03
<b>TOTAL</b>	<b>\$1,439,022.51</b>	<b>\$95,934.83</b>

Flood events have the potential to quickly impact all structures and facilities in the limits of the flooded area or flooded waterway. Large flood events often include mandatory evacuations and the establishment of emergency shelters. Residential properties are the property type most often located within mapped floodplains; therefore, impacts to private houses are anticipated to be the largest structural impact that would result from a large flood event. Extensive impacts to transportation infrastructure and public utilities would also occur. According to the NYS Hazard Mitigation Plan (2009), 1,551 structures are located within 100-year floodplains, as shown by FEMA’s Q3 floodplain mapping data. The calculated value of these structures is \$247,000,000. Such damages represent a potential worst-case flood loss event. In addition, impacts to agricultural properties and enterprises commonly occur as a result of large scale flood events in the County. According to Sullivan County’s Real Property Tax Service, the total value of property classified as agricultural is \$4,787,379. A severe flood event has the potential to impact 20% of this land, resulting in approximately \$957,475 in potential damages.

### 5.1.7 Hazmat - Fixed Site and Hazmat - In Transit

**Description** – Hazardous materials (fixed site) consists of consists of an uncontrolled release of material from a stationary facility, which when released can result in death or injury to people and/or damage to property and the environment through the material's flammability, toxicity, corrosiveness, chemical instability and/or combustibility.

Hazardous materials (in transit) consists of an uncontrolled release of material during transport, which when released can result in death or injury to people and/or damage to property and the environment through the material's flammability, toxicity, corrosiveness, chemical instability and/or combustibility (HIRA-NY, Definitions of Hazards).

**Historic and Current Details** – These hazards are being analyzed based on the concerns of many jurisdictions regarding the potential for train derailments and other accidents that could occur in which the transported material(s) are not known. The transportation of hazardous materials is an issue which is rated highly with respect to public interest.

In the past, a train derailment was the cause for concern just outside the County, near the Delaware Valley. This has caused heightened concern within the County, although no derailments within the County have resulted in the release of any hazardous materials. This concern is strongest in the jurisdictions that border the Southern Tier active railroad line: Towns of Tusten, Fremont, Delaware, and Cochection.

Some of the concern in the Southwestern portion of the County is due to a past train derailment near Shohola, Pennsylvania, where hazardous materials were reported to be released into the environment. An explosion was also reported to have occurred at that time that could be felt in the Town of Highland. This serious occurrence has raised public concern as a freight railroad continues to run through the Towns of Tusten, Cochection, Delaware, and Fremont. Similar hazard concerns exist regarding the trucking industry.

In addition to rail transport, highly travelled State and U.S. routes are commonly used by hazardous waste transporters. The following roads within Sullivan County are purported common routes used to transport hazardous materials: Route 17, Route 17B, Route 52/52A, and Route 97. A major public hazard has the potential to develop in the event of a collision or accident.

The NYSDEC tracks records of reported spills that occur in the State in an online database. Records of spills, both of hazardous materials and petroleum-based products, were reviewed for frequency and severity. The records reported to occur within Sullivan County by the NYSDEC for 2009 are provided in Appendix H. A total of 117 spill records were reported for Sullivan County in 2009. Given this historic data, there is a medium probability of occurrence of a hazmat event occurring within Sullivan County.

**Costs and Damage Estimates** – Specific costs associated with spills and discharges of hazardous materials could not be readily identified. On average, based on the spill data obtained from the

DEC website for 2009, reported spills occur approximately every 3 to 4 days within the County. The majority of these spills are minor and immediate action is taken to cordon off the area and clean up the spill. The most recent significant hazardous materials spill event occurred in 1988 with a chemical spill from a railroad car near Callicoon.

No specific jurisdictions within the County were identified as having an abnormally high spill rate or other problems associated with hazardous materials, in transit or at fixed locations. Costs associated with large, moderate, or small spills or discharge events are related to the recovery of products that may be spilled (oil, gas, etc.), plus clean up by licensed environmental companies. These costs vary by spill, but realistic estimates are located within the \$5,000 to \$10,000 range.

#### 5.1.8 Ice Jams

**Description** – Although a large amount of information associated with ice jam events has been collected since the early 1900's, documentation of the actual rate of occurrence of such events is not easily obtained. The lack of information on ice jams can be attributed, in part, to the fact that ice jam events are often short-lived and often affect only a localized reach or area of a body of water (U.S. Army CRREL, 2004).

An ice jam is described as a large accumulation of ice in rivers or streams that interrupts the normal flow of water and often leads to flooding conditions and/or damage to nearby structures (HIRA-NY, Definitions of Hazards). Ice jams include those that form in early

winter as ice formation begins (freeze-up jams), those that form as a result of the breakup of ice (break-up jams), and those that contain elements of both types (combination jams). Ice jam events can include ice jams, the formation of an ice cover which raises water levels upstream or decreases water levels downstream, or ice cover breakup (U.S. Army Corps CRREL, 2004). Freeze-up jams typically occur early to mid-winter and are made up of slush ice that freezes in place. Break-up jams occur during periods of thaw and are made up of broken pieces of ice from the breaking-up of solid, surface ice (Montana Dept. Military Affairs, 2010).

Specific areas along a stream are more apt to form an ice jam than others (Montana Dept. Military Affairs, 2010):

- *Flat stream slopes* – where the slope of the river or stream flattens out; there is not enough slope for gravity to move ice further toward the stream channel;
- *Narrowed channels* – where the stream channel is naturally narrow, where the channel has been channelized or modified with rip rap, where there are bridge or other flow constrictions, or other areas where there is an absence of natural floodplain;
- *Downstream of open water* – ice can continually form where there are open water areas, contributing ice to the stream; these pieces of ice can accumulate in narrow places downstream; and
- *Floodplains* – naturally, floodplains act as places for floating ice and debris to fall out of the stream channel. If structures or stream modifications alter the natural pattern and location

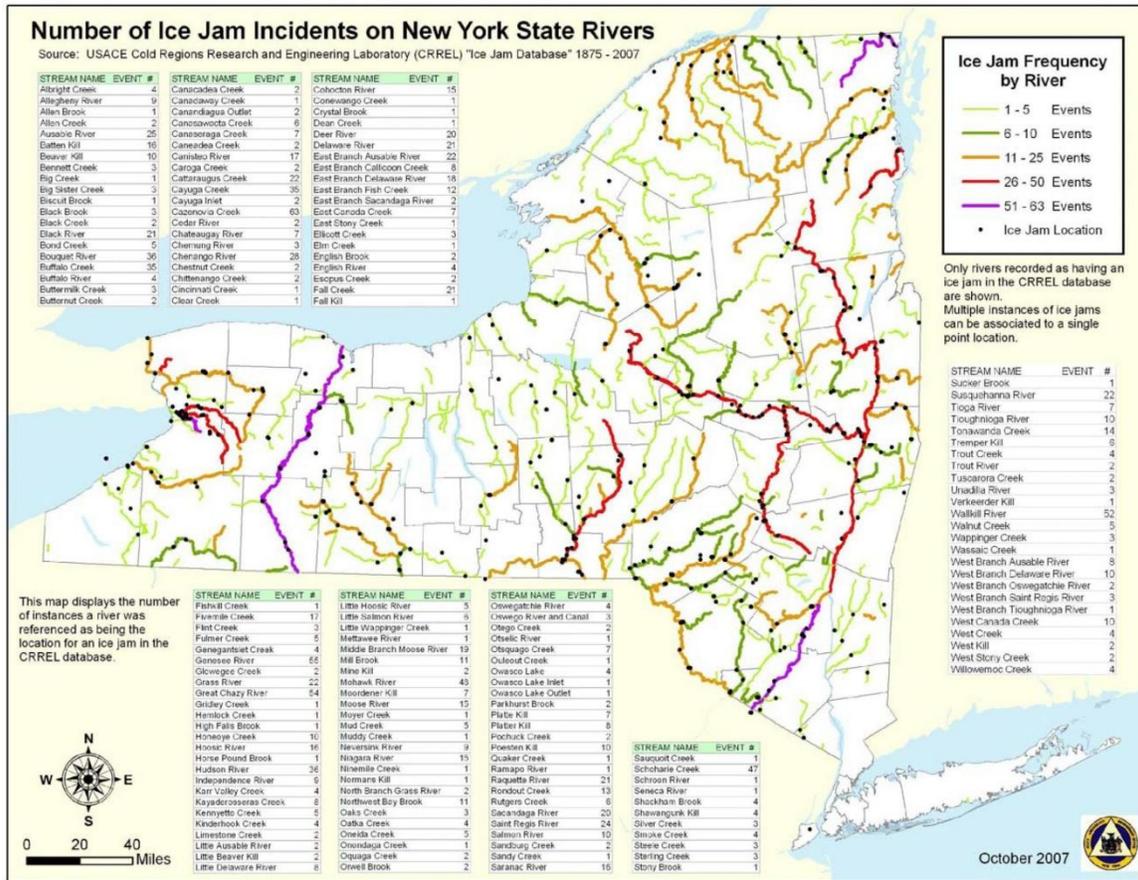
of the floodplains, the possibility of flooding and ice build-up increases.

**Historic and Current Details** – Although these have been mentioned as a concern of citizens and certain officials in the County, based upon the experience of the Sullivan County Division of Public Works with 400 bridges and large culverts, jamming under bridges has not been the cause of major structural damage to these structures. Table 25 lists recorded ice jam events that have occurred over the last three (3) decades in association with the Delaware River. These records are from the U.S. Army Corps of Engineers' Ice Jam Database.

Jam Date	Location	Water	Details
3/22/2001	Narrowsburg	Delaware River	Jam at Narrowsburg Access
2/4/1982	Barryville	Delaware River	Jam at Delaware River above Lackawaxen River
2/4/1982	Callicoon	Delaware River	None provided
2/12/1981	Callicoon	Delaware River	High water discharge – result of ice jam release
2/11/1981	Barryville	Delaware River	Jam at Delaware River above Lackawaxen River

More frequent ice jam events may occur along smaller rivers and streams within the County. Often times, smaller waters are not recorded because the potential hazards are not as severe as an ice jam on a larger body of water. Ice jam hazard events have a medium probability of occurrence within Sullivan County.

**Figure 5.9 - Numbers and Locations of Ice Jams on New York State Streams**  
 (NYS Hazard Mitigation Plan, 2007)



**Costs and Damage Estimates** – With regard to erosion issues and damages to vegetation and land, ice jams could be an issue, but no data could be found at this time regarding the cost of any historic damages that have been incurred. Property damages are unlikely as a result of a minor ice jam event. Transportation infrastructure, particularly bridge structures, is most vulnerable to damage caused by an ice jam. **The cost to replace a damaged bridge structure is estimated at \$1,500,000.**

### 5.1.9 Ice Storm

**Description** – Ice storms are characterized by freezing rain which accumulates in a substantial glaze layer of ice resulting in serious disruptions of normal transportation and possible downed power lines. The NWS uses the term “ice storm” to describe occasions when damaging accumulations of ice are expected during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in the loss of power and communications. Such accumulations of ice pose a risk to walking and driving. Damage from such events could include structural damage, utility failures, and tree damage as a result of excessive weight.

**Historic and Current Details** – No records of significant ice storm events were reported by the National Climatic Data Center (NCDC).

The most notable ice storm that has occurred in recent history took place on December 11, 2008. A half- inch of ice accumulation was measured as a result of this storm. Sullivan County was included in a Federal Disaster Declaration for this hazard event. The heavy ice accumulation downed trees and power and telephone lines, resulting in power outages that lasted up to a week in some areas. More than 1.7 million customers lost power during this event across New York and New England; days after the storm, hundreds of thousands were still without power. Several shelters were opened to house people that lost their utilities during the storm.

Records of an ice storm event in 1992 in the Village of Monticello were also noted. This storm resulted in utility failures that lasted for

days. The area high school served as an emergency shelter for local residents.

**Costs and Damage Estimates** – No specific costs were available regarding the 2008 ice storm described above. It was determined that there is a medium probability of occurrence for an ice storm event within Sullivan County, though these events are not documented to often cause a lot of damage. Impacts to public utilities are most common, but are quickly fixed by appropriate utility personnel before damage to commercial and residential properties occurs.

#### *5.1.10 Landslides*

**Description** – Landslides are defined as the downward and outward movement of slope-forming materials reacting to the force of gravity. Slide materials may be composed of natural rock, soil, artificial fill, or combinations of these materials. Landslide is a general term that can include rock falls, rockslides, creep, block slides, debris slides, earth-flow, and slump. During a landslide event, masses of rock, earth, or debris move down a slope. These events vary in speed of occurrence and how large of an area is impacted.

Landslides are activated by storms, earthquakes, volcanic eruptions, fires, alternate freezing or thawing, and steepening of slopes by erosion or human modification. Landslide problems can be caused by land mismanagement, especially in mountainous and coastal regions. In areas with high landslide potential, land-use

zoning, professional inspections, and proper design can minimize many landslide, mudflow, and debris flow problems.

**Historic and Current Details** – Generally, landslides in Sullivan County have not been frequent in nature, with exception to the Craigie Clair area. Over the past ten (10) years, the Craigie Clair Road area has experienced 3 or 4 landslide events. In the past, these landslides have closed a portion of the Town of Rockland’s highway system and have caused an estimated \$800,000 worth of damage. Hazard mitigation work has been completed in recent years to stabilize and reduce the impact of the problem. As a result of such work, more minor and less frequent slides have occurred in this area.

The Sullivan County Soil & Water Conservation District indicated that there are six (6) known areas where landslides have occurred within Sullivan County:

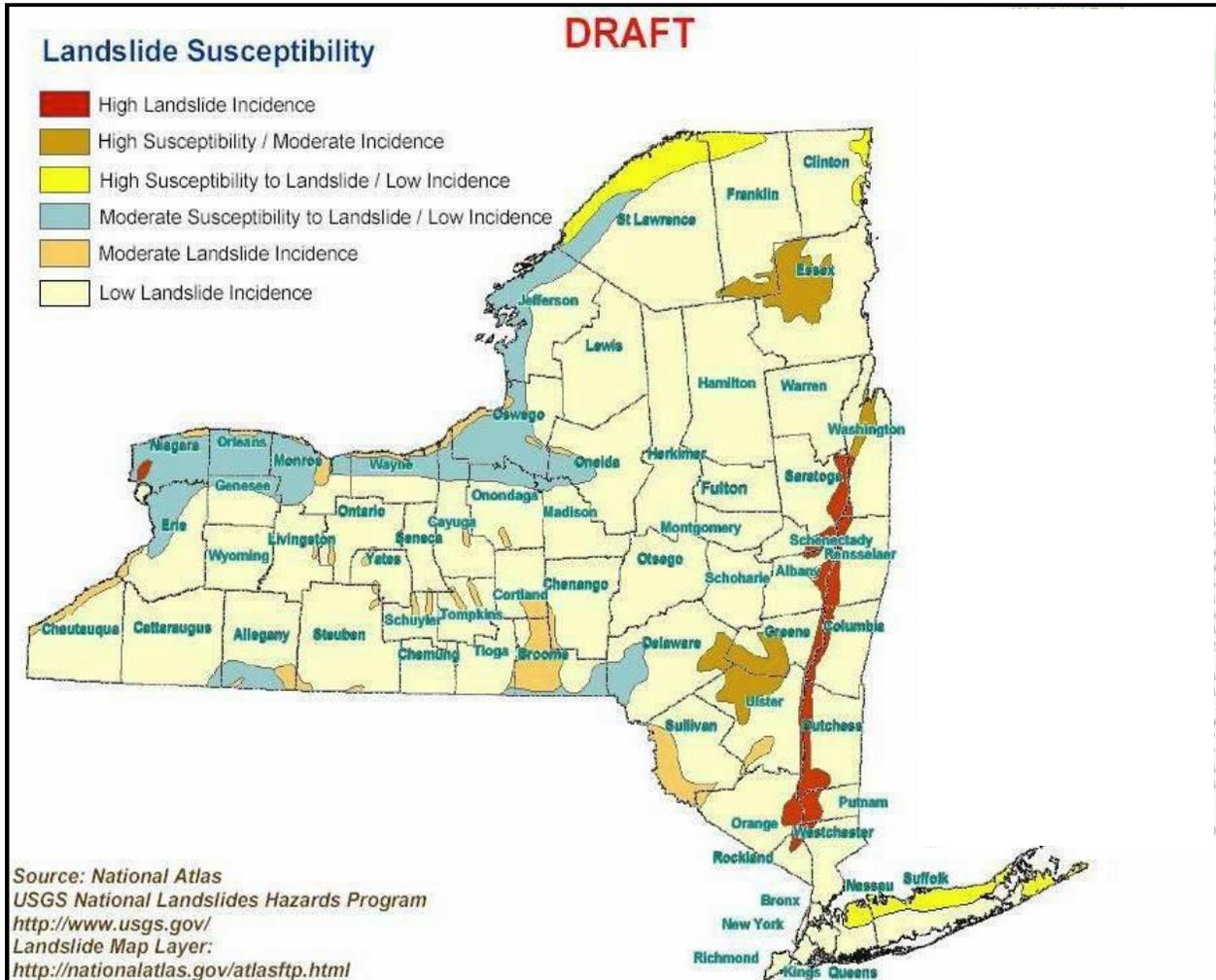
- Russel Peters Farm (Route 121 - North Branch), steep slope adjacent to North Branch Callicoon Creek;
- Ernie Reimer Farm (Route 95 Obernburg Road - North Branch), steep slope adjacent to Callicoon Creek;
- County Route 128, between Jeffersonville and North Branch, corrected by Sullivan County;
- Along Craigie Clair Road, near Clear Lake adjacent to Beaver Kill, which caused the closure of the road for several years;
- Steep slope along Route 151, South of Lew Beach, required extensive grading & reforestation by SWCD; and

- Shin Creek Road, East of Irving Berlin home slid into Shin Creek.

Figure 5.10 shows landslide susceptible areas within New York State. In Sullivan County, a fairly large area of moderate landslide susceptibility is shown along the County's southern and western boundaries. This area is deemed more susceptible to landslide events because of the Delaware River that borders the County to the southwest and west. The remainder of Sullivan County is mapped as having a low landslide incidence. In the low incidence areas, less than 1.5% of the land area is involved in landslides, and in the moderate incidence areas, between 1.5% and 15% of the land area is involved in landslide events. The jurisdictions most susceptible to landslides are the Towns of Cohecton, Tusten, Highland, and Lumberland.

**Costs and Damage Estimates** – Though landslide events documented within the County are not significant events, this hazard has been determined to have a medium qualitative probability of occurrence. Landslide events are most common on vacant properties; however, the historical data for Sullivan County does indicate that damage to transportation infrastructure and residential properties has occurred. Localized areas are most often damaged by landslide events, which do not result in extensive damage to existing infrastructure. **The need to collect more detailed data on annual occurrences and damages that result from landslide events has been identified. The collection of such data will be a focus during the next five years.**

**Figure 5.10 – Landslide Susceptibility within New York State**  
 (USGS, NYS Hazard Mitigation Plan, 2007)



5.1.11 Severe Storm

**Description** – Severe storms include hail storms, windstorms, and severe thunderstorms (with associated severe wind events such as derechos, gustnados, and downbursts). The National Weather Service (NWS) defines a severe storm as one with a tornado and/or surface hail ¾” or greater and/or wind gusts 50 knots (58 mph) or

greater. Such storms can cause damage from wind, hail, heavy rainfall, and/or lightning strikes.

Thunderstorms – The National Weather Service (NWS) estimates that over 100,000 thunderstorms occur each year on the U.S. mainland. Approximately 10 percent are classified as "severe." Thunderstorms can produce deadly and damaging tornadoes, hailstorms, intense downburst and microburst winds, lightning, and flash floods. Thunderstorms spawn as many as 1,000 tornadoes each year as well. Since 1975, severe thunderstorms were involved in 327 Federal disaster declarations within the U.S. In the United States, an average of 300 people are injured and 80 people are killed each year by lightning. Flash flooding is responsible for more fatalities—more than 140 annually—than any other thunderstorm-associated hazard.

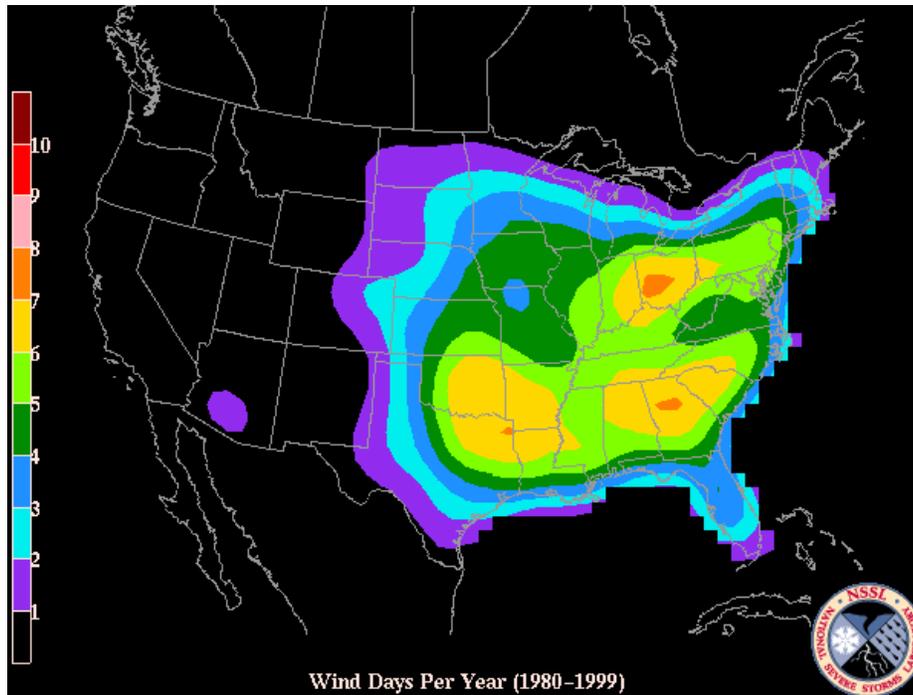
The duration of a thunder event is determined by measuring the time between the first peal of thunder and the last. The last peal of thunder is defined to be that which is followed by a period of at least 15 minutes without an additional peal. A "thunder day" is defined as any day in which at least one thunder peal is heard. Downburst winds are strong, concentrated, straight-line winds created by falling rain and sinking air that can reach speeds of 125 mph (200 km/h). Microburst winds are more concentrated than downbursts, with speeds up to 150 mph (240 km/h). Severe damage can result from the spreading out of downbursts and microbursts, which generally last 5 to 7 minutes. Due to wind shear and

detection difficulties, they pose the biggest threat to aircraft departures and landings.

Lightning, which occurs during all thunderstorms, can strike anywhere. Generated by the buildup of charged ions in a thundercloud, the discharge of a lightning bolt interacts with the best conducting object or surface on the ground. The air in the channel of a lightning strike reaches temperatures higher than 50,000°F. The NWS classifies a thunderstorm as severe if its winds reach or exceed 58 mph (km/h), produces a tornado, or drops surface hail at least 0.75 in (1.91 cm) in diameter (FEMA, MHIRA, 1997). According to the U.S. Department of Commerce, 100-150 fatalities occurred in New York State between 1959 and 1993, as a result of lightning strikes.

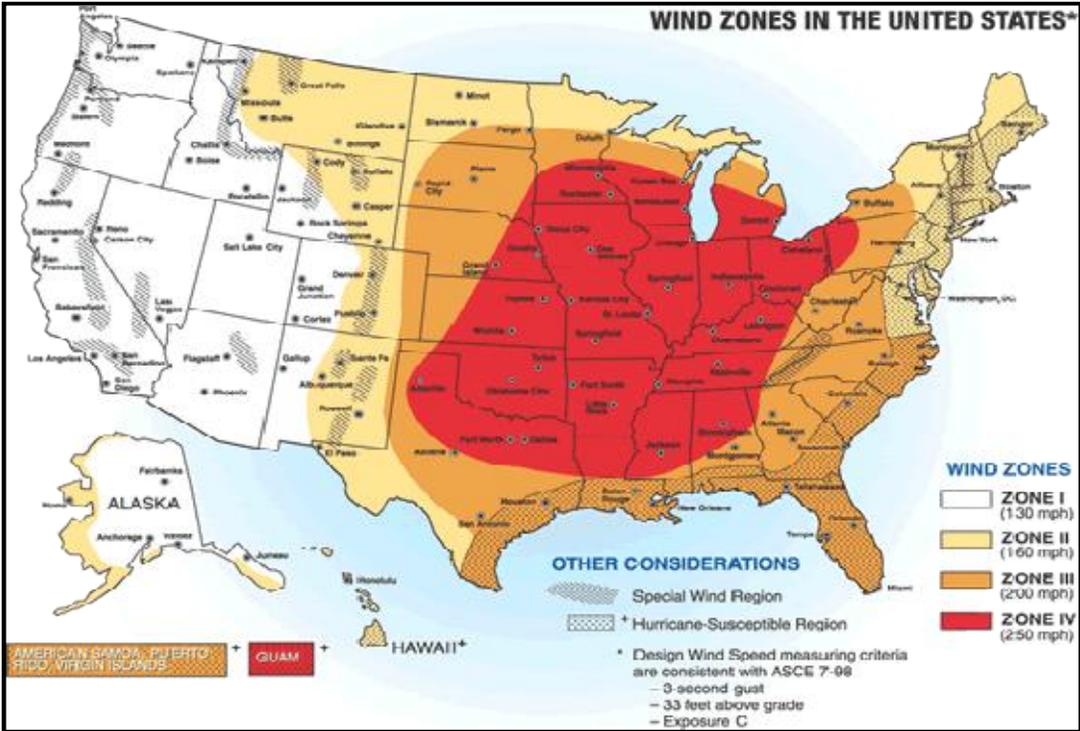
For reference, a derecho is a widespread and long-lived wind storm that is associated with a band of rapidly moving showers or thunderstorms (Storm Prediction Center, "About Derechos"). A gustnado is a short-lived, ground-based vortex that develops on a gust front associated with either showers or thunderstorms (National Weather Service, 2009).

**Figure 5.11 – Probability for thunderstorm winds (greater than 50 knots) to occur in the United States, reported in days per year (NOAA, NSSL, 2003)**



Windstorms – Wind is defined as the motion of air relative to the earth's surface. The horizontal component of the three-dimensional flow and the near-surface wind phenomenon are the most significant aspects of the hazard. Extreme windstorm events are associated with tropical cyclones, winter cyclones, and severe thunderstorms. Winds vary from zero at ground level to 200 mph (89 m/s) in the upper atmospheric jet stream at 6 to 8 mi (10 to 13 km) above the earth's surface. Large-scale extreme wind phenomena are experienced over every region of the United States and its territories. Figure 5.12 illustrates the wind zones mapped across the United States and New York State.

Figure 5.12 –Wind Zones within the United States (FEMA, Wind Zones, 2009)

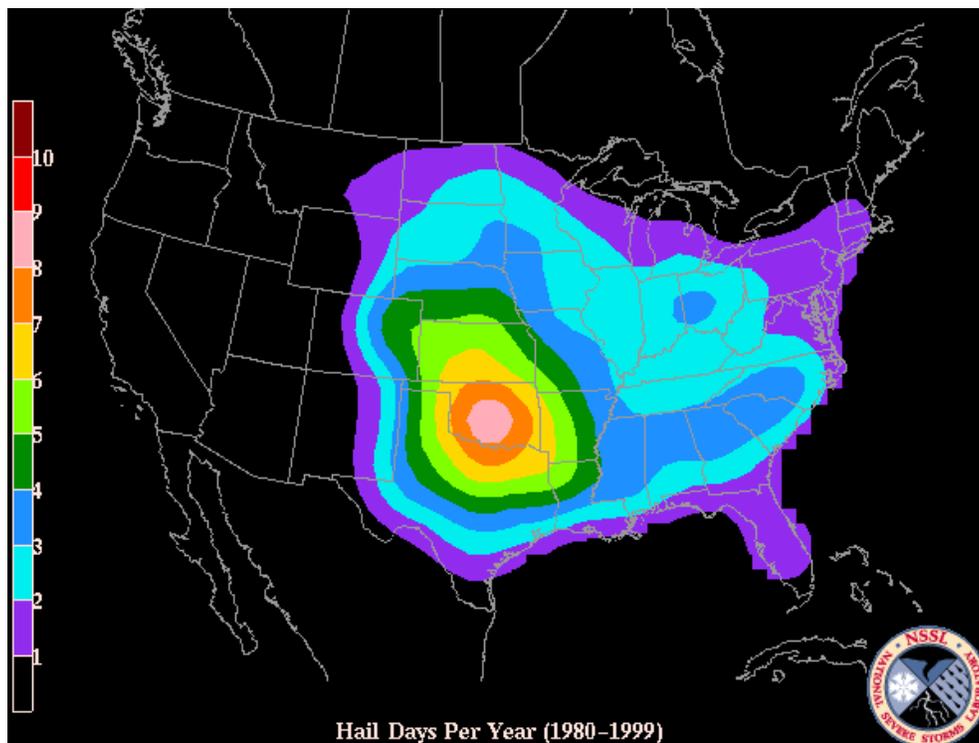


Hailstorms – Hailstorms are often associated with severe thunderstorms. Hailstorms are characterized by the balls or irregularly shaped lumps of ice greater than 0.75 in (1.91 cm) in diameter which fall with rain. Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to warm air rising rapidly into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on the ice crystals until they reach a certain weight, after which they fall as precipitation. The size of hailstones is a direct function of the severity and size of the storm. High velocity updraft winds are required to keep hail in suspension in thunderclouds. The strength of the updraft is a function of

the intensity of heating at the Earth's surface. Higher temperatures at the surface increase the suspension time of hail in the thunderclouds and increase the size of the hailstones themselves (FEMA, MHIRA, 1997).

Peak periods for hailstorms are late spring and early summer, the time of year when the jet stream migrates northward across the U.S. Hailstorms can extensively damage agriculture crops, particularly those that are herbaceous and long-stemmed. Severe hailstorms can also cause damage to buildings and automobiles, but rarely cause fatalities or serious injury.

**Figure 5.13 – Probability for severe hail (3/4-inch diameter or greater) to occur in the United States, reported in days per year (NOAA, NSSL, 2003)**



**Historic and Current Details** – Severe storm events have been documented within Sullivan County, including eight (8) that were disastrous enough to require a Presidential Declaration of Disaster.

On June 19, 2007, thunderstorms led to flash flooding on tributaries of the Delaware River, located on the border between Delaware and Sullivan Counties. Roads, bridges, and homes were damaged by the storm and subsequent flooding. Other disaster declarations were similar, with severe thunderstorms causing damages to trees and property.

According to the National Climatic Data Center (NCDC), 176 thunderstorm and high wind events have been recorded for Sullivan County between 1950 and March 31, 2010. Some of the major storms recorded by the NCDC include:

- November 25, 2004: Thunderstorms downed trees and power lines on Thanksgiving morning in Kenoza Lake, Callicoon, and Jeffersonville. The NCDC estimates property damage for this storm at \$50,000;
- September 4, 2002: Severe thunderstorms caused widespread power outages in Sullivan County. The 911 Center in White Lake was struck by lightning, causing \$50,000 in property damage;
- July 19, 2002: Lightning struck an auto body repair shop in the Town of Tusten and started an electrical fire. The structure was completely destroyed, as were vehicles, tools, and equipment in the shop. The NCDC estimates property damage for this storm at \$200,000;

- June 2, 2000: 4 people were seriously injured when a tree was blown down on their tent at a campground in the Hamlet of Barryville; and
- August 3, 1996: A woman was struck by lightning and killed while working in her garden during a severe thunderstorm in the Town of Fallsburg.

The NCDC database was queried to determine the history of severe storm events that affected Sullivan County between January 1, 1950 and March 2010, according to the National Oceanic and Atmospheric Administration (NOAA). The results from this search are detailed in Table 25. The results of this query were limited to events where wind gusts met or exceeded 50 knots or hail was greater than 0.75 inches in diameter. These thresholds were ignored if an event resulted in property or crop damage and/or fatalities or injuries. Some results provided limited storm details and were therefore left out of the results table. When reviewing Table 26, it is important to note that “Tstm” refers to a thunderstorm event. Due to the prevalence of severe storms within the County, such a hazard event was determined to have a high probability of occurrence.

<b>Table 26 – NOAA NCDC Query Results: Severe Storm Events Recorded for Sullivan County, January 1950 – March 2010</b> (NOAA, NCDC, Storm Events Search, 2010)							
Location	Date	Event	Magnitude	Deaths (#)	Injuries (#)	Property Damage (\$)	Crop Damage (\$)
Sullivan County	6/9/1972	Hail	1.75 in	0	0	0	0
Sullivan County	7/21/1983	Hail	1.75 in	0	0	0	0
Sullivan County	7/21/1983	Hail	1.75 in	0	0	0	0
Sullivan County	6/24/1985	Hail	2 in	0	0	0	0
Sullivan County	6/24/1985	Hail	1.5 in	0	0	0	0

**Table 26 – NOAA NCDC Query Results: Severe Storm Events Recorded for Sullivan County, January 1950 – March 2010**  
(NOAA, NCDC, Storm Events Search, 2010)

Location	Date	Event	Magnitude	Deaths (#)	Injuries (#)	Property Damage (\$)	Crop Damage (\$)
Sullivan County	7/12/1985	Hail	1 in	0	0	0	0
Sullivan County	5/31/1986	Hail	1.5 in	0	0	0	0
Sullivan County	5/23/1987	Hail	0.75 in	0	0	0	0
Sullivan County	8/13/1990	Hail	0.75 in	0	0	0	0
Sullivan County	10/18/1990	Tstm Wind	63 kts	0	0	0	0
Lava	9/3/1993	Tstm Wind	0 kts	0	0	\$5,000	0
Upper Beechwood	6/27/1994	Tstm Wind	0 kts	0	0	\$5,000	0
Sackett Lake	7/24/1994	Tstm Wind	0 kts	0	0	\$5,000	0
Monticello	7/24/1994	Tstm Wind	0 kts	0	0	\$5,000	0
Wurtsboro	9/27/1994	Hail	0.75 in	0	0	0	0
Monticello	11/1/1994	Tstm Wind	0 kts	0	0	\$50,000	0
Monticello	5/24/1995	Tstm Wind	0 kts	0	0	\$5,000	0
Rock Hill	5/24/1995	Tstm Wind	0 kts	0	0	\$5,000	0
Wurtsboro	5/24/1995	Tstm Wind	0 kts	0	0	\$5,000	0
Liberty	6/14/1995	Hail	0.75 in	0	0	0	0
Wurtsboro	6/20/1995	Hail	2.5 in	0	0	\$10,000	\$2,000
Monticello	7/11/1995	Hail	0.75 in	0	0	0	0
Swan Lake	8/31/1995	Tstm Wind	65 kts	0	0	0	0
Fallsburg	8/31/1995	Tstm Wind	0 kts	0	0	\$10,000	0
Grahamsville	8/31/1995	Tstm Wind	0 kts	0	0	\$7,000	0
Monticello	8/31/1995	Tstm Wind	0 kts	0	0	\$12,000	0
Woodridge	8/31/1995	Tstm Wind	0 kts	0	0	\$14,000	0
Liberty	5/21/1996	Tstm Wind	0 kts	0	0	\$7,000	0
Grahamsville	5/21/1996	Tstm Wind	0 kts	0	0	\$9,000	0
Lumberland	5/21/1996	Tstm Wind	0 kts	0	0	\$10,000	0
Fallsburg	8/3/1996	Lightning	N/A	1	0	0	0
Fallsburg	8/23/1996	Tstm Wind	0 kts	0	0	\$5,000	0
Woodbourne	11/8/1996	Tstm Wind	0 kts	0	0	\$10,000	0
Liberty	5/1/1997	Tstm Wind	0 kts	0	0	\$30,000	0
Wurtsboro	5/6/1997	Tstm Wind	0 kts	0	0	\$15,000	0
Shandeele	5/19/1997	Tstm Wind	0 kts	0	0	\$25,000	0
Wurtsboro	7/9/1997	Tstm Wind	0 kts	0	0	\$10,000	0
Lake Huntington	8/16/1997	Tstm Wind	0 kts	0	0	\$25,000	0
Grahamsville	5/29/1998	Tstm Wind	0 kts	0	0	\$10,000	0

**Table 26 – NOAA NCDC Query Results: Severe Storm Events Recorded for Sullivan County, January 1950 – March 2010**

(NOAA, NCDC, Storm Events Search, 2010)

Location	Date	Event	Magnitude	Deaths (#)	Injuries (#)	Property Damage (\$)	Crop Damage (\$)
Grahamsville	5/31/1998	Tstm Wind	0 kts	0	0	\$10,000	0
Cochecton	6/30/1998	Tstm Wind	0 kts	0	0	\$15,000	0
Grahamsville	6/30/1998	Tstm Wind	0 kts	0	0	\$15,000	0
Loch Sheldrake	8/24/1998	Tstm Wind	0 kts	0	0	\$10,000	0
Lake Huntington	9/7/1998	Tstm Wind	0 kts	0	0	\$10,000	0
Monticello	7/6/1999	Tstm Wind	50 kts	0	0	0	0
Jeffersonville	7/17/1999	Tstm Wind	0 kts	0	0	\$25,000	0
Jeffersonville	8/14/1999	Tstm Wind	0 kts	0	0	\$15,000	0
Sullivan County	3/9/2000	Tstm Wind	54 kts	0	0	0	0
Sullivan County	5/9/2000	Tstm Wind	52 kts	0	0	0	0
Woodridge	5/10/2000	Hail	1 in	0	0	0	0
Smallwood	5/10/2000	Tstm Wind	52 kts	0	0	0	0
Rock Hill	5/10/2000	Hail	1 in	0	0	0	0
Grahamsville	5/18/2000	Hail	0.75 in	0	0	0	0
Callicoon	5/24/2000	Tstm Wind	52 kts	0	0	0	0
Monticello	5/24/2000	Tstm Wind	52 kts	0	0	0	0
Grahamsville	5/24/2000	Tstm Wind	52 kts	0	0	0	0
Wurtsboro	5/24/2000	Tstm Wind	52 kts	0	0	0	0
Highland Lake	6/2/2000	Tstm Wind	60 kts	0	4	0	0
Narrowsburg	8/12/2000	Lightning	N/A	0	1	0	0
Bethel	6/20/2001	Tstm Wind	55 kts	0	0	0	0
Sullivan County	7/1/2001	Tstm Wind	55 kts	0	0	0	0
Grahamsville	7/1/2001	Hail	0.75 in	0	0	0	0
Hasbrouck	7/10/2001	Tstm Wind	60 kts	0	0	0	0
Monticello	3/10/2002	Tstm Wind	60 kts	0	0	0	0
Fallsburg	5/28/2002	Tstm Wind	50 kts	0	0	\$5,000	0
White Sulphur Springs	5/31/2002	Tstm Wind	50 kts	0	0	0	0
Long Eddy	5/31/2002	Tstm Wind	50 kts	0	0	0	0
Woodbourne	6/26/2002	Tstm Wind	50 kts	0	0	\$5,000	0
Tusten	7/19/2002	Lightning	N/A	0	0	\$200,000	0
Sullivan County	7/23/2002	Tstm Wind	55 kts	0	0	0	0
Liberty	8/2/2002	Tstm Wind	50 kts	0	0	0	0
Woodbourne	8/2/2002	Lightning	N/A	0	0	\$50,000	0
White Lake	8/14/2002	Tstm Wind	55 kts	0	0	\$2,000	0

**Table 26 – NOAA NCDC Query Results: Severe Storm Events Recorded for Sullivan County, January 1950 – March 2010**  
(NOAA, NCDC, Storm Events Search, 2010)

Location	Date	Event	Magnitude	Deaths (#)	Injuries (#)	Property Damage (\$)	Crop Damage (\$)
Callicoon Center	8/14/2002	Tstm Wind	55 kts	0	0	\$5,000	0
Sullivan County	9/4/2002	Lightning	N/A	0	0	\$50,000	0
Sullivan County	7/21/2003	Tstm Wind	60 kts	0	0	0	0
Monticello	5/23/2004	Hail	0.75 in	0	0	0	0
Livingston Manor	5/24/2004	Hail	0.75 in	0	0	0	0
Monticello	6/9/2004	Tstm Wind	60 kts	0	0	\$5,000	0
Livingston Manor	8/12/2004	Tstm Wind	60 kts	0	0	\$10,000	0
Sullivan County	11/25/2004	Tstm Wind	60 kts	0	0	\$50,000	0
Bethel	5/27/2005	Tstm Wind	60 kts	0	0	\$20,000	0
Roscoe	6/6/2005	Tstm Wind	50 kts	0	0	\$5,000	0
Wurtsboro	6/6/2005	Tstm Wind	50 kts	0	0	\$2,000	0
Woodbourne	6/8/2005	Tstm Wind	50 kts	0	0	\$5,000	0
Livingston Manor	7/1/2005	Hail	1 in	0	0	0	0
Monticello	7/1/2005	Lightning	N/A	0	0	\$10,000	0
Liberty	7/12/2005	Tstm Wind	50 kts	0	0	\$5,000	0
Monticello	7/12/2005	Tstm Wind	50 kts	0	0	\$5,000	0
Grahamsville	7/27/2005	Tstm Wind	50 kts	0	0	\$2,000	0
Central Portion	7/27/2005	Tstm Wind	50 kts	0	0	\$10,000	0
Callicoon	8/12/2005	Tstm Wind	50 kts	0	0	\$10,000	0
Barryville	8/12/2005	Hail	0.75 in	0	0	0	0
Roscoe	8/13/2005	Tstm Wind	50 kts	0	0	\$2,000	0
Cochecton	8/14/2005	Tstm Wind	50 kts	0	0	\$5,000	0
Bethel	8/14/2005	Tstm Wind	50 kts	0	0	\$2,000	0
Glen Spey	8/14/2005	Tstm Wind	50 kts	0	0	\$2,000	0
Tusten	9/29/2005	Tstm Wind	50 kts	0	0	\$2,000	0
Sullivan County	11/6/2005	Tstm Wind	50 kts	0	0	\$20,000	0
Callicoon	2/17/2006	Tstm Wind	50 kts	0	0	\$5,000	0
Monticello	5/30/2006	Hail	0.88 in	0	0	0	0
Fallsburg	8/3/2006	Tstm Wind	50 kts	0	0	\$5,000	0
Roscoe	12/1/2006	Hail	0.75 in	0	0	0	0
Barryville	12/1/2006	Tstm Wind	50 kts	0	0	\$2,000	0
Monticello	12/1/2006	Tstm Wind	50 kts	0	0	\$3,000	0
Loch Sheldrake	12/1/2006	Tstm Wind	52 kts	0	0	\$1,000	0
Rock Hill	12/1/2006	Tstm Wind	50 kts	0	0	\$2,000	0

**Table 26 – NOAA NCDC Query Results: Severe Storm Events Recorded for Sullivan County, January 1950 – March 2010**

(NOAA, NCDC, Storm Events Search, 2010)

Location	Date	Event	Magnitude	Deaths (#)	Injuries (#)	Property Damage (\$)	Crop Damage (\$)
Wurtsboro	12/1/2006	Tstm Wind	50 kts	0	0	\$2,000	0
Kenoza Lake	6/19/2007	Tstm Wind	50 kts	0	0	0	0
Livingston Manor	6/27/2007	Tstm Wind	50 kts	0	0	0	0
Bethel	6/27/2007	Tstm Wind	50 kts	0	0	0	0
Fallsburg	6/27/2007	Tstm Wind	50 kts	0	0	0	0
Monticello	6/28/2007	Tstm Wind	50 kts	0	0	0	0
Smallwood	7/6/2007	Hail	0.88 in	0	0	0	0
Barryville	7/10/2007	Tstm Wind	50 kts	0	0	\$2,000	0
Yulan	7/10/2007	Hail	0.88 in	0	0	0	0
Livingston Manor	7/27/2007	Tstm Wind	50 kts	0	0	0	0
Tusten	8/3/2007	Tstm Wind	50 kts	0	0	\$2,000	0
Tylertown	8/3/2007	Tstm Wind	50 kts	0	0	\$1,000	0
Hunts Corners	8/3/2007	Hail	1 in	0	0	0	0
Fosterdale	8/3/2007	Tstm Wind	50 kts	0	0	0	0
Swan Lake	8/17/2007	Hail	0.88 in	0	0	0	0
Woodbourne	8/17/2007	Tstm Wind	50 kts	0	0	\$1,000	0
Wurtsboro	8/17/2007	Hail	0.88 in	0	0	0	0
Fremont	10/8/2007	Tstm Wind	50 kts	0	0	\$1,000	0
Monticello	6/8/2008	Tstm Wind	50 kts	0	0	\$5,000	0
Liberty	6/10/2008	Hail	0.88 in	0	0	0	0
Lava	6/10/2008	Tstm Wind	50 kts	0	0	\$5,000	0
Bethel	6/10/2008	Tstm Wind	60 kts	0	0	\$20,000	0
Harris	6/10/2008	Hail	0.75 in	0	0	0	0
Neversink	6/10/2008	Tstm Wind	50 kts	0	0	\$3,000	0
Roscoe	6/16/2008	Hail	1 in	0	0	0	0
Livingston Manor	6/16/2008	Hail	1.25 in	0	0	0	0
Hurleyville	6/16/2008	Hail	1 in	0	0	0	0
Woodbourne	6/16/2008	Hail	0.75 in	0	0	0	0
Hurleyville	6/16/2008	Hail	1 in	0	0	0	0
Woodbourne	6/16/2008	Hail	0.75 in	0	0	0	0
Lowes Corners	6/16/2008	Hail	2 in	0	0	0	\$25,000
Bloomingsburg	6/16/2008	Tstm Wind	50 kts	0	0	0	0
Grahamsville	6/16/2008	Hail	1 in	0	0	0	0
White Sulphur Springs	6/16/2008	Hail	0.88 in	0	0	0	0

**Table 26 – NOAA NCDC Query Results: Severe Storm Events Recorded for Sullivan County, January 1950 – March 2010**

(NOAA, NCDC, Storm Events Search, 2010)

Location	Date	Event	Magnitude	Deaths (#)	Injuries (#)	Property Damage (\$)	Crop Damage (\$)
Bloomingsburg	6/16/2008	Tstm Wind	50 kts	0	0	0	0
Glen Spey	6/18/2008	Hail	1 in	0	0	0	0
Highland Lake	6/23/2008	Hail	0.88 in	0	0	0	0
Monticello	6/23/2008	Hail	0.88 in	0	0	0	0
Livingston Manor	7/27/2008	Hail	0.75 in	0	0	0	0
Highland Lake	8/2/2008	Hail	1 in	0	0	0	0
Kenoza Lake	6/9/2009	Hail	1 in	0	0	0	0
Bethel	6/9/2009	Hail	0.88 in	0	0	0	0
Ten Mile River	6/9/2009	Hail	0.75 in	0	0	0	0
Cochecton	6/9/2009	Hail	1.75 in	0	0	0	0
Highland Lake	6/9/2009	Hail	0.75 in	0	0	0	0
Woodbourne	6/15/2009	Hail	0.88 in	0	0	0	0
Willowemoc	6/15/2009	Hail	0.75 in	0	0	0	0
Liberty	6/25/2009	Hail	0.75 in	0	0	0	0
Swan Lake	6/25/2009	Hail	0.88 in	0	0	0	0
Callicoon	6/26/2009	Hail	1 in	0	0	0	0
Swan Lake	6/26/2009	Hail	1 in	0	0	0	0
Kauneonga Lake	6/26/2009	Hail	0.88 in	0	0	0	0
Monticello	6/26/2009	Hail	1 in	0	0	0	0
Monticello	6/26/2009	Hail	0.75 in	0	0	0	0
Smallwood	6/26/2009	Tstm Wind	52 kts	0	0	\$5,000	0
Harris	6/26/2009	Hail	1 in	0	0	0	0
Wurtsboro	6/26/2009	Hail	0.75 in	0	0	0	0
Woodridge	6/26/2009	Hail	1.25 in	0	0	0	0
Joscelyn	6/30/2009	Tstm Wind	50 kts	0	0	\$5,000	0
Lew Beach	6/30/2009	Hail	0.75 in	0	0	0	0
Lew Beach	6/30/2009	Tstm Wind	50 kts	0	0	\$1,000	0
Glen Spey	7/7/2009	Hail	0.88 in	0	0	0	0
Lew Beach	7/7/2009	Hail	1 in	0	0	0	0
Bushville	8/21/2009	Tstm Wind	50 kts	0	0	\$5,000	0
Monticello	8/21/2009	Tstm Wind	50 kts	0	0	\$1,000	0
Harris	8/21/2009	Tstm Wind	50 kts	0	0	\$5,000	0
Hurleyville	8/21/2009	Tstm Wind	50 kts	0	0	\$1,000	0
Bethel	8/21/2009	Tstm Wind	50 kts	0	0	\$20,000	0

<b>Table 26 – NOAA NCDC Query Results: Severe Storm Events Recorded for Sullivan County, January 1950 – March 2010</b> (NOAA, NCDC, Storm Events Search, 2010)							
Location	Date	Event	Magnitude	Deaths (#)	Injuries (#)	Property Damage (\$)	Crop Damage (\$)
Liberty	8/21/2009	Hail	1.75 in	0	0	0	0
<b>Totals:</b>	--	--	--	1	5	<b>\$986,000</b>	<b>\$27,000</b>

**Cost and Damage Estimates** – The majority of severe storm events within Sullivan County result in \$1,000 to \$10,000 worth of damage. Based on the NCDC damages included in Table 26, the records of property damage, crop damage, deaths, and injuries were more accurately recorded starting in September 1993. A review of the records between 1993 and 2009 shows a total of \$986,000 in property damage and \$27,000 in crop damage. These numbers result in an average of \$67,500 in annual damages between 1994 and 2009. Storms that occur between late spring and early fall have a greater probability of damage to croplands. Impacts to public utilities are commonly reported as a result of severe storm events. Such impacts require an immediate response by utility company personnel and are often fixed quickly. Hail events can cause minimal damage to private property, especially vehicles, but often do not result in an increased need for County services or resources. After a severe storm event ends, the County and municipal public works departments are called upon to clean up any debris or infrastructure damage that may have occurred.

### 5.1.12 Terrorism

**Description** – Terrorism is defined as the threat or use of violence to achieve political or social ends usually associated with community disruption and/or multiple injuries or deaths (HIRA-NY, Definitions of Hazards).

**Historic and Current Details** – The only act of terrorism in recent years that was declared a Presidential Disaster was the attacks on September 11, 2001. The disaster declaration for this terrorist attack included all Counties within New York State. As a result of the programs implemented by FEMA stemming from the attacks on September 11<sup>th</sup>, a study was conducted in Sullivan County to identify the potential for terrorism in the County. The study found that there are no significant targets in the County, when compared to other areas across the Country, as there are national landmarks, facilities, and governmental establishments which would be more prone to terrorism due to the close proximity of dense population areas. It was determined that terrorism events have a low probability of occurrence within Sullivan County.

**Costs and Damage Estimates** – Terrorism events can result in a wide range of damage estimates and recovery costs. A small isolated event may result in a minor disruption with low damage and cost implications, while a large-scale event could take years of recovery and cost millions of dollars to clean up and re-build an area. Given the unpredictable nature and variety of terrorist actions, it is difficult for the County and municipalities to be prepared and secure the proper equipment for such an event. Proper training of law enforcement and emergency response

personnel is an important step that can be taken to minimize the after effects of such a hazard event.

#### 5.1.13 Tornado

**Description** – Tornadoes are described as local atmospheric storms, generally of short duration, formed by winds rotating at very high speeds, usually in a counter-clockwise direction. The vortex of the tornado can be up to several hundred yards wide and is visible to the observer as a whirlpool-like column of winds rotating about a hollow cavity or funnel. Tornado winds have been estimated to be as high as 400 miles per hour (HIRA-NY, Definitions of Hazards).

The National Weather Service describes tornadoes as violently rotating columns of air that come in contact with the ground and extend from the base of a cumuliform cloud. A condensation funnel does not need to reach to the ground for a tornado to be present; a debris cloud underneath a thunderstorm is all that is needed to confirm the presence of a tornado, even in the absence of a condensation funnel. Tornadoes always start as funnel clouds and may be accompanied by a loud roaring noise.

The most destructive and deadly tornados occur from supercells, which area described as rotating thunderstorms with a well-defined radar circulation called a mesocyclone. Supercells are also capable of producing damaging hail, severe winds, frequent lightning, and flash flooding. Tornado formation is believed to be dictated mainly by things which happen on the storm scale, in and around the mesocyclone (Edwards, NOAA Storm Prediction Center, 2009).

Waterspout - A waterspout is a tornado over water.

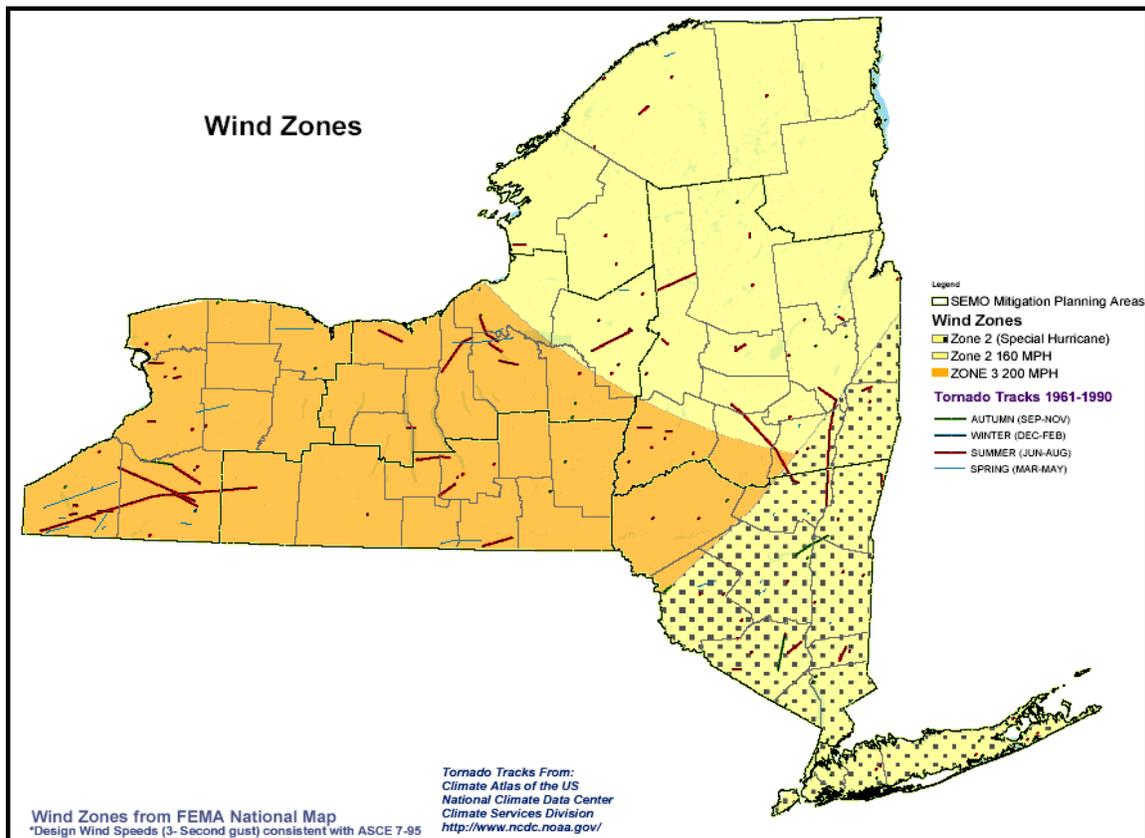
Waterspouts can happen over seas, bays, and lakes, most common in the U.S. along the southeast coast. Although waterspouts are always tornadoes by definition, they do not officially count in tornado records unless they hit land.

Waterspouts can overturn boats, damage larger ships, cause significant damage when they hit land, and can cause casualties, much like a regular land-based tornado. The NWS often issues special marine warnings when waterspouts are likely or have been sighted over coastal waters.

Multi-Vortex Tornado – A multi-vortex tornado contains two or more small, intense subvortices orbiting the center of the larger tornado. When a tornado does not contain too much dust and debris, the multiple vortices may be visible. These vortices may form and die within a few seconds and can happen in all sorts of tornado sizes. Subvortices are the cause of most of the narrow, short, extreme swaths of damage that sometimes arc through larger tornado paths.

**Historic and Current Details** – The occurrences of tornadoes are typically documented for the most part. Using data collected from FEMA and using ESRI software, tornadoes on average, occur every 8 years in Sullivan County. Though the occurrences are infrequent, the impacts can be great. Sullivan County is in Wind Zone II (160 mph) and located within a region susceptible to hurricane-like weather patterns (Figure 5.14).

**Figure 5.14 – Wind zones within New York State are depicted along with historical tornado tracks that occurred between 1961 and 1990**  
 (FEMA, Tornadoes and Windstorms, June 2007)



There are one to five recorded tornadoes per 1,000 square miles in Sullivan County, based on NOAA, Storm Prediction Center Statistics. A list of known Sullivan County Tornado events is listed below in Table 27. Table 28 details the F-scale system that is used to rate the magnitude of tornado events. This provides a reference for the F-scale figures included in Table 27.

<b>Table 27 – NOAA NCDC query results: tornado events recorded for Sullivan County, January 1950 – March 2010</b> (NOAA, NCDC, Storm Events Search, 2010)							
Location	Date	Event	Magnitude	Deaths (#)	Injuries (#)	Property Damage (\$)	Crop Damage (\$)
Sullivan County	05/09/1961	Tornado	F2	0	4	\$2,500,000	0
Sullivan County	06/09/1972	Tornado	F2	0	2	\$250,000	0
Sullivan County	06/16/1986	Tornado	F1	0	2	\$250,000	0
Sullivan County	11/16/1989	Tornado	F1	0	0	\$25,000,000	0
Sullivan County	10/13/1990	Tornado	F1	0	0	\$250,000	0
Monticello	09/28/1996	Tornado	F1	0	1	\$500,000	0
<i>A severe thunderstorm spawned a tornado south of the Village of Monticello, causing damage to trees, homes, and property as it moved northerly through the Village.</i>							
Rock Hill	06/02/2000	Tornado	F0	0	0	\$250,000	0
<i>Wind damage southeast of Monticello was determined to be tornadic after isolated areas of property damage were observed in the area. The tornado was likely aloft for much of the storm, with isolated ground interaction.</i>							
Aden	07/21/2003	Tornado	F1	0	0	\$100,000	0
<i>The tornado touched down about mile northwest of Neversink Reservoir, causing damage to trees, homes, and property. The tornado tracked to the northeast and lifted close to Claryville in northeast Sullivan County.</i>							
Bethel	08/21/2009	Funnel Cloud	0	0	0	0	0
<b>Totals:</b>	--	--	--	<b>0</b>	<b>9</b>	<b>\$29,600,000</b>	<b>0</b>

<b>Table 28 – Enhanced F-scale system used to rate magnitude of tornado events</b> (NOAA, Storm Prediction Center, Enhanced F-Scale)						
F Number	Fujita Scale		Derived EF Scale		Operational EF Scale	
	Fastest ¼-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

Figure 5.15 – Tornado Activity in United States, 1950-1998

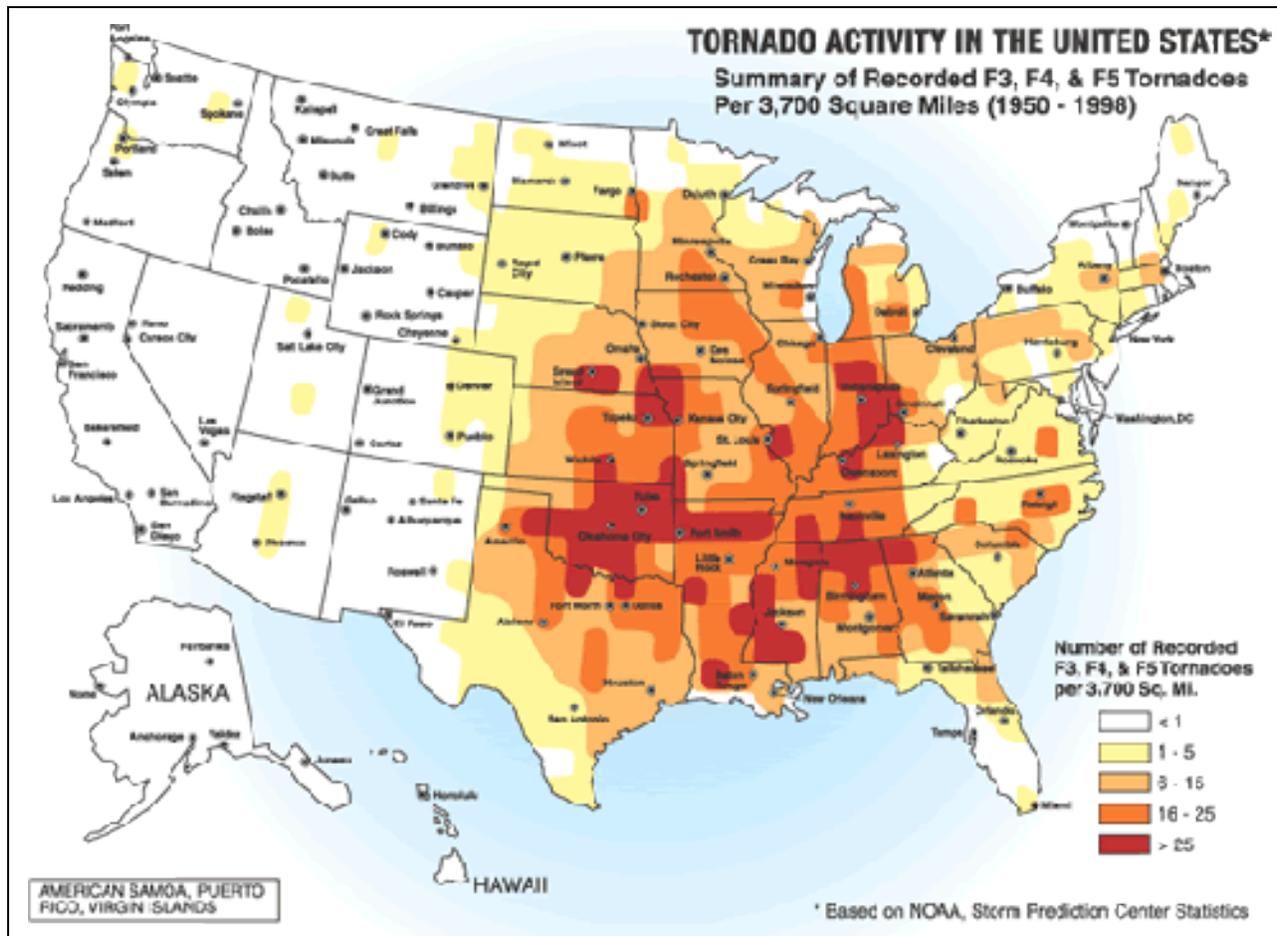
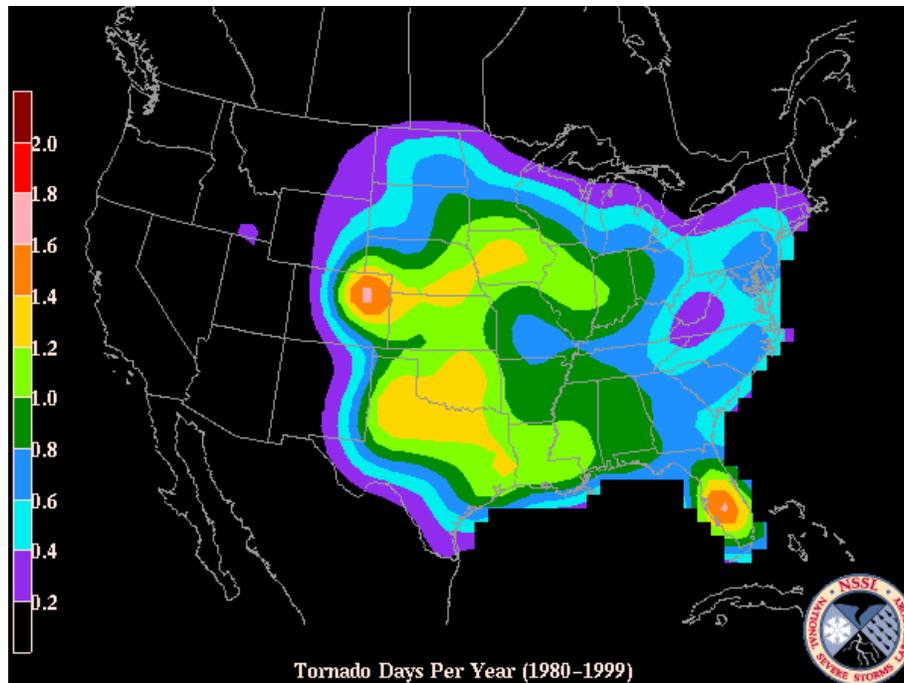


Figure 5.15 reveals that Sullivan County falls under the light yellow shaded area. The yellow shaded area is an area where one (1) to five (5) F3-F5 tornadoes per every 1,000 square miles have been recorded. This is not a large number; however, it does show that tornadoes have a medium qualitative probability of occurrence within Sullivan County. Figure 5.16 shows that Sullivan County had an average of 0.4 tornado days per year between 1980 and 1999.

**Figure 5.16 – Probability for a tornado (any size) to occur in the United States, reported in days per year (NOAA, NSSL, 2003)**



**Cost and Damages Estimates** – A quantitative value cannot be determined for this hazard because of the vast ranges of damage that can result. Estimations of hundreds of millions of dollars worth of damage can be assumed for heavily populated and well developed areas and estimations of millions of dollars worth of damages can be assumed for smaller less populated areas, similar to Sullivan County. **Loss estimates associated with tornado events range from \$100,000 to \$25,500,000. According to the NCDC data illustrated in Table 27, an average of \$616,670 in property damage occurred annually between 1961 and 2009.** Emergency shelters and medical facilities would be required to provide for impacted populations. Tornado advisories are often issued when the threat of such an event is identified. Such warnings are anticipated to at least limit the amount of potential deaths and injuries associated

with a tornado event. Impacts could occur anywhere in the County and affect a wide range of existing infrastructure and properties. The exact path and touchdown locations of a tornado are difficult to predict.

#### *5.1.14 Transportation Accident*

**Description** – A transportation accident is defined as 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.

**Historic and Current Details** – Transportation accidents can occur at any time. Generally, there are two to three major accidents a year that result in fatalities in Sullivan County. Damages that may result from a transportation accident include loss of life, bodily damages, car damages, structural damages, etc.

**Cost and Damage Estimates** – Transportation accidents give no warning and generally last no more than a few seconds in duration. Often times, the damages involved in accidents, particularly vehicular, are the responsibility of the drivers involved. When damage to public infrastructure occurs, the local jurisdictions may be responsible to make repairs. No significant transportation accidents that resulted in a large number of casualties, caused a large amount of damage, or created a large infrastructure repair need were uncovered within Sullivan County. However, smaller accidents occur often, signifying a high probability of occurrence.

### 5.1.15 Utility Failure

**Description** – Utility failure includes the loss of electric power supply, telephone service, or public water supply as a result of an internal system failure and not by the effects of a natural disaster. A widespread electrical power outage could cause traffic accidents, civil unrest, and failures to other utility infrastructure that relies on electricity.

**Historic and Current Details** – Utility Failure is not an easy hazard to profile. Human beings rely so heavily on electricity that the loss of utilities can easily disrupt many daily activities. Emergency services would not function at full power due to the many electrical devices that they rely on during emergency situations such as radios, dispatching equipment, computers, etc.

The frequency of occurrence of a significant power failure is approximately once a year and usually has duration of less than a single day (less than 24 hours). One event occurred in November of 2002, where power was lost for as long as up to five days in some areas of the County. This event was caused by freezing rain in combination with an ice storm.

There was also the power outage blackout of August 2003, which impacted much of the Northeastern United States. Power was restored by the following day; however thousands of people were impacted. This power outage event was declared a Presidential Disaster, authorizing up to \$5 million in federal funding to reimburse local and state governments that were negatively impacted by the hazard event.

This hazard is reported as one of the more frequent hazard events that Sullivan County deals with. The power to the County is supplied by the following distribution companies: (1) Central Hudson Gas and Electric, (2) New York State Electric and Gas (NYSEG) and (3) Orange and Rockland Utilities, Inc. Power Failures are being handled more efficiently today due to the research and development of the Outage Management Systems (OMS). New GIS software is allowing utility companies to pinpoint exact locations of outages, rather than only knowing a general location, which in turn shortens the overall response time of the utility crews. Also, the development of more reliable circuit protection equipment for each circuit aids in the overall reliability of the circuit being protected.

**Costs and Damage Estimates** – Estimations of potential losses range from simply an inconvenience to some residents, to huge economic losses for the utility companies doing the repair work. Although accurate figures were not found to assess the cost of power outages, the disruption of services, spoiling of food, and loss of work production could range from the hundreds of thousands to millions of dollars. Extended periods of utility failure may result in a need to establish emergency shelters. Businesses would be negatively impacted by extended periods of utility failures, because of decreased work production and/or decreased sales. Utility failure hazard events are determined to have a medium to high probability of occurrence.

### 5.1.16 Winter Storms (Severe)

**Description** – A severe winter storm is described as a storm system that develops in late fall to early spring and deposits wintry precipitation, such as snow, sleet, or freezing rain, with a significant impact on transportation systems and public safety. According to the HIRA-NY definitions of hazards, a severe winter storm could meet the following definitions:

- Heavy snow: at least 6 inches in 12 hours or less;
- Blizzard: low temperatures, winds 35 mph or greater, and sufficient falling and/or blowing snow in the air to frequently reduce visibility to  $\frac{1}{4}$  mile or less for a duration of at least three hours; or
- Severe blizzard: temperatures near or below 10°F, winds exceeding 45 mph, and visibility reduced by snow to near zero for a duration of at least 3 hours.

**Historic and Current Details** – Winter storms have impacted the whole County. A winter storm warning is similar to that of an ice storm, and can be found in the same manner, by weather alerts. The Blizzard of 1996, followed by flooding, hit the Appalachians, the Mid-Atlantic Region, and the Northeastern United States (including Sullivan County). This winter storm resulted in a total of over \$3.0 billion dollars in damages. This storm also accounted for 187 deaths, according to information obtained from the National Climatic Data Center. In general, damages can occur anywhere from thousands of dollars to billions of dollars, depending on the severity and longevity of the storm event.

The National Climatic Data Center shows that between January 1993 and March 2010, 47 heavy snow events occurred within Sullivan County. These events vary in severity, ranging from minimal property damage to \$6 million across several counties. Thirteen (13) winter storm events are also reported by the NCDC. Since 1993, no injuries or fatalities have been documented as a result of heavy snowfall events within Sullivan County. Locations of heavy snow events or winter storms are not included in Table 29 because such hazard events are so widespread that often times the entire County was affected by the storm event. The damage amounts included for each storm event represent overall damage estimates, not just damages that occurred within Sullivan County; no County specific damage costs were available.

<b>Table 29 – NOAA NCDC Query Results: Severe Winter Storm Events Recorded for Sullivan County, January 1993 – March 2010</b> (NOAA, NCDC, Storm Events Search, 2010)					
<b>Date</b>	<b>Event</b>	<b>Deaths (#)</b>	<b>Injuries (#)</b>	<b>Property Damage (\$)</b>	<b>Crop Damage (\$)</b>
2/8/1994	Heavy snow	0	0	\$500,000	0
3/2/1994	Heavy snow	0	0	\$500,000	0
2/4/1995	Heavy snow	0	0	\$500,000	0
11/14/1995	Heavy snow	0	0	\$180,000	0
12/9/1995	Heavy snow	0	0	0	0
12/14/1995	Heavy snow	0	0	0	0
1/2/1996	Heavy snow	0	0	\$73,000	0
1/7/1996	Heavy snow	0	0	\$60,000	0
1/12/1996	Heavy snow	0	0	\$18,000	0
3/6/1996	Heavy snow	3	10	0	0
None of the reported deaths and injuries occurred in Sullivan County.					
12/13/1996	Heavy snow	0	0	0	0
3/31/1997	Heavy snow	0	0	0	0
4/1/1997	Heavy snow	0	0	0	0
12/29/1997	Heavy snow	0	0	0	0
2/24/1998	Heavy snow	0	0	0	0

<b>Table 29 – NOAA NCDC Query Results: Severe Winter Storm Events Recorded for Sullivan County, January 1993 – March 2010</b> (NOAA, NCDC, Storm Events Search, 2010)					
<b>Date</b>	<b>Event</b>	<b>Deaths (#)</b>	<b>Injuries (#)</b>	<b>Property Damage (\$)</b>	<b>Crop Damage (\$)</b>
3/20/1998	Heavy snow	0	0	0	0
1/8/1999	Winter storm	0	0	0	0
1/13/1999	Winter storm	0	0	0	0
3/14/1999	Heavy snow	0	0	0	0
1/12/2000	Heavy snow	0	0	0	0
1/20/2000	Heavy snow	0	0	0	0
1/25/2000	Heavy snow	0	0	0	0
1/30/2000	Heavy snow	0	0	0	0
2/18/2000	Heavy snow	0	0	0	0
4/8/2000	Heavy snow	0	0	0	0
12/13/2000	Winter storm	0	0	0	0
12/30/2000	Heavy snow	0	0	0	0
1/20/2001	Heavy snow	0	0	0	0
2/5/2001	Heavy snow	0	0	0	0
3/4/2001	Heavy snow	0	0	0	0
3/9/2001	Heavy snow	0	0	0	0
12/8/2001	Heavy snow	0	0	0	0
1/6/2002	Heavy snow	0	0	0	0
1/19/2002	Heavy snow	0	0	0	0
1/31/2002	Winter storm	0	0	0	0
2/1/2002	Winter storm	0	0	0	0
12/5/2002	Heavy snow	0	0	0	0
1/3/2003	Heavy snow	0	0	\$6,000,000	0
2/17/2003	Heavy snow	0	0	\$2,700,000	0
3/6/2003	Heavy snow	0	0	\$50,000	0
12/6/2003	Heavy snow	0	0	\$220,000	0
1/27/2004	Heavy snow	0	0	\$300,000	0
1/22/2005	Heavy snow	0	0	\$480,000	0
3/1/2005	Heavy snow	0	0	\$360,000	0
3/24/2005	Heavy snow	0	0	\$30,000	0
12/9/2005	Heavy snow	0	0	\$20,000	0
12/16/2005	Winter storm	0	0	\$10,000	0
1/3/2006	Winter storm	0	0	0	0
2/13/2007	Winter storm	0	0	0	0
3/16/2007	Heavy snow	0	0	0	0

<b>Table 29 – NOAA NCDC Query Results: Severe Winter Storm Events Recorded for Sullivan County, January 1993 – March 2010</b> (NOAA, NCDC, Storm Events Search, 2010)					
<b>Date</b>	<b>Event</b>	<b>Deaths (#)</b>	<b>Injuries (#)</b>	<b>Property Damage (\$)</b>	<b>Crop Damage (\$)</b>
12/13/2007	Heavy snow	0	0	0	0
12/30/2007	Heavy snow	0	0	0	0
2/22/2008	Winter storm	0	0	0	0
12/19/2008	Winter storm	0	0	0	0
1/18/2009	Heavy snow	0	0	0	0
12/9/2009	Winter storm	0	0	0	0
2/23/2010	Winter storm	0	0	0	0
2/25/2010	Winter storm	0	0	0	0
<b>Totals:</b>	--	<b>3</b>	<b>10</b>	<b>\$12,001,000</b>	<b>0</b>

Sullivan County declared a state of emergency for the “Blizzard of 2010”, due to the snowfall accumulation and high winds that occurred over several days in February. Portions of the County received snowfall in excess of 4.5 feet, and damage and power outages as a result of the storm were widespread.

Two records of Federal Disaster Declarations involving winter storms were also found:

- *FEMA-3184-EM, New York*: Incident Period: February 17-18, 2003 Public Assistance (assistance to State and local governments for the repair or replacement of disaster-damaged public facilities is provided to Sullivan County. Costs were not available at the time of the writing of this plan.
- *FEMA-3173-EM, New York*: Incident Period: December 25-26, 2002 and January 3-4, 2003 FEMA provided assistance for emergency protective measures (Category B) under the

Public Assistance program to save lives, protect public health and safety, and property. This emergency assistance was provided for a period of 96 hours for Sullivan County. A total of \$897,750 was obligated to applicants in Sullivan County, including \$119,682.71 for the County of Sullivan.

**Costs and Damage Estimates** – The costs involved with winter storms involves the repairs to damaged structures, loss of utilities, snow removal equipment maintenance and man-power for snow removal. Actual costs can range from the thousands to millions depending upon severity, duration, and nature of the event. The probability of occurrence for severe winter storms within Sullivan County has been determined to be high. Roadway maintenance is an important task during and after severe winter storms. Often, advanced warning is provided if the threat of severe winter weather exists. These warnings help to prepare the County and municipal resources and County residents for such an event.

## 5.2 Natural Gas Drilling

The potential for natural gas drilling related to the Marcellus Shale deposits in Sullivan County and throughout the Southern Tier portion of New York State has created a tremendous amount of concern regarding the possible environmental effects of the drilling process. Drilling for natural gas in shale deposits like those in the Marcellus play, uses a process termed hydraulic fracturing, also known as hydrofracking or fracking, in which the gas is extracted from shale and other geologic formations through a horizontal well drilling technique which is not currently permitted in New York State. Hydrofracking refers to the pumping of a mixture of water, chemicals, and sand into the rock formations creating fractures in the shale that allow the natural gas to escape to

a production well where it is extracted and collected. Permits to allow these drilling methods to be used cannot be issued until the NYSDEC finalizes the Supplemental Generic Environmental Impact Statement (SGEIS) the department is currently developing. This SGEIS will essentially dictate the rules by which the drilling companies will have to abide by to minimize the effects that drilling activities will have on the surrounding environment. The NYSDEC is currently in the process of evaluating comments that were received during the public comment period for the SGEIS and has yet to indicate when they estimate they will be completing the environmental review process.

While there are currently no natural gas wells located within Sullivan County, thousands of acres of land, particularly in the western portion of the County, have already been leased for potential future gas drilling operations. Many of the participating jurisdictions in the County's Hazard Mitigation Plan expressed concerns regarding potential cascading effects that could result from natural gas drilling within their municipal limits. Many articles on this topic have been published in area papers in recent months and some of the participating jurisdictions submitted formal comments to the NYSDEC during the SGEIS public comment period. In addition, Sullivan County recently adopted a formal resolution to exclude natural gas drilling on County-owned properties.

While horizontal natural gas drilling is not considered a natural hazard, the consensus is that such drilling techniques present a significant potential to create human-caused environmental disasters in such categories as oils spills, explosions and fire, fixed site and in-transit hazardous materials spills, and water supply contamination. Minimizing this potential has been the goal of Sullivan County's Public Safety Commissioner, Richard Martinkovic, for some time now. In a recent newspaper article, the Commissioner indicated that he and his department have been researching how best to prepare the County to respond to such events in order to help mitigate the potential effects of natural gas drilling.

In speaking with other emergency management coordinators who have had experience dealing with similar drilling related issues throughout the state, the conclusion is that advanced coordination and planning with the drilling companies has proven to be the best course of action. As such, prior to beginning drilling operations within the County, drillers will need to meet with, and provide detailed information to, the County. This detailed information may include how the drillers and emergency responders will interact and what their responsibilities are, where equipment and infrastructure will be located, how the fracking fluids will be brought to and from the drill sites, and what safety precautions will be executed before, during, and after drilling events, particularly if an emergency occurs (Hust, 2010).

As stated earlier, natural gas drilling using the horizontal drilling technique is not currently permitted within New York State and, based on information to date, may not ever be allowed within the New York City Watershed, which includes a small portion of Sullivan County (Figure 5.17). As a process of this HMP Update, it may be premature to attempt to identify and include all potential effects that could occur from these proposed natural gas drilling techniques since there is little or no history available regarding such activities within New York State. In addition to the mitigation measures currently being researched and developed, as the issue progresses during the next 5-year Sullivan County HMP Update timeframe, it will be imperative that this section be reviewed and expanded further in the future, to accommodate and address all of the identified concerns.

**Figure 5.17 – NYC Drinking Water Supply: Catskill and Delaware Watershed Boundaries and Included Jurisdictions**  
(NYSDEP, 2007)



## **6.0 Hazard Vulnerability**

The identification of assets within Sullivan County and the analysis of County development trends were included in the original Hazard Mitigation Plan. These sections have been updated, including looking at the damage potential associated with the County's assets.

The Section 2.2 work was completed in order to identify the severity of the hazards in order to: (1) guide subsequent ranking of such hazards in order of the most severe and/or frequently occurring type; (2) help determine the highest priority of need with respect to implementation of pre-disaster action; and (3) guide the focus for recommendations to be made by the Plan.

Each Town and Village was asked to provide information concerning the occurrence of hazards in their community and to help identify what areas these hazards affect. This information was combined with information provided by FEMA, via the FEMA website, and from SEMO with respect to relative cost of damages known for various declared disasters.

### **6.1 Identify Assets**

Similar to most communities, Sullivan County and its Towns and Villages have numerous critical facilities. These facilities include, but are not limited to, the E 911 Emergency Center, schools, fire departments, hospitals, medical centers, County and Town highway garages, government agencies, Town and Village Halls, police departments, local operational offices for telephone and electrical power utilities, airports, water supply facilities, waste water treatment facilities, etc. For the purpose of the preparation of this planning document, a series of tables of these facilities was prepared using information provided by the County, Towns, and Villages. As indicated, these tables are presented in

Appendix C and provide the name of each facility and its location within Sullivan County. These critical facility tables have been revised since the original plan to include additional facilities and to account for changes of address.

A set of tables has been inserted into Appendix I to show the main hazards that concern each participating jurisdiction. Table I-1 (previously D-1 in 2005 plan) has been revised from the original plan to reflect any changes requested by the participating jurisdictions. Table I-2 (previously D-4 in 2005 plan) has also been revised to indicate the types of critical facilities that could be impacted by different hazard events based on their geographic locations. These tables will be updated as necessary in future editions and updates of the plan.

## 6.2 Damage Potential

Also worth noting is that of the 44,730 total housing units in Sullivan County, 20,145 units were built prior to 1960 and are therefore a minimum of 50 years old (U.S. Census Bureau). This reveals that about 45% of the housing units in the County may be more susceptible to being impacted by an ice storm, winter storm, windstorm, fire event, etc. Also, the median value of a housing unit in Sullivan County is \$93,300 (Census 2000). Therefore, if 0.1% (or 44.73 total housing units) were impacted by a storm, there is a potential for \$4,173,309 worth of damages to occur.

The following Table 30 provides an estimated dollar figure for losses associated with some of the natural hazards that were profiled in this plan. These costs were developed on the basis of past historic information and the use of engineering judgment. **Damage estimates provided by the NCDC and estimates by Sullivan County, based on damages associated with prior hazard events, were also considered and incorporated into the cost ranges for small to large natural hazard occurrences included in Table 30.**

<b>Table 30 – Estimated Annual Damages (\$) to Vulnerable Structures Based on Type of Hazard</b>	
<b>Hazard</b>	<b>Damage Estimates</b>
Civil Unrest	\$200,000
Dam Failure	\$1,000 - \$1,000,000
Drought	\$10,000 - \$2,872,427
Earthquake	\$0 – \$5,000,000
Floods	\$96,000 - \$247,000,000
Haz Mat	\$5,000 - \$10,000
Ice Jams	\$0 - \$1,500,000
Landslides	\$2,000 - \$500,000
Severe Storm	\$1,000 - \$750,000
Tornadoes	\$10,000 - \$25,500,000
Utility Failure	\$10,000 - \$5,000,000
Winter Storms *	\$10,000 - \$3 Billion
* Winter Storms resulting in flooding due to quick thaw have the same impacts as floods.	

### 6.3 Analyzing Development Trends

The types and extent of development trends needs to be considered during the assessment of hazards. Development can increase or decrease risks and can introduce new hazards to a jurisdiction. Generally, previous County development has centered on tourism, secondary and primary homes, and light commercial businesses. Due to limitations in public water supply and waste disposal, heavy industrial development is not prevalent within the County. Light commercial development and residential development is expected to continue. Housing in adjacent Orange County is more expensive than housing in Sullivan County, leading to a larger housing need in Sullivan County. Also, the potential event of casino gaming will continue to propagate tourism within the County.

As can be expected, the population growth will expose more people to the hazards which arise in the County. However, this increase in population and tourism is not expected to have a significant effect on the strategy needed for pre-disaster mitigation efforts. Future updates of this Plan will need to ascertain if this assumption will remain appropriate. Hence, for the purposes of this plan update, development trends in Sullivan County are not at this time a factor in the pre-disaster action decision making process.

It can be expected that population growth within the County will increase at a rate of 2% to 4% annually, with a directly proportionate increase in housing stock. Hence, private sector losses could be expected to increase at the rate of 2% to 4% a year on average. Additional private sector losses may occur due to a 1% to 2% increase in commercial activity which may follow the population growth. With respect to public sector losses we would not expect as great of an increase as may occur within the private sector. Hence, a 0.5% to 1% increase in public sector losses per year at most is estimated.

## **7.0 Hazard Mitigation**

The hazards determined to potentially affect Sullivan County were revisited and re-ranked during the County's HMP Update process. New mitigation goals and objectives were established for this Plan Update and all the originally included mitigation actions were changes, revised, or updated, as appropriate. A variety of additional mitigation actions were suggested by participating jurisdictions and have been incorporated into this document.

### **7.1 Ranking of Risks**

As mentioned in Section 4.2, County and municipal representatives utilized the State's HIRA-NY computer program to assess risks on a County-wide basis. Table 15 summarizes the results of the County-wide analysis of the 8 natural and technological hazards. For the 2005 Plan, a questionnaire asking the Towns and Villages to rank the hazards in their geographic area was distributed along with instructions for each community to rank their top hazards of concern. For this plan update, the hazards included in the 2010 HIRA-NY assessment recently completed by the County are recognized as the top hazards of concern for the County. The risks associated with each analyzed hazard were considered during the HIRA-NY risk assessment process by all participants.

### **7.2 Mitigation Goals**

The prime objective of setting hazard mitigation goals is to aid in the reduction and/or the elimination of losses from hazard events. In concentrating on the top five natural hazards of concern which include: flood, severe storm, winter storm (severe), earthquake, and ice storm; resources can be better focused on achieving progress towards minimizing impacts that could result from such hazards. It is important to create goals that are tangible. The following is a

listing of the goals which would help towards diminishing the impacts of the five natural hazards of concern, in conjunction with the other natural and technological hazards assessed in this plan update.

- **Goal 1:** Improve County-wide Transportation Infrastructure and Networks
- **Goal 2:** Reduce Vulnerability of Residential and Commercial Properties to Flooding Events
- **Goal 3:** Preserve and Enhance the Natural Environment
- **Goal 4:** Increase Community Preparedness for Large-scale Hazard Events
- **Goal 5:** Reduce the Potential Impact of Disasters on the Critical Facilities Identified within the County
- **Goal 6:** Increase Public Understanding, Support, and Demand for Hazard Mitigation

These goals were developed based on the risk assessment results, County vulnerabilities, and County and jurisdictional capabilities and preparedness when it comes to the occurrence of hazard events. The goals identified in this plan update represent what plan participants are hoping to achieve through the implementation of this Hazard Mitigation Plan. The mitigation actions compiled in this document address the reduction of hazard impacts on existing and new buildings and infrastructure.

### 7.3 Mitigation Actions

Several mitigation actions were proposed by participating jurisdictions in order to reduce the impact of potential hazard events. The implementation of these specific mitigation actions would aid in achieving the goals of the County's hazard mitigation plan. The proposed mitigation actions are varied, but can be grouped into six broad categories as indicated by FEMA 386-3:

- **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. Examples include planning and zoning, building codes, capital government programs, open space preservation, and storm water management 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. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- **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.
- **Natural Resource Protection** – Actions that, in addition to minimizing hazard losses, 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.

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

Table 31 lists all the mitigation actions that were proposed by participating jurisdictions, agencies, and members of the public. The hazards that would be mitigated by each proposed action are also noted in Table 31. Some actions relate to a specific hazard event, while others are proposed to mitigate the impacts of multiple hazards. All the mitigation actions included in this plan update have been reviewed by plan participants to ensure that they meet the goals of the plan. Appendix J includes a specific list of County transportation projects that have been completed since the 2005 HMP and projects that are included as proposed mitigation actions in this Plan Update. This appendix details which transportation projects have been completed since the 2005 HMP by listing the completion dates for each action.

Table 31 – Mitigation Actions																	
Action	Civil Unrest	Dam Failure	Drought	Earthquake	Fire	Flood	Haz Materials	Ice Jam	Ice Storm	Landslide	Severe Storm	Structural Collapse	Terrorism	Tornado	Transp. Accident	Utility Failure	Winter Storm
<b>Sullivan County</b>																	
Initiate coordination with railway owners to regularly assess conditions of railroad infrastructure							X								X		
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix J)						X				X	X				X		X
Stormwater training for planning boards – continue existing County SWCD flood remediation program						X		X		X		X					
Continue to provide DEC stream permitting assistance (SWCD)						X											
Distribute information on ways to build homes to withstand tornados/high winds											X			X			
<b>Town of Bethel</b>																	
Improve Brook Rd, Ballard Rd, Burr Rd, West Shore Rd, Wormuth Rd, Laird Rd to minimize flooding impacts to roadway and adj property						X					X						X
Acquire emergency generators for Town Hall, Highway garage, Justice Court, and Senior Center				X		X	X		X		X		X	X		X	X
Complete dam assessment within Town to determine condition of structures		X				X											
<b>Town of Callicoon</b>																	
Initiate maintenance program remove debris jams from Earl Myers Bridge Rd		X				X					X	X					X
Replace/rehab Youngsville NYS Bridge/Route 52, Dewitts Flats and maintain/analyze drainage system to reduce flood impacts						X					X						X
Increase and promote utility tree trimming and private property tree maintenance				X								X		X		X	X
Feasibility assessment of extending water and sewer districts	X		X													X	
Implement stormwater management plan requirement during Planning Board review						X					X	X					X
Acquire emergency generators for firehouses and ambulance buildings	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Distribute mailings and electronic information to public about hazard preparation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 31 – Mitigation Actions																	
Action	Civil Unrest	Dam Failure	Drought	Earthquake	Fire	Flood	Haz Materials	Ice Jam	Ice Storm	Landslide	Severe Storm	Structural Collapse	Terrorism	Tornado	Transp. Accident	Utility Failure	Winter Storm
<b>Town of Cochetcon</b>																	
Initiate coordination with railway owners to regularly assess conditions of railroad infrastructure							X								X		
Acquire emergency generator for Town Hall				X		X	X		X		X		X	X		X	X
Improve highway radio communication system	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Town of Delaware</b>																	
Replace/rehab Main St/Beechwoods Rd, CR 164 and CR 52 to reduce flooding issues						X		X			X						X
Initiate coordination with railway owners to regularly assess conditions of railroad infrastructure							X								X		
Implement flood mitigation measures (resize culverts, complete stream assessments) in the Kohlertown area to alleviate flooding issues and impacts to residents, businesses and infrastructure						X											
<b>Town of Fallsburg</b>																	
Acquire emergency generators for multiple critical facilities				X		X	X		X		X		X	X		X	X
Resize/upgrade culverts on Marsh Rd, Mongaup Rd, and Maplewood Dr to box culverts to reduce flooding						X						X					
Bank stabilization and/or culvert upgrade to help prevent Couzines Rd (seasonal dirt rd) from being washed out during flood events						X				X	X						
<b>Town of Forestburgh</b>																	
Replace/rehab Mill Rd Bridge and, Route 42/43 crossing to minimize flood damage						X		X			X						X
Implement maintenance program for debris removal at CR 44 and French St						X		X	X		X						X
Complete dam assessment of Lake Joseph Dam		X				X											
<b>Town of Fremont</b>																	
Replace/rehab Friedenstien Rd & Basket Rd culvert and Town Rd #10/Buck Brook Rd Bridge to minimize flooding						X		X			X						X
Deer Lake Road culvert upgrade to reduce flood damage						X		X			X						X

Table 31 – Mitigation Actions																	
Action	Civil Unrest	Dam Failure	Drought	Earthquake	Fire	Flood	Haz Materials	Ice Jam	Ice Storm	Landslide	Severe Storm	Structural Collapse	Terrorism	Tornado	Transp. Accident	Utility Failure	Winter Storm
Initiate coordination with railway owners to regularly assess conditions of railroad infrastructure							X								X		
Complete dam assessment of Muskoday dam		X				X											
<b>Town of Highland</b>																	
Airport Road/Levenworth Road area culvert replacement to minimize flooding						X					X						X
Acquire emergency generators for multiple critical facilities				X		X	X		X		X		X	X		X	X
Establish own municipal emergency response communication system	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Town of Liberty</b>																	
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts						X					X						X
Acquire emergency generators for firehouses and town barn				X		X	X		X		X		X	X		X	X
Complete dam assessment for dams in town to determine structural integrity																	
Increase and promote utility tree trimming and private property tree maintenance				X								X		X		X	X
<b>Town of Lumberland</b>																	
Educational mailings sent to public on preparation for hazards	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Replace/rehab Rt 97, Hollow Rd, Sweeny Rd to reduce impacts from flood events						X					X						X
Acquire emergency generator for Town Hall				X		X	X		X		X		X	X		X	X
Complete dam failure analysis for Rio Dam		X				X											
<b>Town of Mamakating</b>																	
Replace/rehab Philipsport Rd Bridge to minimize flooding issues – possibly raise structure elevation						X									X		
Pine Kill Road stream mitigation – complete assessment study to determine improvements that can be made to alleviate flooding impacts						X					X						X
<b>Town of Neversink</b>																	
Improve highway/emergency response radio communication service	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Acquire emergency generator for Tri-Valley Central School (Red Cross shelter location)				X	X	X	X	X	X	X	X	X	X	X		X	X

Table 31 – Mitigation Actions																		
Action	Civil Unrest	Dam Failure	Drought	Earthquake	Fire	Flood	Haz Materials	Ice Jam	Ice Storm	Landslide	Severe Storm	Structural Collapse	Terrorism	Tornado	Transp. Accident	Utility Failure	Winter Storm	
Put together and distribute information to public on flood-proofing private property and homes and making retrofits to reduce flooding impacts						X					X							
<b>Town of Rockland</b>																		
Replace/rehab Hardy St to reduce flood impacts						X												
Install backflow valve for catch basin system on Pearl St.						X					X						X	
Livingston Manor flooding ACOE recommendations						X					X						X	
Bank stabilization on Willowemoc Rd.						X				X	X						X	
Enlarge catch basin system on Highland Ave.						X					X						X	
Acquire emergency generators for Town Hall, firehouses, and ambulance building				X		X	X		X		X		X	X		X	X	
<b>Town of Thompson</b>																		
Acquire generator for Town Hall/Community Center				X		X	X		X		X		X	X		X	X	
Upgrade culverts at Tucci Road crossing to alleviate reoccurring flood damage						X					X	X						
<b>Town of Tusten</b>																		
Replace/rehab Lake Erie Bridge and Swamp Pond Road to reduce flood damage						X					X						X	
Erect emergency tower to inform public of disaster events	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Expand public water for fire suppression needs			X		X													
Initiate coordination with railway owners to regularly assess conditions of railroad infrastructure							X								X			
Acquire emergency generators for multiple critical facilities	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Establish emergency evacuation protocol and shelter location	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Improve communication system for emergency responders	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Implement stormwater management plan requirement during Planning Board review						X					X	X					X	
Review current protocol for siting of structures in flood areas						X					X	X					X	

Table 31 – Mitigation Actions																	
Action	Civil Unrest	Dam Failure	Drought	Earthquake	Fire	Flood	Haz Materials	Ice Jam	Ice Storm	Landslide	Severe Storm	Structural Collapse	Terrorism	Tornado	Transp. Accident	Utility Failure	Winter Storm
<b>Village of Bloomingburg</b>																	
Incorporate smart site planning and hazard reduction elements for new development projects through modifications to planning board review checklist/criteria				X	X	X		X	X	X	X			X		X	X
Campaign to inform public about hazard vulnerabilities within Village through distribution of promotional materials during community events and posting of tips and other information on municipal website	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Village of Jeffersonville</b>																	
Install stormwater drainage system		X				X				X		X				X	
Upgrade signage along evacuation routes	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Extend Lovett Lane to Swiss Hill to improve emergency vehicle access and response time	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Village of Liberty</b>																	
Implement program to assess and maintain condition of box culverts on private property						X					X						X
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage						X					X						X
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contamination)	X																
Execute program to monitor privately-owned dams to avoid failures		X				X											
Acquire emergency generators for multiple critical facilities				X		X	X		X		X		X	X		X	X
<b>Village of Monticello</b>																	
Improve/upgrade stormwater drainage system from St. Johns Street to Spring Street						X											
Relocate DPW fuel storage tanks					X		X										
Acquire generator for Ted Strobel Building				X		X	X		X		X		X	X		X	X
<b>Village of Woodridge</b>																	
Replace/rehab Greenfield Rd, including bridge structure, to minimize flooding impacts						X					X						X
Acquire emergency generator for Village Hall				X		X	X		X		X		X	X		X	X

Table 31 – Mitigation Actions																	
Action	Civil Unrest	Dam Failure	Drought	Earthquake	Fire	Flood	Haz Materials	Ice Jam	Ice Storm	Landslide	Severe Storm	Structural Collapse	Terrorism	Tornado	Transp. Accident	Utility Failure	Winter Storm
Upgrade pipe culverts on Novogrodsky Rd, Dairyland Rd, Greenfield Rd, Green Ave, and Maple Ave to improve drainage and reduce roadway flooding						X					X	X					
Improvements to Krieger Park to reduce flood damage (increase elevations, construct berms or other site barriers, remove stream sediment to provide more flood storage)						X					X						
<b>Village of Wurtsboro</b>																	
Replace/rehab Sullivan St Bridge to reduce flood damage						X					X						X
Improve stormwater drainage system along Canal St to minimize flooding impacts to private homes						X					X						X
Implement a maintenance program for debris removal from Wilsey Brook						X		X	X		X						X
Complete dam assessment for Masten Lake Dam		X				X											
<b>NFIP Mitigation Actions to Reduce Flood Impacts (All Jurisdictions)</b>																	
Update/revise floodplain management ordinances to comply with FEMA regulations						X											
Designate/install a Floodplain Management Administrator						X											
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances						X											
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs						X											
Require staff involved with the management of floodplains and enforcement of ordinances to become Certified Floodplain Managers						X											
Join the Community Rating System (CRS)						X											

These mitigation actions were proposed by participating jurisdictions based on their effectiveness in accomplishing one or more of the goals associated with Sullivan County’s Hazard Mitigation Plan Update. It is recognized that maintenance actions and response/preparedness actions do not

meet the criteria of a *mitigation action* and therefore are generally ineligible for funding under FEMA's Hazard Mitigation Assistance Program.

#### 7.4 Mitigation Strategy

There are many factors that must be considered when implementing a mitigation action. Table 32 displays details of each mitigation action, including specific goals achieved, implementing agency(ies), estimated costs, potential funding sources, implementation timeframes, and whether the action pertains to new and/or existing infrastructure and/or buildings.

The approximate costs considered for each mitigation action were determined based on estimated price ranges. The levels for the cost estimates are as follows:

- Low: cost is estimated to be below \$10,000
- Medium: cost is estimated to be between \$10,000 and \$100,000
- High: cost is estimated to be over \$100,000

The implementation timeframes provided for each mitigation action are also estimated. The levels for the timeframe estimates for each mitigation action are as follows:

- Short: completion anticipated within 1-2 years
- Moderate: completion anticipated within 5 years
- Long: completion anticipated in greater than 5 years

For some mitigation actions timeframe is presented as a range. This indicates that the action is currently being implemented or should be implemented as soon as possible and that it will continue throughout the life of

the current mitigation plan. Often, long-term actions require updates, annual reviews, or extensive coordination and/or implementation that are expected to take longer than 5 years to complete.

**Table 32 – Mitigation Action Strategy Specifics**

Mitigation Action	Hazard(s) Mitigated	Goals Met	Assumed Implementing Agency	Estimated Cost Level	Potential Funding Sources	Implementation Timeframe	Targeted Developments
<b>Sullivan County</b>							
Distribute information to public on ways to build homes to withstand tornados/high wind	Tornado, Severe Storm	4,6	County Emergency Management (lead), DPEM	Low	FEMA Mitigation Grant	Short	New Infrastructure
Initiate coordination with railway owners to regularly assess conditions of railroad infrastructure	Haz Mat, Transp. Accident	1	County Emergency Management, LEPC	Low	County Funds	Long	Existing infrastructure
Stormwater training for planning boards – continue existing County SWCD flood remediation program	Flood, Landslide, Structural Collapse	4, 6	County DPW (lead) & DPEM	Moderate	SWCD, County Funds, State Grant	Moderate	Existing and new infrastructure
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix J)	Flood, Severe Storm, Tornado, Transp. Accident, Winter Storm	1, 2	County DPW	High	DOT, FHWA, County Budget	Long	Existing infrastructure
Continue to provide DEC stream permitting assistance to municipalities (helps ensure appropriate development considerations)	Flood, Severe Storm, Winter Storm	2, 3	DPW (lead)	Moderate	SWCD, County Funds	Short	New infrastructure and existing upgrades
<b>Town of Bethel</b>							
Improve Brook Rd, Ballard Rd, Burr Rd, West Shore Rd, Wormuth Rd, Laird Rd to minimize flooding impacts to roadway and adj property	Flood, Severe Storm, Winter Storm	1, 2	Town of Bethel DPW/Highway Dept.	High	DOT, FHWA, Municipal Budget	Long	Existing infrastructure
Acquire emergency generators for Town Hall, Highway garage, Justice Court, and Senior Center	Utility Failure	4, 5	SCEMP/LEPC	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
Complete dam assessment within Town to determine condition of structures	Dam failure	2,5	Town Board, Town Planning Board	Moderate	NYSDEC, Municipal Budget	Moderate	Existing infrastructure
<b>Town of Callicoon</b>							
Initiate maintenance program remove debris jams from Earl Myers Bridge Rd	Dam Failure, Flood, Structural Collapse	2, 3	Town DPW/Highway	Low	FEMA, County Funds	Moderate	Existing infrastructure
Replace/rehab Youngsville NYS Bridge/ Route 52, Dewitts Flats and maintain/ analyze drainage system to reduce flood impacts	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway, DOT	High	DOT, FHWA, Municipal Budget, County Budget	Long	Existing infrastructure

**Table 32 – Mitigation Action Strategy Specifics**

Mitigation Action	Hazard(s) Mitigated	Goals Met	Assumed Implementing Agency	Estimated Cost Level	Potential Funding Sources	Implementation Timeframe	Targeted Developments
Increase and promote utility tree trimming and private property tree maintenance	Earthquake, Structural Collapse, Tornado, Utility Failure, Winter Storm	4, 6	Town Emergency Response and Planning	Low	Municipal Budget, State Grant, HMGP	Short	Existing and new buildings and infrastructure
Feasibility assessment of extending water and sewer districts	Drought, Civil Unrest	5, 6	Town Board	Moderate	State Grant, Municipal Budget, County Funds, USDA	Long	Existing and new buildings and infrastructure
Implement stormwater management plan requirement during Planning Board review	Flood, landslide, structural collapse	2,5	Town Planning & Zoning Board	Low	No Funding Required	Short	New infrastructure
Acquire emergency generators for firehouses and ambulance buildings	Utility Failure	4, 5	Town Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
Distribute mailings and electronic information to public about hazard preparation	All Hazards	4, 6	Town Emergency Response and Town Information Officer	Low	Municipal Budget	Short	Existing and new infrastructure
<b>Town of Cochection</b>							
Acquire emergency generator for Town Hall	Utility Failure	4, 5	Town Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
Initiate coordination with railway owners to regularly assess conditions of railroad infrastructure	Haz Mat, Transp. Accident	1	Town Board, Emergency Response	Moderate	County Funds, Municipal Budget	Long	Existing infrastructure
Improve highway radio communication system	All Hazards	4	Emergency Management	High	Municipal Budget, County Budget	Long	Existing and new infrastructure
<b>Town of Delaware</b>							
Replace/rehab Main St/Beechwood Rd, CR 164 and CR 52 to reduce flooding issues	Flood, Severe Storm, Winter Storm	1, 2	Town of Delaware, County DPW	High	DOT, FHWA, Municipal Budget, County Budget	Long	Existing infrastructure

**Table 32 – Mitigation Action Strategy Specifics**

Mitigation Action	Hazard(s) Mitigated	Goals Met	Assumed Implementing Agency	Estimated Cost Level	Potential Funding Sources	Implementation Timeframe	Targeted Developments
Initiate coordination with railway owners to regularly assess conditions of railroad infrastructure	Haz Mat, Transp. Accident	1	Emergency Management	Moderate	County Funds, Municipal Budget	Long	Existing infrastructure
Implement flood mitigation measures (resize culverts, complete stream assessments) in the Kohlertown area to alleviate flooding issues and impacts to residents, businesses and infrastructure	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway	High	DOT, FHWA, Municipal Budget	Long	Existing infrastructure
<b>Town of Fallsburg</b>							
Acquire generators for multiple critical facilities	Utility Failure	4, 5	Town Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
Resize/upgrade culverts on Marsh Rd, Mongaup Rd, and Maplewood Dr to box culverts to reduce damage from flooding	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway	High	DOT, FHWA, Municipal Budget	Long	Existing infrastructure
Bank stabilization and/or culvert upgrade to help prevent Couzines Rd (seasonal dirt rd) from being washed out during flood events	Flood, Severe Storm, Winter Storm, Landslide	1, 2	Town DPW/Highway	High	Municipal Budget	Long	Existing infrastructure
<b>Town of Forestburgh</b>							
Replace/rehab Mill Rd Bridge, CR 44 & French, Rt 42/43 crossing to minimize flood damage	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway, DOT	High	DOT, FHWA, Municipal Budget, County Funds	Long	Existing infrastructure
Implement maintenance program for debris removal at CR 44 and French St	Dam Failure, Flood, Ice Jam	2, 3, 5	Town DPW/Highway, Emergency Response	Moderate	HMGP, SWCD, State Grant	Moderate	Existing and new infrastructure
Complete dam assessment of Lake Joseph dam	Dam failure	2,5	Town Board, Town Planning Board	Moderate	NYSDEC, Municipal Budget	Moderate	Existing infrastructure
<b>Town of Fremont</b>							
Deer Lake Road culvert upgrade to reduce flood damage	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway	High	DOT, FHWA, Municipal Budget	Long	Existing infrastructure
Replace/rehab Friedenstien Rd & Basket Rd, Deer Lake Rd, Town Rd #10 & Buck Brook Rd to minimize flooding	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway	High	DOT, FHWA, Municipal Budget, County Funds	Long	Existing infrastructure

**Table 32 – Mitigation Action Strategy Specifics**

Mitigation Action	Hazard(s) Mitigated	Goals Met	Assumed Implementing Agency	Estimated Cost Level	Potential Funding Sources	Implementation Timeframe	Targeted Developments
Initiate coordination with railway owners to regularly assess conditions of railroad infrastructure	Haz Mat, Transp. Accident	1	Emergency Management	Moderate	County Funds, Municipal Budget	Long	Existing infrastructure
Complete dam assessment of Muskoday dam	Dam failure	2,5	Town Board, Town Planning Board	Moderate	NYSDEC, Municipal Budget	Moderate	Existing infrastructure
<b>Town of Highland</b>							
Airport Road/Levenworth Road area culvert replacement to minimize flooding	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway	Moderate	DOT, FHWA, Municipal Budget, County Budget	Moderate	Existing infrastructure
Acquire emergency generators for multiple critical facilities	Utility Failure	4, 5	Town Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
Establish own municipal emergency response communication system	All Hazards	4	Emergency Management, Emergency Response	High	Municipal Budget, County Budget	Long	Existing and new infrastructure
<b>Town of Liberty</b>							
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway	High	DOT, FHWA, Municipal Budget, County Budget	Long	Existing infrastructure
Acquire emergency generators for firehouses and town barn	Utility Failure	4, 5	Town Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
Complete dam assessment for dams in town to determine structural integrity	Dam failure	2,5	Town Board, Town Planning Board	Moderate	NYSDEC, Municipal Budget	Moderate	Existing infrastructure
Increase and promote utility tree trimming and private property tree maintenance	Utility Failure	1,2,4,5,6	Town Emergency Response and Planning Board	Low	Municipal Budget, HMGP	Moderate	Existing and new infrastructure
<b>Town of Lumberland</b>							
Educational mailings sent to public on potential hazards	All Hazards	4, 6	Town Emergency Response and Town Information Officer	Low	Municipal Budget	Short	Existing and new infrastructure

**Table 32 – Mitigation Action Strategy Specifics**

Mitigation Action	Hazard(s) Mitigated	Goals Met	Assumed Implementing Agency	Estimated Cost Level	Potential Funding Sources	Implementation Timeframe	Targeted Developments
Replace/rehab Rt 97, Hollow Rd, Sweeny Rd to reduce impacts from flood events	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway, DOT	High	DOT, FHWA, Municipal Budget	Long	Existing infrastructure
Acquire emergency generator for Town Hall	Utility Failure	4, 5	Town Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
Complete dam failure analysis for Rio Dam	Dam failure	2,5	Town Board, Town Planning Board	Moderate	NYSDEC, Municipal Budget	Moderate	Existing infrastructure
<b>Town of Mamakating</b>							
Replace/rehab Philipsport Rd Bridge to minimize flooding issues	Flood	1, 2	Town DPW/Highway	High	DOT, FHWA, Municipal/ County Budget	Long	Existing infrastructure
Pine Kill Road stream mitigation – complete assessment study to determine improvements that can be made to alleviate flooding impacts	Dam Failure, Flood, Ice Jam	2, 3, 5	Town DPW/Highway	Moderate	HMGP, SWCD, State Grant	Moderate	Existing and new infrastructure
<b>Town of Neversink</b>							
Improve highway/emergency response radio communication service	All Hazards	4	Emergency Management	High	Municipal Budget, County Budget	Long	Existing and new infrastructure
Acquire emergency generator for Tri-Valley Central School (Red Cross shelter location)	Utility Failure	4, 5	Town Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
Put together and distribute information to public on flood-proofing private property and homes and making retrofits to reduce flooding impacts	All Hazards	4, 6	Town Planning and Town Information Officer	Low	Municipal Budget, State Grant, County Funds	Short	Existing and new infrastructure
<b>Town of Rockland</b>							
Replace/rehab Hardy St to reduce flood impacts	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway	Moderate	DOT, FHWA, Municipal Budget, County Budget	Moderate	Existing infrastructure
Acquire emergency generators for Town Hall, firehouses, and ambulance buildings	Utility Failure	4, 5	Town Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure

**Table 32 – Mitigation Action Strategy Specifics**

Mitigation Action	Hazard(s) Mitigated	Goals Met	Assumed Implementing Agency	Estimated Cost Level	Potential Funding Sources	Implementation Timeframe	Targeted Developments
Install backflow valve for catch basin system on Pearl St.	Flood, Severe Storm, Winter Storm	2, 5	Town DPW/Highway, Town Board	Moderate	Municipal Budget	Long	Existing infrastructure
Livingston Manor flooding – ACOE recommendations	Flood, Severe Storm, Winter Storm	2, 5	Town Board (lead), SWCD	High	Federal Grant, HMGP	Long	Existing and new infrastructure
Bank stabilization on Willoemoc Rd.	Flood, Severe Storm, Landslide, Winter Storm	2, 3, 5	Town Board (lead), SWCD	Moderate	SWCD Grant, Municipal Budget, State Grant	Long	Existing and new infrastructure
Enlarge catch basin system on Highland Ave.	Flood, Severe Storm, Winter Storm	2, 5	Town DPW/Highway, Town Planning	Moderate	Municipal Budget	Long	Existing infrastructure
<b>Town of Thompson</b>							
Acquire generator for Town Hall/Community Center	Utility Failure	4, 5	Town Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
Upgrade culverts at Tucci Road crossing to alleviate reoccurring flood damage	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway	High	DOT, FHWA, Municipal Budget	Long	Existing infrastructure
<b>Town of Tusten</b>							
Replace/rehab Lake Erie Bridge and Swamp Pond Road to reduce flood damage	Flood, Severe Storm, Winter Storm	1, 2	Town DPW/Highway	High	DOT, FHWA, Municipal Budget, County Budget	Long	Existing infrastructure
Erect emergency tower to inform public of disaster events	All Hazards	4, 5	Town Board, Emergency Management	High	HMGP, State Grant	Long	Existing and new infrastructure
Initiate coordination with railway owners to regularly assess conditions of railroad infrastructure	Haz Mat, Transp. Accident	1	Town Board, Emergency Response	Moderate	County Funds, Municipal Budget	Long	Existing infrastructure
Expand public water for fire suppression needs	Drought, Fire	4, 5	Town Board, Town Planning & Engineer	High	State Grant, USDA	Long	Existing and new infrastructure

**Table 32 – Mitigation Action Strategy Specifics**

Mitigation Action	Hazard(s) Mitigated	Goals Met	Assumed Implementing Agency	Estimated Cost Level	Potential Funding Sources	Implementation Timeframe	Targeted Developments
Acquire emergency generators for multiple critical facilities	Utility Failure	4, 5	Town Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
Improve communication system for emergency responders	All Hazards	4, 5	Emergency Management and Response	High	HMGP, State Grant	Long	Existing and new infrastructure
Establish emergency evacuation protocol and shelter location	All Hazards	4	Emergency Management, Town Planning	Low	County Budget	Short	Existing buildings and infrastructure
Implement stormwater management plan requirement during Planning Board review	Flood, Landslide, Structural Collapse	2, 6	Town Board, Planning & Zoning	Low	No Funding Required	Short	New infrastructure
Review current protocol for siting of structures in flood area	Flood, Severe Storm	2,5	Town Board, Town Planning, Town Codes	Low	No Funding Required	Moderate	New infrastructure
<b>Village of Bloomingburg</b>							
Incorporate smart site planning and hazard reduction elements for new development projects through modifications to planning board review checklist/criteria	Flood, Landslide	2,3,5	Village Planning	Moderate	Municipal Budget, HMGP	Moderate	New infrastructure
Campaign to inform public about hazard vulnerabilities within Village through distribution of promotional materials during community events and posting of tips and other information on municipal website	All Hazards	4, 6	Emergency Management and Village Board	Low	Municipal Budget, State Grant, County Funds	Short	Existing and new infrastructure
<b>Village of Jeffersonville</b>							
Install stormwater drainage system	Dam Failure, Flood, Landslide, Structural Collapse, Utility Failure	2, 4, 5	Village Board, Engineer	High	Municipal Budget, State Grant	Long	Existing and new infrastructure
Upgrade signage along evacuation routes	All Hazards	4	Village DPW/Highway, DOT (HW Work Permit)	Moderate	Municipal Budget, County Funds	Moderate	Existing and new infrastructure
Extend Lovett Lane to Swiss Hill to improve emergency vehicle access and response time	All Hazards	1, 4	Village DPW/Highway	High	Municipal Budget	Long	Existing and new infrastructure

**Table 32 – Mitigation Action Strategy Specifics**

Mitigation Action	Hazard(s) Mitigated	Goals Met	Assumed Implementing Agency	Estimated Cost Level	Potential Funding Sources	Implementation Timeframe	Targeted Developments
<b>Village of Liberty</b>							
Implement program to assess and maintain condition of box culverts on private property	Flood, Severe Storm, Winter Storm	1, 2	Village DPW/Highway	Moderate	Municipal Budget	Long	Existing infrastructure
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage	Flood, Severe Storm, Winter Storm	1, 2	Village DPW/Highway	High	DOT, FHWA, Municipal Budget, County Budget	Long	Existing infrastructure
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.)	Civil Unrest	3	Village DPW/Planning	High	Municipal Budget	Moderate	Existing and new infrastructure
Execute program to monitor privately-owned dams to avoid failures	Dam Failure, Flood	1, 2, 3	Town Board	Moderate	HMGP, State Grant	Short	Existing infrastructure
Acquire emergency generators for multiple critical facilities	Utility Failure	4, 5	Town Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
<b>Village of Monticello</b>							
Improve/upgrade stormwater drainage system from St. John's St to Spring St	Flood	2, 5	Village DPW/Planning	Moderate	Municipal Budget, State Grant	Long	Existing and new infrastructure
Relocate DPW fuel storage tanks	Fire, Haz Mat	5	Village DPW/Highway, Engineer	Moderate	State & County Funds, Municipal Budget	Long	Existing infrastructure
Acquire generator for Ted Strobel Building	Utility Failure	4, 5	Village Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
<b>Village of Woodridge</b>							
Replace/rehab Greenfield Rd, including bridge structure, to minimize flooding impacts	Flood, Severe Storm, Winter Storm	1, 2	Village DPW/Highway	Moderate	DOT, FHWA, Municipal Budget, County Budget	Long	Existing infrastructure
Upgrade pipe culverts on Novogrodaky Rd, Dairyland Rd, Greenfield Rd, Green Ave, and Maple Ave to improve drainage and reduce roadway flooding	Flood, Severe Storm, Winter Storm	1, 2	Village DPW/Highway	High	DOT, FHWA, Municipal Budget	Long	Existing infrastructure

**Table 32 – Mitigation Action Strategy Specifics**

Mitigation Action	Hazard(s) Mitigated	Goals Met	Assumed Implementing Agency	Estimated Cost Level	Potential Funding Sources	Implementation Timeframe	Targeted Developments
Acquire emergency generator for Village Hall	Utility Failure	4, 5	Village Board	High	Municipal Budget, County Budget, NYS Member Items	Long	Existing infrastructure
Improvements to Krieger Park to reduce flood damage (increase elevations, construct berms, or other site barriers, remove stream sediment to provide more flood storage)	Flood, Severe Storm	2,3	Village DPW/Highway	Moderate	Municipal Budget	Moderate	Existing infrastructure
<b>Village of Wurtsboro</b>							
Replace/rehab Sullivan St Bridge to reduce flood damage	Flood, Severe Storm, Winter Storm	1, 2	Village DPW/Highway	High	DOT, FHWA, Municipal Budget, County Budget	Long	Existing infrastructure
Improve stormwater drainage system along Canal St to minimize flooding impacts	Flood, Severe Storm, Winter Storm	2, 5	Village DPW/Highway, Planning	Moderate	Municipal Budget, State Grant	Moderate	Existing infrastructure
Implement a maintenance program for debris removal from Wilsey Brook	Dam Failure, Flood, Ice Jam	2, 3, 5	Village DPW/Highway	Moderate	HMGP, SWCD, State Grant	Moderate	Existing and new infrastructure
Complete dam assessment for Masten Lake Dam	Dam failure	2,5	Town Board, Town Planning Board	Moderate	NYSDEC, Municipal Budget	Moderate	Existing infrastructure
<b>NFIP Mitigation Actions to Reduce Flood Impacts (All Jurisdictions)</b>							
Update/revise floodplain management ordinances to comply with FEMA regulations	Flood	2, 4, 5	All Municipalities	Moderate	HMGP, FEMA, Municipal Budget	Long	Existing and new infrastructure
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Flood	2, 4, 5	All Municipalities	Low	HMGP, FEMA	Moderate	Existing and new infrastructure
Update/revise floodplain ordinances to comply with current and future FEMA FIRMS	Flood	2, 4, 5	All Municipalities	Moderate	HMGP, FEMA, Municipal Budget	Long	Existing and new infrastructure
Update/revise floodplain management ordinances to comply with FEMA regulations	Flood	2, 4, 5	All Municipalities	Moderate	HMGP, FEMA, Municipal Budget	Long	Existing and new infrastructure
Join the Community Rating System (CRS)	Flood	2, 4, 5	All Municipalities	Low	County Budget	Short	Existing and new infrastructure

**Table 32 – Mitigation Action Strategy Specifics**

Mitigation Action	Hazard(s) Mitigated	Goals Met	Assumed Implementing Agency	Estimated Cost Level	Potential Funding Sources	Implementation Timeframe	Targeted Developments
Require staff involved with the management of floodplains and enforcement of ordinances to become Certified Floodplain Managers	Flood	2, 4, 5	All Municipalities	Low	Municipal Budget, HMGP	Short	Existing and new infrastructure
Designate/install a Floodplain Management Administrator	Flood	2, 4, 5	All Municipalities	Moderate	HMGP, County Budget	Moderate	Existing and new infrastructure
DPEM = Department of Planning and Environmental Management DPW = Department of Public Works SWCD = Soil and Water Conservation District SCEMP/LEPC = Sullivan County Emergency Management Planning/Local Emergency Planning Committee							

## 7.5 Mitigation Action Prioritization

General priority measures were instituted in order to prioritize the proposed mitigation actions that are included as part of this plan. It is important to note that the recognized priority levels are based on the current knowledge of the mitigation actions, including their estimated costs, timeframes, and funding availability. Prioritization criteria will continue to be reviewed and revised during the five-year plan update intervals.

The prioritization of actions was found to be based upon cost, as an approach to getting the largest “bang-for-the-buck” was applied. By implementing these actions as part of pre-disaster mitigation, and not as an afterthought, it is anticipated that the implementation will be more cost effective and that the incorporation of these actions into normal planning processes and operational procedures will naturally occur.

The following considerations were analyzed while evaluating the mitigation actions included in Sullivan County’s plan update (FEMA, 2008):

- Compatibility with goals and objectives identified in the current NYS Hazard Mitigation Plan;
- Compatibility with goals and objectives identified in the local mitigation strategy;
- Assessment of the impact of identified actions on other jurisdictions within the entire planning area or region;
- Cost/benefit reviews of potential actions;

- Funding priorities identified in the current NYS Hazard Mitigation Plan; and
- Compatibility with other local and regional plans and programs.

Each participating jurisdiction evaluated the mitigation actions that applied to their jurisdiction. These evaluations were completed taking into consideration the elements addressed above. Mitigation Action Prioritization and Comparison worksheets were reviewed by all participating jurisdictions as a way to rank the mitigation actions included in this plan. This exercise provided the participating jurisdictions with a way to prioritize the mitigation actions using a simple cost/benefit analysis (Table 33).

<b>Table 33 – Benefit and Cost Rankings</b>			
	<b>Assessment Levels and Description</b>		
	<b>High</b>	<b>Medium</b>	<b>Low</b>
<i>Benefits</i>	Action is anticipated to have an immediate impact on reduction of losses – both life and property.	A long-term impact on the reduction of loss of life is expected or an immediate impact on loss of property.	It is difficult to assess the benefits of an action due to its long-term timeframe.
<i>Costs</i>	Existing funding sources are inadequate or are not identified to cover implementation of the action.	Funding exists, but will have to be reapportioned or budgeted over multiple years.	Funds to implement action are available in existing budget.

Each mitigation action is accordingly recognized as a high priority project, medium priority project, or low priority project, as indicated on the Mitigation Action Prioritization and Comparison forms included in Appendix K for each participating jurisdiction.

## **7.6 National Flood Insurance Program (NFIP)**

Long-term mitigation of potential flood impacts can be best achieved through comprehensive floodplain management regulations and enforcement, particularly at a local level. The NFIP is regulated by FEMA. The goal of this program is to reduce the impact of flooding on private and public structures by providing affordable insurance for property owners. The program encourages local jurisdictions to adopt and enforce floodplain management regulations in order to mitigate the potential effects of flooding on new and existing infrastructure (FEMA, 2009).

Communities that participate in the NFIP adopt floodplain ordinances that require that all insured structures that are damaged over 50-percent of the property's market value must comply with the floodplain ordinance when the structure is repaired/re-built. These repairs could mean changes to the elevation of the structure, acquisition and demolition, or relocation to a location outside of the floodplain. Insured structures that are located within floodplain identified on FEMA's Flood Insurance Rate Maps (FIRMs) receive funds if impacted by a flooding disaster. These distributed funds are to be used to mitigate the risk of future flooding by actions such as those previously referenced.

National Flood Insurance Program records and claims were analyzed to determine the extent of participation, flood losses, and flood insurance policies within Sullivan County. All of the jurisdictions within Sullivan County are current participants in FEMA's NFIP, as indicated by the statistics included in Tables 34 and 35. Table 34 provides loss statistics for all jurisdictions within Sullivan County as of December 31, 2009.

The flood loss data included in Table 34 indicates that the Town of Rockland experienced the largest frequency of impact to property from flood events. The Town of Rockland has also received the highest amount of total payments. The information included in Table 35 documents the number of flood insurance policies, coverage amounts, and premium amounts for all jurisdictions within Sullivan County.

<b>Table 34 – NFIP Loss Statistics, 1978 – 2009</b> (Bureau Net, Claim Information, 2009)					
<b>Jurisdiction</b>	<b>Total Losses</b>	<b>Closed Losses</b>	<b>Open Losses</b>	<b>CWOP Losses</b>	<b>Total Payments</b>
(T) Bethel	11	7	0	4	\$ 35,607.63
(V) Bloomingburg	1	0	0	1	\$ 0.00
(T) Callicoon	39	32	2	5	\$ 835,321.97
(T) Cochecton	15	15	0	0	\$ 385,826.29
(T) Delaware	36	32	0	4	\$ 524,802.40
(T) Fallsburg	9	5	0	4	\$ 25,978.40
(T) Forestburgh	5	5	0	0	\$ 8,370.22
(T) Fremont	22	14	0	8	\$ 379,579.71
(T) Highland	20	17	0	3	\$ 850,650.76
(V) Jeffersonville	50	42	0	8	\$ 814,683.21
(T) Liberty	13	7	0	6	\$ 43,895.69
(V) Liberty	9	6	0	3	\$ 70,734.02
(T) Lumberland	11	9	0	2	\$ 58,826.22
(T) Mamakating	30	23	0	7	\$ 145,784.66
(V) Monticello	2	1	0	1	\$ 27,185.17
(T) Neversink	10	10	0	0	\$ 45,900.93
(T) Rockland	538	460	1	77	\$ 8,380,709.90
(T) Thompson	65	56	0	9	\$ 267,655.18
(T) Tusten	42	37	0	5	\$ 1,253,897.86
(V) Woodridge	1	1	0	0	\$ 118.00
(V) Wurtsboro	9	6	0	3	\$ 11,340.45

Total losses = all losses submitted regardless of status, total claims

Closed losses = losses that have been paid

Open losses = losses that have not been paid in full

CWOP losses = losses closed without payment

Total payments = total amount paid on losses

<b>Table 35 – NFIP Policy Statistics, 1978 – 2009</b> (Bureau Net, Policy Information, 2009)			
<b>Jurisdiction</b>	<b>Policies In-Force</b>	<b>Insurance In-Force (whole \$)</b>	<b>Written Premium In-Force</b>
(T) Bethel	42	\$9,034,000.00	\$33,723.00
(V) Bloomingburg	0	0	0
(T) Callicoon	70	\$12,464,800.00	\$67,876.00
(T) Cochection	21	\$3,341,000.00	\$17,119.00
(T) Delaware	52	\$11,415,800.00	\$30,650.00
(T) Fallsburg	54	\$10,461,400.00	\$18,125.00
(T) Forestburgh	5	\$1,470,000.00	\$2,102.00
(T) Fremont	40	\$6,505,000.00	\$28,376.00
(T) Highland	45	\$10,416,000.00	\$35,744.00
(V) Jeffersonville	26	\$5,124,200.00	\$41,992.00
(T) Liberty	17	\$3,415,600.00	\$11,711.00
(V) Liberty	4	\$1,738,400.00	\$13,913.00
(T) Lumberland	13	\$2,140,300.00	\$7,633.00
(T) Mamakating	63	\$14,377,500.00	\$33,474.00
(V) Monticello	3	\$236,000.00	\$1,894.00
(T) Neversink	19	\$3,719,900.00	\$10,150.00
(T) Rockland	240	\$39,472,200.00	\$215,863.00
(T) Thompson	55	\$12,603,800.00	\$32,159.00
(T) Tusten	57	\$11,712,000.00	\$69,710.00
(V) Woodridge	1	\$42,000.00	\$173.00
(V) Wurtsboro	8	\$1,539,400.00	\$6,367.00

Policies in-force = NFIP policies as of Dec. 31, 2009

Insurance in-force = coverage amount for policies in-force

Written premium in-force = premium paid for policies in-force

The NFIP policy statistics displayed above indicate that only the Village of Bloomingburg does not have any properties which currently have purchased flood policies. The Town of Rockland again is shown as having the highest number of policies in-force and the greatest insurance amounts in-force.

Repetitive flood loss data was provided by the NYSDEC. A total of 122 repetitive loss properties were identified within Sullivan County. Details of these properties are provided in Table 36.

**Table 36 – Repetitive Flood Loss Properties within Sullivan County  
- September 2010**

*(NYSDEC-Floodplain Management Section)*

Location (Town or Hamlet), Zip Code	# of Repetitive Loss Properties	Property Types	Properties that have reported 1-3 loss incidents (#)	Properties that have reported 4+ loss incidents (#)	Properties located within 100-year mapped floodplains
Barryville, 12719	2	2 non-residential	2	0	2
Bloomington, 12721	1	1 residential	1	0	1
Callicoon, 12723	3	1 non-residential, 2-residential	3	0	2
Callicoon Center, 12724	1	1 residential	0	1	1
Cochecton, 12726	3	3 residential	3	0	3
Forestburgh, 12777	1	1 residential	0	1	0
Grahamsville, 12740	1	1 residential	1	0	1
Hankins, 12741	1	1 residential	1	0	1
Jeffersonville, 12748	12	2 non-residential, 10 residential	8	4	8
Kiamesha Lake, 12751	3	1 non-residential, 2 residential	3	0	1
Livingston Manor, 12758	45	5 non-residential, 40 residential	32	13	36
Long Eddy, 12760	2	2 residential	2	0	1
Monticello, 12701	3	2 residential	2	1	0
Narrowsburg, 12764	9	1 non-residential, 8 residential	8	1	1
Parksville, 12768	1	1 residential	1	0	0

**Table 36 – Repetitive Flood Loss Properties within Sullivan County  
- September 2010**

*(NYSDEC-Floodplain Management Section)*

<b>Location (Town or Hamlet), Zip Code</b>	<b># of Repetitive Loss Properties</b>	<b>Property Types</b>	<b>Properties that have reported 1-3 loss incidents (#)</b>	<b>Properties that have reported 4+ loss incidents (#)</b>	<b>Properties located within 100-year mapped floodplains</b>
Pond Eddy, 12770	1	1 residential	1	0	1
Roscoe, 12776	27	8 non-residential, 19 residential	26	1	20
Smallwood, 12778	1	1 residential	1	0	0
Thompsonville, 12789	2	1 residential	2	0	0
Wurtsboro, 12790	3	3 residential	2	1	1

As part of the Sullivan County Hazard Mitigation Plan Update, each participating jurisdiction was required to evaluate a specific set of mitigation actions specifically aimed at continued compliance and participation with FEMA's NFIP. These mitigation actions are proposed in addition to the mitigation actions already included in this plan. The mitigation actions incorporated by FEMA in their 2008 guidance include revisions to floodplain management ordinances in order to comply with FEMA's latest regulations and remain consistent with the FIRMs, the designation of a Floodplain Administrator in each participating jurisdiction, ensuring that staff members have appropriate training to adequately enforce NFIP regulations and ordinances, requiring staff involved in floodplain management and/or regulations to become Certified Floodplain Managers (CFMs), and joining the Community Rating System (CRS). These NFIP specific mitigation actions are further detailed on the Mitigation Action Prioritization and Comparison tables included in Appendix K.

#### *7.6.1 FEMA Floodplain Mapping Update Process*

Sullivan County has been active in coordinating and facilitating the FEMA FIRM update process. A timeline of events is provided below:

- On May 13, 2009, the County Planning Department met with Bill Douglass and Paul Weberg of FEMA to discuss a public outreach approach for the map updates.
- On May 19, 2009, the County Planning Department sent emails to Supervisors, Mayors, Clerks and Building Inspectors to inform them of the map update process and invite them to a May 21, 2009 session at the County planning office.

- On May 21, 2009, the County Planning Department hosted a session to look at the proposed new maps and set dates for public information sessions.
- In late June 2009, all municipal officials and board members were emailed to inform them of the July 7<sup>th</sup> and 8<sup>th</sup> sessions and let them know about the website where they can find the proposed maps.
- On July 7<sup>th</sup> and 8<sup>th</sup>, the County Planning Department convened three sessions for Community Coordination Officers. FEMA and DEC personnel were on hand to give presentations and answer questions.
- On the evening of July 8, 2009, a public information session was held for anyone who wished to view the proposed maps and offer comments.
- Throughout the month of July 2009, several FEMA documents were posted on the County's website for the public to view.

Updates were provided on the County's website as the process continued. Multiple inquiries were received by the Planning Department from residents and municipal officials. The Planning Department provided these individuals with data and maps depicting the existing and proposed FIRM data, and directed them to personnel at DEC and FEMA who could help them to resolve any issues. Data outlining the floodplain hazard areas in the County and each municipality are provided in Table 37.

<b>Table 37 – 100-year Floodplain Hazard Area Details</b>						
<i>(Sullivan County Office of Real Property, 2010)</i>						
Jurisdiction	# Parcels in Municipality	# Parcels in Hazard Area	% in Hazard Area	Area of Municipality (acres)	Area in Hazard Area (acres)	% in Hazard Area
(T) Bethel	7,560	1,087	14.44%	57,467.5	4,625.5	8.05%
(V) Bloomingburg	201	14	7.18%	438.0	64.1	14.63%
(T) Callicoon	2,313	352	15.28%	31,053.5	734.5	2.37%
(T) Cochecton	1,684	147	8.84%	23,990.7	845.4	3.52%
(T) Delaware	2,012	334	16.69%	22,590.5	1,025.2	4.54%
(T) Fallsburg	8,635	536	6.23%	49,536.7	2,115.4	4.27%
(T) Forestburgh^	1,292	0	0.00%	36,204.2	0.0	0.00%
(T) Fremont	2,034	333	16.49%	32,865.5	595	1.81%
(T) Highland	2,758	541	19.68%	32,929.2	1,656.9	5.03%
(V) Jeffersonville	253	114	45.97%	280.8	58.6	20.87%
(T) Liberty	4,547	288	6.36%	50,001.9	1,110.8	2.22%
(V) Liberty	1,754	97	5.55%	1636.7	38.2	2.33%
(T) Lumberland	3,005	624	20.85%	31,401.1	2,678.9	8.53%
(T) Mamakating*	7,785	N/A	N/A	61,690.0	4,125.6	6.69%
(V) Monticello^	2,179	0	0.00%	2,547.1	0.0	0.00%
(T) Neversink	2,949	286	9.76%	5,5044.0	3,387.5	6.15%
(T) Rockland	3,629	842	23.40%	60,857.7	1,750.6	2.88%
(T) Thompson	8,134	1,033	12.73%	53,300.3	4,362.9	8.19%
(T) Tusten	2,070	391	19.01%	31,766.1	1,668.5	5.25%
(V) Woodridge	692	12	1.75%	1,103.8	58.7	5.32%
(V) Wurtsboro	592	101	17.24%	800.0	195.0	24.38%
Sullivan County	66,078	2,890	4.40%	637,505.3	31,097.3	4.88%
*Town of Mamakating – parcel data is currently not in electronic form – parcels in hazard area could not be determined.						
^Village of Monticello and Town of Forestburgh – do not have any parcels located within 100-year floodplain.						

The 90-day appeal period began on approximately March 12, 2010. During that period, any interested party could submit an appeal of the proposed base flood elevations to his or her Town supervisor, or any agency publicly designated by the supervisor. FEMA sent an individual letter to the leader of each County jurisdiction to let them know the details

of the appeal period and how to file an appeal, if warranted. As stated in Section 5.1.6, because the revised FEMA FIRMs have not been formally adopted and issued yet, they were not used as a tool during this HMP Update process. The updated maps took effect in February 2011. The updated FIRMs will be included in the next Hazard Mitigation Plan update, which will focus on the differences between the two sets of mapping and how the revised FIRMs impact the frequency and scope of flood hazard events within the County.

## **7.7 Previous Action Plan Implementation**

Since the adoption of the 2005 All-Hazard Pre-Disaster Mitigation Plan, numerous efforts have been made through the County, Town, and Village governments toward reducing the impacts of disasters upon the community. Many of these actions have been accomplished through the normal day to day operations of government. Through the County Manager's office, routine warnings to the public regarding imminent ice storm, winter storm, flood, windstorm, and tornado events have become standard practice. This has been accomplished through the issuance of public announcements on the County's website or through other media outlets. These early warnings have helped to increase public awareness and preparedness for such hazard events.

Through the building inspection departments of the Towns and Villages, enforcement of the building codes has been a continuing activity to ensure that the construction of new infrastructure and the upgrading of existing infrastructure are done so in compliance with the New York State Building Code. This process helps to ensure that new and upgraded structures include elements that help to reduce the potential damage or impact from floods, winds, rain, and winter storms (Goals 1, 2, and 5). Through the completion of the 2005 Multi-

Jurisdictional, All-Hazard Pre-Disaster Plan, the local building departments were made increasingly aware of their important role to promote hazard awareness and appropriate building construction.

Regarding flood mitigation (Goal 3), the Sullivan County Division of Public Works has successfully completed the replacement of numerous bridges and culverts that have resulted in improved waterway hydraulics to help lessen localized flooding. For the past several years, the County has worked with the Soil and Water Conservation District to implement stream maintenance and remediation measures in certain locations where repetitive damage to existing infrastructure was occurring. In addition, several flood studies were completed, or are in progress, within the County. Examples of these studies include:

- A study looking at reducing the impacts of flooding in the Kohlertown area (Town of Delaware);
- The creation of a Hydraulic and Hydrology Model for the East Branch of the Callicoon Creek Watershed in the Towns of Callicoon, Delaware, Fremont, and Liberty, with the assistance of the U.S. Army Corps of Engineers; and
- A study of the Willowemoc and Little Beaverkill Watersheds in the Town of Rockland, also completed with assistance from the U.S. Army Corps of Engineers.

Through the updating of this plan and continued efforts to promote hazard mitigation planning within the County, it is hoped that municipalities will consider joining the Community Rating System and will remain or become more involved in the Flood Insurance Program.

To reduce the impacts of technological and human-caused hazards (Goal 6), literature has been made available to the public at the County offices regarding fire prevention tips. Such information is also available to the public at all municipal fire departments. Another mitigation action that was completed was the construction of a fire training facility that has enhanced the training provided to volunteer firefighters regarding fire suppression and pre-event preparedness. As stated above, all municipalities have been actively promoting and enforcing building codes.

The Local Emergency Planning Committee (LEPC) has held preliminary discussions with the railroad concerning the transportation of hazardous materials within the County. These discussions need to be continued and expanded with the railroad operators. Coordination with a power company was also completed by the LEPC Committee, whose membership includes a representative of the Orange & Rockland Utility Company. During a committee meeting, the efforts of the power company to address recent power outages were discussed along with the pre-disaster work that the company was planning.

The efforts to reduce the impacts of tornados (Goal 4) were not as successful as the other Goals from the 2005 Plan. No information was distributed on building elements that can be incorporated to limit damage caused by tornados or high wind events. This is included in the Hazard Mitigation Plan Update as a proposed mitigation action to be implemented by the County Emergency Management Office and the Division of Planning.

## **8.0 Plan Maintenance Procedures**

The Plan Maintenance section of Sullivan County's HMP update has been drastically revised from the 2005 HMP version. This section details the future maintenance process that will be followed for subsequent plan updates and future changes in FEMA's floodplain mapping. A checklist to monitor, evaluate, and update this Hazard Mitigation Plan is included in Appendix L.

### **8.1 Monitoring**

The 2010 Sullivan County Hazard Mitigation Plan will be monitored on an annual basis to ensure that the goals of the Plan remain relevant and that the proposed mitigation actions are being implemented properly. The SCEMP/LEPC Committee will remain intact and, at a minimum, will hold a meeting at the end of each year to discuss the County's HMP. This annual meeting will be publicized and open to the public to provide for continued public participation in this process. Each committee member will be responsible for reporting on the implementation of projects or activities executed by their respective agencies during this annual committee meeting. The Sullivan County Department of Planning and Environmental Management will be responsible for carrying out these actions and for compiling information provided by committee members to prepare a summary annual report. This report will include details regarding required changes to the HMP and how and when these changes will be made (i.e., by addendum or during the subsequent 5-year plan update). The schedule and tasks associated with the monitoring of the Sullivan County HMP are documented in Appendix L. The annual reports put together by the Sullivan County DPEM will be posted to the County's website for public review.

## **8.2 Evaluating**

During each annual meeting of the SCEMP/LEPC Committee, the 2010 Sullivan County HMP will be evaluated. The monitoring reports provided by each committee member at these meetings will aid in the proper evaluation of the Plan and its components. Such an evaluation will assess:

- whether the goals and objectives address current and expected conditions;
- whether the nature, magnitude, and/or type of risks have changed;
- whether the current resources are appropriate for implementing the plan;
- whether there are implementation problems or coordination issues with other agencies;
- whether the outcomes, thus far, have occurred as expected; and
- whether agencies and other partners participated as originally proposed.

These assessment criteria will be discussed by the SCEMP/LEPC Committee. The Sullivan County DPEM will be tasked with executing the plan evaluation and including the evaluation results in a summary annual report. The schedule and tasks associated with the evaluation of this document are included in Appendix L. The annual reports put together by the Sullivan County DPEM will be posted to the County's website for public review.

### 8.3 Updating

The Sullivan County Multi-Jurisdictional Hazard Mitigation Plan will be updated by addendum at any time a significant re-zoning of the County, a Town or a Village takes place, a change in the budget occurs, or another significant change is identified to warrant such an action. In the event of a hazard event, the goals, actions, and procedures outlined in the plan will be reviewed. If any revisions or changes are warranted, the plan will be updated immediately, or at the next five-year plan update, depending upon the importance of the proposed revision or change. Notes regarding completion of mitigation actions and the occurrence of hazard events, including damage estimates and cleanup costs spent, will be recorded throughout each five-year period in order to provide documentation on which to base updates to the plan.

During the updating process, the Towns and Villages will be contacted to provide updated information concerning the elements of the plan. This will be done through the issuance of a questionnaire to be completed and returned to the County's SCEMP/LEPC committee. The committee will utilize the information provided on the questionnaire to update the sections of the Plan.

Approximately 18 months prior to the end of the current five-year period, the Plan update process will be initiated. A meeting will be held around the 3½ year mark, on a date to be determined by the SCEMP/LEPC Committee. Any addendums will be directly incorporated into the body of the Plan at that time. Currently, this document reflects the first update to Sullivan County's original HMP, reviewed and approved by SEMO and FEMA in 2005. This Plan Update will also be submitted to SEMO and FEMA for re-approval.

Upon the completion of a draft of the updated All Hazard/Pre-Disaster Mitigation Plan, each Town and Village will be given a copy of the plan for review and comment.

Comments will be incorporated after which the draft will be made available to the public on the County web site ([www.co.sullivan.ny.us/Departments/PlanningandEnvironmentalManagement/tabid/3225/default.aspx](http://www.co.sullivan.ny.us/Departments/PlanningandEnvironmentalManagement/tabid/3225/default.aspx)) and at the government offices of the County, Town, and Villages. A public meeting to obtain public comment on the revised plan will be held. Following all reviews, each Town or Village will submit an Adoption Resolution stating their approval of the newly revised Plan. The new adoption resolutions will supersede and replace the old resolutions and will be attached to the Updated Plan in Appendix A. Currently, the 2005 HMP resolutions indicating plan adoption by the participating jurisdictions are included in Appendix A. A user friendly checklist was formulated to aid Sullivan County in completing future five-year Updates to the County's Multi-Jurisdictional Hazard Mitigation Plan. A copy of this checklist is provided in Appendix L. This document will help the County organize and complete revisions to future Plan Updates and will assist the County to adequately meet the five-year review timeframes instituted by FEMA.

#### **8.4 Local Planning Mechanisms**

By adopting a resolution to accept the Multi-Jurisdictional Hazard Mitigation Plan, each municipality will agree to reference and/or incorporate the HMP into the future local planning documents, codes, decisions, and regulations of their jurisdiction. Elements of the Plan will be considered during municipal and County-wide development and comprehensive planning. The approved hazard mitigation plan also serves as an important resource for developing and/or

updating emergency operations plans and procedures throughout Sullivan County. Local planning mechanisms available for each participating jurisdiction are included in Table 38.

<b>Table 38 – Local Planning Mechanisms</b> (Sullivan County DPEM)		
<b>Jurisdiction</b>	<b>Comprehensive/Master Plan Last Update</b>	<b>Zoning Code Last Update</b>
Town of Bethel	2006	2009
Town of Bloomingburg	2005 (planning policy document)	2005
Town of Callicoon	1980, currently being updated	2004
Town of Cochecton	1998	2004
Town of Delaware	2007	2006
Town of Fallsburg	2006	2007
Town of Forestburgh	2007	1976, currently being updated
Town of Fremont	2007	2002
Town of Highland	2002, currently being updated	1999
Village of Jeffersonville	1997	1998
Town of Liberty	2008 (joint plan with (V) Liberty)	1987, currently being updated
Village of Liberty	2008 (joint plan with (T) Liberty)	2008
Town of Lumberland	2008	2000, currently being updated
Town of Mamakating	2001	2001
Village of Monticello	1999 (joint plan with (T) Thompson)	1976
Town of Neversink	1991, currently being updated	1992
Town of Rockland	Unknown	Unknown
Town of Thompson	1999 (joint plan with (V) Monticello)	2003
Town of Tusten	2007	1998
Village of Woodridge	1961	2003
Village of Wurtsboro	Unknown	1988
<b>Other Relevant Municipal Protections:</b>		
<b>Jurisdiction</b>	<b>Law/Regulation</b>	<b>Date of Last Update</b>
Town of Callicoon	Flood Damage Prevention Law	Unknown
Town of Delaware	Flood Damage Prevention Law	1998
Town of Delaware	Road Law	2003
Town of Delaware	Sewer Use Regulations	1982
Town of Delaware	Waterfront Consistency Review Law	1999
Town of Thompson	Flood Damage Prevention Law	2010
Town of Tusten	Fire Prevention and Building Code Enforcement Law	2006
Town of Tusten	Flood Damage Prevention Law	2002

<b>Table 38 – Local Planning Mechanisms</b> (Sullivan County DPEM)		
<b>Jurisdiction</b>	<b>Comprehensive/Master Plan Last Update</b>	<b>Zoning Code Last Update</b>
Town of Tusten	Road Construction Law	1998
Town of Tusten	Subdivision Law	1998
Town of Tusten	Water Use Law	1998
Town of Tusten	Wellhead Protection Law	2001
Town of Tusten	Wetland Protection Law	1976

This table will be updated as additional mechanisms or capabilities are added by the participating jurisdictions. Table 39 displays how this Hazard Mitigation Plan Update will be incorporated into the existing and future planning mechanisms and opportunities for each participating jurisdiction.

<b>Table 39 – Planning Mechanism Incorporation</b>	
<b>Mechanism</b>	<b>How Plan Will be Incorporated</b>
Emergency Planning	<ul style="list-style-type: none"> <li>Plan will be added/referenced as an Appendix to the County's Emergency Response/Evacuation Plan.</li> <li>Hazard risk assessment and vulnerability data included in the mitigation plan will be reviewed during emergency planning and Emergency Response/Evacuation Plan updates.</li> </ul>
Annual Budget	<ul style="list-style-type: none"> <li>Mitigation actions will be considered when setting the annual budgets within participating jurisdictions.</li> </ul>
Plans and Programs	<ul style="list-style-type: none"> <li>Hazard Mitigation Plan information will be considered by each participating jurisdiction during program and protection updates and revisions.</li> <li>Programs and plans will be compared to the Hazard Mitigation Plan to ensure that goals and objectives are consistent among all documents.</li> </ul>
Grant Applications and other Funding Opportunities	<ul style="list-style-type: none"> <li>Data and maps from the HMP will be used as supporting documentation in grant applications.</li> <li>Mitigation actions included in the Plan will be heavily considered during application submission and fund allocation.</li> </ul>
Economic Development	<ul style="list-style-type: none"> <li>Hazard vulnerability information will be reviewed and utilized during the siting of local development efforts within participating jurisdictions.</li> </ul>

<b>Table 39 – Planning Mechanism Incorporation</b>	
<b>Mechanism</b>	<b>How Plan Will be Incorporated</b>
Capital Improvement Planning	<ul style="list-style-type: none"> <li>• Current and future projects will be reviewed for hazard vulnerability. Hazard resistant construction standards will be incorporated into the design and location of potential projects, as appropriate.</li> </ul>

In addition, specific regulatory elements or planning documents that are suggested for implementation by particular jurisdictions within Sullivan County include:

- Flood Damage Prevention Law
  - Towns of Bethel, Bloomingburg, Cochection, Fallsburg, Forestburgh, Fremont, Highland, Liberty, Lumberland, Mamakating, Neversink, Rockland
  - Villages of Jeffersonville, Liberty, Monticello, Woodridge, Wurtsboro
- Comprehensive Plan Update
  - Towns of Cochection, Mamakating, Thompson
  - Villages of Jeffersonville, Monticello, Woodridge
- Zoning Code Update
  - Towns of Liberty, Highland, Mamakating, Neversink, Tusten
  - Villages of Jeffersonville, Moniticello, Wurtsboro

During subsequent updates and execution of codes, regulations, site reviews, training efforts, and permitting guidelines within the participating jurisdictions, the mitigation actions, HMP goals, and risk assessment information included as part of the hazard mitigation process for Sullivan County will be

considered and used as a tool and resource to aid in these future planning efforts.

There currently is no information available to illustrate how any of the participating jurisdictions integrated the original (2005) HMP into their planning mechanisms and update processes. **During the last 5-year Plan period, the management and responsibility of the Hazard Mitigation Plan transitioned from the Department of Public Works to the Division of Planning and Environmental Management. This transition hindered the comprehensive documentation of plan implementation and tracking of mitigation action statuses.** Numerous changes and additions were made to this document as part of the 5-year HMP Update process. These updates have made the County's Plan more usable and valuable as a planning tool. Going forward, the incorporation of this document in local planning efforts will be noted. The ways in which the mitigation plan is integrated into these local planning mechanisms will be summarized during each annual SCEMP/LEPC committee meeting and will be documented in subsequent 5-year HMP Updates.

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**Appendix A**  
*(NO CHANGES)*

**Example Resolution to Approve Plan Updates,  
Resolutions Approving 2005 Sullivan County Hazard Mitigation Plan,  
and  
2010 Sullivan County Hazard Mitigation Plan Update  
(when available)**

**Appendix B**  
*(NO CHANGES)*

**Sullivan County HIRA-NY 2010 Risk Assessment**

**Appendix C**  
*(NO CHANGES)*

**Critical Facilities Tables for Participating Jurisdictions**

**Appendix D**  
*(NO CHANGES)*

**2010 Revised Plan Update Meeting Agendas and  
Meeting Minutes**

**Appendix E**  
*(NO CHANGES)*

**Blank Sullivan County Hazard Mitigation Questionnaire  
and Tabulated Results of Completed Questionnaires**

**Appendix F**  
*(NO CHANGES)*

**Articles and Announcements Detailing Release of  
Draft HMP Update for Public Comment**

**Appendix G**  
*(NO CHANGES)*

**Comments Received by Local, State, and Federal Stakeholders**

**Appendix H**  
*(NO CHANGES)*

**NYSDEC 2009 Spill Database Records for Sullivan County**

**Appendix I**  
*(NO CHANGES)*

**Asset Identification and Hazard Impacts**  
**(Included in 2005 Plan as Tables D-1 and D-4)**

**Appendix J**  
*(NO CHANGES)*

**Completed Projects and Proposed Upcoming  
County Mitigation Projects (2010)  
(Included in 2005 Plan as Table D-3)**

**Appendix K**  
*(NO CHANGES)*

**Mitigation Action Prioritization and Comparison Worksheets**

**Appendix L**  
*(NO CHANGES)*

**Sullivan County Hazard Mitigation Plan  
Monitoring, Evaluation, & Update Checklist**

**Appendix M**  
*(NO CHANGES)*

**2005 & 2010 Sullivan County Hazard Mitigation Plan Comparison**

(Name of Jurisdiction) \_\_\_\_\_

**RESOLUTION**  
**TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE MULTI-  
JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE FOR SULLIVAN COUNTY,  
NEW YORK**

WHEREAS, the Sullivan County Department of Planning and Environmental Management, with the assistance from Barton & Loguidice, P.C., has gathered information and prepared the Multi-Jurisdictional Hazard Mitigation Plan Update for Sullivan County, New York; and

WHEREAS, the Multi-Jurisdictional Hazard Mitigation Plan Update for Sullivan County, New York has been prepared in accordance with the Disaster Mitigation Act of 2000 and Title 44 Code of Federal Regulations (CFR), Part 201; and

WHEREAS, Title 44 CFR, Chapter 1, Part 201.6(c)(5) requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan or Plan Update to accept and adopt such plan; and

WHEREAS, the Town/Village of \_\_\_\_\_, has reviewed the 2010 Hazard Mitigation Plan Update, has found the document to be acceptable, and as a local unit of government, has afforded its citizens an opportunity to comment and provide input regarding the Plan Update and the actions in the Plan;

WHEREAS, the Town/Village of \_\_\_\_\_, will consider the Sullivan County HMP during the implementation and updating of local planning mechanisms, and will incorporate the hazard assessment data, hazard vulnerabilities, and mitigation actions in these mechanisms, where applicable;

NOW THEREFORE, BE IT RESOLVED, that the Town/Village of \_\_\_\_\_, as a participating jurisdiction, adopts the Multi-Jurisdictional Hazard Mitigation Plan Update for Sullivan County, New York, dated January 2011.

This resolution was thereupon declared duly adopted on \_\_\_\_\_.

\_\_\_\_\_  
(Mayor/Supervisor)

\_\_\_\_\_  
(Clerk)

2005 Resolutions by Participating Jurisdictions  
to Adopt the Multi-Jurisdictional, All-Hazard, Pre-disaster  
Mitigation Plan for Sullivan County

11-04 P

**RESOLUTION NO. 105-04 INTRODUCED BY THE PUBLIC WORKS COMMITTEE TO AUTHORIZE LEGISLATIVE APPROVAL AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS**

**WHEREAS**, the Sullivan County Legislature by Resolution 145-03 authorized the County Manager to enter into an agreement with the New York State Emergency Management Office to provide funding for the preparation of the Plan; and

**WHEREAS**, the Division of Public Works has completed the Plan; and

**WHEREAS**, Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan;

**NOW, THEREFORE, BE IT RESOLVED**, that the Sullivan County Legislature, hereby accepts and adopts the "Sullivan County, County, Town And Village, Multi-Jurisdictional, All- Hazard, Pre- Disaster Mitigation Plan".

**Moved by Mrs. LaBuda, seconded by Mr. Rouis, put to a vote, carried and declared duly adopted on motion February 19, 2004.**

STATE OF NEW YORK)

§:

COUNTY OF SULLIVAN)

I, DENIESE A. HARTING, Deputy Clerk to the Legislature of the County of Sullivan, do hereby certify that I have compared the foregoing copy of a resolution with the original thereof now on file in my office and that the same is a correct transcript therefrom and of the whole of said original.

WITNESS my hand and seal of said Legislature this 19th day of February 2004.

*Deniese A. Harting*  
DEPUTY CLERK TO THE SULLIVAN COUNTY LEGISLATURE

MAR 03 2004

Rita J. Sheehan  
Town Clerk

*Town of Bethel*  
3454 Route 55, P.O. Box 300  
White Lake, New York 12786-0300  
www.town.bethel.ny.us  
(845) 583-4350 Fax: (845) 583-4710

Dina M. Sturm  
Deputy Clerk

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS**

**WHEREAS**, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

**WHEREAS**, the Town of Bethel has reviewed the plan and has found it to be acceptable;

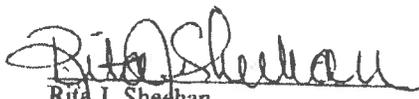
**NOW, THEREFORE, BE IT RESOLVED**, that the Town of Bethel hereby accepts and adopts the Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan.

Moved by Harold Russell, to adopt resolution seconded by Victoria Simpson, put to a vote and carried 4-0.

State of New York  
County of Sullivan County  
Office of the Clerk of the  
Town of Bethel

This is to certify that I, Rita J. Sheehan, Town Clerk of the Town of Bethel in the said County of Sullivan, have compared the foregoing resolution with the original now on file in this office, and that the same is a correct and true transcript of such original and the whole thereof.

*In Witness Whereof*, I have hereunto set my hand and affixed the seal of said Town this 13<sup>th</sup> day of February 2004.

  
Rita J. Sheehan  
Town Clerk of the Town of Bethel  
Sullivan County, New York

FEB 17 2004

**RESOLUTION VILLAGE OF BLOOMINGBURG**

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL-HAZARD, PREDISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS.**

WHEREAS, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

WHEREAS, the Village of Bloomingburg of has reviewed the plan and has found it to be acceptable;

NOW, THEREFORE, BE IT RESOLVED, that the Village of Bloomingburg hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

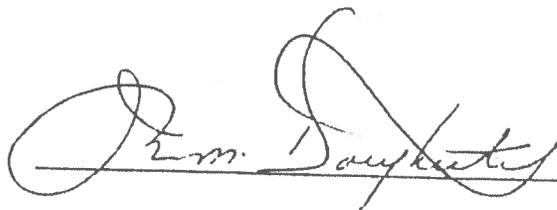
Moved by: R. SCOTT

Seconded by: C. FEICH

And adopted on motion: 2/5/04, 2004

The Resolution was thereupon declared duly adopted.

Dated: 2/5/04



Jean M. Dougherty, Village Clerk

JAN 30 2004

RESOLUTION BY THE TOWN OF CALLICOON - ADOPTED DECEMBER 8, 2003

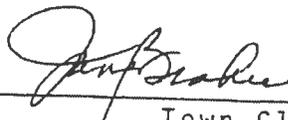
RESOLUTION #23-2003 - ON A MOTION BY COUNCILMAN BOSE, SECONDED BY COUNCILMAN SCHADT TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS.

WHEREAS, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

WHEREAS, the Town of Callicoon has reviewed the plan and has found it to be acceptable;

NOW, THEREFORE, BE IT RESOLVED, that the Town of Callicoon hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

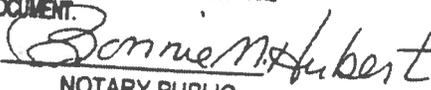
I certify that the attached is a true copy as filed in the Town of Callicoon.

  
Town Clerk

STATE OF NEW YORK SS:  
COUNTY OF SULLIVAN  
ON THIS 28<sup>th</sup> DAY OF JAN, 2004 BEFORE ME PERSONALLY CAME

JANET BRAHM

TO ME PERSONALLY KNOWN TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING DOCUMENT.

  
NOTARY PUBLIC

BONNIE M. HUBERT  
Notary Public, State of New York  
Sullivan County Clerk's #2322  
Commission Expires July 25, 2006

**RESOLUTION BY THE TOWN OF COCHECTON**

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY; COUNTY, TOWN AND VILLAGE , MULTI-JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS.**

WHEREAS, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation plan accept and adopt such plan, and

WHEREAS, the Town of Cochection has reviewed the plan and has found it to be acceptable;

NOW THEREFORE, BE IT RESOLVED, that the Town of Cochection hereby accepts and adopts the "Sullivan County; County, Town, and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan."

Moved by: Councilperson Richardson,

Seconded by: Councilperson Maas,

and adopted by a vote of:	Supervisor Salvatore Indelicato	<u>Aye</u>
	Councilperson Larry Richardson	<u>Aye</u>
	Councilperson Daisy Smith	<u>Aye</u>
	Councilperson Crystal Lauter	<u>Aye</u>
	Councilperson Gary Maas	<u>Aye</u>

I Hollye Schulman  
Hollye Schulman

Town Clerk certify this is a true and accurate resolution as passed by the Town Board of the Town of Cochection on February 11, 2004 at the regular Town Board Meeting.

FEB 17 2004



RESOLUTION BY THE TOWN OF FALLSBURG  
INSERT TOWN OR VILLAGE INSERT NAME OF TOWN OR VILLAGE

RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL- HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS

WHEREAS, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

WHEREAS, the (insert Town or Village) of (Insert name of Town or Village) has reviewed the plan and has found it to be acceptable;

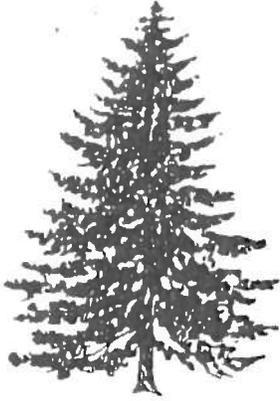
NOW, THEREFORE, BE IT RESOLVED, that the (insert Town or Village) of (Insert name of Town or Village) hereby accepts and adopts the "Sullivan County, County, Town And Village, Multi-Jurisdictional, All- Hazard, Pre- Disaster Mitigation Plan".

Moved by Councilman Saletsky,  
Seconded by Councilman Perrello,  
and adopted on motion February 10,, 2004.

I, the Town Clerk, Tax Collector, Registrar and RMO of the Town of Fallsburg, Sullivan County, New York, do hereby certify that I have compared this copy with the original Resolution record on file in this office and find that it is a true transcript and copy and whole of said original thereof.

Dated this 19<sup>th</sup> day of February, 2004

  
Town Clerk, Tax Collector,  
Registrar & RMO



TOWN OF FORESTBURGH  
P.O. Box 114  
Forestburgh, New York 12777

Tel. (845) 794-0611  
Fax (845) 794-067E

**RESOLUTION BY THE TOWN BOARD OF THE TOWN OF FORESTBURGH**

**RESOLUTION TO AUTHORIZER THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS**

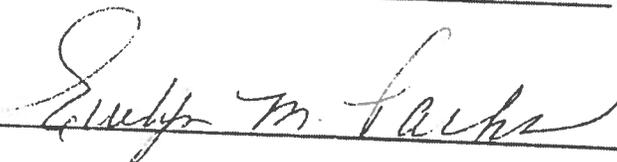
**WHEREAS**, the title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

**WHEREAS**, the Town Board of the Town of Forestburgh has reviewed the plan and has found it to be acceptable;

**NOW, THEREFORE, BE IT RESOLVED**, that the Town Board of the Town of Forestburgh hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan."

MOVED BY: Councilman Galligan Seconded by: Councilwoman Mack  
And adopted on Motion 3/4/04

I, EVELYN M. PARKS, Town Clerk of the Town of Forestburgh, County of Sullivan, New York, do hereby certify that the foregoing is a true copy of a Resolution adopted by the Town Board of the Town of Forestburgh, Sullivan County, NY. on the 4th day of March, 2004.

  
\_\_\_\_\_

TOWN CLERK - TOWN OF FORESTBURGH

RESOLUTION BY THE Town OF Fremont  
INSERT TOWN OR VILLAGE INSERT NAME OF TOWN OR VILLAGE

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL- HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS**

WHEREAS, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

WHEREAS, the (insert Town or Village) of (Insert name of Town or Village) has reviewed the plan and has found it to be acceptable;

NOW, THEREFORE, BE IT RESOLVED, that the (insert Town or Village) of (Insert name of Town or Village) hereby accepts and adopts the "Sullivan County, County, Town And Village, Multi-Jurisdictional, All- Hazard, Pre- Disaster Mitigation Plan".

Moved by C. Ronald Rhodes,  
Seconded by C. John Niflot,  
and adopted on motion February 11, \_\_\_\_\_, 2004.



FEB 17 2004

**RESOLUTION BY THE TOWN OF HIGHLAND**

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE  
"SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL,  
ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY  
THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS**

**WHEREAS**, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

**WHEREAS**, the Town of Highland has reviewed the plan and has found it to be acceptable;

**NOW, THEREFORE, BE IT RESOLVED**, that the Town of Highland hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

Moved by Alan Schadt, SUPERVISOR,  
Seconded by Robert Burlew, COUNCILMAN,  
and adopted on motion FEBRUARY 8, 2005

I, Doreen Hanson, Clerk to the Town of Highland, do hereby certify that I have compared the foregoing copy of a resolution with the original thereof now on file in my office and that the same is a correct transcript therefrom and of the whole said original.

WITNESS my hand and seal of the Town of Highland this 8 day of  
FEBRUARY, 2005.

Doreen Hanson  
Clerk to the Town of Highland

Resolution No. \_\_\_\_\_

**RESOLUTION BY THE VILLAGE OF JEFFERSONVILLE**

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS**

WHEREAS, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

WHEREAS, the Village of Jeffersonville has reviewed the plan and has found it to be acceptable;

NOW, THEREFORE, BE IT RESOLVED, that the Village of Jeffersonville hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

Moved by TRUSTEE PEGGY JOHANSEN,  
Seconded by TRUSTEE PETER CIACCIO,  
and adopted on motion FEBRUARY 9, 2005

I, Louise A. Gorr, Clerk to the Village of Jeffersonville, do hereby certify that I have compared the foregoing copy of a resolution with the original thereof now on file in my office and that the same is a correct transcript therefrom and of the whole said original.

WITNESS my hand and seal of the Village of Jeffersonville this 10<sup>th</sup> day of FEBRUARY, 2005.

Louise A. Gorr  
Clerk to the Village of Jeffersonville

**RESOLUTION BY THE TOWN OF LIBERTY.**

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VAILLAGE, MULTI-JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATIN PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS**

**WHEREAS**, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6( c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

**WHEREAS**, the Town of Liberty has reviewed the plan and has found it to be acceptable;

**NOW, THEREORE, BE IT RESOLVED**, that the Town of Liberty her :by accepts and adopts the "Sullivan County, County, Town And Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

Moved by Councilperson Thomas Hasbrouck,  
Seconded by Councilperson Lynn Killian,  
And adopted on motion February 9, \_\_\_\_\_, 2004.

State of New York, County of Sullivan }  
Town Clerk's Office of the Town of Liberty } ss.

I, Janet LeRoy-----, TOWN CLERK OF THE TOWN OF LIBERTY,

SULLIVAN COUNTY, N.Y., do hereby certify that I have compared the annexed copy of a resolution authorizing the acceptance and adoption of the "Sullivan County, County Town and Village, Multijuris-  
ditional, All-Hazard, Pre-Disaster Mitigation Plan"; ~~which was prepared by the Sullivan Co.~~  
with the one remaining on record in this office, and that the same is a correct transcript and copy thereof, and of the whole DP  
of said original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of the Town of Liberty, this 10<sup>th</sup>  
day of February----- A.D., 2004

Janet LeRoy  
Town Clerk of the Town of Liberty, Sullivan County, N.Y.

Judy H Zurawski VILLAGE CLERK OF THE VILLAGE OF LIBERTY, SULLIVAN

COUNTY, NEW YORK do hereby certify, that I have compared the annexed copy of Resol #  
12-2004 - Adoption of SC All-Hazard/Pre-Disaster Mitigation  
Plan  
with the one remaining on record in this office, and that the same is a correct transcript and copy thereof,  
and of the whole of said original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of the Village of Liberty  
this 19th day of February, A.D., 192009  
Notary Public, State of New York  
No. 4714349  
Qualified in Sullivan County 2006 Judy H Zurawski  
Commission Expires March 30, 2006 Village Clerk of the Village of Liberty, Sullivan Co., NY

**HAZARD/PRE-DIASTER PLAN RESOLUTION**

**RESOL. #** Motion by Trustee Stoddard, seconded by Trustee Gozza and  
**12-2004:** unanimously carried approving Resolution #12-2004

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS.**

**WHEREAS**, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6©(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

**WHEREAS**, the Village of Liberty has reviewed the plan and has found it to be acceptable;

**NOW, THEREFORE, BE IT RESOLVED** that the Village of Liberty hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

Mayor Smith stated that by adopting this resolution it would put the Village on the front line for FEMA funds

**CONSIDER JOINT WORKSESSION WITH TOWN OF LIBERTY**

~~Town Supervisor Frank Demay said he would like to hold this meeting to work together and come up with different ideas that would be beneficial to the Town and the Village~~

~~Mayor Smith suggested that the Boards might be able to get more accomplished by having their subcommittees (two from each Board) meet~~

Resolution #62, 2005

**RESOLUTION BY THE TOWN OF LUMBERLAND**

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS.**

**WHEREAS:** the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 210.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

**WHEREAS:** the Town of Lumberland has reviewed the plan and has found it to be acceptable; and

**WHEREAS:** the Town of Lumberland Comprehensive Emergency Plan is still the lead Emergency Plan in the Town of Lumberland.

**NOW, THEREFORE, BE IT RESOLVED:** that the Town of Lumberland hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

\*A motion to waiver the 5 day rule was presented by Supervisor LiGreci, seconded by Councilman Wilson, all in favor, so carried.

Moved by Supervisor John LiGreci

Seconded by Councilman Faber Wilson

Vote 3 - 0, Councilwomen Jenny Mellan and Nadia Rajsz were Absent

And adopted on motion May 9, 2005

I, Virginia V. Horn, Clerk to the Town of Lumberland, do hereby certify that I have compared the foregoing copy of a resolution with the original thereof now on file in my office and that the same is a correct transcript therefrom and of the whole said original.

WITNESS my hand and seal of the Town of Lumberland this 10<sup>th</sup> day of May, 2005.

  
Clerk to the Town of Lumberland

**RESOLUTION TOWN OF MAMAKATING**

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL-HAZARD, PREDISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS.**

WHEREAS, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

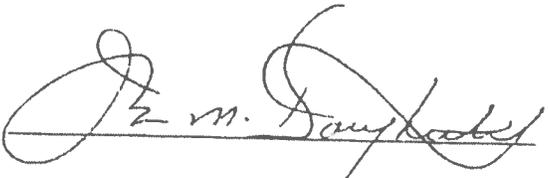
WHEREAS, the Town of Mamakating has reviewed the plan and has found it to be acceptable;

NOW, THEREFORE, BE IT RESOLVED, that the Town of Mamakating hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

Moved by: R. Saunders  
Seconded by: J. Moriarty  
And adopted on motion: March 2, 2004

The Resolution was thereupon declared duly adopted.

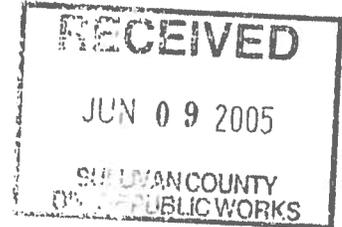
Dated: 3/2/04

  
Jean M. Dougherty, Town Clerk

# VILLAGE OF MONTICELLO

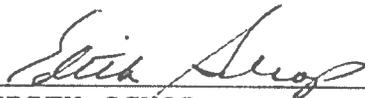


STATE OF NEW YORK        }  
COUNTY OF SULLIVAN     }  
VILLAGE OF MONTICELLO  }



I, Edith Schop, Village Clerk of the Village of Monticello, Sullivan County, New York, do hereby certify that the attached is a correct, true and full copy of a Resolution duly adopted by the Village Board of Trustees of the Village of Monticello, Sullivan County, New York on the 6<sup>th</sup> day of June, 2005, and is the whole thereof,

IN WITNESS WHEREOF, I have hereto set my hand and affixed the seal of said Village of Monticello this 7<sup>th</sup> Day of June, 2005.

  
\_\_\_\_\_  
EDITH SCHOP  
VILLAGE CLERK

S  
E  
A  
L

2 PLEASANT ST.  
MONTICELLO, N.Y. 12701  
(845) 794-6130  
FAX (845) 794-2327  
WWW.VILLAGEOFMONTICELLO.COM

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF  
THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE MULTI-  
JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATION PLAN,"  
WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF  
PUBLIC WORKS**

**WHEREAS**, the Title 44 Code of Federal Regulations (CFR), Chapter I FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

**WHEREAS**, the Village of Monticello has reviewed the plan and has found it to be acceptable;

**NOW, THEREFORE, BE IT RESOLVED**, that the Village of Monticello hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan."

A motion was made by Trustee Marinello, seconded by Trustee VanDermark, unanimously approved on a roll call vote to adopt the above resolution.

TOWN OF NEVERSINK TOWN BOARD  
RESOLUTION 2 OF 2004

RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE  
"SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-  
JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH  
WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS

WHEREAS, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participation in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan: and

WHEREAS, the Town of Neversink has reviewed the plan and has found it to be acceptable;

NOW, THEREFORE, BE IT RESOLVED, that the Town of Neversink hereby accepts and adopts the "Sullivan County, County, Town And Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

Moved by Richard I. Coombe Jr.,  
Seconded by Bryan Delaney,  
and adopted on motion February 11, 2004

I certify that I have compared the preceding resolution with the original on file in this office and that the same is a correct transcript therefrom of the whole such original resolution, and was adopted on the 11<sup>th</sup> of February, 2004.

*Lisa M. Garigliano*

Lisa M. Garigliano, Town Clerk

Dated: February 12, 2004

SUSAN KITSON  
Notary Public, State of New York  
Sullivan County Clerk's #2647  
Commission Expires Jan. 5, 2008

*Susan Kitson*  
February 12, 2004

RESOLUTION BY THE TOWN OF ROCKLAND  
~~INSERT TOWN OR VILLAGE~~ ~~INSERT NAME OF TOWN OR VILLAGE~~

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL- HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS**

WHEREAS, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

WHEREAS, the (insert Town or Village) of (Insert name of Town or Village) has reviewed the plan and has found it to be acceptable;

NOW, THEREFORE, BE IT RESOLVED, that the (insert Town or Village) of (Insert name of Town or Village) hereby accepts and adopts the "Sullivan County, County, Town And Village, Multi-Jurisdictional, All- Hazard, Pre- Disaster Mitigation Plan".

Moved by COUNCILMAN CASEY  
Seconded by COUNCILMAN OWEN  
and adopted on motion FEB. 5, 2004.

THIS IS TO CERTIFY THAT THIS IS A  
TRUE COPY OF A RECORD ON FILE IN  
THE OFFICE OF THE TOWN CLERK.

SIGNED Judy A. Newman  
TOWN CLERK, TOWN OF ROCKLAND  
COUNTY OF SULLIVAN, STATE OF N.Y.

DATE 2/6/04

STATE OF NEW YORK  
COUNTY OF SULLIVAN SS:

ON THIS 6<sup>TH</sup> DAY OF FEB, 2004 BEFORE ME PERSONALLY CAME

JUDY A. NEWMAN  
TO ME PERSONALLY KNOWN TO BE THE PERSON DESCRIBED IN AND  
WHO EXECUTED THE FOREGOING DOCUMENT.

Rose Mary Hankins  
NOTARY PUBLIC

ROSE MARY HANKINS  
Notary Public, State of New York  
Sullivan County Clerk's #2618  
Commission Expires June 23, 2007

SULLIVAN COUNTY ALL HAZARD/PRE-DISASTER MITIGATION PLAN FEB 1 1 2004  
The Following Resolution Was Duly Adopted: Res. No. 92 of the Year 2004.

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE "SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL, ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS**

**WHEREAS**, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

**WHEREAS**, the Town of Thompson has reviewed the plan and has found it to be acceptable;

**NOW, THEREFORE, BE IT RESOLVED**, that the Town of Thompson hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

Moved by: Councilman William J. Rieber, Jr.  
Seconded by: Councilman Peter T. Briggs  
And adopted on motion February 03, 2004.

STATE OF NEW YORK  
SULLIVAN COUNTY  
Office of the Clerk of the  
TOWN OF THOMPSON

ss.

(SEAL)

TOWN CLERK CERTIFICATE NO. 439

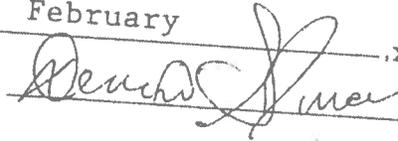
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WILLIAMSON LAW BOOK CO., VICTOR, N. Y. 145

This is to certify that I, Donald S. Price, Town Clerk of the  
Town of Thompson in the said County of Sullivan

have compared the foregoing copy of Res. No. 92 of 2004 from  
Town of Thompson Town Board Minutes of 02/03/2004  
**RE: Hazard/Pre-disaster mitigation plan.**  
with the original now on file in this office, and that the same is a correct and true  
transcript of such original and the whole thereof.

In Witness Whereof, I have hereunto set my hand and affixed the seal of said

Town this 9th day of February, ~~19~~ 2004



Town Clerk of the Town of Thompson Sullivan  
County, New York

Office of the Town Clerk  
Town of Tusten  
P.O. Box 195  
Narrowsburg, NY 12764  
(845)252-7146 xt. 11  
[townclerk@tusten-narrowsburg.org](mailto:townclerk@tusten-narrowsburg.org)

MAR 28 200

**RESOLUTION #50-04**

**ADOPT SULLIVAN COUNTY HAZARD MITIGATION PLAN**

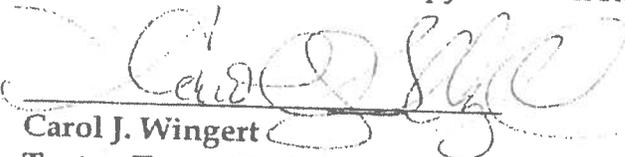
On motion of Councilman Knapp, seconded by Councilwoman Falk, the following resolution was

**ADOPTED - AYES 4 NAYS 0**

**WHEREAS**, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and **WHEREAS**, the Town of Tusten has reviewed the plan and has found it to be acceptable;

**NOW, THEREFORE, BE IT RESOLVED**, that the Town of Tusten hereby accepts and adopt the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

This is a true and correct copy of Town Resolution No. 50-04.

  
Carol J. Wingert  
Tusten Town Clerk

**RESOLUTION BY THE VILLAGE OF WOODRIDGE**

**RESOLUTION TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE  
"SULLIVAN COUNTY, COUNTY, TOWN AND VILLAGE, MULTI-JURISDICTIONAL,  
ALL-HAZARD, PRE-DISASTER MITIGATION PLAN", WHICH WAS PREPARED BY  
THE SULLIVAN COUNTY DIVISION OF PUBLIC WORKS**

WHEREAS, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

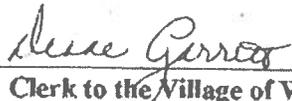
WHEREAS, the Village of Woodridge has reviewed the plan and has found it to be acceptable;

NOW, THEREFORE, BE IT RESOLVED, that the Village of Woodridge hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

Moved by Trustee Andrea Roberts,  
Seconded by Trustee Arlene Messina,  
and adopted on motion May 2, 2005

I, Diane Garritt, Clerk to the Village of Woodridge, do hereby certify that I have compared the foregoing copy of a resolution with the original thereof now on file in my office and that the same is a correct transcript therefrom and of the whole said original.

WITNESS my hand and seal of the Village of Woodridge this 3rd day of  
May, 2005.

  
\_\_\_\_\_  
Clerk to the Village of Woodridge

**RESOLUTION BY THE VILLAGE BOARD OF THE VILLAGE OF  
WURTSBORO**

**Resolution to authorize the acceptance and adoption of the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan", which was prepared by the Sullivan County Division of Public Works.**

**WHEREAS**, the Title 44 Code of Federal Regulations (CFR), Chapter 1 FEMA, Part 201.6(c)(5), requires each local government participating in the preparation of a multi-jurisdictional Local Mitigation Plan to accept and adopt such plan; and

**WHEREAS**, the Village Board of the Village of Wurtsboro has reviewed the plan and has found it to be acceptable;

**NOW, THEREFORE, BE IT RESOLVED**, that the Village Board of the Village of Wurtsboro hereby accepts and adopts the "Sullivan County, County, Town and Village, Multi-Jurisdictional, All-Hazard, Pre-Disaster Mitigation Plan".

Moved by Michelina Maher

Seconded by Robert Whitehead

And adopted on motion February 9, 2004

2010/2011 Resolutions by Participating Jurisdictions  
to Adopt the Multi-Jurisdictional Hazard  
Mitigation Plan for Sullivan County, New York

**New York State Emergency Management Office – Region II  
Hazard Identification and Risk Assessment New York**

**Sullivan County, 2010**

**Background**

On March 9<sup>th</sup>, 2010, Sullivan County conducted a hazard analysis using the automated program, *HIRA-NY* (Hazard Identification and Risk Assessment New York) developed by the American Red Cross and the New York State Emergency Management Office (NYSEMO). This Hazard Analysis document is a key component in the process of creating a multi-hazard plan and will constitute a major section of your Multi-Hazard Mitigation Plan document; it forms the basis for our risk and vulnerability assessment. The results of this hazard analysis are presented in this report.

HIRA-NY evaluates five factors that are the cornerstones in the hazard analysis process. In considering these factors, it is also expected that the risk assessment components of the all-hazard mitigation planning process as outlined in 44 CFR Part 201, under which the hazard mitigation plan is being developed, will also be developed. The risk assessment process is required to identify all hazards that can impact a community and the profiling of the most prevalent hazards. Profiling hazard involves consideration of a) location, or geographic areas affected; b) extent or magnitude/severity; c) previous occurrences; and, d) probability of future occurrences. These five factors are:

1. Scope - This factor looks at two aspects: (1) What area or areas in your jurisdiction could be impacted by the hazard location and (2) What are the chances of the hazard triggering another hazard causing a cascade effect?
2. Onset - How much time is there between the initial recognition of an approaching hazard and when the hazard begins to impact the community? This is a very important factor because for some hazards (e.g., drought) ample warning time is available so that if plans and procedures have not been developed, there is still time to accomplish such. On the other hand, an earth quake could occur at any time without a warning and cause severe damage.
3. Impact - This factor involves the analysis of a hazard's impact extent to the community's infrastructure, private property, and people.
4. Duration (also an indicator of extent) - This factor is concerned with three durations: (1) How long does the hazard remain active? (2) How long do emergency operations continue after the hazard event? (3) How long does the recovery process take?
5. Frequency (past occurrences) - This factor indicates how often a hazard has resulted in an emergency or disaster; historical frequency can also be a prediction of how often a hazard will occur in the future (probability of future occurrences). Frequency is established by recording historical events and determining time intervals between each occurrence.

## ***HIRA-NY and Sullivan County***

*HIRA-NY* is an automated interactive spreadsheet that asks specific questions on potential hazards in a community and records and evaluates the responses to these questions. The selections made in *HIRA-NY* are based on information entered into preformatted Microsoft Excel worksheets recommended by FEMA and NYSEMO. *HIRA-NY* also includes historical and expert data on selected hazards. *HIRA-NY* is designed specifically for groups, rather than individual use. Sullivan County assembled a group of local officials to consider and discuss the questions and issues raised by the *HIRA-NY* program. Representatives from NYSEMO Region II facilitated the meeting and recorded the results.

### **The Results**

The Group analyzed all hazards potentially affecting Sullivan County. *HIRA-NY* rated each hazard based on the Group's assessment and assigned a numerical value.

These values are categorized as follows:

**321 to 400 HIGH HAZARD**  
**241 to 320 MODERATELY HIGH HAZARD**  
**161 to 240 MODERATELY LOW HAZARD**  
**44 to 160 LOW HAZARD**

The Group rated the 8 hazards as follows:

<b><i>Hazard</i></b>	<b><i>Rating</i></b>
<b><i>FLOOD</i></b>	317
<b><i>FIRE</i></b>	262
<b><i>SEVERE STORM</i></b>	255
<b><i>WINTER STORM (SEVERE)</i></b>	253
<b><i>EARTHQUAKE</i></b>	251
<b><i>ICE STORM</i></b>	234
<b><i>HURRICANE</i></b>	201
<b><i>TERRORISM</i></b>	180

**Note: To meet the hazard mitigation planning requirements include under the discussion section for each hazard the following:**

**- A description of the hazard that affects the jurisdiction. Profile those hazards that are considered prevalent and pose the greatest risk to the jurisdiction. It is not necessary to profile less prevalent hazards; however, the risk assessment process should indicate why these hazards are not being profiled. As indicated above, the**

prevalent hazards must be profiled, which means they should be discussed under the following headings:

- The location(s) must be identified (geographic area affected) of each natural hazard addressed in the plan
- A detailed description of previous occurrences of each hazard addressed; that is, the specific dates of occurrences must be identified.
- The extent (magnitude or severity) of each hazard must be addressed by dates of occurrence.
- Must include the probability of future events (chance of occurrences) for each hazard addressed.
- Must include an overall summary description of the jurisdiction's vulnerability to each hazard.
- Must address the impact of each hazard on the jurisdiction.
- Describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard area.
- Describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard area.

Natural vs. Manmade Hazards: : The Disaster Mitigation Act of 2000 (DMA 2000) that mandates the mitigation planning requirements requires that only natural hazards must be included in mitigation plans to meet DMA requirements and are apart of the State and FEMA reviews. However, it is recommended that municipalities engaged in the mitigation planning process address technological and human-caused hazards. **It should be noted that the plan will be rated only on how well it addresses natural hazards; the non-natural hazards addressed will not be rated.** In addition, current funding eligibility for HMGP and PDM-C grant programs is for natural hazards, not manmade ones.

**Hazard(s) rated as moderately high: FLOOD, FIRE, SEVERE STORM, WINTER STORM (SEVERE), EARTHQUAKE**

**FLOOD:** 317, Moderately High Hazard

**Potential Impact:** Throughout a Large Region (Locations identified on map)

**Cascade Effects:** Highly Likely (Cascading hazards identified and mapped)  
Blight; Civil Unrest; Dam Failure; Epidemic; Explosion; Fire; Food Shortage; Fuel Shortage; Hazmat (Fixed Site); Ice Jam; Infestation; Landslide; Oil Spill; Radiological (Fixed Site); Structural Collapse; Trans Accident; Utility Failure; Water Supply Contamination;

**Frequency:** A Frequent Event (Frequency identified)

**Onset:** Several Hours Warning

**Hazard Duration:** Two to Three Days

**Recovery Time:** One to Two Days

**Impact(Detailed information indicated below):**

- Serious Injury or Death is Likely, but not in Large Numbers
- Severe Damage to Private Property
- Severe Structural Damage to Public Facilities

**Risk Assessment Discussion**

**Hazard Description:**

**Geographic Location/Area(s) Affected:**

**Extent (magnitude or severity) of Hazard:**

**Historical Description of Previous Occurrences:**

**Probability of Future Events:**

**Cascading Effects:**

**Vulnerability Assessment Discussion**

**Overall Summary Description of Jurisdiction's Vulnerability:**

**Impacts of Hazards on the Jurisdiction/Community**

**Types and Numbers of Existing Structures in Hazard Area (Estimate):**

**Type and Number of Future Structures in Hazard Area (Estimate):**

**Estimated Potential Dollar Losses to Vulnerable Structures:**

**Method Used to Prepare Estimate:**

Utilize information collected in worksheets to create tables and text for the Section above. Provide as much detail as possible. Reference all maps and include copies of maps in the appendixes and/or insert map images into this document.

**FIRE:** 262, Moderately High Hazard

- Potential Impact:** Single Location (Locations identified on Map)  
**Cascade Effects:** Highly Likely (Cascading hazards identified and mapped)  
Explosion; Structural Collapse; Utility Failure;  
**Frequency:** A Frequent Event (Frequency identified)  
**Onset:** No Warning  
**Hazard Duration:** Less Than One Day  
**Recovery Time:** Less Than One Day  
**Impact(Detailed information indicated below):**

- Serious Injury or Death is Likely, but not in Large Numbers
- Severe Damage to Private Property
- Little or No Structural Damage to Public Facilities

**Risk Assessment Discussion**

**Hazard Description:**

**Geographic Location/Area(s) Affected:**

**Extent (magnitude or severity) of Hazard:**

**Historical Description of Previous Occurrences:**

**Probability of Future Events:**

**Cascading Effects:**

**Vulnerability Assessment Discussion**

**Overall Summary Description of Jurisdiction's Vulnerability:**

**Impacts of Hazards on the Jurisdiction/Community**

**Types and Numbers of Existing Structures in Hazard Area (Estimate):**

**Type and Number of Future Structures in Hazard Area (Estimate):**

## **Estimated Potential Dollar Losses to Vulnerable Structures:**

### **Method Used to Prepare Estimate:**

Utilize information collected in worksheets to create tables and text for the Section above. Provide as much detail as possible. Reference all maps and include copies of maps in the appendixes and/or insert map images into this document.

**SEVERE STORM:** 255, Moderately High Hazard

- Potential Impact:** Throughout a Large Region (Locations identified on map)  
**Cascade Effects:** Highly Likely (Cascading hazards identified and mapped)  
Dam Failure; Explosion; Fire; Flood; Food Shortage; Fuel Shortage; Hazmat (Fixed Site); Hazmat (In Transit); Landslide; Oil Spill; Radiological (In Transit); Structural Collapse; Trans Accident; Utility Failure; Water Supply Contamination; Wildfire;  
**Frequency:** A Frequent Event (Frequency identified)  
**Onset:** Several Days Warning  
**Hazard Duration:** One Day  
**Recovery Time:** One to Two Days  
**Impact(Detailed information indicated below):**
- Serious Injury or Death Unlikely
  - Severe Damage to Private Property
  - Moderate Structural Damage to Public Facilities

### **Risk Assessment Discussion**

#### **Hazard Description:**

#### **Geographic Location/Area(s) Affected:**

#### **Extent (magnitude or severity) of Hazard:**

#### **Historical Description of Previous Occurrences:**

#### **Probability of Future Events:**

#### **Cascading Effects:**

#### **Vulnerability Assessment Discussion**

#### **Overall Summary Description of Jurisdiction's Vulnerability:**

#### **Impacts of Hazards on the Jurisdiction/Community**

#### **Types and Numbers of Existing Structures in Hazard Area (Estimate):**

**Type and Number of Future Structures in Hazard Area (Estimate):**

**Estimated Potential Dollar Losses to Vulnerable Structures:**

**Method Used to Prepare Estimate:**

Utilize information collected in worksheets to create tables and text for the Section above. Provide as much detail as possible. Reference all maps and include copies of maps in the appendixes and/or insert map images into this document.

**WINTER STORM (SEVERE):** 253, Moderately High Hazard

- Potential Impact:** Throughout a Large Region (Locations identified on map)  
**Cascade Effects:** Highly Likely (Cascading hazards identified and mapped)  
Explosion; Fire; Flood; Food Shortage; Fuel Shortage; Hazmat (In Transit); Ice Jam; Landslide; Radiological (In Transit); Structural Collapse; Trans Accident; Utility Failure;  
**Frequency:** A Frequent Event (Frequency identified)  
**Onset:** Several Days Warning  
**Hazard Duration:** Two to Three Days  
**Recovery Time:** Three Days to One Week  
**Impact(Detailed information indicated below):**
- Serious Injury or Death is Likely, but not in Large Numbers
  - Moderate Damage to Private Property
  - Little or No Structural Damage to Public Facilities

**Risk Assessment Discussion**

**Hazard Description:**

**Geographic Location/Area(s) Affected:**

**Extent (magnitude or severity) of Hazard:**

**Historical Description of Previous Occurrences:**

**Probability of Future Events:**

**Cascading Effects:**

**Vulnerability Assessment Discussion**

**Overall Summary Description of Jurisdiction's Vulnerability:**

**Impacts of Hazards on the Jurisdiction/Community**

**Types and Numbers of Existing Structures in Hazard Area (Estimate):**

**Type and Number of Future Structures in Hazard Area (Estimate):**

**Estimated Potential Dollar Losses to Vulnerable Structures:**

**Method Used to Prepare Estimate:**

Utilize information collected in worksheets to create tables and text for the Section above. Provide as much detail as possible. Reference all maps and include copies of maps in the appendixes and/or insert map images into this document.

**EARTHQUAKE:** 251, Moderately High Hazard

**Potential Impact:** Throughout a Large Region (Locations identified on map)

**Cascade Effects:** Highly Likely (Cascading hazards identified and mapped)  
Civil Unrest; Dam Failure; Epidemic; Explosion; Fire; Flood; Food Shortage; Fuel Shortage; Hazmat (Fixed Site); Infestation; Landslide; Mine Collapse; Oil Spill; Radiological (Fixed Site); Structural Collapse; Trans Accident; Utility Failure; Water Supply Contamination; Wildfire;

**Frequency:** A Rare Event (Frequency identified)

**Onset:** No Warning

**Hazard Duration:** Two to Three Days

**Recovery Time:** More Than Two Weeks

**Impact(Detailed information indicated below):**

- Serious Injury or Death is Likely, but not in Large Numbers
- Severe Damage to Private Property
- Severe Structural Damage to Public Facilities

**Risk Assessment Discussion**

**Hazard Description:**

**Geographic Location/Area(s) Affected:**

**Extent (magnitude or severity) of Hazard:**

**Historical Description of Previous Occurrences:**

**Probability of Future Events:**

**Cascading Effects:**

**Vulnerability Assessment Discussion**

**Overall Summary Description of Jurisdiction's Vulnerability:**

**Impacts of Hazards on the Jurisdiction/Community**

**Types and Numbers of Existing Structures in Hazard Area (Estimate):**

**Type and Number of Future Structures in Hazard Area (Estimate):**

**Estimated Potential Dollar Losses to Vulnerable Structures:**

**Method Used to Prepare Estimate:**

Utilize information collected in worksheets to create tables and text for the Section above. Provide as much detail as possible. Reference all maps and include copies of maps in the appendixes and/or insert map images into this document.

**Hazard(s) rated as moderately low: ICE STORM, HURRICANE, TERRORISM**

**ICE STORM:** 234, Moderately Low Hazard

- Potential Impact:** Throughout a Large Region (Locations identified on map)  
**Cascade Effects:** Highly Likely (Cascading hazards identified and mapped)  
Explosion; Fire; Food Shortage; Fuel Shortage; Hazmat (In Transit); Radiological (In Transit); Structural Collapse; Trans Accident; Utility Failure;  
**Frequency:** A Regular Event (Frequency identified)  
**Onset:** One Day Warning  
**Hazard Duration:** Two to Three Days  
**Recovery Time:** One to Two Days  
**Impact(Detailed information indicated below):**
- Serious Injury or Death is Likely, but not in Large Numbers
  - Moderate Damage to Private Property
  - Moderate Structural Damage to Public Facilities

**Risk Assessment Discussion**

**Hazard Description:**

**Geographic Location/Area(s) Affected:**

**Extent (magnitude or severity) of Hazard:**

**Historical Description of Previous Occurrences:**

**Probability of Future Events:**

**Cascading Effects:**

Utilize information collected in worksheets to create tables and text for the Section above. Provide as much detail as possible. Reference all maps and include copies of maps in the appendixes and/or insert map images into this document.

**HURRICANE:** 201, Moderately Low Hazard

- Potential Impact:** Throughout a Large Region (Locations identified on map)  
**Cascade Effects:** Highly Likely (Cascading hazards identified and mapped)  
Civil Unrest; Dam Failure; Epidemic; Explosion; Fire; Flood; Food Shortage; Fuel Shortage; Hazmat (Fixed Site); Hazmat (In Transit); Infestation; Landslide; Oil Spill; Radiological (Fixed Site); Radiological (In Transit); Structural Collapse; Trans Accident; Utility Failure; Water Supply Contamination;  
**Frequency:** A Rare Event (Frequency identified)  
**Onset:** One Day Warning  
**Hazard Duration:** Less Than One Day  
**Recovery Time:** More Than Two Weeks  
**Impact(Detailed information indicated below):**
- Serious Injury or Death is Likely, but not in Large Numbers
  - Severe Damage to Private Property
  - Severe Structural Damage to Public Facilities

**Risk Assessment Discussion**

**Hazard Description:**

**Geographic Location/Area(s) Affected:**

**Extent (magnitude or severity) of Hazard:**

**Historical Description of Previous Occurrences:**

**Probability of Future Events:**

**Cascading Effects:**

Utilize information collected in worksheets to create tables and text for the Section above. Provide as much detail as possible. Reference all maps and include copies of maps in the appendixes and/or insert map images into this document.

**TERRORISM:** 180, Moderately Low Hazard

**Potential Impact:** Several Locations (Locations identified on Map)

**Cascade Effects:** Some Potential (Cascading hazards identified and mapped)  
Civil Unrest; Dam Failure; Epidemic; Explosion; Fire; Hazmat (Fixed Site); Hazmat (In Transit); Oil Spill; Radiological (Fixed Site); Radiological (In Transit); Structural Collapse; Trans Accident; Utility Failure; Water Supply Contamination; Wildfire;

**Frequency:** A Rare Event (Frequency identified)

**Onset:** No Warning

**Hazard Duration:** Less Than One Day

**Recovery Time:** One to Two Days

**Impact(Detailed information indicated below):**

- Serious Injury or Death to Large Numbers
- Little or No Damage to Private Property
- Severe Structural Damage to Public Facilities

### **Risk Assessment Discussion**

#### **Hazard Description:**

#### **Geographic Location/Area(s) Affected:**

#### **Extent (magnitude or severity) of Hazard:**

#### **Historical Description of Previous Occurrences:**

#### **Probability of Future Events:**

#### **Cascading Effects:**

Utilize information collected in worksheets to create tables and text for the Section above. Provide as much detail as possible. Reference all maps and include copies of maps in the appendixes and/or insert map images into this document.

#### **HAZARDS THAT OCCUR WITH NO WARNING\***

**FIRE**  
**EARTHQUAKE**  
**TERRORISM**

\* No warning was selected from the Onset Tab.

#### **HAZARDS THAT OCCUR MOST OFTEN\***

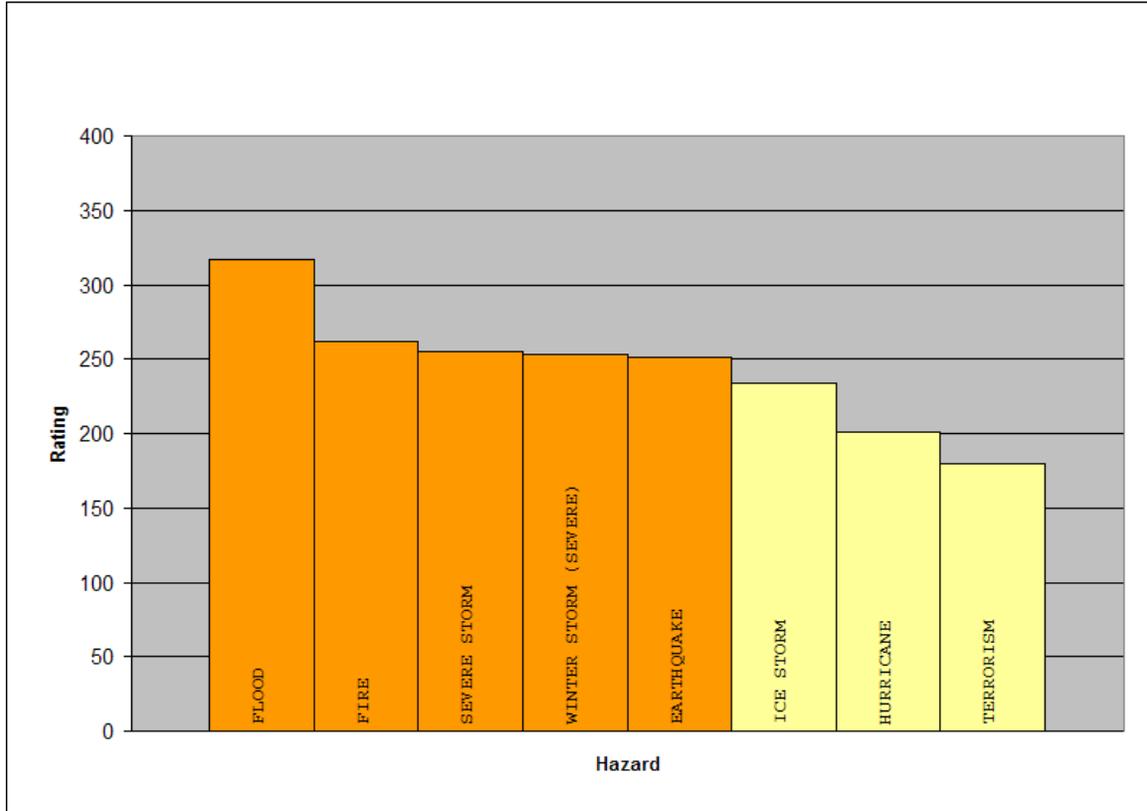
**FLOOD**  
**FIRE**  
**SEVERE STORM**  
**WINTER STORM (SEVERE)**

\*A frequent event was selected on frequency Tab.

**HAZARDS THAT PRESENT THE GREATEST THREAT TO LIFE\***  
**TERRORISM**

\*Serious injury and death in large or extremely large numbers was selected from the Impact Tab.

Figure 1. Chart of Hazards vs. Ratings



**Reminder: The report must include an overall summary description of the jurisdiction's vulnerability to each hazard.**

**Appendix C - County Critical Facilities in Sullivan County**

Critical Facility	Location	Address
Court House	Village of Monticello	414 Broadway
Government Center	Village of Monticello	100 North Street
Liberty Complex	Village of Liberty	North Main Street
Harris Facility		
Barryville Facility		
Livingston Manor Storm Station	Town of Rockland	143 Shandelee Road
Callicoon Storm Station		State Route 97
Liberty Storm Station		
Wurtsboro Storm Station	Village of Wurtsboro	
Kenoza Lake Storm Station	Town of Callicoon	
International Airport	Town of Bethel	76 County Route 183A
E-911 Building	Town of Bethel	
Landfill Treatment Plant	Village of Monticello	973 East Broadway
New York State Police	Village of Liberty	5754 State Route 55
New York State Police	Narrowsburg (Town of Tusten)	6509 State Route 98
New York State Police	Roscoe (Town of Rockland)	5754 State Route 55
New York State Police	Village of Wurtsboro	2954 State Route 209
County Jail	Village of Monticello	4 Bushnell Avenue
Central Hudson Gas & Electric Corp.	Multiple throughout County	
NYSEG Electric & Gas	Multiple throughout County	
Verizon Telephone Company	Multiple throughout County	
Sprint Telephone Company	Multiple throughout County	
AT&T Telephone Company	Multiple throughout County	











**Appendix C - Critical Facilities in Town of Fallsburg**

Critical Facility	Location	Address
Town Hall	Town of Fallsburg	
Highway Department	Town of Fallsburg	
Justice Court	Town of Fallsburg	
Loch Sheldrake WWTP	Town of Fallsburg	
Sewer/Water Department	Town of Fallsburg, South Fallsburg	5410 State Route 42
Post Office	Town of Fallsburg	6 Mongaup Road
Police Department	Town of Fallsburg	
Sullivan/Woodburne Cemeteries	Town of Fallsburg	
Elementary School	Town of Fallsburg	
High School	Town of Fallsburg	
Fallsburg WWTP	Town of Fallsburg	
Mountaindale WWTP	Town of Fallsburg	
Loch Sheldrake Senior Center	Town of Fallsburg	
Fallsburg Senior Center	Town of Fallsburg	
Hurleyville Firehouse	Town of Fallsburg	
Woodburne Firehouse	Town of Fallsburg	
South Fallsburg Firehouse	Town of Fallsburg	
Loch Sheldrake Firehouse	Town of Fallsburg	































## Kick-off Meeting Agenda – February 3, 2010

### Introduction:

- B&L
- DMA-2000 requirements

### Current Plan

- Background on the current Plan
- 2004, update 2005 Plan
- A few items from the Plan that stand out

### Our Approach

#### ***Organize to Plan: Develop the planning process***

- Kick-off Meeting
- Public Participation Process

#### ***Risk Assessment; Hazard Analysis & Vulnerability Assessment***

- Develop interview tool
- Revisit hazard rankings
- Discuss existing hazards, new occurrences of existing hazards, and any new hazards
- Discuss actions the County has already taken
- Inventory community assets
- Assess vulnerability
- Prepare revised map

#### ***Mitigation Strategy Development***

- Assess progress towards previously defined goals
- Establish Revised Goals
- Assess Appropriate Mitigation Measures
- Prepare Mitigation Action Plan

#### ***Evaluation & Maintenance of the Plan***

- Set schedule for monitoring and update for the 5 year cycle
- Process for continued public involvement

#### ***Plan Review, Revision, Approval & Adoption***

- First draft
- Public review
- Revisions
- Submit to SEMO
- SEMO submits Plan to FEMA
- Revisions to the Plan, as required

### Schedule

- Highly compressed
- Draft Plan was to be ready by 2/15
- Final plan to County by & SEMO by 4/21
- Final Plan to FEMA by 5/21



Hazard Mitigation Plan Kickoff Meeting, February 3, 2010.

Attendees:

Luiz Aragon, Sullivan County Planning Commissioner  
Tom Bose, Town of Callicoon Supervisor  
Thomas J. Brawley, Town of Thompson Code Enforcement Officer  
William Culligan, Town of Thompson Water and Sewer Superintendent  
Walter Fedun, Village of Monticello Code Enforcement Officer  
Sue Flora, Village of Monticello Code Enforcement Officer  
Allen Frishman, Town of Fallsburg & Village of Woodridge Code Enforcement Officer  
Howard Fuchs, Town of Delaware Code Enforcement Officer  
James Galligan, Town of Forestburgh Supervisor  
BJ Gettel, Town of Bethel Code Enforcement Officer  
Glenn Gidaly, Barton and Loguidice  
James Greier, Town of Fremont Supervisor  
Margaret Harrison, Town of Tusten Supervisor  
Daniel S. Hogue, Jr., Town of Forestburgh Highway Superintendent  
William Jakaitis, Town of Fallsburg Highway Superintendent  
Gordon Jenkins, Village of Monticello Mayor  
Richard Johnson, Jr., Town of Mamakating Highway Superintendent  
Preston Kelly, Town of Neversink Highway Superintendent  
Jennifer Mall, Sullivan County Planning Division  
Dick Martinkovic, Sullivan County Public Safety Commissioner  
Ed McAndrew, Sullivan County Deputy Commissioner of Public Works  
Pete Parks, Village of Liberty Highway Superintendent  
John Perrella, Town of Neversink Code Enforcement Officer  
Nadia Rajsz, Town of Lumberland Supervisor  
Jim Scheutzow, Town of Delaware Supervisor  
Kris Scullion, Town of Callicoon Highway Superintendent  
Gregg Semenetz, Town of Cochection Code Enforcement Officer  
David Sparling, Town of Tusten Code Enforcement Officer  
James Steinberg, Village of Monticello Highway Superintendent  
Norman Sutherland, Town of Highland Highway Superintendent  
Robert Trotta, Sullivan County Division of Public Works  
Mark Van Etten, Town of Liberty Code Enforcement Officer  
Richard Winters, Village of Liberty Mayor

## Hazard Mitigation Plan Update Steering Committee Meeting, Feb. 17, 2010

Present:

TJ Brawley  
Allen Frishman  
BJ Gettel  
Ted Hartling  
Kara McEloy  
John Perrella  
Nadia Rajsz  
Kris Scullion  
Bob Theadore  
Pam Winters  
Bob Trotta  
Dick Martinkovic  
Mark Van Etten  
Jennifer Mall  
Glenn Gidaly

Glenn Gidaly: Good morning. We drafted up an agenda, and many of the items require your input. First, a question for Jennifer: Would you like to comment the appointment of representatives to the committee by the supervisors and mayors?

Jennifer Mall: Most of the towns have indicated that they have designated a representative. Some are formally appointing representatives via resolution of the Town Boards. I've been calling the municipalities who weren't represented at the kickoff meeting, to encourage them to appoint a representative and come out today. Today there are a couple of towns that couldn't send someone out because of the weather—their folks are out working on the roads.

Glenn: Thanks. I have a draft questionnaire to be sent out. The idea is to get some input, not only from people on the committee, but to others as well. I would like to get your input on other forums for distributing this questionnaire. It's designed to gauge people's perceptions of hazard mitigation, where they get their information related to hazard mitigation, issues about their homes, and other issues. Because you're all here now, please take a couple of minutes to look at the questionnaire and give me your feedback.

Glenn: Any suggestions or concerns? I want to make sure you're comfortable with the way it reads before we talk about distributing it.

Q: How many of these questionnaires would you like to get back?

Glenn: The plan can be updated without conducting the questionnaire at all, but we want as much information as possible. So it would be nice to have 100 of them returned.

Discussion of ways to disseminate the questionnaire:

\*Copies at the Town and Village Halls

\*Email to committee members, to distribute to town planning and zoning board members and others

\*Post on municipal websites

\*Mention in municipal newsletters

\*Post on the County website

\*Fire Chiefs, Fire Commissioners

Each fire department

\*Sullivan Renaissance Winter Exposition

\*Pat Michel's (School Superintendent) firehouse chats regarding the new school budget. There is one on February 24<sup>th</sup> at the White Lake Firehouse. These meetings can draw large crowds, and you can ask people to fill out the questionnaires and leave them at the door when they exit.

Glenn: I will email Pat today and ask his permission to distribute the questionnaires there.

BJ Gettel: I will be there, so I can take copies and collect the completed questionnaires.

Glenn: We would like to have these returned by March 31<sup>st</sup> at the latest. On our original schedule, the draft plan was scheduled to be submitted by February 15<sup>th</sup>, and the final plan submitted by May 21<sup>st</sup>. So we need to get them turned in as soon as possible.

Comment: The 2005 plan is a good document, but most residents don't know it exists. The 2005 plan is now on the Sullivan County website, so we hope people will take a look at it.

Glenn: To increase public awareness, we will put the questionnaire on the County website, and email it to all steering committee members. We will also post a press release on the County website.

Glenn: Are there any comments on the content and layout of the survey?

Comment: Regarding question 4B: "Did your real estate agent or landlord inform you that a natural hazard risk zone was present before you purchased or moved into your home?" I don't think most people know they're in a flood zone when they buy a home. They might come on a summer day, when the river is low, and never think about what could happen during a storm event.

Glenn: Right, and I think people often do not know what type of soil their home sits on. I don't know whether NYS law requires that real estate agents disclose information about flood zones to prospective purchasers.

Glenn: Next, there's a sheet on declared disasters since 2000. Please take a look and see what you think about the amounts of money that are listed for each event. Some of these events were included in the 2005 plan, but others have occurred since.

Q: The 10/1/04 event is described as a tropical depression. What does this mean?

Dick Martinkovic: There was a storm that broke off a hurricane, and became a tropical depression. The National Weather Service calls such events tropical depressions or tropical storms. All of our storms since the 2004-05 plan have been related to rain and flooding. Everything has been related to water, and water that never used to happen. In Livingston Manor, Roscoe, and Shandalee, roads washed out that they never thought would wash out. The streams and brooks couldn't take that amount of rain in a short amount of time. The Delaware River and Neversink Dam remained intact, but the issue is with the smaller streams—the Callicoon Creek in particular. The Town of Delaware almost lost their highway facility twice. The claims that are listed here come from the PALs (public assistance liaisons) from SEMO, who came down and walked the sites with town officials. They then made awards. Had we not had a mitigation plan in place, a lot of the monetary relief would not have happened. If I were a town official, I would take a look at flooding and rainstorms, and see where my 2004 plan put me, and ratchet that up closer to the top. A few towns listed wildfire as a

hazard, but we really don't have wildfire the way the western states do. Flooding and rainstorms are our biggest issue. We are also due for an ice storm. The National Weather Service says we are due for an ice storm creating 2 to 3 inches of ice. This will knock out power lines, knock down trees, and make roads impassable.

Glenn: We also included a list of significant flood events since 2000. Some of these numbers may be inaccurate, but they come from what we could find on the internet. In terms of the plan update, as Dick said, most of the events since 2004 have been related to water. So please take a moment to look that over. Any comments?

No comments.

Glenn: Regarding our discussion of re-ranking hazards, I spoke with Gene Lucchese at SEMO about the HAZNY analysis. This is where you go through each of the hazards and rank and rate them. It's a computerized program. He gave me a couple of dates when he is available to come in and do the HAZNY with us. Which of the suggested dates is best for you?

Discussion.

March 9<sup>th</sup> at 2:00 pm is good for all members.

Glenn: Okay, I will confirm that with Gene today.

Q: Where will we do this?

A: Here in the Legislative Hearing Room if we can secure it. We will let you know as soon as possible.

Glenn: I wanted to mention this January 12<sup>th</sup> article from the Sullivan County Democrat. It discusses the County's program for purchasing properties that are in flooded areas. Does anyone know how that's going?

Dick: This was money secured by Sen. Bonacic for helping families who have continually had flooding issues. The property has to be a residence, and I believe there is an income requirement. We initially had about 40 applications, some of which had to be denied, for example, because they contained apartments or commercial spaces. Roughly 12 properties went through the process all the way to closing. The stipulation from the State was that the building must be destroyed, and the land restored and left vacant. Some parcels are near streams, so we're talking to the municipalities to see if they are interested in taking them over for recreation. Most of the properties, but not all, are in the floodplain. For example, on the Island in Jeffersonville, there are four properties that have been purchased. Perhaps those properties could be managed for recreation. The municipalities won't want to make a big investment in these properties, though, because they will most likely flood again. There's a property in Youngsville, which the fire department would like to use as parking.

Glenn: Who would have the list of the properties?

Dick: The Grants office would have all the information.

Glenn: Do you know if we spent all of the available money on the twelve properties?

Dick: No. Each county got a different amount.

Glenn: Also in this article, Army Corps of Engineers and other County and Soil and Water projects are mentioned.

Dick: Right. Those are different programs.

Glenn: The good thing about all of this is that it shows that the County is taking action to mitigate future flooding problems.

Dick: Yes, and we're using funds from a state agency. The Town of Rockland did a buyout program, but they got stuck with their properties—they had to pay the costs of demolition, and now they can't sell or dispose of the parcels.

Ted Hartling: inaudible

Dick: Yes, the County wants to dispose of the properties. Delaware County went through the same thing. It left a bad taste for them.

Glenn: Do you have a contact at the Army Corps?

Bob Trotta: I can get you the contact information.

More discussion, inaudible.

Jennifer : The planning office also has information on the Army Corps work on the East Branch.

Dick: We've been trying to be proactive. But of those forty original flood buyout properties, there were some people who could have sold, but when we told them what their property was worth according to an independent appraiser, they could not have bought another home for that amount of money. Many properties were appraised at less than \$100,000. If FEMA keeps coming in and giving people money for repairs, they won't leave.

More discussion, inaudible.

Glenn: Does anyone have other questions? If you've filled out the questionnaire, we can take it from you. Also, we are compiling the information from the checklists that you filled out at the kickoff meeting.

I will contact Gene about doing the HAZNY on March 9<sup>th</sup> at 2:00.

We will email all of you the questionnaire, and put it on the County website.

Thank you.

Hazard Mitigation Plan Steering Committee Meeting, 3-9-10.

TJ Brawley  
Charlie Hallock  
Ted Hartling  
Daniel Hendrickson  
Dave Kuebler  
Kara McElroy  
Gregg Semenetz  
Bob Theadore  
Bob Trotta  
Pam Winters  
Dick Martinkovic  
John Perrella  
Jennifer Mall  
Glenn Gidaly  
Eugene Lucchese  
Charles Fallon  
Dave Sparling  
Norman Sutherland  
Walter Fedun

Discussion of our HMP update and the FEMA flood map updates:

If you disagree with the new flood insurance rate maps, we should indicate this in our plan. For example, if the new BFEs in a particular location are lower than you think they should be, based on your expertise and observations, then homes just above that elevation could be at risk. We need to identify those locations and potential hazards in our plan.

Today's task is to complete SEMO's HAZNY analysis. Gene Lucchese is here to take us through the process. See the attached Hazard Analysis Worksheet and List of Hazards.

First, look at the worksheet and check hazards that we have faced in the past or that you think are possible in the future. Then rank them, with #1 being the greatest hazard. Look at the List of Hazards for the definitions—SEMO might define a particular hazard differently than you do.

Next, we will look at several aspects (scope, frequency, onset, impact and duration) of each hazard. For example:

Hazard:	Severe Storm
Scope:	Could affect entire region Highly likely to cause other hazards (including dam failure, explosion, fire, flood, food shortage, fuel shortage, hazmat-- fixed site and in transit, landslide, oil spill, radiological—in transit, structural collapse, transportation accident, utility failure, wildfire, and water supply contamination).
Frequency:	Frequent (greater than once a year)
Impact:	Serious injury or death is unlikely Severe impact to private property Moderate damage to infrastructure

Onset: Several days warning

Duration: Less than one day

Once inactive, emergency operations and services continue for 1 to 2 days

Based on all of the above, the HAZNY software determined that a severe storm gets a moderately high hazard ranking for us.

We continued this analysis for several other hazards, including flood, earthquake, hurricane, winter storm, terrorism, and others.

FEMA requires that we consider earthquakes and hurricanes in our plan. Although they are infrequent in our area, they are extremely costly.

HAZNY gives us a starting point for a hazard analysis. Once we have the hazards ranked and prioritized, we can talk about vulnerability and how to prepare.

Attached please find the HAZNY report that we generated at this meeting, as well as a listing of possible mitigation measures for each hazard.

# Sullivan County Hazard Mitigation Questionnaire

## 1. Citizen Preparedness Survey

Natural disasters have increasingly caused injury, property damage, and interruption of business and government services across New York State. The toll on individuals, families, businesses, and local governments can be and has been devastating. The time, money, and emotional effort required to respond to and recover from these disasters take public resources and attention away from other important programs and problems. The mission of Hazard Mitigation is to reduce risk to the community and ultimately to better protect life and property.

Sullivan County is eligible to receive grant funding for mitigation programs by maintaining a FEMA-approved Hazard Mitigation Plan, which the County last updated in 2005. FEMA requires that hazard mitigation plans be updated every five years, and the County's Plan must now be updated to maintain compliance with FEMA's requirements.



This questionnaire is designed to assess household awareness of and preparation for disasters and to identify tools and techniques that may assist in reducing risk in the community. We ask that the questionnaire be completed by an adult, preferably the homeowner or head of household.

Your participation in this survey is voluntary and your responses will remain confidential.

You will be asked to indicate whether your home is located in a floodplain. You can check the status of your property by visiting the following web site: <http://www.floodsmart.gov> and entering your property address in the One-Step Flood Risk Profile section of the site.

Please return your completed survey by mail, email or fax to:

Mail	Email	Fax
Barton & Loguidice PO Box 267 Ellenville, NY 12428	<a href="mailto:mbrother@bartonandloguidice.com">mbrother@bartonandloguidice.com</a>	845-647-4078

***Please complete the questionnaire and return by March 31, 2010***



# Sullivan County Hazard Mitigation Questionnaire

## 2. General Household Information

In this section, we will ask several general questions regarding your household, such as where you live and whether you own or rent the property. This information will assist the mitigation planning committee in better understanding the range of concerns within the community and how those concerns may vary by location. *As with all the information we are requesting, your responses will remain confidential.*

A. Please indicate where you reside in Sullivan County:

Community	Zip Code	Community	Zip Code
Monticello <input type="checkbox"/>	12701 <input type="checkbox"/>	Liberty <input type="checkbox"/>	12754 <input type="checkbox"/>
Barryville <input type="checkbox"/>	12719 <input type="checkbox"/>	Livingston Manor <input type="checkbox"/>	12758 <input type="checkbox"/>
Bethel <input type="checkbox"/>	12720 <input type="checkbox"/>	Loch Sheldrake <input type="checkbox"/>	12759 <input type="checkbox"/>
Bloomingsburg <input type="checkbox"/>	12721 <input type="checkbox"/>	Long Eddy <input type="checkbox"/>	12760 <input type="checkbox"/>
Callicoon <input type="checkbox"/>	12723 <input type="checkbox"/>	Mongaup Valley <input type="checkbox"/>	12762 <input type="checkbox"/>
Claryville <input type="checkbox"/>	12725 <input type="checkbox"/>	Mountain Dale <input type="checkbox"/>	12763 <input type="checkbox"/>
Cochecton <input type="checkbox"/>	12726 <input type="checkbox"/>	Narrowsburg <input type="checkbox"/>	12764 <input type="checkbox"/>
Eldred <input type="checkbox"/>	12732 <input type="checkbox"/>	Neversink <input type="checkbox"/>	12765 <input type="checkbox"/>
Fallsburg <input type="checkbox"/>	12733 <input type="checkbox"/>	North Branch <input type="checkbox"/>	12766 <input type="checkbox"/>
Ferndale <input type="checkbox"/>	12734 <input type="checkbox"/>	Parksville <input type="checkbox"/>	12768 <input type="checkbox"/>
Fremont Center <input type="checkbox"/>	12736 <input type="checkbox"/>	Pond Eddy <input type="checkbox"/>	12770 <input type="checkbox"/>
Glen Spey <input type="checkbox"/>	12737 <input type="checkbox"/>	Rock Hill <input type="checkbox"/>	12775 <input type="checkbox"/>
Glen Wild <input type="checkbox"/>	12738 <input type="checkbox"/>	Roscoe <input type="checkbox"/>	12776 <input type="checkbox"/>
Grahamsville <input type="checkbox"/>	12740 <input type="checkbox"/>	Forestburgh <input type="checkbox"/>	12777 <input type="checkbox"/>
Hankins <input type="checkbox"/>	12741 <input type="checkbox"/>	South Fallsburg <input type="checkbox"/>	12779 <input type="checkbox"/>
Harris <input type="checkbox"/>	12742 <input type="checkbox"/>	Swan Lake <input type="checkbox"/>	12783 <input type="checkbox"/>
Highland Lake <input type="checkbox"/>	12743 <input type="checkbox"/>	White Lake <input type="checkbox"/>	12786 <input type="checkbox"/>
Hortonville <input type="checkbox"/>	12745 <input type="checkbox"/>	White Sulphur Springs <input type="checkbox"/>	12787 <input type="checkbox"/>
Hurleyville <input type="checkbox"/>	12747 <input type="checkbox"/>	Woodbourne <input type="checkbox"/>	12788 <input type="checkbox"/>
Jeffersonville <input type="checkbox"/>	12748 <input type="checkbox"/>	Woodridge <input type="checkbox"/>	12789 <input type="checkbox"/>
Kenoza Lake <input type="checkbox"/>	12750 <input type="checkbox"/>	Wurtsboro <input type="checkbox"/>	12790 <input type="checkbox"/>
Kiamesha Lake <input type="checkbox"/>	12751 <input type="checkbox"/>	Youngsville <input type="checkbox"/>	12791 <input type="checkbox"/>
Lake Huntington <input type="checkbox"/>	12752 <input type="checkbox"/>	Yulan <input type="checkbox"/>	12792 <input type="checkbox"/>

Other: \_\_\_\_\_



# Sullivan County Hazard Mitigation Questionnaire

## 2. General Household Information, continued

B. How long have you lived in Sullivan County?

Less than 1 year:

One to 5 years:

Six to 9 years:

Ten to 19 years:

Twenty years or more:

C. Is this your primary place of residence:

Yes  No:

D. Do you own or rent your place of residence?

Own  Rent

E. What is your street address? *(Information will remain confidential)*

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# Sullivan County Hazard Mitigation Questionnaire

## 3. Hazard Information

A. How prepared do you feel you and your household are for the likely impacts of natural and man-made hazard events that may occur in Sullivan County? Please provide your ranking on a scale of 1 to 5, with 5 representing the most prepared.

- 1 (Least)     
  2     
  3     
  4     
  5 (Most)

B. Why do you feel you and your household are prepared for the likely impacts of natural and man-made hazard events that may occur in Sullivan County? Please check all that apply.

- Emergency preparedness information from a government source (e.g, federal, state, or local emergency management)
- Have attended meetings about hazard mitigation or disaster preparedness
- Gained awareness from local or regional media reports
- Information provided by schools or other academic institutions
- Received information from our local utility companies
- Received information from non-governmental organizations (e.g., Red Cross, Salvation Army, etc.)

C. In the past 20 years, which of the following hazard events have you or someone in your household experienced within Sullivan County? Please also indicate how concerned you are about the listed hazards that may impact Sullivan County. Indicate in the first column if you have experienced the hazard and then indicate your level of concern in the remaining columns.

HAZARD TYPE	Have Experienced	Not Concerned	Somewhat Concerned	Very Concerned	Extremely Concerned
Power Failure	<input type="checkbox"/>				
Structural Fire	<input type="checkbox"/>				
Tornado	<input type="checkbox"/>				
Ice Storm	<input type="checkbox"/>				
Dam Failure	<input type="checkbox"/>				
Winter Storm	<input type="checkbox"/>				
HAZMAT- Fixed Sites	<input type="checkbox"/>				
Flood	<input type="checkbox"/>				
Trans. Accidents	<input type="checkbox"/>				
Structural Collapse	<input type="checkbox"/>				
Oil Spill	<input type="checkbox"/>				
HAZMAT – In Transit	<input type="checkbox"/>				
Ice Jam	<input type="checkbox"/>				
Landslide	<input type="checkbox"/>				
Water Supply Failure	<input type="checkbox"/>				
Explosion	<input type="checkbox"/>				



# Sullivan County Hazard Mitigation Questionnaire

## 3. Hazard Information, continued

HAZARD TYPE	Have Experienced	Not Concerned	Somewhat Concerned	Very Concerned	Extremely Concerned
Epidemic	<input type="checkbox"/>				
Civil Unrest	<input type="checkbox"/>				
Drought	<input type="checkbox"/>				
Terrorism	<input type="checkbox"/>				
Windstorm	<input type="checkbox"/>				
Wildfire	<input type="checkbox"/>				
Mass Gathering	<input type="checkbox"/>				
Earthquake	<input type="checkbox"/>				
Radiological – In Transit	<input type="checkbox"/>				
Mine Collapse	<input type="checkbox"/>				

D. Information regarding hazards can be provided to the community in many different ways. In the section below, please identify the three *most effective* ways information could be provided to you to help you prepare for and withstand a hazard event.

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Times Herald Record      | <input type="checkbox"/> Radio news                | <input type="checkbox"/> Schools/Colleges       |
| <input type="checkbox"/> Sullivan County Democrat | <input type="checkbox"/> Radio advertising         | <input type="checkbox"/> Chamber of Commerce    |
| <input type="checkbox"/> River Reporter           | <input type="checkbox"/> Outdoor advertising       | <input type="checkbox"/> Church/Synagogue       |
| <input type="checkbox"/> Other newspaper          | <input type="checkbox"/> Internet                  | <input type="checkbox"/> Books                  |
| <input type="checkbox"/> Regional TV news         | <input type="checkbox"/> Fire/EMS Departments      | <input type="checkbox"/> Public Library         |
| <input type="checkbox"/> Local cable TV news      | <input type="checkbox"/> Public meetings/workshops | <input type="checkbox"/> Special events         |
| <input type="checkbox"/> TV advertising           | <input type="checkbox"/> County/Local Government   | <input type="checkbox"/> Non-Govt-Organizations |
| <input type="checkbox"/> Utility company          | <input type="checkbox"/> Other (briefly describe): |   |

E. Is your place of residence located in a designated floodplain?

- Yes                       No                       Not Sure

F. Do you have flood insurance?

- Yes                       No                       Not Sure

G. Have you had any difficulty obtaining conventional homeowner's insurance?

- Yes                       No                       Not Sure



# Sullivan County Hazard Mitigation Questionnaire

## 3. Hazard Information, continued

H. If you DO NOT have flood insurance, what is the primary reason?

- |   |   |
|---|---|
| <input type="checkbox"/> I don't need it; my property has never flooded | <input type="checkbox"/> I don't need it; my house is not in the floodplain |
| <input type="checkbox"/> It's too expensive                             | <input type="checkbox"/> It's not worth it                                  |
| <input type="checkbox"/> Insurance company will not provide             | <input type="checkbox"/> My homeowner's insurance will cover me             |
| <input type="checkbox"/> Didn't know it was available                   | <input type="checkbox"/> Don't have the time                                |
| <input type="checkbox"/> It's not required by code                      | <input type="checkbox"/> It's not required by law                           |

I. Have you or someone in your household:

	Have Done	Plan to Do	Not Done	Can Not
1. Attended meetings or received written information on natural disasters or emergency preparedness?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Talked with household members about what to do in the event of a natural disaster or emergency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Developed a "Household/Family Emergency Plan in order to decide what everyone should do in the event of an emergency?"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Prepared a "Disaster Supply Kit" (e.g., with extra food, bottled water, batteries, flashlights or other emergency supplies)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. In the last year has anyone in your household been trained or re-certified in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



# Sullivan County Hazard Mitigation Questionnaire

## 4. Hazard Mitigation

To mitigate means to alleviate, to ease, or to lessen. Mitigation actions, therefore, are measures taken to minimize the impact upon life and property when a hazard event occurs. Sullivan County is preparing an update to the existing All Hazard Mitigation Plan to re-assess previously identified mitigation strategies to determine if modifications to the plan are needed. The following section is attended to assess the community's general level of awareness regarding mitigation actions that may be available to protect against hazard events.

A. Did you consider the potential impact a natural or man-made disaster could have on your home before you purchased or moved into the home?

- Yes  No

B. Did your real estate agent or landlord inform you that a natural hazard risk zone (e.g., flood zone, steep slope/landslide area, etc) was present before you purchased or moved into your home?

- Yes  No

C. Would the disclosure of such information influence your decision to purchase or move into a home?

- Yes  No

D. How much money would you be willing to spend on your current home to make it more resistant to future natural hazards within your community? (Examples could include elevating a flood-prone home or replacing combustible roofing materials with non-combustible alternatives)

- |   |  |
|---|--|
| <input type="checkbox"/> \$0 Nothing      | <input type="checkbox"/> \$1,000 to \$2,500  |
| <input type="checkbox"/> Less than \$100  | <input type="checkbox"/> \$2,500 to \$5,000  |
| <input type="checkbox"/> \$100 to \$500   | <input type="checkbox"/> \$5,000 to \$10,000 |
| <input type="checkbox"/> \$500 to \$1,000 | <input type="checkbox"/> More than \$10,000  |

E. Which of the following incentives would make it more likely that you would spend money to protect your home from natural hazards? (Please check all that apply)

- |   |  |
|---|--|
| <input type="checkbox"/> Mortgage discount        | <input type="checkbox"/> Insurance premium discount                |
| <input type="checkbox"/> Low interest loan        | <input type="checkbox"/> Grant program with cost share requirement |
| <input type="checkbox"/> Property tax discount    | <input type="checkbox"/> None of the above                         |
| <input type="checkbox"/> Other (please describe): |  |





2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f	4g	
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced (italics) and how concerned about each are you?	How concerned are you about those hazards?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered	Comments	
1	Barryville	12719	20+	Y	Rent	5	c	Power Failure	Not	Times Herald	N	N	N	Don't need/never flooded	Not done	Have done	Have done	Have done	Plan to do	N	N	Y	\$1,000-\$2,500	Mortgage discount	Buyout	
							d	Structural Fire		Radio news													Property tax discount	Elevation		
								Tornado	Somewhat	Local Cable TV News																
								Ice Storm																		
								Dam Failure																		
								Winter Storm	Not																	
								HAZMAT/Fixed Sites																		
								Flood																		
								Trans. Accid.																		
								Structural Collapse																		
								Oil Spill																		
								HAZMAT – In Transit																		
								Ice Jam																		
								Landslide																		
								Water Supply Failure																		
								Explosion																		
								Epidemic	Not																	
								Civil Unrest	Not																	
								Drought	Not																	
								Terrorism	Not																	
								Windstorm	Not																	
								Wildfire	Not																	
								Mass Gathering	Not																	
								Earthquake	Not																	
								Radiological – In Transit	Not																	
								Mine Collapse	Not																	

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f	4g
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced (italics) and how concerned about each are you?	How concerned are you about those hazards?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influenced decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered	Comments

1	Bethel	12720	20+	Y	Own	3	a	<i>Power Failure</i>		Times Herald	?	?	N	Don't need/never flooded	Not done	Plan to do	Plan to do	Plan to do	Plan to do	Not done	Y	N	Y	\$0.00	Insurance Premium Discount	Buyout	
							c	Structural Fire	Somewhat	Radio news														Property tax discount	Relocation		
								<i>Tornado</i>	Somewhat	Sullivan County Democrat																	
								<i>Ice Storm</i>																			
								<i>Dam Failure</i>																			
								<i>Winter Storm</i>																			
								HAZMAT/Fixed Sites	Somewhat																		
								<i>Flood</i>																			
								Trans. Accid.	Somewhat																		
								Structural Collapse	Somewhat																		
								Oil Spill	Somewhat																		
								HAZMAT - In Transit	Somewhat																		
								Ice Jam	Somewhat																		
								Landslide	Somewhat																		
								Water Supply Failure	Somewhat																		
								Explosion	Somewhat																		
								Epidemic	Somewhat																		
								Civil Unrest	Not																		
								Drought	Somewhat																		
								Terrorism	Somewhat																		
								Windstorm	Somewhat																		
								Wildfire	Somewhat																		
								Mass Gathering	Not/Somewhat																		
								Earthquake	Not																		
								Radiological - In Transit	Not																		
								Mine Collapse	Not																		
2	Bethel	12720	20+	Y	Own	5	a	<i>Power Failure</i>		Times Herald	N	N	N	Don't need/never flooded	Have done	Have done	Have done	Have done	Have done			Y					
							b	Structural Fire		Sullivan County Democrat																	
							c	<i>Tornado</i>		River Reporter																	
							e	<i>Ice Storm</i>		Local cable TV news																	
							f	<i>Dam Failure</i>		Radio news																	
								<i>Winter Storm</i>		Radio advertising																	
								HAZMAT/Fixed Sites		Fire/EMS Departments																	
								<i>Flood</i>		Public meetings/works hops																	
								Trans. Accid.		County/local government																	
								Structural Collapse		Special events																	
								Oil Spill																			
								HAZMAT - In Transit																			
								Ice Jam																			
								Landslide																			
								Water Supply Failure																			
								Explosion																			
								Epidemic																			
								Civil Unrest																			
								Drought																			
								Terrorism																			
								Windstorm																			
								Wildfire																			
								Mass Gathering																			
								Earthquake																			
								Radiological - In Transit																			
								Mine Collapse																			

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f	4g
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced (italics) and how concerned about each are you?	How concerned are you about those hazards?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influenced decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered	Comments

1	Bloomingburg	12721	10-19	Y	Own	4	d	Power Failure		Times Herald	N	N	N	Don't need/never flooded	Have Done	N	N	Y	\$5,000-\$10,000	Insurance Premium Discount	Buyout	Survey should've been better communicated, should be electronic (online) and could be better formatted.					
								Structural Fire	Somewhat	Utility Company																	
								Tornado	Somewhat	Sullivan County Democrat																	
								Ice Storm																			
								Dam Failure	Somewhat																		
								Winter Storm																			
								HAZMAT/Fixed Sites	Somewhat																		
								Flood																			
								Trans. Accid.																			
								Structural Collapse	Very																		
								Oil Spill	Somewhat																		
								HAZMAT - In Transit	Somewhat																		
								Ice Jam																			
								Landslide	Somewhat																		
								Water Supply Failure	Somewhat																		
								Explosion	Somewhat																		
								Epidemic	Somewhat																		
								Civil Unrest	Very																		
								Drought	Very																		
								Terrorism	Somewhat																		
								Windstorm	Somewhat																		
								Wildfire	Somewhat																		
								Mass Gathering	Somewhat																		
								Earthquake	Somewhat																		
								Radiological - In Transit	Somewhat																		
								Mine Collapse	Not																		

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced (italics) and how concerned about each are you?	How concerned are you about those hazards?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered

1	Callicoon	12723	20+	Y	Own	3	c	Power Failure	Somewhat	Times Herald	N	N	N	Don't need/not in flood plain			Have done	Have done		N	N		\$1,000-\$2,500	Property tax discount Insurance Premium Discount	Elevation
							d	Structural Fire		River Reporter															
							e	Tornado		Radio news															
								Ice Storm		Internet															
								Dam Failure																	
								Winter Storm	Somewhat																
								HAZMAT/Fixed Sites																	
								Flood																	
								Trans. Accid.	Very																
								Structural Collapse																	
								Oil Spill	Extremely																
								HAZMAT - In Transit	Very																
								Ice Jam																	
								Landslide																	
								Water Supply Failure																	
								Explosion	Very																
								Epidemic																	
							Civil Unrest																		
							Drought																		
							Terrorism																		
							Windstorm																		
							Wildfire																		
							Mass Gathering																		
							Earthquake																		
							Radiological - In Transit																		
							Mine Collapse																		
2	Callicoon	12723	10-19	N	Own	3	a	<i>Power Failure</i>	Very	Radio news	Not sure	No	No	Too expensive	Have done	N	N	N	\$0	Low interest loan Property tax discount Insurance Premium Discount Grant Program w/cost share	None				
							b	Structural Fire	Not	Outdoor Ads															
							c	Tornado		Other (e-mail)															
							f	<i>Ice Storm</i>	Somewhat																
								Dam Failure																	
								Winter Storm	Very																
								HAZMAT/Fixed Sites																	
								Flood	Very																
								Trans. Accid.																	
								Structural Collapse	Extremely																
								Oil Spill																	
								HAZMAT - In Transit																	
								Ice Jam																	
								Landslide																	
								Water Supply Failure																	
								Explosion																	
								Epidemic																	
							Civil Unrest																		
							Drought																		
							Terrorism																		
							Windstorm	Extremely																	
							Wildfire																		
							Mass Gathering																		
							Earthquake																		
							Radiological - In Transit																		
							Mine Collapse																		

3	Callicoon	12723	20+	Y	Own	3	f	Power Failure	Somewhat	Local Cable TV News Radio Advertising	N	N	N	Don't need/not in flood plain	Have done	Have done	Have done	Have done	Have done	Y	N	Y	\$0	Mortgage Discount	Buyout
								Structural Fire																Property tax discount	Elevation
								Tornado		Internet															
								Ice Storm	Somewhat																
								Dam Failure																	
								Winter Storm	Somewhat																
								HAZMAT/Fixed Sites																	
								Flood																	
								Trans. Accid.																	
								Structural Collapse																	
								Oil Spill																	
								HAZMAT - In Transit																	
								Ice Jam																	
								Landslide																	
								Water Supply Failure																	
								Explosion																	
								Epidemic																	
							Civil Unrest																		
							Drought																		
							Terrorism																		
							Windstorm																		
							Wildfire																		
							Mass Gathering																		
							Earthquake																		
							Radiological - In Transit																		
							Mine Collapse																		
4	Callicoon	12723	1-5	Y	Own	3	c	Power Failure		Times Herald	N	N	N	Don't need/not in flood plain	Not done	Have done	Plan to do	Not done	Have done	N	N	Y	\$5,000 - \$10,000	Property tax discount	
							d	Structural Fire	Not	Sull Co Democrat Radio Advertising														Insurance Premium Discount	
								Tornado	Somewhat	Internet														Grantn Program w/cost share	
								Ice Storm																	
								Dam Failure	Not	Schools/colleges															
								Winter Storm																	
								HAZMAT/Fixed Sites	Not																
								Flood	Very																
								Trans. Accid.	Very																
								Structural Collapse	Not																
								Oil Spill	Not																
								HAZMAT - In Transit	Not																
								Ice Jam																	
								Landslide	Not																
								Water Supply Failure	Not																
								Explosion	Not																
								Epidemic	Not																
							Civil Unrest	Not																	
							Drought	Not																	
							Terrorism	Not																	
							Windstorm																		
							Wildfire	Somewhat																	
							Mass Gathering	Not																	
							Earthquake	Not																	
							Radiological - In Transit	Very																	
							Mine Collapse	Not																	

5	Callicoon	12723	20+	Y	Own	3	c	Power Failure	Somewhat	Regional TV News	N	N	N	Don't need/not in flood plain	Have done	Have done	Have done	Have done	Not done	Y	N	Y	\$0	Low interest loan	Relocation								
								Structural Fire	Somewhat	Radio news																							
								Tornado	Very	Fire/EMS Dept																							
								Ice Storm	Not																								
								Dam Failure	Not																								
								Winter Storm	Somewhat																								
								HAZMAT/Fixed Sites	Somewhat																								
								Flood	Somewhat																								
								Trans. Accid.	Not																								
								Structural Collapse																									
								Oil Spill	Very																								
								HAZMAT - In Transit	Very																								
								Ice Jam	Not																								
								Landslide	Not																								
								Water Supply Failure	Very																								
								Explosion	Somewhat																								
								Epidemic	Not																								
								Civil Unrest	Not																								
								Drought	Very																								
								Terrorism	Somewhat																								
Windstorm	Very																																
Wildfire	Not																																
Mass Gathering	Not																																
Earthquake	Not																																
Radiological - In Transit	Somewhat																																
Mine Collapse	Not																																
6	Callicoon	12723	20+	Y	Rent	2		Power Failure		Other Newspaper	?	N	N	Too expensive	Plan to do	Have done	Have done	Have done	Have done	Y	N	Y	<\$100	Other (rent discount)	None								
								Structural Fire	Somewhat	Internet																							
								Tornado		Fire/EMS Dept																							
								Ice Storm		Other (e-mail)																							
								Dam Failure	Extremely																								
								Winter Storm																									
								HAZMAT/Fixed Sites	Extremely																								
								Flood																									
								Trans. Accid.																									
								Structural Collapse	Not																								
								Oil Spill	Extremely																								
								HAZMAT - In Transit																									
								Ice Jam																									
								Landslide	Not																								
								Water Supply Failure																									
								Explosion	Extremely																								
								Epidemic	Somewhat																								
								Civil Unrest	Not																								
								Drought																									
								Terrorism	Not																								
Windstorm																																	
Wildfire	Not																																
Mass Gathering	Not																																
Earthquake																																	
Radiological - In Transit	Not																																
Mine Collapse	Extremely																																

7	Callicoon	12723	20+	Y	Own	4	c	Power Failure	Not	Regional TV News	Y	N	N	Too expensive	Not done	Can not	Can not	Have done	Not done	N	N	N	\$1,000-\$2,500	Property tax discount Grant Program w/cost share	Elevation
							e	Structural Fire	Not	Radio news				Not required by code											
							f	Tornado	Not	Internet				Not required by law											
								Ice Storm	Somewhat																
								Dam Failure	Very																
								Winter Storm	Not																
								HAZMAT/Fixed Sites	Not																
								Flood	Very																
								Trans. Accid.	Not																
								Structural Collapse	Not																
								Oil Spill	Somewhat																
								HAZMAT - In Transit	Not																
								Ice Jam	Somewhat																
								Landslide	Somewhat																
								Water Supply Failure	Not																
								Explosion	Not																
								Epidemic	Somewhat																
								Civil Unrest	Not																
								Drought	Somewhat																
								Terrorism	Very																
								Windstorm																	
								Wildfire	Somewhat																
								Mass Gathering	Not																
								Earthquake	Not																
								Radiological - In Transit	Somewhat																
								Mine Collapse	Not																

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f											
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced (italics) and how concerned about each are you?	How concerned are you about those hazards?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influenced decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered											
1	Callicoon Ctr.	12724	10-19	Y	Own	2	c	<i>Power Failure</i>	Somewhat	Outdoor Ads	N	N	N	Don't need/not in flood plain	Not done	Not done	Not done	Not done	Have done	N	Y	Y	\$2,500-\$5,000	Mortgage Discount	Buyout										
								Structural Fire	Somewhat	County/Local Gov't																					Grant Program w/cost share				
								<i>Tornado</i>	Very	Other (PO/Supermarket/gas stn.)																									
								<i>Ice Storm</i>	Very																										
								<i>Dam Failure</i>	Not																										
								<i>Winter Storm</i>	Very																										
								HAZMAT/Fixed Sites	Very																										
								Flood	Somewhat																										
								<i>Trans. Accid.</i>	Very																										
								Structural Collapse	Somewhat																										
								Oil Spill	Not																										
								HAZMAT - In Transit	Extremely																										
								Ice Jam	Somewhat																										
								Landslide	Somewhat																										
								Water Supply Failure	Somewhat																										
								Explosion	Somewhat																										
								<i>Epidemic</i>	Very																										
Civil Unrest	Not																																		
Drought	Not																																		
Terrorism	Somewhat																																		
<i>Windstorm</i>	Very																																		
Wildfire	Somewhat																																		
Mass Gathering	Not																																		
Earthquake	Somewhat																																		
Radiological - In Transit	Extremely																																		
Mine Collapse	Not																																		
2	Callicoon Ctr.	12724	20+	Y	Own	4	b c	<i>Power Failure</i>		Sull Co Democrat	Y	Y	N		Have done	Have done	Plan to do	Not done	Not done	Y	N	Y	\$2,500-\$5,000	Mortgage Discount	Buyout										
								Structural Fire	Very	Radio news																						Property tax discount	Relocation		
								<i>Tornado</i>	Somewhat	Internet																								Insurance Premium Discount	
								<i>Ice Storm</i>																											
								<i>Dam Failure</i>	Somewhat																										
								<i>Winter Storm</i>																											
								HAZMAT/Fixed Sites	Not																										
								Flood																											
								<i>Trans. Accid.</i>																											
								Structural Collapse	Somewhat																										
								Oil Spill	Not																										
								HAZMAT - In Transit																											
								Ice Jam																											
								Landslide	Not																										
								Water Supply Failure	Very																										
								Explosion	Not																										
								<i>Epidemic</i>	Somewhat																										
Civil Unrest	Not																																		
<i>Drought</i>																																			
Terrorism	Somewhat																																		
<i>Windstorm</i>	Somewhat																																		
Wildfire	Somewhat																																		
Mass Gathering	Somewhat																																		
Earthquake	Somewhat																																		
Radiological - In Transit	Not																																		
Mine Collapse	Not																																		

3	Callicoon Ctr.	12724	10-19	Y	Own	4	a	Power Failure	Very	Local Cable TV News	Y	N	N	Too expensive	Have done	N	N	Y	\$2,500 - \$5,000	Property tax discount Insurance Premium Discount	Buyout						
							b	Structural Fire		Radio news Radio Advertising																	
							c	Tornado																			
							e	Ice Storm																			
								Dam Failure																			
								Winter Storm	Very																		
								HAZMAT/Fixed Sites																			
								Flood	Very																		
								Trans. Accid.																			
								Structural Collapse																			
								Oil Spill																			
								HAZMAT - In Transit																			
								Ice Jam																			
								Landslide																			
								Water Supply Failure																			
								Explosion																			
								Epidemic																			
								Civil Unrest																			
								Drought																			
								Terrorism																			
							Windstorm																				
							Wildfire																				
							Mass Gathering																				
							Earthquake																				
							Radiological - In Transit																				
							Mine Collapse																				

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced (italics) and how concerned about each are you?	How concerned are you about those hazards?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influenced decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered

1	Fallsburg	12733	10-19	Y	Own	3	d	<i>Power Failure</i> Structural Fire	Times Herald Record Radio News	N	N	N	Don't need/never flooded	Not done	Have done	Not done	Have done	Have done	N	N	N	\$500-\$1,000	Mortgage Discount Property tax discount Insurance premium discount	Buyout Relocation Elevation
								<i>Tornado</i>																
								<i>Ice Storm</i>																
								<i>Dam Failure</i>																
								<i>Winter Storm</i>																
								HAZMAT/Fixed Sites																
								<i>Flood</i>																
								Trans. Accid.																
								Structural Collapse																
								Oil Spill																
								HAZMAT - In Transit																
								Ice Jam																
								Landslide																
								Water Supply Failure																
								Explosion																
								Epidemic	Not															
								Civil Unrest	Not															
								Drought	Not															
								Terrorism	Not															
								Windstorm	Not															
								Wildfire	Not															
								Mass Gathering	Not															
								Earthquake	Not															
								Radiological - In Transit	Not															
								Mine Collapse	Not															

2a	2a	2b	2c	2d	2e	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/Rent	Street (Confidential)	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced (italics) and how concerned are you?	How concerned are you about those hazards?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered

1	Ferndale	12734	20+	Y	Own		3	<i>Power Failure</i>		Times Herald Record	N	N	N										\$0.00	Low interest loan Insurance premium discount	
								<i>Structural Fire</i>		Sull Co. Democrat															
								<i>Tornado</i>		River Reporter															
								<i>Ice Storm</i>		Radio News															
								<i>Dam Failure</i>		Fire/EMS Dept.															
								<i>Winter Storm</i>																	
								<i>HAZMAT/Fixed Sites</i>																	
								<i>Flood</i>																	
								<i>Trans. Accid.</i>																	
								<i>Structural Collapse</i>																	
								<i>Oil Spill</i>																	
								<i>HAZMAT – In Transit</i>																	
								<i>Ice Jam</i>																	
								<i>Landslide</i>																	
								<i>Water Supply Failure</i>																	
								<i>Explosion</i>																	
								<i>Epidemic</i>																	
								<i>Civil Unrest</i>																	
								<i>Drought</i>																	
								<i>Terrorism</i>																	
								<i>Windstorm</i>																	
								<i>Wildfire</i>																	
								<i>Mass Gathering</i>																	
								<i>Earthquake</i>																	
								<i>Radiological – In Transit</i>																	
								<i>Mine Collapse</i>																	

2a 2a 2b 2c 2d 3a 3b 3c 3d 3e 3f 3g 3h 3i 3i 3i 3i 3i 4a 4b 4c 4d 4e 4f

In past 20 yrs, which hazards have you experienced (italics) and how concerned about each are you?

How long have you lived in Sullivan County? Primary Residence? Own/ (1=least prepared, 5=most prepared) Preparedness? Why do you feel prepared?

How concerned are you about those hazards? Best information distribution outlets? Floodplain? Flood Insurance? Difficulty obtaining HO insurance? Why no Flood insurance?

1 2 3 4 5

Consider disaster impact on home prior to purchase? Real Estate agent or landlord inform you of natural hazard risk zone? Would disclosure of this info influence decision to buy/move into new home? \$ you'd be willing to spend on making home more resistant to natural hazard? Incentives that would encourage you to spend \$ to protect home from natural hazard? Mitigation actions considered

Community	Zip	How long have you lived in Sullivan County?	Primary Residence?	Own/ (1=least prepared, 5=most prepared)	Preparedness	Why do you feel prepared?	Emerg. preparedness info from Gov't Source	In past 20 yrs, which hazards have you experienced (italics) and how concerned about each are you?	How concerned are you about those hazards?	Best information distribution outlets?	Floodplain?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard?	Incentives that would encourage you to spend \$ to protect home from natural hazard?	Mitigation actions considered
1	Fremont	12736	20+	Y	Own	5	Emerg. preparedness info from Gov't Source <i>Power Failure</i>	Somewhat	Somewhat	Radio News	N	N	N	Don't need - never flooded	Have done	Have done	Have done	Plan to do		N		Y	\$0.00	None	None
							Have attended mtgs. about hazard mit. or disaster preparedness. <i>Structural Fire</i>	Very	Very	Fire/EMS Dept															
							Gained awareness from local/regional media rpts <i>Tornado</i>	Somewhat	Somewhat	Cty/Local Gov't															
							Received info from local utility company <i>Ice Storm</i>	Somewhat	Somewhat																
							Received info from non-gov't organizations <i>Dam Failure</i>																		
							<i>Winter Storm</i>	Somewhat																	
							<i>HAZMAT/Fixed Sites</i>	Very																	
							<i>Flood</i>	Very																	
							<i>Trans. Accid.</i>	Somewhat																	
							<i>Structural Collapse</i>																		
							<i>Oil Spill</i>	Somewhat																	
							<i>HAZMAT - In Transit</i>																		
							<i>Ice Jam</i>																		
							<i>Landslide</i>																		
							<i>Water Supply Failure</i>	Somewhat																	
							<i>Explosion</i>																		
							<i>Epidemic</i>																		
							<i>Civil Unrest</i>																		
							<i>Drought</i>	Somewhat																	
							<i>Terrorism</i>																		
							<i>Windstorm</i>																		
							<i>Wildfire</i>																		
							<i>Mass Gathering</i>	Very																	
							<i>Earthquake</i>																		
							<i>Radiological - In Transit</i>																		
							<i>Mine Collapse</i>																		
2	Fremont Ctr	12736	20+	Y	Own	1	Emerg. preparedness info from Gov't Source <i>Power Failure</i>	Somewhat	Somewhat					Don't need - not in floodplain	Not done	Have done	Plan to do	Have done	Not done	Y	N	Y	\$2,500-\$5,000	Low interest loan	Buyout
							Gained awareness from local/regional media rpts <i>Structural Fire</i>	Somewhat																Property tax discount	
							Received info from local utility company <i>Tornado</i>	Somewhat																Insurance premium discount	
							<i>Ice Storm</i>	Somewhat																Grant program with cost share rqt	
							<i>Dam Failure</i>	Somewhat																	
							<i>Winter Storm</i>	Somewhat																	
							<i>HAZMAT/Fixed Sites</i>	Extremely																	
							<i>Flood</i>	Extremely																	
							<i>Trans. Accid.</i>	Extremely																	
							<i>Structural Collapse</i>	Somewhat																	
							<i>Oil Spill</i>	Somewhat																	
							<i>HAZMAT - In Transit</i>	Extremely																	
							<i>Ice Jam</i>	Somewhat																	
							<i>Landslide</i>	Somewhat																	
							<i>Water Supply Failure</i>	Extremely																	
							<i>Explosion</i>	Extremely																	
							<i>Epidemic</i>																		
							<i>Civil Unrest</i>																		
							<i>Drought</i>																		
							<i>Terrorism</i>																		
							<i>Windstorm</i>																		
							<i>Wildfire</i>																		
							<i>Mass Gathering</i>																		
							<i>Earthquake</i>																		
							<i>Radiological - In Transit</i>																		
							<i>Mine Collapse</i>																		

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced (italics) and how concerned about each are you?	How concerned are you about those hazards?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influenced decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered

1	Glen Spey	12737	20+	Y	Own	4	Have attended mtgs. about hazard mit. or disaster preparedness.		Times Herald Record	N	N	N	Don't need - not in floodplain	Have done	Have done	Not done	Have done	Not done	N	N	Y	\$0.00	Mortgage discount	Buyout
							<i>Power Failure</i>	Somewhat	River Reporter														Property tax discount	Relocation
							Tornado	Not	Internet														Insurance premium discount	
							<i>Ice Storm</i>																Grant program with cost share rqt	
							Dam Failure	Not																
							<i>Winter Storm</i>																	
							HAZMAT/Fixed Sites	Not																
							Flood	Not																
							Trans. Accid.	Not																
							Structural Collapse	Not																
							Oil Spill	Not																
							HAZMAT - In Transit	Not																
							Ice Jam	Not																
							Landslide	Not																
							Water Supply Failure	Not																
							Explosion	Not																
						Epidemic	Not																	
						Civil Unrest	Not																	
						Drought	Not																	
						Terrorism	Not																	
						Windstorm	Not																	
						Wildfire	Not																	
						<i>Mass Gathering</i>																		
						Earthquake	Not																	
						Radiological - In Transit	Not																	
						Mine Collapse	Not																	
2	Glen Spey	12737	20+	Y	Own	3	Emerg. preparedness info from Gov't Source		Times Herald Record	N	N	N	Don't need - never flooded	Not done	Have done	Plan to do	Plan to do	Have done	N	N	Y	\$5,000-\$10,000	Mortgage discount	Buyout
							Gained awareness from local/regional media rpts		Sull Co Democrat														Low interest loan	Relocation
							Info provided by schools/academic institutions		River Reporter														Property tax discount	
							Tornado																	
							<i>Ice Storm</i>																	
							Dam Failure																	
							<i>Winter Storm</i>																	
							HAZMAT/Fixed Sites																	
							Flood																	
							Trans. Accid.																	
							Structural Collapse																	
							Oil Spill																	
							HAZMAT - In Transit																	
							Ice Jam																	
							Landslide																	
							Water Supply Failure																	
						Explosion																		
						Epidemic	Very																	
						Civil Unrest																		
						Drought																		
						Terrorism																		
						Windstorm																		
						Wildfire																		
						<i>Mass Gathering</i>																		
						Earthquake																		
						Radiological - In Transit																		
						Mine Collapse																		

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?		Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered

1	Grahamsville	12740	20+	Y	Own	2		Power Failure		Extremely	Internet			Don't need - not in floodplain	Not done	Have done	Not done	Have done	Not done	N	N	Y	\$2,500-\$5,000	Property tax discount	
								Structural Fire			Public Mtg/Wksp														
								Tornado			Cty/Local Gov't														
								Ice Storm																	
								Dam Failure	Y																
								Winter Storm																	
								HAZMAT/Fixed Sites																	
								Flood																	
								Trans. Accid.																	
								Structural Collapse																	
								Oil Spill																	
								HAZMAT - In Transit																	
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								Drought																	
								Terrorism																	
								Windstorm																	
								Wildfire																	
								Mass Gathering																	
								Earthquake																	
								Radiological - In Transit																	
								Mine Collapse																	

2	Grahamsville	12740	20+	Y	Own	5	Emerg. preparedness info from Gov't Source	Power Failure	Y	Very	Sull Co Democrat			Don't need - not in floodplain	Have done	Have done	Have done	Not done	Not done	Y	N	Y	\$1,000-\$2,500	Low interest loan	None
							Have attended mtgs. about hazard mit. or disaster preparedness.	Structural Fire	Y		Other Newspaper													Insurance premium discount	
							Gained awareness from local/regional media rpts	Tornado		Somewhat	Radio News														
								Ice Storm	Y	Extremely	Cty/Local Gov't														
								Dam Failure		Somewhat															
								Winter Storm	Y	Very															
								HAZMAT/Fixed Sites																	
								Flood	Y	Somewhat															
								Trans. Accid.		Not															
								Structural Collapse		Not															
								Oil Spill	Y	Somewhat															
								HAZMAT - In Transit		Somewhat															
								Ice Jam	Y	Somewhat															
								Landslide	Y	Somewhat															
								Water Supply Failure		Somewhat															
								Explosion		Somewhat															
								Epidemic		Somewhat															
								Civil Unrest		Not															
								Drought		Somewhat															
								Terrorism		Very															
								Windstorm		Very															
								Wildfire		Very															
								Mass Gathering		Somewhat															
								Earthquake		Not															
								Radiological - In Transit		Not															
								Mine Collapse		Not															

3	Grahamsville	12740	20+	Y	Own	4	Gained awareness from local/regional media rpts	Power Failure	Y	Very	Radio News	N	N	N	Don't need - not in floodplain	Have done	Have done	Have done	Have done	Not done	N	N	N	\$0.00	None	
								Structural Fire		Not	Internet															
								Tornado	Y	Somewhat																
								Ice Storm	Y	Somewhat																
								Dam Failure		Not																
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites		Not																
								Flood		Somewhat																
								Trans. Accid.		Not																
								Structural Collapse		Not																
								Oil Spill		Not																
								HAZMAT - In Transit		Not																
								Ice Jam		Not																
								Landslide		Not																
								Water Supply Failure		Not																
								Explosion		Not																
								Epidemic	Y	Somewhat																
								Civil Unrest		Not																
								Drought	Y	Somewhat																
								Terrorism		Not																
							Windstorm	Y	Somewhat																	
							Wildfire		Somewhat																	
							Mass Gathering		Not																	
							Earthquake		Somewhat																	
							Radiological - In Transit		Not																	
							Mine Collapse		Not																	
4	Grahamsville	12740	20+	Y	Own	3		Power Failure	Y	Extremely	Times Herald Record	N	N	N	Don't need - never flooded	Not done	Not done	Not done	Not done	Not done	N		Y	\$0.00	None	None
								Structural Fire		Extremely	Sull Co Democrat				Don't need - not in floodplain											
								Tornado		Extremely	Fire/EMS Dept															
								Ice Storm	Y	Extremely																
								Dam Failure		Extremely																
								Winter Storm	Y	Extremely																
								HAZMAT/Fixed Sites		Extremely																
								Flood		Extremely																
								Trans. Accid.		Extremely																
								Structural Collapse		Extremely																
								Oil Spill		Extremely																
								HAZMAT - In Transit		Extremely																
								Ice Jam		Extremely																
								Landslide		Extremely																
								Water Supply Failure		Extremely																
								Explosion		Extremely																
								Epidemic		Extremely																
								Civil Unrest		Extremely																
								Drought		Extremely																
								Terrorism		Extremely																
							Windstorm		Extremely																	
							Wildfire		Extremely																	
							Mass Gathering	Y																		
							Earthquake		Extremely																	
							Radiological - In Transit		Extremely																	
							Mine Collapse	Y																		

5	Grahamsville	12740	20+	Y	Own	5		Power Failure	Y	Not	Regional TV News	N	N	N	Too expensive		Not done	Not done	Have done	Plan to do	Y	N	Y	\$0.00	Property tax discount Insurance premium discount	Buyout
								Structural Fire		Not	Radio News															
								Tornado		Not	Internet															
								Ice Storm	Y	Not																
								Dam Failure		Not																
								Winter Storm	Y	Not																
								HAZMAT/Fixed Sites		Not																
								Flood		Not																
								Trans. Accid.		Not																
								Structural Collapse		Not																
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								Civil Unrest		Not																
								Drought		Not																
								Terrorism		Extremely																
								Windstorm		Not																
								Wildfire		Not																
								Mass Gathering		Not																
								Earthquake		Not																
								Radiological - In Transit		Not																
								Mine Collapse		Not																
6	Grahamsville	12740	20+	Y	Own	4	Emerg. preparedness info from Gov't Source	Power Failure	Y	Very	Times Herald Record	N	N	N	Don't need - not in floodplain	Have done	Have done	Have done	Not done	Have done	N	N	Y	\$5,000-\$10,000	Property tax discount	Relocation
							Info provided by schools/academic institutions	Structural Fire		Very	Fire/EMS Dept														Insurance premium discount	Elevation
								Tornado		Not	Cty/Local Gov't														Grant program with cost share rqt	
								Ice Storm		Somewhat																
								Dam Failure		Not																
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites		Somewhat																
								Flood	Y	Somewhat																
								Trans. Accid.		Not																
								Structural Collapse		Not																
								Oil Spill		Somewhat																
								HAZMAT - In Transit		Not																
								Ice Jam		Not																
								Landslide		Not																
								Water Supply Failure		Somewhat																
								Explosion		Somewhat																
								Epidemic		Somewhat																
								Civil Unrest		Somewhat																
								Drought	Y	Somewhat																
								Terrorism		Somewhat																
								Windstorm	Y	Somewhat																
								Wildfire		Somewhat																
								Mass Gathering	Y	Somewhat																
								Earthquake		Not																
								Radiological - In Transit		Not																
								Mine Collapse		Not																

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered		

1	Highland Lake	12743	20+	Y	Own	3		Power Failure	Y	Very	Times Herald Record		N	N	N	Don't need - not in floodplain	Not done	N	N	Y	>\$10,000	Property tax discount	Buyout				
								Structural Fire		Very	Radio News															Insurance premium discount	
								Tornado		Not	Internet															Grant program with cost share rqt	
								Ice Storm	Y	Very																	
								Dam Failure		Not																	
								Winter Storm	Y	Somewhat																	
								HAZMAT/Fixed Sites		Somewhat																	
								Flood		Not																	
								Trans. Accid.		Not																	
								Structural Collapse		Not																	
								Oil Spill		Not																	
								HAZMAT - In Transit		Somewhat																	
								Ice Jam		Not																	
								Landslide		Not																	
								Water Supply Failure		Somewhat																	
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								Epidemic		Not																	
								Civil Unrest		Not																	
								Drought		Not																	
								Terrorism		Not																	
								Windstorm		Not																	
								Wildfire		Somewhat																	
								Mass Gathering		Not																	
								Earthquake		Not																	
								Radiological - In Transit		Not																	
								Mine Collapse		Not																	

2	Highland Lake	12743	20+	Y	Own	3	Have attended mtgs. about hazard mit. or disaster preparedness.	Power Failure	Y	Somewhat	River Reporter		N	N	N	Don't need - never flooded	Have done	Plan to do	Not done	Not done	Have done	Y	N	Y	\$2,500-\$5,000	Property tax discount	Elevation
							Info provided by schools/academic institutions	Structural Fire		Very	Internet																
								Tornado		Somewhat	Schools/Colleges																
								Ice Storm	Y	Somewhat																	
								Dam Failure		Somewhat																	
								Winter Storm	Y	Somewhat																	
								HAZMAT/Fixed Sites		Somewhat																	
								Flood		Somewhat																	
								Trans. Accid.	Y	Very																	
								Structural Collapse		Very																	
								Oil Spill		Somewhat																	
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								Mass Gathering		Somewhat																	
								Earthquake		Somewhat																	
								Radiological - In Transit		Very																	
								Mine Collapse		Somewhat																	

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered	

1	Hortonville	12745	6-9	Y	Own	3	Have attended mtgs. about hazard mit. or disaster preparedness.	Power Failure Structural Fire Tornado Ice Storm Dam Failure Winter Storm HAZMAT/Fixed Sites Flood Trans. Accid. Structural Collapse Oil Spill HAZMAT - In Transit Ice Jam Landslide Water Supply Failure Explosion Epidemic Civil Unrest Drought Terrorism Windstorm Wildfire Mass Gathering Earthquake Radiological - In Transit Mine Collapse				Times Herald Record Internet	Y	Y	N		Have done	Plan to do	Plan to do	Not done	Have done	Y	N	Y	>\$10,000	Low interest loan Property tax discount Insurance premium discount Grant program with cost share rqt	Elevation
2	Hortonville	12745	10-19	Y	Own	1		Power Failure Structural Fire Tornado Ice Storm Dam Failure Winter Storm HAZMAT/Fixed Sites Flood Trans. Accid. Structural Collapse Oil Spill HAZMAT - In Transit Ice Jam Landslide Water Supply Failure Explosion Epidemic Civil Unrest Drought Terrorism Windstorm Wildfire Mass Gathering Earthquake Radiological - In Transit Mine Collapse	Y	Extremely	River Reporter	?	N	N	Don't need - never flooded	Can not	Can not	Have done	Have done	Can not	N	N	Y	\$100-\$500	Low interest loan Buyout		

3	Hortonville	12745	20+	Y	Own	4	Have attended mtgs. about hazard mit. or disaster preparedness.	Power Failure	Y		Times Herald Record	Y	Y	N		Have done	Not done	Not done	Have done	Not done	N	N	N	\$1,000-\$2,500	Insurance premium discount	Buyout
							Gained awareness from local/regional media rpts	Structural Fire		Somewhat	Internet														Grant program with cost share rqt	
								Tornado		Not	City/Local Gov't															
								Ice Storm		Somewhat																
								Dam Failure		Somewhat																
								Winter Storm		Not																
								HAZMAT/Fixed Sites		Extremely																
								Flood		Extremely																
								Trans. Accid.		Very																
								Structural Collapse		Not																
								Oil Spill		Not																
								HAZMAT – In Transit		Very																
								Ice Jam																		
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								Water Supply Failure		Very																
								Explosion		Not																
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								Civil Unrest		Not																
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								Wildfire		Not																
								Mass Gathering		Not																
								Earthquake		Not																
								Radiological – In Transit		Somewhat																
								Mine Collapse		Not																

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered	
1	Hurleyville	12747	6-9	Y	Own	3	Gained awareness from local/regional media rpts	Regional TV News	N	N	N	Don't need - never flooded	Not done	N	N	N	\$0.00	None	None					
							Power Failure	Y																
							Structural Fire																	
							Tornado																	
							Ice Storm	Y																
							Dam Failure																	
							Winter Storm	Y																
							HAZMAT/Fixed Sites																	
							Flood																	
							Trans. Accid.																	
							Structural Collapse																	
							Oil Spill																	
							HAZMAT - In Transit																	
							Ice Jam																	
							Landslide																	
							Water Supply Failure	Y																
							Explosion																	
							Epidemic																	
							Civil Unrest																	
							Drought																	
							Terrorism																	
							Windstorm	Y																
							Wildfire																	
							Mass Gathering																	
							Earthquake																	
							Radiological - In Transit																	
							Mine Collapse																	

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f		
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?		Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influenced decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered		
1	Jeffersonville	12748	20+	Y	Own	3	Have attended mtgs. about hazard mit. or disaster preparedness.	Power Failure	Y	Not	Sull Co Democrat	N	N	N	Too expensive	Have done	Not done	Not done	Have done	Not done	Y	N	Y	\$0.00	Property tax discount	Buyout
								Structural Fire	Y	Not	Local Cable TV News															
								Tornado			Radio News															
								Ice Storm	Y	Not																
								Dam Failure																		
								Winter Storm	Y	Not																
								HAZMAT/Fixed Sites																		
								Flood	Y	Extremely																
								Trans. Accid.																		
								Structural Collapse	Y	Not																
								Oil Spill	Y	Not																
								HAZMAT - In Transit																		
								Ice Jam	Y	Not																
								Landslide																		
								Water Supply Failure																		
								Explosion																		
								Epidemic																		
								Civil Unrest																		
								Drought	Y	Not																
								Terrorism																		
								Windstorm																		
								Wildfire	Y	Not																
								Mass Gathering																		
								Earthquake																		
								Radiological - In Transit																		
								Mine Collapse																		
2	Jeffersonville	12748	20+	Y	Rent	4	Emerg. preparedness info from Gov't Source Have attended mtgs.	Power Failure	Y	Somewhat	Times Herald Record	N	N	N	Don't need - not in floodplain	Have done	Have done	Have done	Not done	Not done	Y		Y	\$2,500-\$5,000	Property tax discount	Elevation
								Structural Fire		Somewhat	Sull Co Democrat															
								Tornado		Somewhat	Internet															
								Ice Storm	Y	Very	Cty/Local Gov't															
								Dam Failure		Somewhat																
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites		Somewhat																
								Flood	Y	Extremely																
								Trans. Accid.		Somewhat																
								Structural Collapse		Somewhat																
								Oil Spill		Somewhat																
								HAZMAT - In Transit		Very																
								Ice Jam		Not																
								Landslide		Not																
								Water Supply Failure		Not																
								Explosion		Not																
								Epidemic		Somewhat																
								Civil Unrest		Not																
								Drought		Somewhat																
								Terrorism		Not																
								Windstorm		Somewhat																
								Wildfire		Not																
								Mass Gathering		Somewhat																
								Earthquake		Not																
								Radiological - In Transit		Somewhat																
								Mine Collapse		Not																

3	Jeffersonville	12748	20+	Y	Own	4	Emerg. preparedness info from Gov't Source Gained awareness Received info from local utility company	Power Failure Structural Fire	Y	Somewhat	Radio News	N	N	N	Don't need - never flooded	Have done	Have done	Have done	Have done	Not done	Y	N	Y	\$5,000-\$10,000	Low interest loan Property tax discount Insurance premium discount	Buyout
								Tornado																		
								Ice Storm	Y	Somewhat																
								Dam Failure																		
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites																		
								Flood																		
								Trans. Accid.																		
								Structural Collapse																		
								Oil Spill																		
								HAZMAT - In Transit																		
								Ice Jam																		
								Landslide	Y	Somewhat																
								Water Supply Failure																		
								Explosion																		
								Epidemic																		
								Civil Unrest																		
								Drought																		
								Terrorism																		
								Windstorm	Y	Somewhat																
								Wildfire																		
								Mass Gathering																		
								Earthquake																		
								Radiological - In Transit																		
								Mine Collapse																		
4	Jeffersonville (Kohlertown)	12748	10-19	N	Own	2		Power Failure Structural Fire	Y		Local Cable TV News Radio News	N	N	N	Not worth it	Not done	Have done	Have done	Not done	Not done	N	N	Y	\$0.00	Low interest loan Property tax discount Insurance premium discount Other	Relocation
								Tornado			Internet															
								Ice Storm		Somewhat																
								Dam Failure	Y	Extremely																
								Winter Storm	Y	Extremely																
								HAZMAT/Fixed Sites																		
								Flood	Y	Extremely																
								Trans. Accid.																		
								Structural Collapse																		
								Oil Spill																		
								HAZMAT - In Transit		Very																
								Ice Jam		Extremely																
								Landslide																		
								Water Supply Failure		Somewhat																
								Explosion																		
								Epidemic		Not																
								Civil Unrest		Not																
								Drought		Not																
								Terrorism																		
								Windstorm		Somewhat																
								Wildfire		Somewhat																
								Mass Gathering																		
								Earthquake																		
								Radiological - In Transit																		
								Mine Collapse																		

5	Jeffersonville	12748	10-19	Y	Rent	5		Power Failure	Y		Radio News	Y	N	N		Have done	Have done	Have done	Have done	Not done	N	Y	N	\$0.00	None	None
								Structural Fire			Radio Advertising															
								Tornado			Fire/EMS Dept															
								Ice Storm																		
								Dam Failure																		
								Winter Storm	Y																	
								HAZMAT/Fixed Sites																		
								Flood																		
								Trans. Accid.																		
								Structural Collapse																		
								Oil Spill																		
								HAZMAT - In Transit																		
								Ice Jam																		
								Landslide																		
								Water Supply Failure																		
								Explosion																		
								Epidemic																		
								Civil Unrest																		
								Drought																		
								Terrorism																		
								Windstorm																		
								Wildfire																		
								Mass Gathering																		
								Earthquake																		
								Radiological - In Transit																		
								Mine Collapse																		
6	Jeffersonville	12748	1-5	Y	Own	3	Emerg. preparedness info from Gov't Source Gained awareness	Power Failure	Y	Very	Radio News	Y	N	N	Too expensive	Not done	Have done	Have done	Have done	Not done	N	N	N	\$0.00		Buyout
								Structural Fire		Not	Fire/EMS Dept				Not worth it											
								Tornado		Not																
								Ice Storm	Y	Somewhat																
								Dam Failure	Y	Very																
								Winter Storm		Not																
								HAZMAT/Fixed Sites		Not																
								Flood	Y	Extremely																
								Trans. Accid.		Not																
								Structural Collapse	Y	Somewhat																
								Oil Spill		Not																
								HAZMAT - In Transit		Not																
								Ice Jam	Y	Somewhat																
								Landslide		Not																
								Water Supply Failure		Not																
								Explosion		Not																
								Epidemic																		
								Civil Unrest																		
								Drought																		
								Terrorism																		
								Windstorm																		
								Wildfire																		
								Mass Gathering																		
								Earthquake																		
								Radiological - In Transit																		
								Mine Collapse																		

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered	
1 Kaungungo Lk	12749	20+	Y	Own	4	Gained awareness from local/regional media rpts	Power Failure Structural Fire Tornado Ice Storm Dam Failure Winter Storm HAZMAT/Fixed Sites Flood Trans. Accid. Structural Collapse Oil Spill HAZMAT - In Transit Ice Jam Landslide Water Supply Failure Explosion Epidemic Civil Unrest Drought Terrorism Windstorm Wildfire Mass Gathering Earthquake Radiological - In Transit Mine Collapse	Times Herald Record Local Cable TV News Radio News	N	N	N	Don't need - not in floodplain	Not done	Have done	Not done	Not done	Not done	N	N	Y	\$2,500-\$5,000	Grant program with cost share rqt	Buyout Relocation	

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Received info from local utility company	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered	
Kiamesha Lk	12751	6-9	Y	Own	3	Received info from local utility company	Power Failure	Y	Somewhat	Public Mtg/Wksp	?	N	N	Don't need - never flooded	Not done	N	N	N	<\$100	None					
							Structural Fire		Not	City/Local Gov't															
							Tornado		Not	Public Library															
							Ice Storm		Somewhat																
							Dam Failure		Not																
							Winter Storm		Somewhat																
							HAZMAT/Fixed Sites		Not																
							Flood		Not																
							Trans. Accid.		Not																
							Structural Collapse		Not																
							Oil Spill		Not																
							HAZMAT - In Transit		Not																
							Ice Jam		Not																
							Landslide		Not																
							Water Supply Failure		Extremely																
							Explosion		Not																
							Epidemic		Not																
							Civil Unrest		Not																
							Drought		Extremely																
							Terrorism		Not																
							Windstorm		Somewhat																
							Wildfire		Not																
							Mass Gathering		Not																
							Earthquake		Not																
							Radiological - In Transit		Not																
							Mine Collapse		Not																

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced (italics) and how concerned about each are you?	How concerned are you about those hazards?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influenced decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered

1	Liberty	12754	20+	Y	Own	3	b	<i>Power Failure</i>		Radio news	N	N	N	Don't need/never flooded	Have done	Have done	Have done	Not done	Not done	N	N	N	\$0.00	Property tax discount Insurance Premium Discount	None
							c	Structural Fire	Not	Fire/EMS Dept															
							f	Tornado	Not																
								<i>Ice Storm</i>	Not																
								Dam Failure	Not																
								<i>Winter Storm</i>																	
								HAZMAT/Fixed Sites	Not																
								Flood	Not																
								Trans. Accid.	Not																
								Structural Collapse	Not																
								Oil Spill	Not																
								HAZMAT - In Transit	Not																
								Ice Jam	Not																
								Landslide	Not																
								<i>Water Supply Failure</i>																	
								Explosion	Not																
								Epidemic	Not																
								Civil Unrest	Not																
								Drought	Not																
								Terrorism	Not																
								Windstorm	Not																
								Wildfire	Not																
								Mass Gathering	Not																
								Earthquake	Not																
								Radiological - In Transit	Not																
								Mine Collapse	Not																
2	Liberty	12754	20+	Y	Own	2	a	<i>Power Failure</i>	Somewhat	TV	Not Sure	N	N	Don't need/never flooded	Have done	Y	N	Y	\$5,000 - \$10,000	Mortgage Discount Property tax discount Insurance Premium Discount	Buyout Elevation				
								Structural Fire		Radio news															
								Tornado		Fire/EMS Dept															
								<i>Ice Storm</i>	Somewhat																
								Dam Failure																	
								<i>Winter Storm</i>	Somewhat																
								HAZMAT/Fixed Sites																	
								Flood	Very																
								Trans. Accid.																	
								Structural Collapse																	
								Oil Spill																	
								HAZMAT - In Transit																	
								Ice Jam																	
								Landslide																	
								<i>Water Supply Failure</i>																	
								Explosion																	
								Epidemic																	
								Civil Unrest																	
								Drought																	
								Terrorism																	
								<i>Windstorm</i>	Somewhat																
								Wildfire																	
								Mass Gathering																	
								Earthquake																	
								Radiological - In Transit																	
								Mine Collapse																	

3	Liberty	12754	<1	Y	Rent	2	c	Power Failure	Not	Times Herald	N	N	N	Don't need/never flooded	Not done	Not done	Not done	Not done	Not done	N	N	Y	\$0	Mortgage Discount	Buyout
								Structural Fire	Somewhat	Radio news															
								Tornado	Not	Internet															
								Ice Storm	Somewhat																
								Dam Failure	Not																
								Winter Storm	Somewhat																
								HAZMAT/Fixed Sites	Not																
								Flood	Not																
								Trans. Accid.	Not																
								Structural Collapse	Not																
								Oil Spill	Not																
								HAZMAT - In Transit	Not																
								Ice Jam	Not																
								Landslide	Not																
								Water Supply Failure	Not																
								Explosion	Not																
								Epidemic	Not																
							Civil Unrest	Not																	
							Drought	Not																	
							Terrorism	Not																	
							Windstorm	Not																	
							Wildfire	Not																	
							Mass Gathering	Not																	
							Earthquake	Not																	
							Radiological - In Transit	Not																	
							Mine Collapse	Not																	
4	Liberty	12754	20+	Y	Own	3	d	Power Failure		Times Herald	N	N	N	Too expensive	Have done		Have done	Not done	Not done	N	N	Y	\$500 - \$1,000	Mortgate discount	Buyout
								Structural Fire	Very	Local Cable TV News														Low interest loan	Relocation
								Tornado	Not	Radio news														Property tax discount	
								Ice Storm																Insurance premium discount	
								Dam Failure	Somewhat																
								Winter Storm																	
								HAZMAT/Fixed Sites																	
								Flood																	
								Trans. Accid.	Somewhat																
								Structural Collapse	Somewhat																
								Oil Spill	Somewhat																
								HAZMAT - In Transit	Somewhat																
								Ice Jam	Not																
								Landslide	Not																
								Water Supply Failure	Somewhat																
								Explosion	Somewhat																
								Epidemic	Somewhat																
							Civil Unrest	Not																	
							Drought	Somewhat																	
							Terrorism	Somewhat																	
							Windstorm	Not																	
							Wildfire	Somewhat																	
							Mass Gathering	Not																	
							Earthquake	Somewhat																	
							Radiological - In Transit	Somewhat																	
							Mine Collapse	Not																	

5	Liberty	12754	20+	Y	Own	2	Other-Common sense	Power Failure	Extremely	Radio news	N	N	Y	Don't need/never flooded	Have done	Have done	Not done	Not done	Not done	N	N	Y	\$0	Property tax discount	Buyout
								Structural Fire	Somewhat	Internet				Don't need/not in flood plain										Grant Program w/cost share	
								Tornado	Not	Fire/EMS Dept															
								Ice Storm	Very																
								Dam Failure	Not																
								Winter Storm	Somewhat																
								HAZMAT/Fixed Sites	Not																
								Flood	Not																
								Trans. Accid.	Not																
								Structural Collapse	Somewhat																
								Oil Spill	Somewhat																
								HAZMAT - In Transit	Not																
								Ice Jam	Not																
								Landslide	Not																
								Water Supply Failure	Somewhat																
								Explosion	Somewhat																
								Epidemic	Somewhat																
								Civil Unrest	Not																
								Drought	Not																
							Terrorism	Somewhat																	
							Windstorm	Somewhat																	
							Wildfire	Not																	
							Mass Gathering	Somewhat																	
							Earthquake	Very																	
							Radiological - In Transit	Somewhat																	
							Mine Collapse	Not																	
6	Liberty	12754	20+	Y	Own	3	f	Power Failure	Extremely	Times Herald	N	N	N	Don't need/not in flood plain	Can not	Have done	Plan to do	Plan to do	Have done	Y	N	Y	\$500-\$1,000	Mortgage Discount	Buyout
								Structural Fire	Somewhat	Radio Advertising														Property tax discount	
								Tornado	Not	Other-XM/Sirius															
								Ice Storm	Extremely																
								Dam Failure	Not																
								Winter Storm	Extremely																
								HAZMAT/Fixed Sites																	
								Flood	Somewhat																
								Trans. Accid.	Not																
								Structural Collapse	Somewhat																
								Oil Spill	Somewhat																
								HAZMAT - In Transit	Not																
								Ice Jam	Not																
								Landslide	Not																
								Water Supply Failure	Not																
								Explosion	Not																
								Epidemic	Not																
								Civil Unrest	Not																
								Drought	Not																
							Terrorism	Extremely																	
							Windstorm	Somewhat																	
							Wildfire	Not																	
							Mass Gathering	Not																	
							Earthquake	Not																	
							Radiological - In Transit	Not																	
							Mine Collapse	Not																	

7	Liberty	12754	20+	Y	Own	3	a	Power Failure	Somewhat	Local Cable TV News	N	N	N	Don't need/never flooded	Not done	Have done	Have done	Plan to do	Not done	N	N	Y	\$2,500-\$5,000	Mortgage Discount	Buyout	
								Structural Fire	Very	Radio news																Low interest loan
								Tornado	Not	Internet																Property tax discount
								Ice Storm	Somewhat																	
								Dam Failure	Not																	
								Winter Storm	Not																	
								HAZMAT/Fixed Sites	Not																	
								Flood	Not																	
								Trans. Accid.	Not																	
								Structural Collapse	Somewhat																	
								Oil Spill	Not																	
								HAZMAT - In Transit	Not																	
								Ice Jam	Not																	
								Landslide	Not																	
								Water Supply Failure	Very																	
								Explosion	Not																	
								Epidemic	Somewhat																	
								Civil Unrest	Not																	
								Drought	Not																	
								Terrorism	Extremely																	
Windstorm	Not																									
Wildfire	Not																									
Mass Gathering	Not																									
Earthquake	Not																									
Radiological - In Transit	Not																									
Mine Collapse	Not																									
8	Liberty	12754	20+	Y	Own	1	e	Power Failure	Not	Non Gov't Organizations	N	N	N	Don't need/never flooded	Not done	Not done	Not done	Not done	Not done	N	N	N	\$0	Mortgage Discount	None	
								Structural Fire	Not																	
								Tornado	Not																	
								Ice Storm	Not																	
								Dam Failure	Not																	
								Winter Storm	Not																	
								HAZMAT/Fixed Sites	Not																	
								Flood	Not																	
								Trans. Accid.	Not																	
								Structural Collapse	Not																	
								Oil Spill	Not																	
								HAZMAT - In Transit	Not																	
								Ice Jam	Not																	
								Landslide	Not																	
								Water Supply Failure	Not																	
								Explosion	Not																	
								Epidemic	Not																	
								Civil Unrest	Not																	
								Drought	Not																	
								Terrorism	Not																	
Windstorm	Not																									
Wildfire	Not																									
Mass Gathering	Not																									
Earthquake	Not																									
Radiological - In Transit	Not																									
Mine Collapse	Not																									

9	Liberty	12754	20+	Y	Own		a	Power Failure		Local Cable TV News	N	N	N	Don't need/never flooded	Not done	Have done	Have done	Plan to do	Not done	Y	N	Y	\$0	Property tax discount	None	
							b	Structural Fire		Radio news County/Local Gov't				Don't need/not in flood plain										Grantn Program w/cost share		
							c	Tornado						Not required by code												
							e	Ice Storm						Not required by law												
								Dam Failure																		
								Winter Storm																		
								HAZMAT/Fixed Sites																		
								Flood																		
								Trans. Accid.																		
								Structural Collapse																		
								Oil Spill																		
								HAZMAT - In Transit																		
								Ice Jam																		
								Landslide																		
								Water Supply Failure																		
								Explosion																		
								Epidemic																		
								Civil Unrest																		
								Drought																		
								Terrorism																		
							Windstorm																			
							Wildfire																			
							Mass Gathering																			
							Earthquake																			
							Radiological - In Transit																			
							Mine Collapse																			
10	Liberty	12754	20+	Y	Own	3	b	Power Failure	Somewhat		N	N	N	Don't need/never flooded	Not done	Not done	Not done	Not done	Not done	N	N	N	>\$10,000	Mortgage Discount	None	
								Structural Fire	Very																	
								Tornado	Extremely																	
								Ice Storm																		
								Dam Failure	Not																	
								Winter Storm																		
								HAZMAT/Fixed Sites	Not																	
								Flood	Not																	
								Trans. Accid.	Not																	
								Structural Collapse	Not																	
								Oil Spill	Not																	
								HAZMAT - In Transit	Not																	
								Ice Jam	Not																	
								Landslide	Not																	
								Water Supply Failure	Not																	
								Explosion	Not																	
								Epidemic	Not																	
								Civil Unrest	Not																	
								Drought	Not																	
								Terrorism	Not																	
							Windstorm	Somewhat																		
							Wildfire	Not																		
							Mass Gathering	Not																		
							Earthquake	Not																		
							Radiological - In Transit	Not																		
							Mine Collapse	Not																		

11	Liberty	12754	20+	Y	Rent	2	b	Power Failure	Somewhat	Times Herald	N	N	N	Don't need/not in flood plain	Have done	Have done	Have done	Not done	Not done	N	N	Y	\$0	None	Buyout		
							c	Structural Fire	Somewhat	Sull Co Democrat																	
								Tornado	Somewhat	Radio news																	
								Ice Storm	Very	County/Local Gov't																	
								Dam Failure	Not																		
								Winter Storm	Somewhat																		
								HAZMAT/Fixed Sites	Somewhat																		
								Flood	Very																		
								Trans. Accid.	Not																		
								Structural Collapse	Somewhat																		
								Oil Spill	Not																		
								HAZMAT - In Transit	Somewhat																		
								Ice Jam	Not																		
								Landslide	Not																		
	12	Liberty	12754	20+	Y	Own	4	a	Power Failure	Somewhat	Times Herald	N	N	N	Don't need/not in flood plain	Have done	Have done	Have done	Have done	Not done	N	N	Y	>\$10,000	Mortgage Discount	Buyout	
								b	Structural Fire	Somewhat	Radio news															Low interest loan	
								c	Tornado	Somewhat	County/Local Gov't															Property tax discount	
							f	Ice Storm	Very																Insurance premium discount		
								Dam Failure	Somewhat																Grantn Program w/cost share		
								Winter Storm	Extremely																		
								HAZMAT/Fixed Sites	Somewhat																		
								Flood	Extremely																		
								Trans. Accid.																			
								Structural Collapse	Somewhat																		
								Oil Spill	Somewhat																		
								HAZMAT - In Transit	Somewhat																		
								Ice Jam	Somewhat																		
								Landslide	Not																		
								Water Supply Failure	Somewhat																		
								Explosion	Not																		
								Epidemic	Somewhat																		
							Civil Unrest	Not																			
							Drought	Not																			
							Terrorism	Somewhat																			
							Windstorm	Not																			
							Wildfire	Not																			
							Mass Gathering	Not																			
							Earthquake	Not																			
							Radiological - In Transit	Not																			
							Mine Collapse	Not																			

13	Liberty	12754	20+	Y	Own	4	b	Power Failure	Very	Times Herald	N	Y	N		Have done	Have done	Have done	Plan to do	Plan to do	N		Y	> \$10,000	Grant program w/cost share rqt
							c	Structural Fire	Very	Regional TV News														
							e	Tornado		Radio news														
								Ice Storm	Very															
								Dam Failure	Somewhat															
								Winter Storm	Very															
								HAZMAT/Fixed Sites	Very															
								Flood	Somewhat															
								Trans. Accid.	Somewhat															
								Structural Collapse																
								Oil Spill																
								HAZMAT - In Transit																
								Ice Jam	Somewhat															
								Landslide	Not															
								Water Supply Failure	Not															
								Explosion	Somewhat															
								Epidemic																
								Civil Unrest																
								Drought	Not															
								Terrorism	Somewhat															
								Windstorm	Somewhat															
								Wildfire	Not															
								Mass Gathering	Somewhat															
								Earthquake	Not															
								Radiological - In Transit																
								Mine Collapse																

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f	
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influenced decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered			
1	Livingston Manor	12758	20+	Y	Own	4	Emerg. preparedness info from Gov't Source Have attended mtgs.	Power Failure Structural Fire	Y	Somewhat	Times Herald Record Sull Co Democrat	N	N	N	Don't need - never flooded	Have done	Have done	Plan to do	Have done	Have done	Y	Y	Y	\$2,500-\$5,000	Property tax discount Grant program with cost	Buyout
								Tornado			Local Cable TV News															
								Ice Storm	Y	Somewhat	Radio News															
								Dam Failure																		
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites																		
								Flood	Y	Very																
								Trans. Accid.																		
								Structural Collapse																		
								Oil Spill																		
								HAZMAT - In Transit																		
								Ice Jam																		
								Landslide																		
								Water Supply Failure																		
								Explosion																		
								Epidemic																		
								Civil Unrest																		
								Drought																		
								Terrorism																		
								Windstorm	Y	Somewhat																
								Wildfire																		
								Mass Gathering																		
								Earthquake																		
								Radiological - In Transit																		
								Mine Collapse																		
2	Livingston Manor	12758	20+	Y	Own	4	Emerg. preparedness info from Gov't Source Have attended mtgs. Gained awareness from local/regional media rpts	Power Failure Structural Fire	Y	Very	Times Herald Record Sull Co Democrat	N	N	N	Don't need - not in floodplain	Have done	Have done	Have done	Not done	Have done	Y	N	Y	\$1,000-\$2,500	Grant program with cost share rqt	Buyout
								Tornado		Somewhat	Cty/Local Gov't															
								Ice Storm	Y	Very																
								Dam Failure		Extremely																
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites		Not																
								Flood	Y	Extremely																
								Trans. Accid.		Somewhat																
								Structural Collapse		Not																
								Oil Spill		Somewhat																
								HAZMAT - In Transit		Somewhat																
								Ice Jam	Y	Somewhat																
								Landslide	Y	Somewhat																
								Water Supply Failure		Somewhat																
								Explosion		Not																
								Epidemic		Not																
								Civil Unrest		Not																
								Drought		Not																
								Terrorism		Not																
								Windstorm	Y	Not																
								Wildfire		Not																
								Mass Gathering		Not																
								Earthquake		Not																
								Radiological - In Transit		Not																
								Mine Collapse		Not																

3	Livingston Manor	12758	20+	Y	Own	4	Received info from non-gov't organizations	Power Failure	Y	Somewhat	Times Herald Record	Y	Y	Y		Have done	Have done	Plan to do	Have done	Not done	N	N	Y	\$1,000-\$2,500	Property tax discount	Buyout
								Structural Fire		Not	Local Cable TV News														Insurance premium	Relocation
								Tornado		Not	Radio News														Grant program with cost share rqt	
								Ice Storm	Y	Somewhat																
								Dam Failure	Y	Very																
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites		Extremely																
								Flood	Y	Extremely																
								Trans. Accid.		Not																
								Structural Collapse		Not																
								Oil Spill		Somewhat																
								HAZMAT – In Transit		Extremely																
								Ice Jam	Y	Somewhat																
								Landslide	Y	Somewhat																
								Water Supply Failure	Y	Somewhat																
								Explosion		Not																
								Epidemic		Somewhat																
								Civil Unrest		Not																
								Drought	Y	Not																
								Terrorism		Somewhat																
								Windstorm	Y	Somewhat																
								Wildfire		Not																
								Mass Gathering		Not																
								Earthquake	Y	Somewhat																
								Radiological – In Transit		Extremely																
								Mine Collapse		Not																



3	Monticello	12701	20+	Y	Own	3	Emerg. preparedness info from Gov't Source	Power Failure	Y	Somewhat	Times Herald Record	N	N	N	Don't need - never flooded	Not done	Have done	Not done	Plan to do	Not done	N	N	Y	\$2,500-\$5,000	Mortgage discount	Relocation
							Received info from non-gov't organizations	Structural Fire			TV Advertising				Don't need - not in floodplain										Low interest loan	Elevation
								Tornado			Radio News														Insurance premium discount	
								Ice Storm	Y	Somewhat																
								Dam Failure																		
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites																		
								Flood																		
								Trans. Accid.																		
								Structural Collapse																		
								Oil Spill																		
								HAZMAT - In Transit																		
								Ice Jam																		
								Landslide																		
								Water Supply Failure																		
								Explosion																		
								Epidemic																		
								Civil Unrest																		
								Drought																		
								Terrorism																		
								Windstorm																		
								Wildfire																		
								Mass Gathering																		
								Earthquake																		
								Radiological - In Transit																		
								Mine Collapse																		
4	Monticello	12701	20+	Y	Own	3		Power Failure	Y		Times Herald Record	N	N	N	Don't need - never flooded	Have done	Plan to do	Not done	Not done	Not done	N	N	Y	\$2,500-\$5,000	Mortgage discount	Relocation
								Structural Fire		Somewhat	Radio News														Property tax discount	
								Tornado		Not															Insurance premium discount	
								Ice Storm	Y																Grant program with cost share rqt	
								Dam Failure		Not																
								Winter Storm	Y																	
								HAZMAT/Fixed Sites																		
								Flood		Not																
								Trans. Accid.		Very																
								Structural Collapse		Not																
								Oil Spill		Not																
								HAZMAT - In Transit		Not																
								Ice Jam		Not																
								Landslide		Not																
								Water Supply Failure		Not																
								Explosion		Not																
								Epidemic		Somewhat																
								Civil Unrest		Not																
								Drought		Somewhat																
								Terrorism		Very																
								Windstorm		Very																
								Wildfire		Somewhat																
								Mass Gathering		Not																
								Earthquake		Not																
								Radiological - In Transit		Somewhat																
								Mine Collapse		Not																

5	Monticello	12701	20+	Y	Own	4	Emerg. preparedness info from Gov't Source	Power Failure		Very	Times Herald Record	N	?	N	Don't need - never flooded	Have done	Have done	Have done	Have done	Plan to do	N	Y	N	\$0.00	Property tax discount	Buyout
							Have attended mtgs. about hazard mit. or disaster preparedness.	Structural Fire		Extremely	Fire/EMS Dept													Insurance premium discount		
							Gained awareness from local/regional media rpts	Tornado		Somewhat	Cty/Local Gov't													Grant program with cost share rqt		
							Info provided by schools/academic institutions	Ice Storm		Extremely																
							Received info from non-gov't organizations	Dam Failure		Somewhat																
								Winter Storm		Extremely																
								HAZMAT/Fixed Sites		Extremely																
								Flood		Very																
								Trans. Accid.		Extremely																
								Structural Collapse		Extremely																
								Oil Spill		Extremely																
								HAZMAT - In Transit		Extremely																
								Ice Jam		Somewhat																
								Landslide		Extremely																
								Water Supply Failure		Extremely																
								Explosion		Extremely																
								Epidemic		Extremely																
								Civil Unrest		Extremely																
								Drought		Somewhat																
								Terrorism		Extremely																
								Windstorm		Extremely																
								Wildfire		Extremely																
								Mass Gathering		Extremely																
								Earthquake		Very																
								Radiological - In Transit		Extremely																
								Mine Collapse		Very																
6	Monticello	12701	20+	Y	Own	3	Gained awareness from local/regional media rpts	Power Failure	Y		Times Herald Record	N	Y	N		Not done	N	N	Y	\$0.00	None	Buyout				
								Structural Fire		Very	TV Advertising															
								Tornado		Somewhat	Radio News															
								Ice Storm		Very																
								Dam Failure		Somewhat																
								Winter Storm		Somewhat																
								HAZMAT/Fixed Sites		Somewhat																
								Flood																		
								Trans. Accid.		Not																
								Structural Collapse		Not																
								Oil Spill		Not																
								HAZMAT - In Transit		Not																
								Ice Jam		Not																
								Landslide		Not																
								Water Supply Failure		Somewhat																
								Explosion		Not																
								Epidemic		Somewhat																
								Civil Unrest		Somewhat																
								Drought		Somewhat																
								Terrorism		Very																
								Windstorm		Somewhat																
								Wildfire		Not																
								Mass Gathering		Not																
								Earthquake		Not																
								Radiological - In Transit		Not																
								Mine Collapse		Not																





3	Narrowsburg	12764	10-19	Y	Own	3	Emerg. preparedness info from Gov't Source	Power Failure	Y	Somewhat	Regional TV News	?	N	N	Don't need - not in floodplain	Have done	Have done	Have done	Not done	Not done	Y	N	N	>\$10,000	Mortgage discount	Buyout
							Received info from non-	Structural Fire	Y	Very	Local Cable TV News														Low interest loan	Elevation
								Tornado		Not	Radio News														Property tax discount	
								Ice Storm	Y	Somewhat	Internet														Insurance premium discount	
								Dam Failure		Not															Grant program with cost share rqt	
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites																		
								Flood		Somewhat																
								Trans. Accid.		Somewhat																
								Structural Collapse		Somewhat																
								Oil Spill		Somewhat																
								HAZMAT - In Transit		Somewhat																
								Ice Jam		Not																
								Landslide		Not																
								Water Supply Failure		Somewhat																
								Explosion		Somewhat																
								Epidemic		Somewhat																
								Civil Unrest		Somewhat																
								Drought		Somewhat																
								Terrorism		Somewhat																
								Windstorm		Somewhat																
								Wildfire		Somewhat																
								Mass Gathering		Not																
								Earthquake		Somewhat																
								Radiological - In Transit		Somewhat																
								Mine Collapse		Not																

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f	
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered			
1	Neversink	12765	10-19	Y	Own	5	Received info from local utility company	Power Failure Structural Fire	Y	Somewhat	Regional TV News Internet	N	N	N	Don't need - not in floodplain	Not done	Have done	Have done	Have done	Not done	N	N	Y	>\$10,000	Property tax discount Insurance premium Grant program with cost share rqt	Buyout
								Tornado			Fire/EMS Dept															
								Ice Storm	Y	Somewhat																
								Dam Failure																		
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites																		
								Flood																		
								Trans. Accid.																		
								Structural Collapse																		
								Oil Spill																		
								HAZMAT - In Transit																		
								Ice Jam																		
								Landslide																		
								Water Supply Failure																		
								Explosion																		
								Epidemic																		
								Civil Unrest																		
								Drought																		
								Terrorism																		
								Windstorm																		
								Wildfire																		
								Mass Gathering																		
								Earthquake																		
								Radiological - In Transit																		
								Mine Collapse																		

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f		
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered			
1	Parkville	12768	20+	Y		5	Gained awareness from local/regional media rpts	Power Failure Structural Fire Tornado	Y	Somewhat	Local Cable TV News Radio Advertising Cty/Local Gov't	N	N	N	Don't need - never flooded	Have done	Have done	Have done	Have done	Not done	N	N	Y	\$0.00	Mortgage discount Low interest loan Property tax discount Insurance premium discount	Buyout Relocation Elevation
							Ice Storm			Somewhat																
							Dam Failure			Not																
							Winter Storm			Somewhat																
							HAZMAT/Fixed Sites			Somewhat																
							Flood			Somewhat																
							Trans. Accid.			Somewhat																
							Structural Collapse			Somewhat																
							Oil Spill			Somewhat																
							HAZMAT - In Transit			Somewhat																
							Ice Jam			Somewhat																
							Landslide			Somewhat																
							Water Supply Failure			Somewhat																
							Explosion			Somewhat																
							Epidemic			Somewhat																
							Civil Unrest			Somewhat																
							Drought			Somewhat																
							Terrorism			Somewhat																
							Windstorm			Somewhat																
							Wildfire			Somewhat																
							Mass Gathering			Somewhat																
							Earthquake			Somewhat																
							Radiological - In Transit			Somewhat																
							Mine Collapse																			



3	Rock Hill	12775	20+	Y	Own	4	Emerg. preparedness info from Gov't Source Have attended mtgs.	Power Failure	Y	Not	Times Herald Record	N	N	N	Don't need - not in floodplain	Have done	Have done	Plan to do	Not done	Have done	N	N	\$1,000-\$2,500	None	Elevation
							Gained awareness from local/regional media rpts	Structural Fire	N		Sull Co Democrat														
								Tornado	N		Radio News														
								Ice Storm	Y	Very															
								Dam Failure	N																
								Winter Storm	Y	Somewhat															
								HAZMAT/Fixed Sites	N																
								Flood	Y	Very															
								Trans. Accid.	N																
								Structural Collapse	N																
								Oil Spill	N																
								HAZMAT - In Transit	N																
								Ice Jam	N																
								Landslide	N																
								Water Supply Failure	N																
								Explosion	N																
								Epidemic	N																
								Civil Unrest	N																
								Drought	N																
								Terrorism	N																
								Windstorm	N																
								Wildfire	Y	Somewhat															
								Mass Gathering	N																
								Earthquake	N																
								Radiological - In Transit	N																
								Mine Collapse	N																
4	Rock Hill	12775	6-9	Y	Own	3	Gained awareness from local/regional media rpts	Power Failure	Y	Very	Times Herald Record	N	N	Don't need - not in floodplain	Not done	Have done	Plan to do	Plan to do	Have done	N	N	N	\$2,500-\$5,000	Property tax discount	Buyout
								Structural Fire	N	Very	Local Cable TV News													Insurance premium	
								Tornado	N	Extremely	Fire/EMS Dept													Grant program with cost share rqt	
								Ice Storm	Y	Somewhat															
								Dam Failure	N	Somewhat															
								Winter Storm	Y	Somewhat															
								HAZMAT/Fixed Sites	N	Not															
								Flood	N	Somewhat															
								Trans. Accid.	N	Somewhat															
								Structural Collapse	N	Somewhat															
								Oil Spill	N	Somewhat															
								HAZMAT - In Transit	N	Very															
								Ice Jam	N	Somewhat															
								Landslide	N	Somewhat															
								Water Supply Failure	N	Extremely															
								Explosion	N	Very															
								Epidemic	N	Extremely															
								Civil Unrest	N	Very															
								Drought	N	Extremely															
								Terrorism	N	Extremely															
								Windstorm	N	Very															
								Wildfire	N	Extremely															
								Mass Gathering	N	Somewhat															
								Earthquake	N	Extremely															
								Radiological - In Transit	N	Extremely															
								Mine Collapse	N	Not															

5	Rock Hill	12775	20+	Y	Own	4	Emerg. preparedness info from Gov't Source	Power Failure	Y		Times Herald Record	N	N	N	Don't need - not in floodplain	Have done	Plan to do	Plan to do	Have done	Have done	Y	N	Y	<\$100	Mortgage discount	Relocation
							Have attended mtgs.	Structural Fire		Somewhat	Radio News														Low interest loan	
							Gained awareness from local/regional media rpts	Tornado		Somewhat	Internet														Property tax discount	
							Received info from non-gov't organizations	Ice Storm		Somewhat															Insurance premium discount	
							Received info from local utility company	Dam Failure		Not															Grant program with cost share rqt	
							Received info from non-gov't organizations	Winter Storm	Y																	
								HAZMAT/Fixed Sites		Not																
								Flood		Not																
								Trans. Accid.		Somewhat																
								Structural Collapse		Somewhat																
								Oil Spill		Not																
								HAZMAT - In Transit		Somewhat																
								Ice Jam		Not																
								Landslide		Not																
								Water Supply Failure		Not																
								Explosion		Not																
								Epidemic		Not																
								Civil Unrest		Not																
								Drought		Somewhat																
								Terrorism		Not																
								Windstorm		Somewhat																
								Wildfire		Somewhat																
								Mass Gathering		Not																
								Earthquake		Not																
								Radiological - In Transit		Not																
								Mine Collapse		Not																

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f			
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered				
1	Roscoe	12776	20+	Y	Own	3	Gained awareness from local/regional media rpts	Power Failure	Y	Not	Times Herald Record	Y	Y	N			Not done	Not done	Not done	Not done	Have done	Y	N	N	\$2,500-\$5,000	Other	None
								Structural Fire		Extremely	Internet																
								Tornado	Y	Very	Fire/EMS Dept																
								Ice Storm	Y	Not																	
								Dam Failure		Not																	
								Winter Storm	Y	Not																	
								HAZMAT/Fixed Sites		Not																	
								Flood	Y	Very																	
								Trans. Accid.		Somewhat																	
								Structural Collapse		Not																	
								Oil Spill		Not																	
								HAZMAT – In Transit		Somewhat																	
								Ice Jam		Very																	
								Landslide		Not																	
								Water Supply Failure		Not																	
								Explosion		Not																	
								Epidemic		Not																	
								Civil Unrest		Not																	
								Drought		Not																	
								Terrorism		Not																	
								Windstorm		Not																	
								Wildfire		Not																	
								Mass Gathering		Not																	
								Earthquake		Extremely																	
								Radiological – In Transit		Extremely																	
								Mine Collapse		Not																	



2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?		Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered	
1	Swan Lake	12783	20+	Y	Own	2	Emerg. preparedness info from Gov't Source Gained awareness	Power Failure	Y				Don't need - never flooded	Have done	Not done	Not done	Have done	Not done	N	N	Maybe	\$1,000-\$2,500	Property tax discount	Buyout	
							Structural Fire	N	Somewhat	Local Cable TV News	N	N	N										Insurance premium	Relocation	
							Received info from local utility company	Tornado	N	Somewhat														Elevation	
							Received info from non-gov't organizations	Ice Storm	Y																
								Dam Failure	N	Somewhat	Radio News														
								Winter Storm	Y		Radio Advertising														
								HAZMAT/Fixed Sites	N	Somewhat	Cty/Local Gov't														
								Flood	N	Somewhat															
								Trans. Accid.	Y																
								Structural Collapse	N																
								Oil Spill	N																
								HAZMAT - In Transit	N																
								Ice Jam	N																
								Landslide	N																
								Water Supply Failure	N																
								Explosion	N																
								Epidemic	N	Somewhat															
								Civil Unrest	N	Somewhat															
								Drought	N	Somewhat															
								Terrorism	N	Very															
								Windstorm	N	Not															
								Wildfire	N	Not															
								Mass Gathering	N	Not															
								Earthquake	N	Somewhat															
								Radiological - In Transit	N	Not															
								Mine Collapse	N	Not															
2	Swan Lake	12783	20+	Y	Own	2		Power Failure	Y				Don't need - never flooded	Not done	Not done	Not done	Not done	Not done	N	N	N	\$0.00	Property tax discount	None	
								Structural Fire		Very	Regional TV News														
								Tornado		Very	Radio News														
								Ice Storm		Very	Fire/EMS Dept														
								Dam Failure		Not															
								Winter Storm		Very															
								HAZMAT/Fixed Sites		Very															
								Flood		Somewhat															
								Trans. Accid.		Somewhat															
								Structural Collapse		Somewhat															
								Oil Spill		Not															
								HAZMAT - In Transit		Somewhat															
								Ice Jam		Not															
								Landslide		Not															
								Water Supply Failure		Very															
								Explosion		Somewhat															
								Epidemic		Very															
								Civil Unrest		Somewhat															
								Drought		Somewhat															
								Terrorism		Somewhat															
								Windstorm		Somewhat															
								Wildfire		Very															
								Mass Gathering		Not															
								Earthquake		Very															
								Radiological - In Transit		Very															
								Mine Collapse		Not															



3	White Lake	12786	<1	Y	Own	2	Emerg. preparedness info from Gov't Source	Power Failure	Y	Very	Internet	N	N	N	Don't need - not in floodplain	Have done	Not done	Not done	Have done	Have done	N	N	Y	>\$10,000	Property tax discount	Buyout
								Structural Fire		Somewhat	Public Mtg/Wksp														Insurance premium	
								Tornado		Somewhat	Cty/Local Gov't															
								Ice Storm		Somewhat																
								Dam Failure		Not																
								Winter Storm		Somewhat																
								HAZMAT/Fixed Sites		Very																
								Flood		Not																
								Trans. Accid.		Somewhat																
								Structural Collapse		Not																
								Oil Spill		Very																
								HAZMAT - In Transit		Very																
								Ice Jam		Somewhat																
								Landslide		Not																
								Water Supply Failure		Very																
								Explosion		Very																
								Epidemic		Somewhat																
								Civil Unrest		Somewhat																
								Drought		Not																
								Terrorism		Not																
								Windstorm		Somewhat																
								Wildfire		Somewhat																
								Mass Gathering		Not																
								Earthquake		Somewhat																
								Radiological - In Transit		Somewhat																
								Mine Collapse		Not																
4	White Lake	12786	1-5	N	Own	3		Power Failure	Y	Somewhat	Utility Company	N	N	N	Don't need - not in floodplain	Not done	Plan to do	Plan to do	Plan to do	Not done	Y	N	Y		Mortgage discount	Buyout
								Structural Fire			Internet														Property tax discount	
								Tornado			Cty/Local Gov't														Insurance premium discount	
								Ice Storm																		
								Dam Failure																		
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites																		
								Flood																		
								Trans. Accid.																		
								Structural Collapse																		
								Oil Spill																		
								HAZMAT - In Transit																		
								Ice Jam																		
								Landslide																		
								Water Supply Failure																		
								Explosion																		
								Epidemic																		
								Civil Unrest																		
								Drought																		
								Terrorism																		
								Windstorm																		
								Wildfire																		
								Mass Gathering																		
								Earthquake																		
								Radiological - In Transit																		
								Mine Collapse																		

5	White Lake	12786	20+	Y	Own	4	Emerg. preparedness info from Gov't Source	Power Failure	Y	Very	Times Herald Record	N	N	N	Too expensive	Have done	N	N	Y	\$1,000-\$2,500	Insurance premium discount	None					
							Have attended mtgs.	Structural Fire	N		Radio News																
							Gained awareness from local/regional media rpts	Tornado	N		Internet																
							Received info from non-gov't organizations	Ice Storm	Y	Very																	
								Dam Failure	N																		
								Winter Storm	Y	Very																	
								HAZMAT/Fixed Sites	N																		
								Flood	Y	Somewhat																	
								Trans. Accid.	N																		
								Structural Collapse	N																		
								Oil Spill	N																		
								HAZMAT - In Transit	N																		
								Ice Jam	N																		
								Landslide	N																		
								Water Supply Failure	Y	Somewhat																	
								Explosion	N																		
								Epidemic	N																		
								Civil Unrest	N																		
								Drought	N																		
								Terrorism	N																		
							Windstorm	Y	Very																		
							Wildfire	N																			
							Mass Gathering	N																			
							Earthquake	N																			
							Radiological - In Transit	N																			
							Mine Collapse	N																			
6	White Lake	12786	1-5	N	Own	2		Power Failure	Y	Extremely	Sull Co Democrat	N	N	N	Don't need - not in floodplain	Have done	Have done	Have done	Have done	Plan to do	N	N	Y	\$1,000-\$2,500	Mortgage discount	None	
								Structural Fire		Somewhat	Regional TV News																
								Tornado		Somewhat	Internet																
								Ice Storm		Extremely																	
								Dam Failure		Very																	
								Winter Storm		Extremely																	
								HAZMAT/Fixed Sites		Extremely																	
								Flood		Somewhat																	
								Trans. Accid.		Somewhat																	
								Structural Collapse		Not																	
								Oil Spill		Extremely																	
								HAZMAT - In Transit		Extremely																	
								Ice Jam		Not																	
								Landslide		Not																	
								Water Supply Failure		Somewhat																	
								Explosion		Extremely																	
								Epidemic		Somewhat																	
							Civil Unrest		Not																		
							Drought		Somewhat																		
							Terrorism		Very																		
							Windstorm		Very																		
							Wildfire		Somewhat																		
							Mass Gathering		Not																		
							Earthquake		Not																		
							Radiological - In Transit		Somewhat																		
							Mine Collapse		Not																		

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?		Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered	
1	White Sulphur Springs	12787	20+	Y	Own	5	Emerg. preparedness info from Gov't Source	Power Failure	Y		Local Cable TV News	N	N	N	Don't need - not in floodplain	Have done	Not done	Not done	Have done	Have done	N	Y	Y	\$2,500-\$5,000	Mortgage discount Property tax discount Insurance premium discount
								Structural Fire	Y		Radio News														
								Tornado	N	Not	Fire/EMS Dept														
								Ice Storm	Y																
								Dam Failure	N																
								Winter Storm	Y																
								HAZMAT/Fixed Sites	Y																
								Flood	Y																
								Trans. Accid.	N	Not															
								Structural Collapse	Y																
								Oil Spill	Y																
								HAZMAT - In Transit	Y																
								Ice Jam	N	Not															
								Landslide	N	Not															
								Water Supply Failure	Y																
								Explosion	N	Not															
								Epidemic	N	Not															
								Civil Unrest	N	Not															
								Drought	Y																
								Terrorism		Not															
								Windstorm	Y																
								Wildfire	Y																
								Mass Gathering	N																
								Earthquake	N	Not															
								Radiological - In Transit	N	Not															
								Mine Collapse	N	Not															
2	White Sulphur Springs	12787	20+	Y	Own	5	Gained awareness from local/regional media rpts	Power Failure	Y		Times Herald Record	?	N	N	Don't need - not in floodplain	Not done	Have done	Have done	Have done	Not done	N	N	Y	\$0.00	Insurance premium discount
								Structural Fire	N	Somewhat	Sull Co Democrat														
								Tornado	N	Somewhat	Radio News														
								Ice Storm	Y																
								Dam Failure	N	Not															
								Winter Storm	N	Somewhat															
								HAZMAT/Fixed Sites	N	Not															
								Flood	N	Somewhat															
								Trans. Accid.	N																
								Structural Collapse	N	Not															
								Oil Spill	N	Not															
								HAZMAT - In Transit	N	Not															
								Ice Jam	N	Somewhat															
								Landslide	N	Not															
								Water Supply Failure	N	Somewhat															
								Explosion	N	Not															
								Epidemic	N	Not															
								Civil Unrest	N	Not															
								Drought	N	Not															
								Terrorism	N	Not															
								Windstorm	N	Somewhat															
								Wildfire	N	Somewhat															
								Mass Gathering	N	Not															
								Earthquake	N	Not															
								Radiological - In Transit	N	Not															
								Mine Collapse	N	Not															

3	White Sulphur Springs	12758	20+	Y	Own	4	Gained awareness from local/regional media rpts	Power Failure	Y		Times Herald Record	N	?	N		Have done	Have done	Have done	Not done	Not done	N	N	N	\$0.00	None	None
								Structural Fire		Somewhat	Local Cable TV News															
								Tornado		Not	Radio News															
								Ice Storm	Y																	
								Dam Failure		Not																
								Winter Storm	Y																	
								HAZMAT/Fixed Sites		Not																
								Flood		Not																
								Trans. Accid.		Not																
								Structural Collapse		Not																
								Oil Spill		Not																
								HAZMAT - In Transit		Not																
								Ice Jam		Not																
								Landslide		Not																
								Water Supply Failure		Somewhat																
								Explosion		Not																
								Epidemic		Not																
								Civil Unrest		Not																
								Drought		Somewhat																
								Terrorism		Somewhat																
								Windstorm	Y	Somewhat																
								Wildfire		Not																
								Mass Gathering		Not																
								Earthquake		Not																
								Radiological - In Transit		Not																
								Mine Collapse		Not																
4	White Sulphur Springs	12787	20+	Y	Own	5	Emerg. preparedness info from Gov't Source	Power Failure	Y	Not	Times Herald Record	N	N	N	Don't need - never flooded	Have done	Have done	Have done	Not done	Have done	Y	N	Y	\$0.00	Mortgage discount	Buyout
							Have attended mtgs.	Structural Fire	Y	Not	Radio News															
							Gained awareness from local/regional media rpts	Tornado	N		Internet															
								Ice Storm	Y	Not																
								Dam Failure	N																	
								Winter Storm	Y	Not																
								HAZMAT/Fixed Sites	N																	
								Flood	Y	Not																
								Trans. Accid.	N																	
								Structural Collapse	N																	
								Oil Spill	N																	
								HAZMAT - In Transit	N																	
								Ice Jam	N																	
								Landslide	N																	
								Water Supply Failure	Y	Not																
								Explosion	N																	
								Epidemic	N																	
								Civil Unrest	N																	
								Drought	Y	Not																
								Terrorism	N																	
								Windstorm	Y	Not																
								Wildfire	N																	
								Mass Gathering	Y	Not																
								Earthquake	N																	
								Radiological - In Transit	N																	
								Mine Collapse	N																	

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f		
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?		Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered		
1	Woodbourne	12788	20+	Y	Own	5	Other	Power Failure	Y	Somewhat	Times Herald Record	N	N	N	Don't need - not in floodplain	Have done	Have done	Have done	Have done	Not done	Y	N	Y	\$0.00	None	Buyout
								Structural Fire	N	Very	Radio News															
								Tornado	Y	Somewhat	Internet															
								Ice Storm	Y	Somewhat																
								Dam Failure	N	Very																
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites	N	Somewhat																
								Flood	N	Very																
								Trans. Accid.	N	Somewhat																
								Structural Collapse	N	Somewhat																
								Oil Spill	Y	Somewhat																
								HAZMAT - In Transit	N	Somewhat																
								Ice Jam	N	Somewhat																
								Landslide	Y	Somewhat																
								Water Supply Failure	N	Very																
								Explosion	N	Somewhat																
								Epidemic	N	Very																
								Civil Unrest	N	Somewhat																
								Drought	Y																	
								Terrorism	N	Somewhat																
								Windstorm	Y	Somewhat																
								Wildfire	N	Not																
								Mass Gathering	N	Somewhat																
								Earthquake	N	Somewhat																
								Radiological - In Transit	N	Somewhat																
								Mine Collapse	N	Not																
2	Woodbourne	12788	20+	Y	Own	4	Emerg. preparedness info from Gov't Source	Power Failure	Y		Times Herald Record	N	N	N	Too expensive	Have done	Have done	Have done	Not done	Have done	N	N	Y	\$2,500-\$5,000	Mortgage discount	Buyout
								Structural Fire	N	Somewhat	TV Advertising															
								Tornado	N	Somewhat	Internet															
								Ice Storm	Y																	
								Dam Failure	N	Not																Grant program with cost share rqt
								Winter Storm	Y																	
								HAZMAT/Fixed Sites	N	Somewhat																
								Flood	Y																	
								Trans. Accid.	N	Somewhat																
								Structural Collapse	N	Somewhat																
								Oil Spill	N	Somewhat																
								HAZMAT - In Transit	N	Somewhat																
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								Explosion	N	Somewhat																
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								Wildfire	N	Somewhat																
								Mass Gathering	N	Somewhat																
								Earthquake	N	Somewhat																
								Radiological - In Transit	N	Somewhat																
								Mine Collapse	N	Not																

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f			
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered				
1	Woodridge	12789	20+	Y	Own	4	Info provided by schools/academic institutions	Power Failure	Y	Not	Regional TV News	?	N	N	Don't need - never flooded	Have done	Have done	Not done	Have done	Have done	Y	N	Y	\$500-\$1,000	Mortgage discount	Buyout	
								Structural Fire	N	Somewhat															Property tax discount		
								Tornado	N	Somewhat																Grant program with cost share rqt	
								Ice Storm	Y	Not																	
								Dam Failure	N	Not																	
								Winter Storm	Y	Not																	
								HAZMAT/Fixed Sites	Y	Somewhat																	
								Flood	Y	Somewhat																	
								Trans. Accid.	Y	Somewhat																	
								Structural Collapse	N	Not																	
								Oil Spill	N	Not																	
								HAZMAT - In Transit	N	Not																	
								Ice Jam	N	Not																	
								Landslide	N	Not																	
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								Explosion	N	Not																	
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								Civil Unrest	Y	Somewhat																	
								Drought	Y	Not																	
								Terrorism	N	Very																	
								Windstorm	Y	Not																	
								Wildfire	N	Somewhat																	
								Mass Gathering	Y	Somewhat																	
								Earthquake	N	Not																	
								Radiological - In Transit	N	Somewhat																	
								Mine Collapse	N	Not																	

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f		
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influence decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered			
1	Wurtsboro	12790	1-5	Y	Own	4		Power Failure	Y	Extremely	Public Mtg/Wksp	N	N	N	Don't need - not in floodplain	Plan to do	Have done	Plan to do	Have done	Not done	Y	N	Y	\$2,500-\$5,000	Mortgage discount	Buyout
								Structural Fire		Not	Cty/Local Gov't														Property tax discount	
								Tornado		Somewhat	Schools/Colleges														Other	
								Ice Storm	Y	Extremely																
								Dam Failure		Not																
								Winter Storm	Y	Extremely																
								HAZMAT/Fixed Sites		Not																
								Flood		Somewhat																
								Trans. Accid.		Somewhat																
								Structural Collapse		Not																
								Oil Spill		Not																
								HAZMAT - In Transit		Somewhat																
								Ice Jam		Not																
								Landslide		Not																
								Water Supply Failure		Somewhat																
								Explosion		Not																
								Epidemic		Very																
								Civil Unrest		Very																
								Drought		Somewhat																
								Terrorism		Somewhat																
								Windstorm		Somewhat																
								Wildfire		Somewhat																
								Mass Gathering		Somewhat																
								Earthquake		Somewhat																
								Radiological - In Transit		Somewhat																
								Mine Collapse		Not																
2	Wurtsboro	12790	20+	N	Own	2	Gained awareness from local/regional media rpts	Power Failure	Y	Somewhat	Sull Co Democrat	?	N	N	Don't need - never flooded	Plan to do	Plan to do	Plan to do	Have done	Not done	Y	N	Y	>\$10,000	Property tax discount	None
							Received info from	Structural Fire	N	Not	Internet															
								Tornado	N	Not	Public Mtg/Wksp															
								Ice Storm	Y	Somewhat																
								Dam Failure		Somewhat																
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites	N	Extremely																
								Flood	N	Somewhat																
								Trans. Accid.	N	Not																
								Structural Collapse	N	Not																
								Oil Spill	N	Somewhat																
								HAZMAT - In Transit	N	Extremely																
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								Water Supply Failure	N	Extremely																
								Explosion	N	Somewhat																
								Epidemic	N	Somewhat																
								Civil Unrest	N	Not																
								Drought	Y	Not																
								Terrorism	N	Not																
								Windstorm	N	Somewhat																
								Wildfire	N	Somewhat																
								Mass Gathering	Y	Not																
								Earthquake	Y	Somewhat																
								Radiological - In Transit	N	Extremely																
								Mine Collapse	N	Not																

2a	2a	2b	2c	2d	3a	3b	3c	3c	3d	3e	3f	3g	3h	3i	3i	3i	3i	3i	4a	4b	4c	4d	4e	4f		
Community	Zip	How long have you lived in Sullivan County	Primary Residence ?	Own/ Rent	Preparedness (1=least prepared, 5=most prepared)	Why do you feel prepared?	In past 20 yrs, which hazards have you experienced and how concerned about each are you?	Best information distribution outlets?	Floodplain ?	Flood Insurance?	Difficulty obtaining HO insurance?	Why no Flood insurance?	1	2	3	4	5	Consider disaster impact on home prior to purchase?	Real Estate agent or landlord inform you of natural hazard risk zone?	Would disclosure of this info influenced decision to buy/move into new home?	\$ you'd be willing to spend on making home more resistant to natural hazard	Incentives that would encourage you to spend \$ to protect home from natural hazard	Mitigation actions considered			
1	Youngsville	12791	20+	Y	Own	5		Power Failure	Y	Somewhat	Sull Co Democrat	Y	N	N	Too expensive	Have done	Have done	Have done	Not done	Have done	N	N	Y	\$500-\$1,000	Other	None
								Structural Fire	N	Somewhat	Fire/EMS Dept				Not worth it											
								Tornado	N		Cty/Local Gov't															
								Ice Storm	Y	Somewhat																
								Dam Failure	Y	Somewhat																
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites	N																	
								Flood	Y	Very																
								Trans. Accid.	N																	
								Structural Collapse	N																	
								Oil Spill	N																	
								HAZMAT – In Transit	N																	
								Ice Jam	N																	
								Landslide	N																	
								Water Supply Failure	Y	Extremely																
								Explosion	N																	
								Epidemic	N																	
								Civil Unrest	N																	
								Drought	Y	Somewhat																
								Terrorism	N																	
								Windstorm	Y	Very																
								Wildfire	N																	
								Mass Gathering	N																	
								Earthquake	N																	
								Radiological – In Transit	N																	
								Mine Collapse	N																	
2	Youngsville	12791	20+	Y	Own	3	Gained awareness from local/regional media rpts	Power Failure	Y	Extremely	Regional TV News	Y	N		Not done	Have done	Have done	Have done	Not done	Y	Y	Y		None	Relocation	
								Structural Fire	N		Radio News															
								Tornado	N		Fire/EMS Dept															
								Ice Storm	Y	Extremely																
								Dam Failure	N																	
								Winter Storm	Y	Extremely																
								HAZMAT/Fixed Sites	N																	
								Flood	Y	Extremely																
								Trans. Accid.	N																	
								Structural Collapse	N																	
								Oil Spill	N																	
								HAZMAT – In Transit	N																	
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								Landslide	N																	
								Water Supply Failure	Y	Extremely																
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								Civil Unrest	N																	
								Drought	N																	
								Terrorism	N																	
								Windstorm	N																	
								Wildfire	N																	
								Mass Gathering	N																	
								Earthquake	N																	
								Radiological – In Transit	N																	
								Mine Collapse	N																	

3	Youngsville	12791	20+	Y	Own	5	Emerg. preparedness info from Gov't Source Have attended mtgs.	Power Failure	Y	Somewhat	Radio News	N	N	N	Don't need - not in floodplain	Have done	Have done	Have done	Not done	Have done	N	Y	\$2,500-\$5,000	Insurance premium discount	Buyout	
								Structural Fire		Very	Internet															
								Tornado		Not	Fire/EMS Dept															
								Ice Storm	Y	Extremely																
								Dam Failure		Somewhat																
								Winter Storm	Y	Somewhat																
								HAZMAT/Fixed Sites		Somewhat																
								Flood	Y	Extremely																
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								Wildfire		Somewhat																
								Mass Gathering		Not																
								Earthquake		Not																
								Radiological - In Transit		Very																
								Mine Collapse		Not																
4	Youngsville	12791	20+	Y	Own	2	Emerg. preparedness info from Gov't Source Gained awareness	Power Failure	Y	Very	Sull Co Democrat	?	N	N	Not rqd by law	Have done	Have done	Have done	Have done	Plan to do	N	N	Y	\$1,000-\$2,500	Property tax discount	Buyout
							Info provided by schools/academic institutions	Structural Fire	N	Very	Utility Company														Grant program with cost	
							Received info from local utility company	Tornado	N	Very	Radio News															
								Ice Storm	Y	Very	Internet															
								Dam Failure	N	Very																
								Winter Storm	Y	Extremely																
								HAZMAT/Fixed Sites	N	Extremely																
								Flood	Y	Extremely																
								Trans. Accid.	Y	Very																
								Structural Collapse	N	Extremely																
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								Windstorm	Y	Very																
								Wildfire	N	Somewhat																
								Mass Gathering	N	Somewhat																
								Earthquake	N	Very																
								Radiological - In Transit	N	Extremely																
								Mine Collapse	N	Not																

5	Youngsville	12791	20+	Y	Own	3	Emerg. preparedness info from Gov't Source	Power Failure	Y	Somewhat	Times Herald Record	N	N	N		Have done	Have done	Have done	Plan to do	Can not	N	N	Y	\$1,000-\$2,500	Low interest loan	Buyout
							Received info from non-	Structural Fire	Y	Very	Sull Co Democrat														Property tax discount	Relocation
								Tornado	Y	Somewhat	Other Newspaper														Grant program with cost share rqt	
								Ice Storm	Y	Somewhat	Internet															
								Dam Failure	Y																	
								Winter Storm	Y																	
								HAZMAT/Fixed Sites																		
								Flood	Y	Somewhat																
								Trans. Accid.		Somewhat																
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								Wildfire		Somewhat																
								Mass Gathering		Somewhat																
								Earthquake		Somewhat																
								Radiological – In Transit		Somewhat																
								Mine Collapse		Somewhat																



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County News

### Draft Hazard Mitigation Plan Update Released for Public Comment

Monday, August 30, 2010

Monticello – County Manager David P Fanslau has announced that Sullivan County has completed a draft of the Multi-Jurisdictional Hazard Mitigation Plan Update through the professional services of Barton and Loguidice, P.C. The intention of this plan is to meet the New York State and Federal hazard mitigation planning requirements established and managed by the New York State Emergency Management Office (NYSEMO) and the Federal Emergency Management Agency (FEMA). Sullivan County and jurisdictions will benefit from the planning and implementation of the proposed mitigation actions included in this plan.

"The purpose of this Multi-Jurisdictional Hazard Mitigation Plan (HMP) is to effectively reduce future disaster damages, public expenditure, private losses, and community vulnerability to natural, technological, and man-made hazards. This plan provides an opportunity for Sullivan County, in conjunction with the communities included in the County, to develop a comprehensive risk assessment and to outline proposed mitigation actions that would minimize the costs and impacts of future disasters" said Fanslau.

Residents are encouraged to review the plan and comment on Tuesday, September 7th at 5:30 p.m. in the Government Center, 100 North Street, Monticello, New York, 2nd floor Legislative Hearing Room. The plan may also be reviewed on the Planning Division's website at [co.sullivan.ny.us](http://co.sullivan.ny.us) and feedback may be provided by email to [planning@co.sullivan.ny.us](mailto:planning@co.sullivan.ny.us) or by calling the Division of Planning and Environmental Management at 845-807-0527.

"Unfortunately, Sullivan County has experienced tragedies from numerous significant flood events over the last decade, and the intent of this plan is to provide a blueprint of actions to guard against future flood events and resulting tragedies," concluded Fanslau.

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#### LINKS

[2011 County of Sullivan Tentative Budget \(1.8 Mb PDF\)](#)

[County of Sullivan Draft Strategic Plan 2010-2012 \(513 Kb PDF\)](#)

[Chairman Roufs' 2010 State of the County Address \(117 Kb PDF\)](#)

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[Sullivan County Corporate Compliance False Claims Act Policy \(509 Kb PDF\)](#)

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[Draft 2010 Hazard Mitigation Plan](#)

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## Division of Planning & Environmental Management

The Sullivan County Division of Planning & Environmental Management is responsible for the creation of programs that foster orderly development and redevelopment of the County's physical infrastructure in a manner that conserves natural resources while providing economic opportunity for its residents. The Division of Planning also offers technical assistance to municipalities and assists with the development of land use policies. Located in the historic Catskills Region, sixty miles northwest of New York City, Sullivan County is home to nearly 75,000 year-round residents and an additional 45,000 second-home owners.

Sullivan County's land area is 1,011 square miles and is composed of 17 towns, 6 villages, and more than 30 hamlets. Its physical environment ranges from historic urban centers to bucolic farming communities nestled within an unsurpassed open space network that includes: the Upper Delaware River, Catskill Park, Basherkill Wetland, and Shawangunk Mountains.

You are invited to explore our web site to get a better understanding of the Division of Planning and Environmental Management. The Division of Planning and Environmental Management is helping to guide growth and redevelopment in Sullivan County.

[Message from the Commissioner](#)

[Sullivan 2020 Toolbox Index](#)

[Available Funding Opportunities](#)

## BRIEFS

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### **Sullivan County to hold meeting on reducing hazard damage**

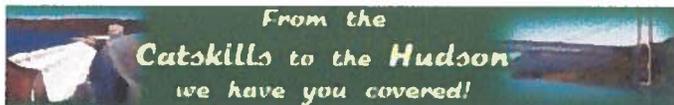
**MONTECELLO** – Residents wanting to comment on Sullivan County's proposed plan for reducing potential damage from floods, storms and other natural and man-made hazards can do so at a public meeting Tuesday at the Government Center in Monticello.

The meeting on the county's Hazard Mitigation Plan starts at 5:30 p.m. A draft of the plan can be seen on the Planning Division's website at [www.sullivan.ny.us](http://www.sullivan.ny.us), or call the division at 807-0527 for information.

Johanna E. Duffy

---

**From:** Glenn Gidaly  
**Sent:** Tuesday, August 31, 2010 7:12 AM  
**To:** John J. Condino; Johanna E. Duffy  
**Subject:** Emailing: Sullivan County draft hazard mitigation plan update released.htm



Tuesday  
August 31, 2010

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### Sullivan County draft hazard mitigation plan update released

MONTICELLO – The Sullivan County draft of the Multi-Jurisdictional Mitigation Plan Update has been completed.

The document, which will be presented to the public at 5:30 p.m. on Tuesday, September 7 at the Sullivan County Government Center in Monticello, is intended to meet state and federal hazard mitigation planning requirements.

The purpose of the plan is to “effectively reduce future disaster damages, public expenditure, private losses, and community vulnerability to natural, technological, and manmade hazards,” said County Manager David Fanslau. “This plan provides an opportunity for Sullivan County, in conjunction with the communities included in the county, to develop a comprehensive risk assessment and to outline proposed mitigation actions that would minimize the costs and impacts of future disasters.”

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TUESDAY, SEPTEMBER 7, 2010

SULLIVAN COUNTY DEMOCRAT

[www.sc-democrat.com](http://www.sc-democrat.com)

## Mitigation plan ready for review

**MONTICELLO** — County Manager David P. Fanslau has announced that Sullivan County has completed a draft of the Multi-Jurisdictional Hazard Mitigation Plan Update through the professional services of Barton and Loguidice, P.C.

"The purpose of this plan is to effectively reduce future disaster damages, public expenditure, private losses, and community vulnerability to natural, technological, and man-made hazards. This plan provides an opportunity for Sullivan County, in conjunction with the communities included in the county, to develop a compre-

hensive risk assessment and to outline proposed mitigation actions that would minimize the costs and impacts of future disasters," said Fanslau.

Residents are encouraged to review the plan and comment on Tuesday, September 7th at 5:30 p.m. in the Government Center, 100 North Street, Monticello, New York, 2nd floor Legislative Hearing Room. The plan may also be reviewed on the Planning Division's website at [www.co.sullivan.ny.us](http://www.co.sullivan.ny.us) and feedback may be provided by email to [planning@co.sullivan.ny.us](mailto:planning@co.sullivan.ny.us) or by calling 807-0527.

Original Advertisement

Tom Bose, Supervisor  
Town Board Members  
Town of Callicoon, N.Y.

Youngsville Environmental  
Preservation Committee  
(YEPC) P.O. 194  
Youngsville, N.Y. 12791

Sept 12, 2010

The 2010 Hazard Mitigation Plan is currently in development. We would appreciate it if you would include the following list of projects in the plan. Although we realize that these issues involve the entire water drainage system, we have concentrated our list in the hamlet of Youngsville.

While these are long term "wish list" items, it is our understanding that they need to be included in the Hazard Mitigation Plan if they are to be considered should Federal Disaster money become available.

Our larger goal is to help develop an overall plan for minimizing damage to people, structures, property and wildlife throughout the hamlet. Specific areas of concern are as follows:

- 1: Restore and maintain streambeds and banks for clear water flow and wildlife habitat.
- 2: Continue to improve and maintain water drainage surrounding the two bridges on State Route 52.
- 3: Explore and develop a plan for drainage above and on Old Danzer Rd. to the old creamery site, then down on to State Rt 52 as well as behind the post office and surrounding properties.
- 4: Restore dry dams and retention ponds on Panther Rock Brook and East Branch of Callicoon Creek that were washed out. Explore the possibility of developing additional dry ponds or retention dams on down to Jeffersonville. These would create a series of footpaths and pocket parks. This will become habitat for wild life, recreation and water control.
- 5: Explore the feasibility of the purchase of the property located on State Route 52 (tax i.d. 19.-8-22) for possible mitigation for drainage from East Hill Rd. /C. Spielmann Rd)

We hope these suggestions will be helpful to you.  
Thank you for your consideration,

Members of the Youngsville Environmental Preservation Committee:  
Anna LeRoy, Mary Nosek, Elizabeth Kidder, Anne Hart,  
Rachelle Cinque, Ruth Huggler, Sharon Green, Linda Babicz,  
Ouida Edington



## Sullivan County Board of Cooperative Educational Services

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6 Wierk Avenue • Liberty, NY 12754-2116  
Tel 845-295-4000 • Fax 845-292-8694

**Date: December 1<sup>st</sup>, 2010**

**TO: Luiz C. Aragon, Sullivan County Division of Planning and Environmental Management**

**From: Michael F. LaFountain, Health, Safety & Risk Management Department**

**RE: School related corrections to the Multi-Hazard Mitigation Plan**

I am the Sullivan County BOCES Health and Safety Coordinator, responsible for Health, Safety, and Security related issues in the eight School Districts and BOCES in Sullivan County. As requested, I have reviewed the Sullivan County Multi-Hazard Mitigation Plan and submit the following suggested corrections. The highlighted items are those areas that need to be changed/added.

Pg 42 - Address for Robert J. Kaiser Middle School is **45 Breakey Ave**, Monticello

Pg 42 - Address for Chase Elementary School is **26 Patricia Place**, Monticello

Pg 42 - Address for Cooke Elementary School is **69 Richardson Ave**, Monticello

Pg 42 - Address for Chase Elementary School is **28 Pennsylvania Ave**, Wurtsboro

Pg 43 - Address for Sullivan West Lake Huntington Campus is **6604 State Route 52**, Lake Huntington

Pg 43 - Address for Sullivan West Jeffersonville Campus is **33 Schoolhouse Rd**, Jeffersonville

Pg 43 – Delaware Valley School is currently vacant

Pg 43 – Narrowsburg School is currently vacant

Pg 43 - Address for Tri-Valley School is **34 Moore Hill Rd, Grahamsville**

Pg 43 - In 1999, Delaware Valley, Jeffersonville-Youngsville, and Narrowsburg School Districts were combined to form the Sullivan West School District. The Delaware Valley and Narrowsburg schools are now vacant but still owned by the District. Both facilities are in the process of being sold (to a non-school related entity) as early as mid-2011.

Pg 43 - The main campus of the Sullivan County BOCES is located at 52 Ferndale-Loomis Road, Liberty, NY 12754-2908. Another alternative to public high school is the Sullivan County BOCES Youngsville School for Alternative Education, located at 1815 Shandelea Rd, Youngsville, NY 12791. Also, while the White Sulphur Springs Elementary School is owned by the Liberty School District (see page 42), it is occupied exclusively by Sullivan County BOCES Elementary Special Education students.

Sincerely,

Michael LaFountain  
Health and Safety Coordinator



## United States Department of the Interior

NATIONAL PARK SERVICE  
Upper Delaware Scenic and Recreational River  
274 River Road, Beach Lake PA 18405

IN REPLY REFER TO:

A3815 (UPDE-OS)

December 15, 2010

Mr. Luiz Aragon, Commissioner  
Division of Planning and Environmental Management  
Sullivan County Government Center  
100 North Street  
P O Box 5012  
Monticello, NY 12701

Dear ~~Mr. Aragon~~ *Luiz*,

Thank you for the opportunity to review Sullivan County's draft Multi-jurisdictional Hazard Mitigation Plan Update. We offer the following comments:

- Section 1.1 (page 1) Callicoon is not listed as one of the 49 recognized hamlets in Sullivan County.
- Section 2.3 (page 16, table 2.4) Delaware River should also be identified as open water.
- Section 2.3 (page 17-18) The Upper Delaware River should be included.
- Section 2.5 (page 28) "Flooding occurs occasionally along the Delaware River..." What is the definition of "occasionally".
- Section 2.6 (page 33) With natural gas drilling appearing imminent in the region, more planning as far as rail transportation of hazardous materials associated with the drilling process should be considered.
- Section 2.9 (page 49, table 13) Superintendent Dave Forney has retired, replace with Sean McGuinness.
- Section 3.1 (page 58) Change the title of the NPS representative to: Superintendent, Upper Delaware Scenic and Recreational River.
- Section 5.1.2 (page 91) Perhaps consideration should be given to dams located outside of Sullivan County because of their potential impact to the county in the event of a failure, i.e. PP&L at Lake Wallenpaupack.

It appears that we have not had a National Park Service representative serve on the Sullivan County Emergency Management Planning Committee/Local Emergency Planning Committee since Superintendent Dave Forney was here over 2 years ago. We would appreciate your consideration to again be part of this committee.

The Upper Delaware Scenic and Recreational River currently has plans in place to address power outages, evacuations, dam emergencies, flood/high water events, pandemic influenza, hazardous weather, bomb threats, and hazardous materials. We also have a Continuity of Operations plan in the event that staff needs to relocate from their primary duty stations to maintain management of the park.

I am attaching a list of emergency contact numbers which should be included in the plan update.

If you have any questions, please don't hesitate to contact me at the above address or email me at [sean\\_mcguinness@nps.gov](mailto:sean_mcguinness@nps.gov).

Sincerely,



Sean J. McGuinness  
Superintendent

Attachment

Cuz,

I'm looking forward to a great year  
working with you and your staff to  
make Sullivan Co and the River corridor  
the Best!  
SJM

**NATIONAL PARK SERVICE**  
**UPPER DELAWARE SCENIC AND RECREATIONAL RIVER**  
**EMERGENCY NUMBERS**

1. All correspondence concerning the National Park Service should be addressed to:  
National Park Service  
Upper Delaware S&RR  
274 River Road  
Beach Lake, PA 18405

Attn: Sean McGuinness, Superintendent  
Attn: Chief of Protection

2. Phone Numbers: Weekdays (8 am -4 pm) Park Headquarters (570) 729-7134  
Contact Person - Barbara C. Perry

OR

Barryville, NY Ranger Station (845) 557-0222  
Milanville, PA Ranger Station (570) 729-7862

**24 HOUR EMERGENCY DISPATCH**    570-426-2457

3. **AFTER HOUR CONTACTS:**

Larry Neal	Park Ranger	570-729-0454
Bill Weber	Park Ranger	570-729-0492
Vince Pareago	Park Ranger	570-729-0735
Kevin Reish	Park Ranger	570-226-6120



State of New York  
Department of Transportation  
Region Nine  
44 Hawley Street  
Binghamton, New York 13901-3200  
[www.nysdot.gov](http://www.nysdot.gov)

John R. Williams, P.E.  
Regional Director

Stanley Gee  
Acting Commissioner

December 23, 2010

Mr. Luiz Aragon, Commissioner  
Sullivan County Division of Planning and Community Development  
County Government Center  
100 North Street, PO Box 5012  
Monticello, New York 12701

Dear Commissioner Aragon:

**RE: SULLIVAN COUNTY MULTI-JURISDICTIONAL MULTI-HAZARD  
MITIGATION PLAN UPDATE (2010)**

We have reviewed the above-referenced report and offer the following comments. In Table 32 Mitigation Action Strategy Specifics, there are five different “Mitigation Actions” where NYS DOT is listed as an “Assumed Implementing Agency”. Specific comments on these “Mitigation Actions” are as follows:

- *Upgrade signage along evacuation routes (Village of Jeffersonville)*—We assume this project refers to flooding of the East Branch of the Callicoon Creek that runs through the Village of Jeffersonville and parallel to NYS Route 52. The majority of the signage will most likely be installed off the state highway system, but any signs placed in the state right-of-way will require a highway work permit.
- *Replace/rehab Route 97, Hollow Road, Sweeny Road (Town of Lumberland)*—Does this mitigation action suggest that all of Route 97 in the Town of Lumberland be replaced or rehabilitated? If so, please be advised that there are no projects listed on our current five-year capital program regarding the replacement or rehabilitation of Route 97 in Lumberland.
- *Replace/rehab Mill Road Bridge, CR 44 & French, Route 42/43 Bridge to minimize flood damage (Town of Forestburg)*—Please clarify the location of the “Route 42/43 Bridge”. If this “bridge” is the stack of five culvert pipes (CIN C970097) along NYS Route 42 near RM 42 9602 1039, replacement of this structure is currently in the preliminary design phase, and construction is anticipated to begin in the summer of 2013.
- *Replace/rehab Sullivan Street Bridge to reduce flood damage (Village of Wurtsboro)*—According to our records, the “Sullivan Street Bridge” is not a state owned bridge or culvert. As such, NYS DOT should not be listed as an “Assumed Implementing Agency”.
- *Replace/rehab Youngsville NYS Route Bridge/Route 52, Dewatts Flats to reduce flood impacts (Town of Callicoon)*—Assuming the Youngsville NYS Route Bridge/Route 52 refers to NYS 52 over Panther Rock Creek (BIN 1026540), this project is not currently listed on our capital program.

If you have any questions, or need further assistance, please contact Christine Klein, AICP, of our Regional Planning and Program Management Office at (607) 721-8259.

Sincerely,

*Original signed by Christine Klein, AICP for*

Christine E. Klein, AICP  
Regional Emergency Manager

CEK/jab

ec: S. Zaman, Sullivan County Resident Engineer  
D. Smith, Sullivan County Assistant Resident Engineer  
D. Pencek, Assistant Regional Director of Operations  
A. Stiles, Regional Director of Operations  
c: File  
Blue

From: Donna Hemmer  
Sent: Wednesday, December 29, 2010 11:26 AM  
To: Weyer, Jill M.  
Subject: Re: Hazard Mitigation Plan

Hi Jill,

Attached are just a couple comments. Since I was not in the initial meetings I unsure of how detailed you want the plan to be and what aspects you wanted to focus on. So please take that into consideration.

Also as an FYI, I've been working with the Dick Martinkovic in creating a county-wide notification system with the schools, so if possible I would like to opportunity to sit in on some of your meetings to make sure the schools are in the loop and you are also in the loop on our plans.

Overall it seems as if the schools & BOCES are not taken into consideration into the plan. The public schools are mentioned in one section, but as you know they are also utilized as evacuation sites and are usually impacted in one way or another. I'm not sure how you would like to incorporate them, but I would be happy to discuss it with you.

On page 43 where you talk about BOCES the information is not complete --

We actually have 5 campuses:

Administration Building  
6 Wierk Avenue  
Liberty, NY 12754

Rubin Pollack Education Center  
52 Ferndale-Loomis Road  
Liberty, NY 12754

St. John Street Education Center  
22 St. John Street  
Monticello, NY 12701

White Sulphur Springs School  
29 Schoolhouse Road  
White Sulphur Springs, NY 12787

Youngsville School  
1815 Shanderee Road  
Youngsville, NY 12791

I also thought that your plan should also include the private schools. The only one I saw was St. Peters in Liberty. The others are:

Hebrew Day School of Sullivan  
4718 State Route 42  
Kiamasha Lake, NY 12751-0839

The Homestead School  
428 Hollow Road  
Glen Spey, New York 12737

The Center for Discovery  
Box 840 Benmoshe Road  
Harris, NY 12742

For Higher Education:

Delaware Valley Job Corps  
PO Box 845  
Callicoon, NY 12723-0846

I hope this is helpful. As mentioned above I would be happy to meet with you to help incorporate the schools and discuss any other items.

Thank you for the opportunity to still comment.

Donna Hemmer  
Director of Communications  
Sullivan County BOCES  
6 Wierk Avenue  
Liberty, NY 12754

Phone: (845) 295-4011  
Cell Phone: (845) 807-7256  
Fax: (845) 292-0131

NYSDEC Spills Database - Sullivan County - 2009 Records

Spill Number	Date Spill Reported	Spill Name	County	City/Town	Address	Material	Amount
910864	1/7/2009	JANET THRESHMAN RESIDENCE	Sullivan	CALLICOON	424 RIVER RD	#2 Fuel Oil	Unknown
910886	1/7/2009	SOLOMON RES.	Sullivan	WOODRIDGE	1220 GLEN WILD ROAD	#2 Fuel Oil	Unknown
911112	1/14/2009	HOFFMAN RES	Sullivan	BLOOMINGBURG	30 VALLEYVIEW RD	#2 Fuel Oil	Unknown
911197	1/18/2009	SILVESTRI RES	Sullivan	ROCK HILL	4 CURVE RD	#1 Fuel Oil	Unknown
911300	1/20/2009	HUDSON VALLEY FOIEGRAS	Sullivan	FERNDALE	BROOKS RD	#2 Fuel Oil	50 gals.
911745	2/3/2009	DEP POLICE 5TH PCT	Sullivan	GRAHAMSVILLE	7892 STATE 42	Ethylene Glycol	1 gal.
911890	2/9/2009	IROQUIOUS CLUB	Sullivan	IROQUIOUS CLUB	50 TORONTO RD	#2 Fuel Oil	Unknown
911907	2/9/2009	MONGIELLO RES.	Sullivan	HURLEYVILLE	245 HILLDALE ROAD	MTBE	Unknown
911961	2/11/2009	TOWN OF WOODRIDGE TREATMENT PLANT	Sullivan	WOODRIDGE	GREEN FIELD ROAD	Unknown	Unknown
912020	2/16/2009	OLD FALLS/STEWARTS SHOP	Sullivan	SOUTH FALLSBURG	ROUTE 42 AND 52	Unknown	Unknown
912041	2/16/2009	ELIZABETH RADZIESKI	Sullivan	WHITE LAKE	33 MATTISON RD	Gasoline	Unknown
912381	2/26/2009	GREENFIELD PUMP STATION	Sullivan	WOODRIDGE	36 GREENFIELD	Raw Sewage	Unknown
912958	3/13/2009	MANHOLE IN ROAD	Sullivan	HIGHLAND MILLS	BRIGADOON BLVD AND RT 32	Raw Sewage	Unknown
912964	3/13/2009	TOWN OF LIBERTY OFFICES	Sullivan	LIBERTY	120 NORTH MAIN ST	#2 Fuel Oil	2 gals.
912991	3/14/2009	GREENFIELD PUMP STATION	Sullivan	WOODRIDGE	36 GREENFIELD RD	Raw Sewage	1000 gals.
912999	3/14/2009	APT BUILDING	Sullivan	WURTSBORO	154 KINGSTON AVE (209)	Diesel Fuel	Unknown
913054	3/15/2009	CONSTRUCTION SITE	Sullivan	LIBERTY	O'KEEFE HILL RD	Transmission Fluid	55 gals.
913061	3/15/2009	POLE 37118/5572	Sullivan	GLEN SPEY	23 MOUNTAIN LAUREL LANE	Transformer Oil	2 gals.
913081	3/15/2009	FORECLOSED DEVELOPMENT	Sullivan	LIBERTY	178 MINERAL SPRINGS RD	Unknown	Unknown
913161	3/16/2009	POLE TOP 37701 52748	Sullivan	GLEN SPAY	DECKER AND FISH CABIN RD	Transformer Oil	1 gal.
913165	3/16/2009	LEONARD RESIDENCE	Sullivan	BLOOMINGBURG	27 VALLEY VIEW DR	#2 Fuel Oil	10 gals.
913207	3/17/2009	WATER AND SEWER BUILDING	Sullivan	MONTICELLO	128 ROCK RIDGE DR	#2 Fuel Oil	Unknown
913220	3/17/2009	PVT DWELLING	Sullivan	GRAHAMSVILLE	7368 ROUTE 42	#2 Fuel Oil	2 gals.
913419	3/19/2009	PRIVATE RESIDENCE	Sullivan	COCHECTON	2243 STATE RT. 17B	Unknown	Unknown
913426	3/20/2009	PRIVATE RESIDENCE	Sullivan	LUMBERLAND	3 BERM AND CHURCH RD	Unknown	Unknown
913452	3/21/2009	POLE #6 LINE 1370	Sullivan	MONGAUP VALLEY	658 STARLIGHT DRIVE	Transformer Oil	15 gals.
913505	3/23/2009	VILLAGE OF WOODRIDGE	Sullivan	WOODRIDGE	36 GREENFIELD	Raw Sewage	Unknown
913531	3/23/2009	PRIVATE RESIDENCE	Sullivan	JEFFERSONVILLE	4532(?) ROUTE 52	Waste Oil	5 gals.
913549	3/23/2009	LUMBERLAND HWY GARAGE	Sullivan	GLENSPAY	989 PROCTOR RD	#2 Fuel Oil	Unknown
913570	3/23/2009	VILLAGE OF MONTICELLO	Sullivan	MONTICELLO	38 PLANT DR	Diesel Fuel	Unknown
913629	3/24/2009	COUNTRY CORNERS GAS STATION	Sullivan	HORTONVILLE	4288 STATE ROUTE 17B	Diesel Fuel	3 gals.
913731	3/26/2009	NEAR SUMP PUMP	Sullivan	KIAMESHA LAKE	6 JAMES PLACE	#1 Fuel Oil	Unknown
913806	3/29/2009	VERIZON CENTRAL OFFICE	Sullivan	LIBERTY	21 OBERFEST ST	#2 Fuel Oil	Unknown
913903	3/31/2009	SULLIVAN COUNTY DPW /BARRYVILLE	Sullivan	BARRYVILLE	CNTY 11	Waste Oil	Unknown
1000151	4/5/2009	NY ROUTE 17	Sullivan	WURTSBORO	1/2 MILE EAST OF EXIT 111 EASTBOUND	Diesel Fuel	20 gals.
1000208	4/6/2009	PVT DWELLING	Sullivan	WURTSBORO	43 WOLF LAKE RD	#2 Fuel Oil	0.5 gals.
1000247	4/6/2009	DEP FACILITY	Sullivan	GRAHAMSVILLE	7870 STATE ROUTE 42	Diesel Fuel	Unknown
1000276	4/7/2009	APARTMENT BLD	Sullivan	MONTICELLO	1 LAURA LANE	#2 Fuel Oil	Unknown
1000544	4/13/2009	PVT DWELLING	Sullivan	BETHEL	42 SMITH RD	Transformer Oil	15 gals.
1000699	4/18/2009	BRIDGE NY TO PA	Sullivan	NARROWSBURG	BRIDGE NY TO PA	Unknown	Unknown
1001016	4/27/2009	STEINMETZ RENTAL (6 APTS.)	Sullivan	LIVINGSTON MANOR	60 MAIN ST	#2 Fuel Oil	Unknown
1001083	4/28/2009	PRIVATE RESIDENCE	Sullivan	LUMBERLAND	51 HOMEYER RD	Transformer Oil	Unknown
1001124	4/29/2009	GAS STATION - UNBRANDED	Sullivan	ROCK HILL	686 WOLF LAKE RD	Diesel Fuel	Unknown

NYSDEC Spills Database - Sullivan County - 2009 Records

Spill Number	Date Spill Reported	Spill Name	County	City/Town	Address	Material	Amount
1001141	4/29/2009	TIGERS DEN MOBIL	Sullivan	LIBERTY	189 MILL STREET	Gasoline	Unknown
1001288	5/4/2009	GLOBAL GAS AND FOOD MART	Sullivan	ROCK HILL	686 WOLF LAKE RD	Gasoline	Unknown
1001331	5/4/2009	ROCK HILL CITGO	Sullivan	ROCK HILL	7 GLEN WILD ROAD	Diesel Fuel	Unknown
1001367	5/5/2009	OLIN RESIDENCE	Sullivan	BLOOMINGBURG	24 OLD TURNPIKE	Gasoline	Unknown
1001489	5/7/2009	RACEWAY MOBIL	Sullivan	MONTICELLO	4 RACEWAY ROAD	#2 Fuel Oil/Diesel	Unknown
1001491	5/7/2009	ULTRA POWER CITGO	Sullivan	MONTICELLO	133 JEFFERSON STREET	Diesel/Gasoline	Unknown
901733	5/12/2009	GOOD LIFE MOBILE HOME PARK	Sullivan	LIBERTY	6 LISA LANE	#1 Fuel Oil	Unknown
901821	5/14/2009	VILLIAGE OF WOODRIDGE SEWER DEPT	Sullivan	WOODRIDGE	36 GREENFIELD RD	Raw Sewage	200,000 gals.
901935	5/18/2009	STEINMENTZ RESIDENCE	Sullivan	SOUTH FALLSBURG	6 LAKE LAND DR	#2 Fuel Oil	Unknown
901998	5/19/2009	DEL PIANO RENTAL	Sullivan	PINE BUSH	8 WALKER VALLEY RD	#2 Fuel Oil	Unknown
902211	5/25/2009	OLD DAVOS SKI AREA	Sullivan	WOODRIDGE	OFF TABACZYNSKI ROAD	Transformer Oil	Unknown
902323	5/28/2009	NYC DEP	Sullivan	GRAHAMSVILLE	1229 RTE 55A	Unknown	Unknown
902451	6/1/2009	DAYTOP VILLAGE	Sullivan	SWAN LAKE	4446 RTE 55	#2 Fuel Oil	Unknown
902578	6/3/2009	RONDOUT RESERVOIR	Sullivan	GRAHMSVILLE	RTE 55 A	Antifreeze/Trans Fluid	Unknown
902640	6/4/2009	J HUGHSON EXCAVATING	Sullivan	JEFFERSONVILLE	5239 RTE 59	#2 Fuel Oil/Waste Oil	Unknown
902666	6/5/2009	MEISEL RENTAL	Sullivan	FALLSBURG	5577 RTE 42	#2 Fuel Oil	Unknown
902865	6/10/2009	NEVERSINK DAM	Sullivan	NEVERSINK	RTE 55	Hydraulic Oil	Unknown
902977	6/12/2009	IN BACK OF TRAILER OUTSIDE	Sullivan	LIVINGSTON MANOR	481 HAZEL RD	#1 Fuel Oil	Unknown
903085	6/16/2009	FORMER RESTAURANT	Sullivan	MONTICELLO	426 BROADWAY	Vegetable Oil	Unknown
903271	6/19/2009	PROTTAS RES	Sullivan	WOODRIDGE	44 KRIEGER BLVD	#2 Fuel Oil	Unknown
903311	6/21/2009	OFF BROADWAY	Sullivan	WOODRIDGE	44 KRIEGER BLVD	#2 Fuel Oil	Unknown
903705	6/29/2009	CATSKILL FISH HATCHERY	Sullivan	LIVINGSTON MANOR	MONGAUP POND RD	Diesel Fuel	Unknown
903731	6/30/2009	MONGAUP POND	Sullivan	LIVINGSTON MANOR	231 MONGAUP POND RD	Battery Acid	Unknown
903783	7/1/2009	SULLIVAN CORRECTIONAL FACILITY	Sullivan	FALLSBURG	325 RIVERSIDE DR	Waste Oil	5 gals.
903992	7/7/2009	I/F/O 34 MOORE HILL RD	Sullivan	GRAMSVILLE	34 MOORE HILL RD	Motor Oil	1 gal.
904038	7/7/2009	YAKOV BAYER	Sullivan	SWAN LAKE	196 STANTON CORNERS RD #3	#2 Fuel Oil	Unknown
904160	7/9/2009	AHAVAS CHAVERIM CORP. HOTEL	Sullivan	SPRING GLEN	SPRING GLEN AND PHILIPSPORT	#2 Fuel Oil	Unknown
904241	7/12/2009	RESIDENCE	Sullivan	LOCH SHELDRAKE	304 WADE RD	#2 Fuel Oil	10 gals.
904263	7/13/2009	I/F/O 32 LAUSSANNE DR	Sullivan	WOODRIDGE	32 LAUSSANNE DR	Diesel Fuel	Unknown
904351	7/14/2009	WEST DELAWARE TUNNEL OUTLET	Sullivan	GRAMSVILLE	1324 NEW YORK CITY RTE 55A	Hydraulic Oil	0.25 gals.
904367	7/14/2009	DELAWARE JOB CORP	Sullivan	CALLICOON	9368 ST RT 97	#4 Fuel Oil	Unknown
904456	7/16/2009	MORAN RESIDENCE	Sullivan	WOODRIDGE	19 LAUSSANNE PL	Motor Oil	1 gal.
904905	7/28/2009	MOBIL	Sullivan	WOODBOURNE	6093 STATE RTE 42	Gasoline	0.5 gals.
904990	7/30/2009	AMERICAN LEGION POST 298	Sullivan	LIVINGSTON MANOR	INTERSECTION PEARL ST & MAIN ST	#2 Fuel Oil	50 gals.
905034	7/30/2009	VILLAGE OF WOODRIDGE	Sullivan	FALLSBURG	36 GREENFIELD ROAD	Other	Unknown
905164	8/3/2009	EAST BROADWAY/ ALDI'S	Sullivan	MONTICELLO	ALDIS PLAZA	Cooking Grease	Unknown
905274	8/6/2009	TRAFFIC ACCIDENT	Sullivan	JEFFERSONVILLE	I/A/O 5525 RTE 52	Diesel Fuel	30 gals.
905359	8/7/2009	BAUM RESIDENCE	Sullivan	CALLICOON	69 FREEMONT ST	#2 Fuel Oil	Unknown
905429	8/10/2009	POLE # 46592/56583	Sullivan	BLOOMINGBURG	46 OLD ROOSA GAP RD	Transformer Oil	Unknown
905800	8/18/2009	17B QUICK STOP-CITGO	Sullivan	WHITE LAKE	1322 RTE 17B	Gasoline	Unknown
906115	8/25/2009	CROSS ST BREEZY HILL AND TAYLOR BETWEEN 1ST HOUSE ON RIGHT	Sullivan	LIBERTY	ACROOS FROM 43 TAYLOR RD	#2 Fuel Oil	Unknown
906238	8/28/2009	PVT DWELLING	Sullivan	LIBERTY	8 LISA LN	Kerosene	Unknown
906312	8/31/2009	PRIVATE DWELLING	Sullivan	MONTICELLO	24 BENNETTE ST	Unknown	Unknown
906337	9/1/2009	POLE # 24 LINE # 86	Sullivan	LIBERTY	WEST LAKE ST	Transformer Oil	15 gals.

NYSDEC Spills Database - Sullivan County - 2009 Records

Spill Number	Date Spill Reported	Spill Name	County	City/Town	Address	Material	Amount
906441	9/3/2009	PRIVATE PROERTY	Sullivan	MONTICELLO	8 ROCK RIDGE AVE	Other	Unknown
906512	9/5/2009	SWINGING BRIDGE LAKE	Sullivan	MONTECELLO	STAR LIGHT RD	Motor Oil/Jet Fuel	0.5 gals./45 gals.
906542	9/8/2009	MONTICELLO COUNTRY STORE	Sullivan	MONTICELLO	150 BROADWAY	Diesel Fuel	Unknown
906666	9/11/2009	BROADWAY SUNUCO	Sullivan	MONTICELLO	150 BROADWAY	Unknown	Unknown
906671	9/11/2009	4437 STATE RTE 42	Sullivan	MONTICELLO	4437 STATE RTE 42	Gasoline	Unknown
906771	9/15/2009	37 THOMPSON RD	Sullivan	MONTICELLO	37 THOMPSON RD	#2 Fuel Oil	Unknown
906853	9/17/2009	NYC DEP SITE	Sullivan	GRAHAMSVILLE	7870 STATE RTE 42	Gasoline	Unknown
906997	9/22/2009	NEW BRIDGE	Sullivan	WOODBURN	MAIN RD	Other	Unknown
907041	9/22/2009	BRIDGE ON RT 209	Sullivan	WURTSBORO	RT 209/WILSEY VALLEY	Unknown	Unknown
907050	9/23/2009	RT. 17 (I-86) NORTH OF MEMORIES BLDG	Sullivan	PARKSVILLE	RT. 17 NORTH	Mud	Unknown
907136	9/24/2009	PAVESE SERVICE CENTER	Sullivan	MONTICELLO	36 COLD SPRING ROAD	Gasoline	Unknown
907325	9/29/2009	PVT DWELLING	Sullivan	LIVINGSTON MANOR	373 KNICKERBOCKER RD	Kerosene	Unknown
907941	10/14/2009	TANK IN BASEMENT	Sullivan	MONTICELLO	5 EMILY ST	#2 Fuel Oil	Unknown
907982	10/15/2009	DEP : TRANSFORMER OIL	Sullivan	NEVERSINK	7051 STATE ROUTE 55	Transformer Oil	0.2 gals.
908236	10/22/2009	SULLIVAN COUNTY DPW	Sullivan	FREMONT CENTER	COUNTY RTE 93 & TANANA LAKE RD	Hydraulic Oil	20 gals.
908505	10/28/2009	LEAKING TANK ON TRUCK	Sullivan	MONTICELLO	ST RT 17 B	#2 Fuel Oil	Unknown
908616	10/30/2009	INTERSECTION	Sullivan	THOMPSON	DILLON RD AND DILLON FARM RD	#2 Fuel Oil	Unknown
909064	11/12/2009	CIPOLLONE RENTAL	Sullivan	CALLICOON	30 TONJES RD	#2 Fuel Oil	Unknown
909071	11/12/2009	INTERSECTION CNTY RD 31 AND STATE RTE 97	Sullivan	GLEN SPEY	INTERSECTION CNTY RD 31 AND STATE RTE 97	Gasoline	2 gals.
909353	11/20/2009	CERONE RENTAL	Sullivan	LIVINGSTON MANOR	343 DAHLIA RD	#2 Fuel Oil	Unknown
909470	11/24/2009	PVT DWELLING	Sullivan	MONTICELLO	13 HANOVER DRIVE	#2 Fuel Oil	Unknown
909621	11/30/2009	ROADWAY	Sullivan	ROCKLAND	COUNTY RTE. 92 AND YOUNGS ROAD	Unknown	Unknown
909646	12/1/2009	DRAINAGE DITCH	Sullivan	MONTICELLO	PARK AVENUE AND ATWELL LANE	Antifreeze	Unknown
909649	12/1/2009	KOZE ENTERPRIZES GAS STATION	Sullivan	MONTICELLO	519 BROADWAY	#2 Fuel Oil	Unknown
909762	12/3/2009	PVT RESIDENCE	Sullivan	WURTSBORO	50 LAUREL TRAIL	#2 Fuel Oil	Unknown
910048	12/10/2009	STANLEY MCARTHUR	Sullivan	LIVINGSTON MANOR	820 DAHLIA RD	Kerosene	5 gals.
910176	12/14/2009	ROADSIDE	Sullivan	GRAHAMSVILLE	SR 55	Motor Oil	5 gals.
910212	12/15/2009	LIBERTY ELEMENTARY SCHOOL	Sullivan	LIBERTY	201 NORTH MAIN STREET	#2 Fuel Oil	Unknown
910585	12/28/2009	TODERO RES.	Sullivan	MONTICELLO	57 SPRING ST	#2 Fuel Oil	30 gals.
910653	12/30/2009	LEISURE TIME ICE/WATER	Sullivan	MONTICELLO	4496 STATE RTE 42	Nitric Acid	250 gals.

## Appendix I - Asset Identification and Hazard Impacts

*Top Hazards to Which Each Jurisdiction Determined Itself to be Vulnerable (revised Table D-1)*

Jurisdiction	Utility Failure	Fire	Tornado	Ice Storm	Dam Failure	Winter Storm (severe)	HazMat - Fixed	Flood	Transportation Accident	Structural Collapse	Oil Spill	HazMat - In Transit	Ice Jam	Landslide	Water Supply Contamination	Air Contamination	Explosion	Epidemic	Civil Unrest	Drought	Terrorism	Severe Storm	Wildfire	Earthquake	Radiological - In Transit	Radiological - Fixed	Mine Collapse	Infestation	Extreme Temperatures	Food/Fuel Shortage	
Sullivan County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																
(T) Bethel	X			X		X		X											X	X			X								
(V) Bloomingburg	X	X	X	X	X	X	X	X	X	X	X	X			X		X							X							
(T) Callicoon	X	X	X	X		X	X	X	X	X	X	X	X		X							X	X								
(T) Cochecton	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X														
(T) Delaware		X	X	X		X	X	X	X		X	X	X				X						X	X		X					
(T) Fallsburg	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							X									
(T) Forestburgh	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																
(T) Fremont	X	X	X	X	X	X		X	X	X		X	X	X	X		X				X	X	X	X							
(T) Highland	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X														
(V) Jeffersonville	X	X		X	X	X		X	X	X	X	X	X		X		X	X		X			X								
(T) Liberty	X	X	X	X	X	X	X	X	X	X	X	X			X				X	X			X	X							
(V) Liberty	X	X	X	X	X	X	X	X	X	X	X	X	X		X						X				X						
(T) Lumberland	X	X	X	X	X	X	X	X	X	X	X		X	X	X								X	X							
(T) Mamakating	X	X	X	X	X	X	X	X	X	X	X	X	X		X						X		X	X		X					
(V) Monticello	X	X	X	X	X	X	X	X	X	X	X	X			X		X		X	X	X	X	X								
(T) Neversink	X	X	X	X	X	X	X	X	X	X		X		X							X	X	X								
(T) Rockland	X	X		X		X		X	X	X	X	X	X	X	X						X		X	X							
(T) Thompson	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																
(T) Tusten	X	X		X	X	X	X	X	X	X		X	X		X		X	X					X	X							
(V) Woodridge	X	X		X	X	X	X	X			X	X			X		X	X		X	X	X									
(V) Wurtsboro	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																

X = Indicates that the listed hazard is of concern to the noted jurisdiction



**Appendix J (Revised Table D-3 from 2005 Plan)**

**2010 UPDATE - COMPLETED PROJECTS AND PROPOSED UPCOMING COUNTY MITIGATION PROJECTS**

	LOCATION	PROJECT DESCRIPTION	COST/ ESTIMATED COST	COMPLETED/ ESTIMATED COMPLETION DATE
Disaster Project				
Major Mitigations Implemented				
Funding Needed				
Sullivan ( C )	County Road 105	Bridge #139 Replacement Including Flood Mit. Improvements	\$150,899.00	Completed 04
	Town Highway 40	Bridge #275 Replacement Including Flood Mit. Improvements	\$380,495.00	Completed 04
	County Road 123	Bridge #26 Replacement Including Flood Mit. Improvements	\$477,925.00	Completed 05
	County Road 144	Bridge #230 Replacement Including Flood Mit. Improvements	\$1,488,268.00	Completed 05
	Town Highway 11	Bridge #281 Replacement Including Flood Mit. Improvements	\$196,012.00	Completed 05
	Town Highway 43	Bridge #185 Replacement Including Flood Mit. Improvements	\$219,317.00	Completed 05
	Town Highway 14	Bridge #372 Replacement Including Flood Mit. Improvements	\$166,646.00	Completed 05
	County Road 55	Bridge #33 Replacement Including Flood Mit. Improvements	\$207,863.00	Completed 06
	County Road 61	Bridge #152 Replacement Including Flood Mit. Improvements	\$572,107.00	Completed 06
	County Road 105	Bridge #301 Major Flood Corrective Project	\$115,159.00	Completed 06
	County Road 82	Bridge #144 Replacement Major Flood Corrective Project	\$839,887.00	Completed 07
	Town Highway 30	Bridge #158 Replacement Including Flood Mit. Improvements	\$1,630,851.00	Completed 07
	Town Highway 44	Bridge #444 Major FEMA Funded Disaster Project	\$332,085.00	Completed 07
	Town Highway 13	Bridge #278 Replacement Major FEMA Funded Disaster Project	\$588,816.00	Completed 07
	Town Highway 13	Bridge #137 Major FEMA Funded Disaster Project	\$411,065.00	Completed 07

**Appendix J (Revised Table D-3 from 2005 Plan)**

**2010 UPDATE - COMPLETED PROJECTS AND PROPOSED UPCOMING COUNTY MITIGATION PROJECTS**

	<b>LOCATION</b>	<b>PROJECT DESCRIPTION</b>	<b>COST/ ESTIMATED COST</b>	<b>COMPLETED/ ESTIMATED COMPLETION DATE</b>
	Town Highway 11	Bridge # 101 Replacement Major FEMA Funded Disaster Project	\$572,206.00	Completed 07
	Town Highway 46A	Bridge # 264 Replacement Major FEMA Funded Disaster Project	\$522,973.00	Completed 08
	County Road 157	Bridge #187 Replacement Including Major Flood Mit. Improvements	\$2,761,005.00	Completed 08
	Stone Arch	Bridge # 365 Moderate Rehabilitation FEMA Funded Disaster Project	\$58,836.00	Completed 08
	County Road 49	Bridge #82 Rehabilitation Including Flood Mit. Improvements	\$658,496.00	Completed 08
	Town Highway 13	Bridge #298 Replace Abutment Flood Disaster Project	\$65,481.00	Completed 09
	Town Highway 43	Bridge #305 Pier Improvement Flood Corrective Project	\$50,122.00	Completed 09
	Town Highway 42	Bridge #309 Replacement Including Flood Mit. Improvements	\$1,187,342.00	Completed 09
	Town Highway 51	Bridge #321 Replace Foundation/Abutment With Including Flood Mit. Improvements	\$217,485.00	Completed 09
	Town Highway 39	Bridge #293 Replacement Including Flood Mit. Improvements	\$2,681,498.00	2010
	County Road 55	Bridge #3 Replacement Including Flood Mit. Improvements	\$900,000	2010
	County Road 53	Bridge #47 Replacement Including Flood Mit. Improvements	\$100,000	2010
	County Road 103	Bridge #109 Replacement Including Flood Mit. Improvements	\$100,000.00	2011
	Town Highway 13	Bridge #251 Replacement Including Flood Mit. Improvements	\$320,000.00	2011
	Town Highway 1	Bridge #263 Replacement Including Flood Mit. Improvements	\$750,000.00	2011
	County Road 56	Bridge #461 Replacement Including Flood Mit. Improvements	\$100,000.00	2011
	Town Highway 17	Bridge #241 Replacement Including Flood Mit. Improvements	\$320,000.00	2012
	Town Highway 77	Bridge #427 Replacement Including Flood Mit. Improvements	\$320,000.00	2012

**Appendix J (Revised Table D-3 from 2005 Plan)**

**2010 UPDATE - COMPLETED PROJECTS AND PROPOSED UPCOMING COUNTY MITIGATION PROJECTS**

	<b>LOCATION</b>	<b>PROJECT DESCRIPTION</b>	<b>COST/ ESTIMATED COST</b>	<b>COMPLETED/ ESTIMATED COMPLETION DATE</b>
	County Road 105	Bridge #462 Replacement Including Flood Mit. Improvements	\$100,000.00	2012
	County Road 55	Bridge #36 Replacement Including Flood Mit. Improvements	\$250,000.00	2012
	County Road 73	Bridge #252 Replacement Including Flood Mit. Improvements	\$100,000.00	2012
	County Road 23	Bridge #76 Replacement Including Flood Mit. Improvements	\$1,000,000.00	2013
	Town Highway 32	Bridge #268 Replacement Including Flood Mit. Improvements	\$280,000.00	2013
	Town Highway 38	Bridge #261 Replacement Including Flood Mit. Improvements	\$280,000.00	2013
	Town Highway 61	Bridge #313 Replacement Including Flood Mit. Improvements	\$320,000.00	2013
	Town Highway 98	Bridge #428 Replacement Including Flood Mit. Improvements	\$280,000.00	2013
	County Road 53	Bridge #45 Replacement Including Flood Mit. Improvements	\$2,240,000.00	2014
	County Road 176	Bridge #379 Replacement Including Flood Mit. Improvements	\$200,000.00	2014
	County Road 164	Kohlertown Flood Mitigation Project (Needs Hazard Mitigation Funding)	\$1,500,000.00	2014
	County Road 55	Bridge #29 Replacement Including Flood Mit. Improvements	\$350,000.00	2014
	Town Highway 21	Bridge #272 Replacement Including Flood Mit. Improvements	\$280,000.00	2014
	Town Highway 48	Bridge #98 Replacement Including Flood Mit. Improvements	\$320,000.00	2014
	Maple Ave	Bridge #22 Replacement Including Flood Mit. Improvements	\$210,000.00	2015
	Town Highway 47	Bridge #228 Replacement Including Flood Mit. Improvements	\$224,000.00	2015
	Town Highway 22	Bridge #270 Replacement Including Flood Mit. Improvements	\$196,000.00	2015
	Town Highway 28	Bridge #430 Replacement Including Flood Mit. Improvements	\$196,000.00	2015

**Appendix J (Revised Table D-3 from 2005 Plan)**

**2010 UPDATE - COMPLETED PROJECTS AND PROPOSED UPCOMING COUNTY MITIGATION PROJECTS**

	<b>LOCATION</b>	<b>PROJECT DESCRIPTION</b>	<b>COST/ ESTIMATED COST</b>	<b>COMPLETED/ ESTIMATED COMPLETION DATE</b>
	Town Highway 39	Bridge #192 Replacement Including Flood Mit. Improvements	\$2,800,000.00	2015
Sullivan ( C )	County Road 74	Closed Drainage System Including Flood Mit. Improvements	\$380,000.00	Completed 04
	County Road 162	Closed Drainage System Including Flood Mit. Improvements	\$481,000.00	Completed 05
	County Road 179	Road/River Embankment Stabilization/Fortification (FEMA 1589)	\$34,000.00	Completed 05
	County Road 116	Road/River Embankment Stabilization/Fortification (FEMA 1589)	\$75,000.00	Completed 06
	County Road 122	Road/River Embankment Stabilization/Fortification (FEMA 1565)	\$75,000.00	Completed 06
	County Road 164	Closed Drainage System (Phase I) Incl. Flood Mit. Improvements	\$612,000.00	Completed 07
	County Road 82	Road/River Embankment Stabilization/Fortification (FEMA 1650)	\$38,000.00	Completed 07
	County Road 121	Road/River Embankment Stabilization/Fortification (FEMA 1650)	\$27,000.00	Completed 07
	County Road 134	Road/River Embankment Stabilization/Fortification (FEMA 1650)	\$65,000.00	Completed 07
	County Road 152	Road/River Embankment Stabilization/Fortification (FEMA 1650)	\$141,000.00	Completed 07
	County Road 179	Road/River Embankment Stabilization/Fortification (FEMA 1650)	\$69,000.00	Completed 07
	County Road 49	Road/River Embankment Stabilization/Fortification (CHIP's)	\$92,500.00	Completed 07
	County Road 149	Road/River Embankment Stabilization/Fortification (FEMA 1650)	\$122,000.00	Completed 08
	County Road 163	Road/River Embankment Stabilization/Fortification (FEMA 1564)	\$125,000.00	Completed 08
	County Road 178	Road/River Embankment Stabilization/Fortification (CHIP's)	\$20,000.00	Completed 08
	County Road 149	Road/River Embankment Stabilization/Fortification (FEMA 1650)	\$133,000.00	Completed 09
	County Road 92	Pipe Upgrades/Addit. Crossers/Debris Rack - Flood Mit. Improvements	\$75,000.00	2010
	County Road 123	Pipe Upgrades/Addit. Crossers/Debris Rack - Flood Mit. Improvements	\$80,000.00	2010

**Appendix J (Revised Table D-3 from 2005 Plan)**

**2010 UPDATE - COMPLETED PROJECTS AND PROPOSED UPCOMING COUNTY MITIGATION PROJECTS**

	<b>LOCATION</b>	<b>PROJECT DESCRIPTION</b>	<b>COST/ ESTIMATED COST</b>	<b>COMPLETED/ ESTIMATED COMPLETION DATE</b>
	County Road 153	Road/River Embankment Stabilization/Fortification	\$125,000.00	2010
	County Road 178	Road/River Embankment Stabilization/Fortification (FEMA 1650)	\$250,000.00	2010/2011
	County Road 17	Closed Drainage System Including Flood Mit. Improvements	\$750,000.00	2011
	County Road 164	Closed Drainage System (Phase II) Incl. Flood Mit. Improvements	\$550,000.00	2011
	County Road 179	Road Embankment Stabilization	\$100,000.00	2011
	County Road 47	Closed Drainage System Including Flood Mit. Improvements	\$500,000.00	2012
	County Road 94	Major Road/River Embankment Stabilization/Fortification	\$1,500,000.00	2012
	County Road 113	Closed Drainage System Including Flood Mit. Improvements	\$300,000.00	2013
	County Road 121	Road/River Embankment Stabilization/Fortification	\$250,000.00	2013
	County Road 15	Closed Drainage System Including Flood Mit. Improvements	\$300,000.00	2014
	County Road 14/141	Closed Drainage System Including Flood Mit. Improvements	\$400,000.00	2015
	County Road 121/122	Closed Drainage System Including Flood Mit. Improvements	\$350,000.00	2015
	County Road 134	Road Embankment Stabilization	\$250,000.00	2015

## **Sullivan County**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Sullivan County

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Sullivan County

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	N	Y	N	H	H	H

National Flood Insurance Program  
Flood Mitigation Actions

Jurisdiction: Sullivan County

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

## **Town of Bethel**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Bethel

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Bethel

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program  
Flood Mitigation Actions

Jurisdiction: Town of Bethel

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Village of Bloomingburg**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Bloomingburg

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Bloomingburg

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan objectives?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program Flood Mitigation Actions
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Jurisdiction: Village of Bloomingburg

Action	Can action be easily implemented?	Does action achieve multiple plan objectives?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Callicoon**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Callicoon

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Callicoon

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program  
Flood Mitigation Actions

Jurisdiction: Town of Callicoon

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Cochection**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Cochection

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Cochection

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

<b>National Flood Insurance Program Flood Mitigation Actions</b>
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Jurisdiction: Town of Cochecton

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Delaware**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Delaware

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M





## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Delaware

page 4

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Initiate maintenance program remove debris jams from Earl Myers Bridge Road ( <i>Town of Callicoon</i> )	-	-	-	-	-	-
Replace/rehab Youngsville NYS Bridge/Route 52, Dewatts Flats to reduce flood impacts ( <i>Town of Callicoon</i> )	-	-	-	-	-	-
Increase and promote utility tree trimming and private property tree maintenance ( <i>Town of Callicoon</i> )	-	-	-	-	-	-
Feasibility assessment of extending water and sewer districts ( <i>Town of Callicoon</i> )	-	-	-	-	-	-
Replace/rehab Lake Erie Bridge and Swamp Pond Road to reduce flood damage ( <i>Town of Tusten</i> )	-	-	-	-	-	-
Erect emergency tower to inform public of disaster events ( <i>Town of Tusten</i> )	-	-	-	-	-	-
Expand public water for fire suppression needs ( <i>Town of Tusten</i> )	-	-	-	-	-	-
Replace/rehab Main St/Beechwoods Rd, CR 164 and CR 52 to reduce flooding issues ( <i>Town of Delaware</i> )	N	Y	N	H	H	H

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Delaware

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program Flood Mitigation Actions
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Jurisdiction: Town of Delaware

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Fallsburg**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Fallsburg

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Fallsburg

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program Flood Mitigation Actions
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Jurisdiction: Town of Fallsburg

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Forestburgh**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Forestburgh

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Forestburgh

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program Flood Mitigation Actions
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Jurisdiction: Town of Forestburgh

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Fremont**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Fremont

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Fremont

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program  
Flood Mitigation Actions

Jurisdiction: Town of Fremont

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Highland**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Highland

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Highland

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program Flood Mitigation Actions
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Jurisdiction: Town of Highland

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Village of Jeffersonville**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Jeffersonville

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Jeffersonville

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program  
Flood Mitigation Actions

Jurisdiction: Village of Jeffersonville

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Liberty**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Liberty

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Liberty

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	N	Y	N	H	H	H
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program  
Flood Mitigation Actions

Jurisdiction: Town of Liberty

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

## **Village of Liberty**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Liberty

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Liberty

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	Y	Y	Y	M	L	M
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	N	Y	N	H	H	H
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	Y	N	Y	M	L	M
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	N	Y	Y	H	M	H
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program  
Flood Mitigation Actions

Jurisdiction: Village of Liberty

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Lumberland**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Lumberland

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Lumberland

page 2

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Initiate coordination with railway owners to regularly assess conditions of railroad infrastructure ( <i>Sullivan County</i> )	-	-	-	-	-	-
Identify emergency shelter locations, establish if necessary ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	M
Install stormwater drainage system ( <i>Village of Jeffersonville</i> )	-	-	-	-	-	-
Upgrade signage along evacuation route ( <i>Village of Jeffersonville</i> )	-	-	-	-	-	-
Extend Lovett Lane to Swiss Hill to improve emergency vehicle access and response time ( <i>Village of Jeffersonville</i> )	-	-	-	-	-	-
Replace/rehab Philipsport Road Bridge to minimize flooding issues ( <i>Town of Mamakating</i> )	-	-	-	-	-	-
Educational mailings sent to public on potential hazards ( <i>Town of Lumberland</i> )	Y	Y	Y	M	L	M
Replace/rehab Route 97, Hollow Road, Sweeny Road ( <i>Town of Lumberland</i> )	N	Y	N	H	H	H





## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Lumberland

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program  
Flood Mitigation Actions

Jurisdiction: Town of Lumberland

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Mamakating**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Mamakating

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Mamakating

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program Flood Mitigation Actions
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Jurisdiction: Town of Mamakating

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Village of Monticello**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Monticello

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Monticello

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program  
Flood Mitigation Actions

Jurisdiction: Village of Monticello

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

## **Town of Neversink**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Neversink

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Neversink

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program  
Flood Mitigation Actions

Jurisdiction: Town of Neversink

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Rockland**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Rockland

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Rockland

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	N	Y	N	H	H	H
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program Flood Mitigation Actions
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Jurisdiction: Town of Rockland

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Thompson**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Thompson

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Thompson

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program Flood Mitigation Actions
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Jurisdiction: Town of Thompson

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Town of Tusten**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Tusten

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M





## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Tusten

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Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Initiate maintenance program remove debris jams from Earl Myers Bridge Road ( <i>Town of Callicoon</i> )	-	-	-	-	-	-
Replace/rehab Youngsville NYS Bridge/Route 52, Dewatts Flats to reduce flood impacts ( <i>Town of Callicoon</i> )	-	-	-	-	-	-
Increase and promote utility tree trimming and private property tree maintenance ( <i>Town of Callicoon</i> )	-	-	-	-	-	-
Feasibility assessment of extending water and sewer districts ( <i>Town of Callicoon</i> )	-	-	-	-	-	-
Replace/rehab Lake Erie Bridge and Swamp Pond Road to reduce flood damage ( <i>Town of Tusten</i> )	-	-	-	-	-	-
Erect emergency tower to inform public of disaster events ( <i>Town of Tusten</i> )	Y	Y	Y	H	M	H
Expand public water for fire suppression needs ( <i>Town of Tusten</i> )	N	Y	N	M	H	H
Replace/rehab Main St/Beechwoods Rd, CR 164 and CR 52 to reduce flooding issues ( <i>Town of Delaware</i> )	-		-	-	-	-

## Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Tusten

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program Flood Mitigation Actions
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Jurisdiction: Town of Tusten

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Village of Woodridge**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Woodridge

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M







## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Woodridge

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program Flood Mitigation Actions
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Jurisdiction: Village of Woodridge

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

# **Village of Wurtsboro**

## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Wurtsboro

page 1

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Stream restoration activities to reduce flooding ( <i>All Jurisdictions</i> )	N	Y	N	H	H	M
Request the completion of a stormwater management plan for new development ( <i>All Jurisdictions</i> )	Y	Y	Y	M	L	H
Acquire generators for critical facilities, including emergency shelters and evacuation locations ( <i>All Jurisdictions</i> )	Y	Y	Y	H	M	H
Replace and/or rehabilitate existing transportation infrastructure to minimize flooding impacts ( <i>All Jurisdictions</i> )	N	N	N	H	H	H
Increase public awareness and education programs to prepare for disaster event ( <i>All Jurisdictions</i> )	Y	Y	Y	H	L	H
Stream maintenance to remove debris from channels and from structure locations along waterways ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	M	L	H
Stormwater training for planning boards – continue existing County SWCD program ( <i>SWCD, All Jurisdictions</i> )	Y	Y	Y	H	L	M
Improve, if necessary, emergency response, law enforcement, and DPW radio communication systems ( <i>All Jurisdictions</i> )	N	N	N	M	H	M



## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Wurtsboro

page 3

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Improve/upgrade stormwater drainage system ( <i>Village of Monticello</i> )	-	-	-	-	-	-
Relocate DPW fuel storage tanks ( <i>Village of Monticello</i> )	-	-	-	-	-	-
Replace/rehab Brook Rd, Ballard Rd, Burr Rd, West Shore Rd, Wormuth Rd, Laird Rd to minimize flooding impacts ( <i>Town of Bethel</i> )	-	-	-	-	-	-
Replace/rehab Mill Road Bridge, CR 44 & French, Route 42/43 Bridge to minimize flood damage ( <i>Town of Forestburgh</i> )	-	-	-	-	-	-
Replace/rehab Friedenstein Rd & Basket Rd, Deer Lake Rd, Town Rd #10 & Buck Brook Rd to minimize flooding ( <i>Town of Fremont</i> )	-	-	-	-	-	-
Replace/rehab Greenfield Road to minimize flooding impacts ( <i>Village of Woodridge</i> )	-	-	-	-	-	-
Replace/rehab Sullivan St Bridge to reduce flood damage ( <i>Village of Wurtsboro</i> )	N	Y	N	H	H	H
Improve stormwater drainage system along Canal Street to minimize flooding impacts ( <i>Village of Wurtsboro</i> )	Y	Y	Y	M	M	H



## Mitigation Action Prioritization and Comparison

Jurisdiction: Village of Wurtsboro

page 5

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Replace/rehab Airport Rd, Anderson Rd, Aden Rd to reduce flood impacts ( <i>Town of Liberty</i> )	-	-	-	-	-	-
Implement program to assess and maintain condition of box culverts on private property ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab West St Bridge, Park&Rec parking lot culvert, Church St to minimize flood damage ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Initiate program to monitor condition of sewer mains to avoid discharge of effluent (water contam.) ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Execute program to monitor privately-owned dams to avoid failures ( <i>Village of Liberty</i> )	-	-	-	-	-	-
Replace/rehab Hardy St to reduce flood impacts ( <i>Town of Rockland</i> )	-	-	-	-	-	-
Sullivan County transportation improvement projects to reduce flooding impacts (listed in Appendix H) ( <i>Sullivan County</i> )	-	-	-	-	-	-

National Flood Insurance Program Flood Mitigation Actions
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Jurisdiction: Village of Wurtsboro

Action	Can action be easily implemented?	Does action achieve multiple plan goals?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
	Y = 'Yes', N = 'No'			Levels = high, medium, or low		
Update/revise floodplain management ordinances to comply with FEMA regulations	N	Y	N	H	L	H
Designate/install a Floodplain Management Administrator	Y	Y	Y	H	L	H
Install/train staff members to adequately enforce NFIP regulations and floodplain ordinances	Y	Y	N	H	M	H
Update/revise floodplain ordinances to comply with current and future FEMA FIRMs	N	Y	N	H	L	H
Require staff involved with the management of floodplains and enforce of ordinances to become Certified Floodplain Managers	N	Y	N	H	M	M
Join the Community Rating System (CRS)	Y	Y	N	H	L	M

**Sullivan County  
Multi-Jurisdiction Hazard Mitigation Plan  
Monitoring, Evaluation and Update Checklist**

**Steps to be completed, at a minimum, at the end of Years 1, 2, 3, and 4:**

***Meeting***

- Identify members of the (SCEMP/LEPC) Steering Committee (may need to be revised year-to-year)
- Set a meeting date and notify Steering Committee members
  - Members should come prepared to specifically discuss implementation of projects or activities executed by their respective agency/organization
- Publish meeting date in newspaper and online to invite public participants
- Hold meeting – discuss hazard events that have occurred since last meeting or Plan Update including:
  - Type of hazard event
  - Damages incurred
  - Cost of repairs
  - Hazard response
  - Hazard duration and recovery time
- Discuss how the HMP actions, strategies, and other information has been incorporated into local planning mechanisms and agency efforts over the past year
- Evaluate the HMP Update by assessing:
  - Whether the goals and objectives address current and expected conditions
  - Whether the nature, magnitude, and/or type of risks have changed
  - Whether the current resources are appropriate for implementing the plan
  - Whether there are implementation problems or coordination issues with other agencies
  - Whether the outcomes, thus far, have occurred as expected,
  - Whether agencies and other partners participated as originally proposed
- Update the HMP by addendum if any significant changes are needed

***Documentation***

- Sullivan County DPEM to prepare annual summary of collected information, hazard occurrences and damages, completed mitigation actions and costs, and other applicable information
- Post this annual summary on County website for public review

**Steps to be completed end of Year 3/early in Year 4:**

***Grant Funding***

Submit application to FEMA for grant funding to complete next HMP Update

**Steps to be completed in early/mid-way Year 4:**

***Plan Document***

- Determine who will be the primary author of Plan Update (Consultant or In-house)

***Meeting***

- Inform Steering Committee members of first meeting to begin formal Plan Update process

***HIRA-NY Risk Assessment***

- Send email to participants with date and time of HIRA-NY event
- Complete HIRA-NY program with NYSOEM facilitation

**Steps to be completed in Year 5:**

***Plan Document***

- Update pertinent sections of the Plan, including Appendices
- Add-in hazard related details that were collected during annual Steering Committee meetings

***Meetings***

- Hold Steering Committee meeting(s) to discuss and revise Plan Update
- Hold meetings and discussions with participating jurisdictions to update information relevant to each jurisdiction and revise each jurisdiction's previous risk assessment
- Discuss how the HMP actions, strategies, and other information has been incorporated into local planning mechanisms since the last Plan Update
- Hold public information meeting(s) to solicit comments on Plan Update

***Plan Approval Process***

- Submit final draft to NYSOEM for review with copy of crosswalk
- Complete NYSOEM comments, if necessary, and submit Plan Update to NYSOEM/FEMA for pre-approval
- Complete FEMA comments, if necessary, re-submit, if necessary
- County and participating jurisdictions pass resolutions accepting the Plan Update – include these in Appendix A

*Appendix M – 2005 & 2010 Sullivan County Hazard Mitigation Plan Comparison*

2005 HMP Section Title	2005 HMP Section	Page Location	2010 HMP Section Revisions	2005 HMP Section	Page Location
Introduction	-	iv-v	Introduction	Sections 1.1, 1.2	1-3
Planning Process	Section 1	1-2	Planning Process	Sections 1.3, 3.0	4-7, 54-55
Committee Members	Section 1.1	2-6	Steering Committee Members	Section 3.1	55-62
Public Participation	Section 1.2	7-10	Public Participation	Section 3.3	69-72
Coordination with Agencies	Section 1.3	11-12	Public and Agency/Organization Input	Sections 1.5, 3.1, 3.4	10, 55-62, 72-74
Not Included	-	-	Sullivan County HIRA-NY Risk Analysis	Sections 1.4, 4.1, 4.2	7-9, 75-81, 81-83
Not Included	-	-	Sullivan County Profile	Section 2.0	11-53
Not Included	-	-	Plan Update Timeline of Events	Section 3.2	62-68
Risk Assessment	Section 2	13	Risk Assessment	Section 4.0	75-83
Identifying Hazards	Section 2.1	13-29	Hazard Identification	Section 4.3	83-94
Profiling and Assessment of Hazard Events	Section 2.2	30-46	Hazard Data and Profiles	Sections 5.0, 5.1, 5.2	95-166
Identifying Assets	Section 2.3	47-50	Identifying Assets	Sections 6.1, 6.2	167-169
Analyzing Development Trends	Section 2.4	50-52	Analyzing Development Trends	Section 6.3	169-170
Ranking of Risks and Prioritizing of Goals	Section 2.5	52-54	Ranking of Risks, Mitigation Goals	Sections 7.1, 7.2	171-172
Mitigation Strategy	Section 3	55-56	Mitigation Strategy	Section 7.4	178-184
All Hazard/Pre-Disaster Mitigation Goals	Section 3.1	57-58	Mitigation Actions	Section 7.3	172-177
Plan of Action	Section 3.2	59-61	Mitigation Action Prioritization	Section 7.5	185-186
Not Included	-	-	National Flood Insurance Program	Section 7.6	187-195
Plan Maintenance Procedures	Section 4	60-61	Plan Maintenance Procedures	Sections 8.0-8.4	196-202
Tables 1-3	-	3, 54, 55	Tables 1-38	-	See table of contents
Figures 1-5	-	15,21,25,27,28	Figures 1.1-1.2, 2.1-2.15, 5.1-5.11	-	See table of contents
Appendices A-F	-	End of report	Appendices A-M	-	End of report

## Chapter 10 Terrorism Plan

<b>§10-01</b>	<b>Acronyms</b>
<b>§10-02</b>	<b>Introduction</b>
<b>§10-03</b>	<b>Policy</b>
<b>§10-04</b>	<b>Situation</b>
<b>§10-05</b>	<b>Organization</b>
<b>§10-06</b>	<b>Concept of Operations</b>
<b>§10-07</b>	<b>Monitoring and Reporting Actions</b>
<b>§10-08</b>	<b>Response Actions</b>
<b>§10-09</b>	<b>Chapter Review and Update</b>
<b>§10-10</b>	<b>Reference Materials</b>
<b>§10-11</b>	<b>Terms and Definitions</b>

### §10-01 Acronyms

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DPC	New York Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYS DOH	New York State Department of Health
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDFS	Sullivan County Department of Family Services
SCDPEM	Sullivan County Division of Planning and Environmental Management

SCDPW	Sullivan County Division of Public Works
SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPHS	Sullivan County Public Health Nursing Services
SCPIO	Sullivan County Public Information Officer
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

## **§10-02 Introduction**

Recent events worldwide and in the United States have caused all levels of government to take a closer look at terrorism and how it can affect us. Terrorism is defined as a premeditated, unlawful act that is dangerous to human life or public welfare and intended to intimidate or coerce civilian populations or governments, or any segment thereof, in furtherance of political or social objectives.

### **A. Purpose**

The purpose of this chapter is to outline a concept of operations for coordinated response and short-term recovery activities related to an incident involving an act of terrorism and/or Weapons of Mass Destruction (WMD). This chapter defines the roles and responsibilities of County departments and agencies assisting local governments during emergency events.

### **B. Scope**

This chapter builds upon the process and structure of the Sullivan County Comprehensive Emergency Management Plan (SCEMP) by addressing unique policies, situations, operating concepts and responsibilities required during response and through short-term recovery from an act of terrorism and/or a WMD event. This appendix applies to:

1. All threats or acts of terrorism within Sullivan County for which local response capacity is lacking or is exhausted and the local jurisdiction responsible for managing and responding to the incident has requested assistance from Sullivan County; and
2. All County departments and agencies that may be directed to respond to the consequences of a threat or act of terrorism within Sullivan County.

Note that most incidents of terrorism or WMD events will involve mass casualties and will trigger activation of the New York State Mass Casualty Incident Plan (MCI). Sullivan County EMS personnel are trained in the policies and procedures contained in the MCI Plan.

### **C. Authority for this chapter is contained in New York State Executive Law, Article 2-B (State and Local Natural and Man-Made Disaster Preparedness) and within Presidential Decision Directive (PDD) 39 (United Policy on Counter Terrorism), and PDD 62 (Protection Against Unconventional Threats to the United States). This chapter is integrated as a hazard-specific plan within SCEMP. Agencies with specific operating authority for terrorism response include:**

1. Local and State Government;
2. Federal Bureau of investigation (FBI); and
3. Federal Emergency Management Agency (FEMA).

### **§10-03 Policy**

Response operations for all emergencies, including incidents of terrorism and WMD events, are initially the responsibility of and controlled by local government departments and agencies having jurisdiction. Local response operations may be supported and coordinated by the SCOEM/HS, as necessary. When local governments have exceeded their capabilities and/or have exhausted local resources while responding to a terrorism threat or act, the County may be requested to assume a leadership role. During incidents of terrorism and WMD events Sullivan County through the SCOEM/HS will:

1. Coordinate the use of County resources and manpower during and after the incident;
2. Ensure that the public receives the necessary information;
3. Coordinate services to the greatest extent possible given the capabilities and emergency resources available within Sullivan County; and
4. Coordinate with federal and state agencies, as necessary.

### **§10-04 Situation**

Within Sullivan County there are a number of facilities, special events and population groups that may be potential targets for terrorist attacks or may be impacted by terrorist attacks occurring in neighboring localities. The awareness, prevention, preparedness, response and short-term recovery activities related to terrorism will involve federal, state, local and private entities. No single agency, department or organization has the expertise or resources to unilaterally act in the complex situations associated with terrorist threats, physical and cyber acts of terrorism, and/or the use of weapons of mass destruction.

Terrorist acts may include, but are not limited to the following:

- |                                     |                                     |
|-------------------------------------|-------------------------------------|
| 1. Kidnapping;                      | 9. Extortion;                       |
| 2. Hijacking;                       | 10. Contamination of food;          |
| 3. Shooting;                        | 11. Contamination of crops;         |
| 4. Conventional bombing;            | 12. Contamination of water;         |
| 5. Attacks involving CBRNE weapons; | 13. Contamination of air;           |
| 6. Cyber attacks;                   | 14. Contamination of Livestock; and |
| 7. Sabotage;                        | 15. Threats to commit any such act. |
| 8. Assassination;                   |                                     |

#### **A. Planning Assumptions**

1. Terrorist attacks may or may not be preceded by a warning or threat, and may at first appear to be an accidental hazardous materials incident.
2. Incidents of terrorism may involve multiple acts at multiple sites throughout the County.
3. Terrorists seek to inflict the maximum impact with the minimal expenditure of resources.
4. Local terrorism response and short-term recovery actions may exceed County and locally controlled assets.
5. County and locally controlled assets may be affected by an act of terrorism and /or a WMD event.
6. Response to an emergency or disaster caused by a terrorist act and/or WMD event may involve many of the same organizations and skills used in other emergency responses. In any incident, responses must address the possibility or actuality of CBRNE materials that are not typically encountered in natural disaster response operations.
7. The County may need assistance to monitor, clean up, and dispose of hazardous materials and

debris, including animal carcasses, after an incident of terrorism or an incident involving a weapon of mass destruction.

8. Multiple sites of foreign animal disease incursions may be considered a terrorist act.
9. Terrorist attacks may require a coordinated response from all levels of government (federal, state, and local).

#### B. Planning Factors

1. Local police, fire, medical and health personnel will be the first to respond to an incident.
2. Local government is the lead decision maker in times of emergency.
3. Virtually all terrorist acts involve violations of law.
4. In a terrorist incident and/or WMD event, the area of operations may be a crime scene, a hazardous materials site, and a disaster area and it may involve multiple jurisdictions.
5. Law enforcement agencies are often the first to discover intelligence on potential terrorists and may develop estimates of their intentions. Communicating information regarding credible threats in a timely manner by law enforcement agencies to those local officials who can implement protective measures and alert emergency responders is critical.
6. The federal government will ultimately determine whether an incident is a terrorist event.
7. Preventing an incident from ever occurring is more effective than simply reducing the costs of post-incident response and short-term recovery. Efficient awareness, prevention and preparedness require effective public and private partnerships.
8. Response to a terrorist incident or WMD event will be determined by the CBRNE material involved and by the authorities, plans and operations triggered by the event.
9. The SCSD will lead terrorism crisis management and will work with the County Manager. The County Manager will be accountable to the Chairman of the County Legislature.
10. SCOEM/HS will be the lead County agency for terrorism consequence management and will be accountable to the County Manager.
11. Terrorism threats may be either domestically or internationally-based.
12. In the event that the County Manager declares a County Declaration of Disaster Emergency, County departments and agencies may be directed to assist with WMD response and short-term recovery activities.
13. Some County departments and agencies have limited training and resources with which to respond to WMD events.
14. The NIIMS/ICS will be used as the standard command and control system during an emergency.
15. The EOC and the State Coordination Center (SCC) will be activated in the event of an act of terrorism and the NIIMS/ICS will be implemented.
16. Coordination among law enforcement, other responding departments and agencies and emergency management personnel is vital to ensure that appropriate readiness actions are taken.
17. The presence of chemical, biological, radiological, nuclear or explosive agents may not be suspected and/or confirmed until some time after casualties occur. There may be a delay in identifying the agent present and in determining the appropriate protective measures as such agents may quickly dissipate or not be persistent.
18. In the case of an attack with a biological agent, the initial dissemination of the agent may occur outside the local area in other counties, perhaps in other states or countries, but will still produce victims in the local area.

#### **§10-05 Organization**

A terrorist incident could begin with a general threat of potential terrorist activity, continue with a specific credible threat, leading to an actual terrorist incident; or it could begin with any of the above.

## A. Response Components

The response to a terrorist incident includes several major components, which may operate concurrently or consecutively:

1. Crisis Management involves measures to resolve the hostile situation, investigate it, and prepare a criminal case for prosecution under federal and state law. It includes measures to identify the terrorist(s), define the threat, secure the area, and prevent the threat from being carried out. Crisis Management, the purview of law enforcement, may operate from a general threat, to a credible threat, throughout the incident.
2. Consequence Management involves measures to alleviate the damage, loss, hardship or suffering caused by terrorist incidents. It includes measures to protect public health and safety, provide emergency relief to affected governments, businesses, and individuals, and to restore essential government services. Consequence Management is the purview of all response agencies and may operate before and during an incident, and continue until demobilization of emergency operations.
3. Response Levels
  - Level 1: Local Resources only (Single Agencies or Mutual Aid to other Counties)
  - Level 2: Local plus County Support (EOC activation, if necessary)
  - Level 3: Local plus County plus State Support (EOC Activation)
  - Level 4: Local, County, State plus Federal and/or International Support
4. Response Notifications
  - Level 1: No notification unless incident necessitates action
  - Level 2: SCOEM/HS, County Manager, Sheriff and Incident Specific Department Heads
  - Level 3: Level 2 notifications and SEMO, OFPC, other State Agencies and Homeland Security
  - Level 4: Level 3 notifications and Federal Agencies

## B. Operational Boundaries

In a terrorist incident, the area of operations is potentially a crime scene, a hazardous materials site, and a disaster area all of which may cross-jurisdictional borders. In order to organize on-scene operations for officials responding to all aspects of the attack, operational boundaries need to be defined with common terminology and procedures. Operational boundaries may be used to control access to the area, target public information messages, assign operational sectors and assess potential impacts on the population and the environment. The physical location of these boundaries will depend on the type and quantity of CBRNE agents involved:

1. The Crime Scene Boundary defines the crime scene. The crime scene may include the areas that are referred to in technical terms as the “working point” or “red zone.” Access to the crime scene will be restricted by law enforcement. Response activities within the crime scene may require special procedures to protect evidence collection.
2. The CBRNE/WMD Boundary defines the hazardous materials site, which may be referred to in technical terms as the “hot” or “isolation” zones. Depending on the spread of contaminants, the site may include some portion of the crime scene and the surrounding community. Access to the site will be restricted to response personnel wearing proper personal protective equipment and those involved with decontamination.

3. The Disaster Boundary identifies the at-risk community who may need to take protective actions such as sheltering, evacuation or quarantine. Health officials may restrict access to this area.

#### C. Agency Operations

Although terrorist threats or actual incidents will likely require a response by State and Federal governments, Sullivan County and its local governments will play a key role in Crisis Management. Local government is also involved throughout Consequence Management. Coordination between and among government agencies is a necessity and the NIIMS/ICS is a means to ensure this coordination. Sullivan County and New York State governments will organize a response to a terrorist threat/incident according to the NIIMS/ICS.

#### D. Risk Assessment

Sullivan County with assistance from the New York State Weapons of Mass Destruction Task Force has conducted an assessment of the terrorism threat throughout the County. As a result several facilities/sites have been identified as potential terrorist targets. This list is confidential pursuant to Section 87(2) of the State Freedom of Information Law and will not be published or released to the public. For each location, Sullivan County has met with the location's management and advised of basic security and detection measures that could assist in avoiding a terrorist incident.

### **§10-06 Concept of Operations**

#### A. General

This appendix provides guidance for assessing and managing response and short-term recovery actions to an act of terrorism and/or WMD incident. Although terrorist threats or actual incidents will likely require a response by federal and state governments, Sullivan County and its local governments will play a key role in response and short-term recovery activities. Sullivan County will organize all responses to terrorist incidents according to the NIIMS/ICS. As State and Federal assets arrive to assist, the command system may change to a Unified Command structure.

- B. Preparedness involves actions designed to save lives and minimize damage. It is prior planning and training for appropriate response to an emergency. Terrorism preparedness actions within the County include, but are not limited to, the following activities.

1. Develop and maintain Standard Operating Procedures or Guidelines (S.O.P. or S.O.G.) --All responders will:
  - a. Maintain a resource inventory of equipment and personnel for their agency.
  - b. Train personnel in the responsibilities and emergency duties required under this plan.
  - c. Conduct periodic exercises to test the effectiveness of this plan and capabilities and shortfalls of the county's ability to respond to terrorist related events.
  - d. Communicate the need for review and update of the plan based on exercises, emergency response or changes in policy.
2. Identify Threat(s) and Threat Organizations: the consequences of a terrorist incident in Sullivan County could be catastrophic, therefore mitigating against and preventing such an incident is a priority for County law enforcement and emergency management officials. The SCSD is part of the New York State Counter-Terrorism Zone IV.
3. Identify Critical Infrastructure  
The Sullivan County All-Hazards Mitigation Plan will identify the County's critical infrastructure and key assets located within the public and private sectors. Besides critical infrastructures and key assets, certain venues could be tempting targets because of their potential for casualties or their psychological significance. These include concerts, sporting events, fairs,

religious gatherings, monuments and icons within Sullivan County. SCOEM/HS is responsible for identifying Sullivan County's critical infrastructure, key assets and vulnerable venues. Through appropriate public and private partnerships, SCOEM/HS will identify critical infrastructure for each local government by critical infrastructure sector as defined in the National Homeland Security Strategy. SCOEM/HS coordinates public and private activities to protect critical infrastructures from terrorist attacks.

4. Promote Public Awareness is a critical component to any prevention program and is the responsibility of the SCPIO who is appointed by the County Manager. By informing county residents of possible threats to the county or to different elements of the County's infrastructure, the public can assist in identifying suspicious activity.
5. Protect Critical Infrastructure  
Efforts to protect critical infrastructure from being exploited is an important step in reducing the risk of acts cyber terrorism and other types of terrorism. Possible measures include security systems, improved communications and access restrictions. Protection of the critical infrastructure within Sullivan County is the responsibility of SCMIS.

#### C. Activation

The primary purpose of the Terrorism Response Chapter is to provide coordinated, temporary, focused, limited County agency assistance to County agencies and local governments that have exceeded their capabilities or have exhausted local resources responding to an act of terrorism and/or WMD event following a County Declaration of Disaster Emergency.

County assistance is intended to support:

1. Federal and state crisis management activities; and
2. County and local government response and short-term recovery consequence management activities.

The federal government has developed an advisory system recommending actions to be taken during five terrorist threat levels. Sullivan County observes these threat level warnings and takes appropriate actions during times of high alert. Sullivan County retains the right to increase its own threat level warnings based upon available evidence.

Effective terrorism preparedness is contingent on comprehensive information sharing. Information relevant to thwarting terrorism can be derived from a variety of channels including law enforcement, immigration, public health and transportation. That information will be managed, translated and transmitted to appropriate federal, state and local officials largely by SCSD.

Upon becoming aware of an incident involving suspected terrorist activities, the SC911 Coordinator will immediately notify the Director of SCOEM/HS and implement procedures for notification of emergency management personnel. SC911 personnel will provide the following information to callers reporting any suspected chemical, biological, radiological, nuclear or explosive material:

1. Do not open any suspected envelope, package or container
2. Evacuate the room or area
3. Isolate any persons exposed away from other persons and the material
4. Keep all other persons away from the area
5. Stay calm and await the arrival of the emergency responders

6. Keep closed all doors to the area of the suspected material
7. Restrict access to the building to all persons except members of the emergency response team

SCOEM/HS will:

1. Activate the County EOC;
2. Notify Terrorism Response Appendix member agencies that the appendix has been activated;
3. Notify SEMO via the State Warning Point;
4. Arrange a date and time to meet or teleconference to brief member agencies on the emergency situation; and
5. Inform the affected local government(s) of the necessity to provide a liaison to the Sullivan County EOC

SCPIO will:

1. Establish a Joint Information Center briefing area; and
2. Coordinate with the SCOEM and federal and state agencies, as necessary, to ensure information released to the public is accurate, timely and non-contradictory.

Affected Local Governments will:

1. Prioritize requests for assistance within their area of responsibility; and
2. Submit prioritized requests for assistance to the County EOC after all local municipal resources are deployed for response and short-term recovery activities.

#### D. Emergency Response

##### 1. Protecting Emergency Responders

- a. Emergency personnel responding to a terrorist incident must be protected from various hazards associated with terrorism. Hazards may include the following:
  - 1) Thermal hazard: Both extreme heat and cold, e.g., burning liquids or metals like magnesium, and cryogenic materials such as liquid oxygen.
  - 2) Radiological/Nuclear hazard: Alpha, beta, and gamma radiation from nuclear material.
  - 3) Asphyxiation hazard: Lack of oxygen in the atmosphere due to displacement by heavier-than-air vapors, or depletion by a chemical reaction such as burning.
  - 4) Chemical hazard: Toxic or corrosive substances, e.g., acids such as sulfuric or hydrochloric; caustics such as ammonium hydroxide; chlorine; phosgene, toxic substances such as nerve agents, pesticides, or other chemical agents.
  - 5) Biological/Etiological hazard: Disease-causing material including bacteria (e.g., anthrax), rickettsia (e.g., Q fever), viruses (e.g., hemorrhagic fever), and toxins (e.g., ricin or botulinus).
  - 6) Mechanical hazard: Any type of mechanism that causes trauma gun, bomb fragments or shrapnel.
  - 7) Psychological hazard: fear for own safety, fear for family's safety, and fear for responder's safety
- b. Though the type of required protection varies from hazard to hazard, there are three basic principles of protection that apply to all hazards.
  - 1) Time. Spend the shortest amount of time possible in the hazard area. Use techniques such as rapid entries to execute reconnaissance or rescue. Rotate personnel in the hazard area. Minimize the time spent in the affected area to reduce injuries and the chance of contaminating the crime scene.
  - 2) Distance. Maximize the distance from the hazard area or the projected hazard area. Recommended distances for chemical hazards are included in the North American

Emergency Response Guidebook (NAERG).

- 3) Shielding. Use appropriate shielding, including vehicles, buildings, chemical protective clothing, and personal protective equipment, to address specific hazards.

## 2. Situation Assessment Protocol

When a terrorist threat or incident occurs, it is critical to quickly identify and quantify any material that has or could be used by the terrorist to cause public harm.

- a. A Technical Specialist Position(s) may be established and initially assigned to the Planning Section, but will be available for reassignment within the incident organization as deemed necessary by the IC. Local Technical Specialists may be required from:
  - 1) SCSD and local municipal agency (when available) Criminal Investigation Unit(s)
  - 2) SCDPW
  - 3) Sullivan County Hazardous Materials Team
  - 4) SCPHS
- b. Such Technical Specialists will gather, analyze, and disseminate information related to the credibility of any WMD threat and/or evaluate the immediate and future threat to the public health and safety, the environment, and the infrastructure following an actual attack.
- c. This analysis will include, when appropriate and available, a review and assessment of hospital emergency room admission trends, Infection Control Program (ICP) reports, hospital laboratory reports, electronic mortality data, and school attendance records. Such an assessment can be part of an ongoing sentinel network to detect a terrorist incident when there are no other overt signs.
- d. Technical Specialists will be supplemented, depending on the size, scope, duration and specific legal requirement of the incident, with appropriate personnel from similar State and Federal agencies, including the State Division of Military & Naval Affairs' Civil Support Detachment (CSD). Requests for the CSD will be made to SEMO.
- e. If the situation requires, and the number of Technical Specialists dictates, a Technical Specialist Unit may be formed in the Planning Section. The Technical Specialist Unit Leader will be assigned based on incident specifics, with a representative appointed from the department or agency whose area of expertise most closely parallels the nature of the incident. As the incident evolves the position of Unit Leader may rotate among group members. Technical Specialists may also be assigned to the Situation Unit as Analysts and Field Observers.
- f. Technical Specialists will advise the IC, through the designated chain of command, of appropriate technical protocols relative to specifically indicated or contraindicated actions necessary for mitigation of, and recovery from, a CBRNE incident.
- g. Technical Specialists will assist in the preparation of contingency plans based on their continuing analysis of the event.

## 3. Scene Control

- a. Initial Considerations. An act of terrorism presents unique challenges to the responder. To effectively implement scene control and ensure public safety, emergency responders must quickly and accurately evaluate the incident area and determine the severity of danger. Once the magnitude of the incident is realized, attempts to isolate the danger can begin. Early establishment of control (work) zones will enhance public protection efforts:
  - 1) Isolate the hazard area and control a mass exodus of people who may include contaminated victims.
  - 2) Initial scene control will likely be dictated by law enforcement personnel if it is suspected that terrorists are lurking nearby or among the injured.

- 3) Define outer and inner operational perimeters to account for multiple-hazard locations or multiple targets.
  - 4) Controlling the scene, isolating hazards and conducting controlled evacuations will be resource intensive, so responders should request additional assistance early.
  - 5) Access to the scene may be limited due to rubble or debris making it difficult to establish ingress and egress.
- b. Perimeter Control. Recognizing and evaluating danger is critical to implementing perimeter control:
- 1) Adequate evaluation of potential harm will guide decisions in considering “stand
    - a) off distances, and establishing “work zones.”
    - b) Take time to perform an adequate assessment.
    - c) It is better to over-estimate the perimeter than to underestimate, i.e., it is always easier to reduce the perimeter.
  - 2) “Outer” and “inner” perimeter boundaries may be identified depending on the size and complexity of the incident. Terrorist attacks involving explosive devices, chemical or biological dispersion devices and radiological contamination, may require outer and inner perimeter boundaries:
    - a) The outer perimeter is the most distant control point or boundary of the incident. It is used to restrict all public access to the incident.
    - b) The inner perimeter isolates known hazards within the outer perimeter. It is used to control the movement of responders.
  - 3) Perimeter control may be influenced by the following components:
    - a) Amount and type of resources on-hand;
    - b) Capability of available resources (training level);
    - c) Ability of the responders to provide PPE;
    - d) Size and configuration of the incident; and/or
    - e) Stability of the incident.
  - 4) The standard “control zones” within the outer perimeter include:
    - a) I-lot: an exclusion area with limited access;
    - b) Warm zone: contamination reduction corridor; and
    - c) Cold zone: a support and staging area.
  - 5) Because of the potential for secondary and tertiary events, the perimeter and control zones should be mapped. If the incidents escalate, boundaries can be expanded using established reference points, which are familiar to on-scene responders. Mapping components should include topography, structures/landmarks, ingress and egress points, and perimeter boundaries and elevations.
  - 6) Standard detection and monitoring equipment has limitations:
    - a) Using detection and monitoring equipment, responders must attempt to identify “clean” areas as well as hazardous areas. However, equipment designed to detect hazardous materials associated with terrorism may not be immediately available to first responders.
    - b) Radiological detection equipment, gas detection, other specialized equipment, and trained operators are available from the Sullivan County Hazardous Materials Unit, SEMO, and NYS OFPC.
  - 7) There are special Isolation/Stand-off Distance considerations:
    - a) First, identify the problem from initial incident information (dispatcher reports) and outward warning signs and detection clues.
    - b) Determine the isolation area based upon: the potential harm to life, critical systems

and property; topography; meteorological factors; and, resources available to implement tactical operations.

- c) Access reference materials such as the North American Emergency Response Guidebook (NAERG), or Jane's Chem-Bio Handbook, or the DOJ Emergency Response to Terrorism Job Aid, to determine initial isolation and protection distances.
  - d) If radioactive materials are suspect, use appropriate detection equipment with trained operators in determining isolation distances. Monitoring for radioactive materials at any bombing event should be done routinely. Monitoring is the only way to detect the presence of radiation at the scene.
4. Scene Security Considerations
- a. The agency assigned to site security may vary according to the location and scope of the incident and the resources available.
  - b. Law enforcement officials dictate security measures for scene control.
  - c. If the incident is of such magnitude that response activities may continue for days, the use of National Guard units should be considered for perimeter security and control. National Guard support can only be obtained by a chain-of-command request through the SEMO.
5. Tactical Considerations
- Emergency responders should always approach a suspicious incident with all senses alert for warning signs and detection clues:
- a. Approach the scene utilizing personal protective equipment (PPE).
  - b. Be alert for warning signs of danger:
    - 1) Casualties resulting from no apparent reason;
    - 2) Signs and symptoms indicating chemical exposure;
    - 3) Obvious signs of criminal activity, such as weapons at the scene;
    - 4) Suspicious vehicles or packages;
    - 5) Verbal threats or written warnings; and/or
    - 6) People leaving area.
  - c. Stage vehicles properly during emergency conditions. If the incident has created large scale public chaos and panic, responders must realize that conditions may not provide the most ideal locations for staging.
    - 1) Examine staging area for secondary devices, including vehicles, dumpsters, storm water catch basins, and manholes;
    - 2) Position first-in vehicles and responders upwind and uphill;
    - 3) Direct supporting responders to approach from upwind and uphill;
    - 4) Avoid "stacking" vehicles where they interfere with egress;
    - 5) Avoid line-of-site staging with suspected explosive devices;
    - 6) Strictly enforce staging instructions; and
    - 7) Back vehicles into position so they may leave the scene quickly.
  - d. Avoid vapor clouds, mist and unknown liquids.
  - e. Initially, assign at least one law enforcement responder to observe on-going activities surrounding the operating position. This person should be alert for criminal activities and the potential for secondary events.
  - f. Plan tentative escape routes for emergency personnel and refuge assembly points.
  - g. Prepare for emergency decontamination during all phases of the incident. Each response agency should have plans for emergency decontamination for all size populations. These plans should be developed and maintained with the assistance of the SCOEM/HS. The Sullivan County decontamination capabilities and procedures outlined in the County

HAZMAT Response Plan (Chapter 6 SCEMP) are applicable to a terrorist incident.

### **§10-07 Monitoring and Reporting Actions**

Following activation of Terrorism Response member agencies by the SCOEM/HS may request member agencies monitor and report the status of their response and short-term recovery activities. Member agencies will:

- A. Report operational status information to the County EOC four times per day, no later than:
  - 0400 hours (4 a.m.);
  - 1000 hours (10 a.m.);
  - 1500 hours (3p.m.); and
  - 2000 hours (8 p.m.).
- B. Report significant operational status changes/impacts to the County EOC between scheduled reporting times, as warranted by the emergency situation.

### **§10-08 Response Actions**

#### **A. NIIMS/IC**

The NIIMS/ICS structure outlined in the SCEMP is especially applicable to a terrorist incident involving a multitude of agencies from all levels of government. Several aspects of NIIMS/ICS are particularly pertinent to a terrorist incident. The IC will likely be, initially, a local official. However, as State and Federal assistance arrives and the scope of the response expands and grows more complex, the need to transition NIIMS/ICS to the next level of government or to a Unified Command may become apparent. All must accept this transition and Sullivan County officials will support such a transition. The FBI has primary law enforcement responsibilities for any terrorist incident in the continental United States.

NIIMS/IC responsibilities may include, but are not limited to:

1. Establishing command;
2. Hazard and risk assessment;
3. Notifications;
4. Developing and implementing site safety;
5. Ensuring responder protection;
6. Public protection measures;
7. Developing and implementing integrated Incident Action Plans (IAP);
8. Controlling hazards;
9. Requesting specialized resources;
10. Resource management;
11. Evaluating progress;
12. Logistical support;
13. Information control; and
14. Incident termination.

Terrorist incidents will involve a Unified Command System to properly coordinate the various agencies and authorities involved in responses. Key agencies may include:

1. Local Government, represented by:
  - a. SCOEM/HS;

- b. SCSD;
  - c. SCEMS;
  - d. SCPHS;
  - e. SCDPW; and
  - f. Sullivan County International Airport.
2. New York State Government, represented by:
- a. NYSP;
  - b. NYSDOH;
  - c. DEC;
  - d. OFPC; and
  - e. SEMO.

The New York State Domestic Preparedness Plan (Chapter 7) identifies the SCSD as the lead state agency for Crisis Management for terrorist attacks. The designation of the lead state agency for Consequence Management is contingent upon the actual event and will be designated by the SEMO at the time of the incident. SEMO is designated as the lead state agency for coordination of state-level emergency response.

3. Federal Government represented by:
- a. Federal Bureau of Investigation (FBI);
  - b. Department of Defense (DOD);
  - c. Federal Emergency Management Agency (FEMA); and
  - d. Federal Aviation Administration.

Presidential Decision Directive-39 identifies the FBI as the lead federal agency for Crisis Management during terrorist attacks involving nuclear, biological, or chemical materials. It identifies FEMA as the lead agency for Consequence Management during terrorist attacks involving nuclear, biological, or chemical materials.

#### B. Initial County Response Actions

The SCOEM/HS will:

1. Act as liaison between the County Manager and local, state and federal response agencies that may participate in a particular terrorism or WMD event;
2. Activate the use of the State MCI Plan after consulting with the SCEMS Coordinator, the SCDPW and the NYS DOH;
3. Coordinate priorities and action plans for the on-scene consequence management response and short-term recovery;
4. Lead preparation of situation reports and briefings with the support of other agencies and departments, as needed;
5. Coordinate command and control of the County HAZMAT Response Team;
6. Coordinate fire service response in accordance with the Fire Mutual Aid Plan;
7. Coordinate local search and rescue efforts; and
8. Coordinate additional fire service resource on-scene mitigation.

The SCSD will:

1. Coordinate with and support local law enforcement agencies;
2. Establish a perimeter;
3. Secure site perimeter and control access points;

4. Control traffic and crowds;
5. Assist with evacuation;
6. Assist with collection and preservation of evidence, as requested by die lead agency;
7. Ensure PPE is worn, as warranted;
8. Adhere to established agency guidelines under the NIIMS/ICS, as warranted, i.e., establish Command Post, secure communications, establish staging areas, decontamination areas; and
9. Work cooperatively with other local, state and federal law enforcement agencies.

The Director of SCOEM/HS will:

1. Coordinate through the Sullivan County Fire Mutual Aid Plan to rescue victims and extinguish fires;
2. Follow established agency guidelines under the NIIMS/ICS, (e.g., request additional resources necessary for scene mitigation, command and control of firefighters);
3. Act as a support agency for law enforcement during incidents that involve explosives;
4. Support law enforcement during crime scene investigation;
5. Coordinate with HAZMAT Team; and
6. Assist with decontamination of victims prior to removal from scene.

The Sullivan County HAZMAT Response Unit and the County Bureau of Fire, Deputy Battalion Coordinator-HAZMAT will:

1. Attempt to identify “products,” materials or agents involved using available monitoring and detection equipment;
2. Advise other responding agencies of precautions that need to be implemented;
3. Determine and use appropriate PPE;
4. Control, contain and confine biological or chemical agents using appropriate methods; and
5. Ensure that patients are decontaminated prior to transport.

EMS and the SCEMS Coordinator will:

1. Provide pre-hospital medical triage, treatment and transport for all victims;
2. Provide support to fire and rescue agencies as requested; and
3. Provide support, as needed, to medical providers for patient care.

The duties of the SCDPW include:

1. Coordinate the provision of specific pharmaceuticals to EMS personnel;
2. Coordinate mental health and crisis counseling during disaster situations;
3. Establish Receiving Storage Sites (RSS) for the SNS and coordinate the set up of POD sites and clinics for the community;
4. Assist special needs population groups; and
5. Provide biologically related information to the media.

The duties of the Sullivan County International Airport include:

1. Coordinate response and recovery activities with law enforcement and federal agencies for incidents of terrorism effecting die Sullivan County International Airport;
2. Provide support for fire and rescue operations occurring at the Sullivan County International Airport;
3. Warn aircraft of ground issues and possible airport closure; and
4. Issue formal Notice to Airmen (NOTAM) when required.

## C. Federal Response Resources

### 1. FBI

In managing an act of terrorism in the United States, the FBI is designated the lead agency for Crisis Management. The United States Department of Justice (DOJ) is responsible for ensuring the development and implementation of policies directed at preventing terrorist attacks domestically, and will undertake the criminal prosecution of these acts of terrorism that violate U.S. law. DOJ has designated the FBI as the lead Federal agency responsible for the management of a Federal response to terrorist incidents that take place within U.S. territory or those occurring in international waters that do not involve a foreign flag vessel. The FBI will execute any Federal operational response and act as the Federal on-scene commander ensuring appropriate coordination of the Federal response with state and local authorities.

When the threat or incident exceeds the capabilities of the local FBI Field Division, the Special Agent in Charge (SAC) can request additional resources from the regional FBI Division, FBI Headquarters, and the Critical Incident Response Group (CIRG), located in Virginia, to augment existing Crisis Management capabilities.

Additional FBI resources include the following:

- a. WMD Operations Unit (WMDOU): The specialized mission of the WMD Operations Unit is to combat the use or threatened use of WMD as a means of terrorism directed against the U.S., its citizens, or its interests.
- b. WMD Countermeasures Unit (WMDCU): The mission of the WMD Countermeasures Unit is to ensure the FBI, State and local First Responders are prepared to handle incidents involving the use or threat to use WMD in terrorist acts against the U.S., its citizens, or its interests.
- c. Domestic Emergency Support Team (DEST): The DEST is a specialized interagency U.S. government team designed to expeditiously provide expert advice, guidance and support to the FBI on-scene commander. This advice specifically relates to providing the FBI with the capabilities supporting agencies can provide to mitigate the crisis. The DEST also supports the FBI by coordinating follow-up assets as may be requested. In addition, the DEST can be configured to provide the FBI with a limited operational capability. For example, a scientific analysis component can be deployed to rapidly assess potentially contaminated sites, collect samples, and conduct nuclear/radiological searches.

The DEST is deployed upon request by the SAC, through FBIHQ to the Attorney General. The FBI, in consultation with supporting Federal Agencies, determines the composition of the DEST required on a case-by-case basis. As appropriate, the DEST is configured to include components for a specific type of WMD incident such as nuclear, chemical or biological threats.

- d. Critical Incident Response Group (CIRG):
  - 1) Hostage Rescue Team (HRT)
  - 2) Crisis Management Unit (CMU)
  - 3) Crisis Negotiations Unit (CNU)
  - 4) National Center for the Analysis of Violent Crimes (NCAVC)
- e. Laboratory Division:
  - 1) Hazardous Materials Response Unit (1-IJtvIRU)
  - 2) Evidence Response Unit (ERU)
  - 3) Materials and Devices Unit (MADU)

- f. Information Resource Division:
  - 1) Crisis Response Team (CRT)
  - 2) Rapid Start Team (RST)
- 2. Federal Emergency Management Agency (FEMA) will respond to the consequences of terrorism directed against populations in the United States, including terrorism involving Weapons of Mass Destruction (WMD).
- 3. Other Federal Agencies
 

The FBI may form and coordinate the deployment of a Domestic Emergency Support Team (DEST) with other agencies, when appropriate, and seek appropriate Federal support based on the nature of the situation.

  - a. Department of Energy (DOE) provides scientific-technical personnel and equipment during all aspects of a nuclear/radiological WMD terrorist incident. DOE assistance can support both crisis and consequence management activities.
  - b. Environmental Protection Agency (EPA) provides technical personnel and supporting equipment during all aspects of a WMD terrorist incident.
  - c. Department of Defense (DOD). Upon approval of the Secretary of Defense, DOD will provide assistance that could include technical advice, operational support, disposal of a WMD device, and other assistance during all aspects of a terrorist incident.
  - d. Department of Health and Human Services (DHHS) will provide health, medical and health related social services. The SCPHS may activate the National Disaster Medical System to support local and state authorities in the delivery of direct medical care, which may be required as the result of a terrorist incident.
- 4. Federal Aviation Administration has the primary responsibility for safety in civil aviation and will support local emergency responders during an incident of terrorism impacting the Sullivan County international Airport.
- 5. National Guard will act as a support agency to local emergency responders. Resources are available by contacting OEP through the established chain of command.

#### D. State Response Resources

- 1. State Emergency Management Office (SEMO)
 

SEMO is the designated LEAD STATE AGENCY FOR COORDINATION of Federal, State, private sector, volunteer assets, major components and operations throughout a terrorist incident within the State.

Upon the Governor's declaration of a "State Disaster Emergency" the designated State Coordinating Officer (SCO) will be the Director of SEMO. The SCO is responsible for coordination of Federal, State, private sector and volunteer assets for all terrorist incidents within the State.

The designated lead State Agency for Crisis Management for terrorist incidents within the State is the NYSP.

The designation of lead State agency for Consequence Management for terrorist incidents within the State is contingent on the situation and will be made by SEMO at the time of the incident in accordance with the State Comprehensive Emergency Management Plan.

The designated lead State agencies for Technical Operations response in their area of expertise are the NYSDOH, the DEC, the Department of Agriculture and Markets (Ag & Mkts), OFPC and the NYSP.

#### E. Continuing Operations

At the direction of the operations section chief in the county emergency operations center, but no later than one week after Terrorism Response Appendix activation, the operations section chief, county emergency operation center staff, SEMO, and representative(s) of the impacted local jurisdiction(s) will assess work progress according to established priorities. This assessment will be conducted at least weekly (seven calendar days) thereafter. Once the operations section chief decides to implement a completion date, the SCOEM/HS will publicize that date to Terrorism Response member agencies and the impacted local jurisdiction(s). The purpose of the deadline is to maintain an emphasis on the emergency nature of the work and to ensure that emergency-related activities are completed in a timely manner.

#### F. Short-Term Recovery Activities

Once all casualties have been removed and the criminal investigation has shifted from the scene, clean up, removal, and the proper disposal of debris (contaminated and uncontaminated) must occur. To insure that adequate public health and safety precautions are in place, this may take a considerable amount of time. This is especially true in the case of foreign animal diseases where it may be necessary to depopulate large numbers of animals and the type of disposal is of paramount importance.

The following recovery activities will accompany most incidents of terrorism:

1. Decontamination of incident sites and other affected areas (federal and/or state agencies may oversee this effort, which may be conducted by contractors)
2. Identification and restriction of access to all structurally unsafe buildings
3. Remediation and cleanup of any hazardous materials that have or might enter local water, sewer or drainage systems
4. Provision of traffic control for the return of evacuees
5. Provision of security for areas evacuated until residents return
6. Assistance in arranging temporary housing for evacuees who cannot return to their homes
7. Development and implementation of appropriate access controls for contaminated areas that cannot be decontaminated and returned to normal use in the near term
8. Identification of and counseling to responders suffering from post-incident stress
9. Maintenance of records of use of personnel, equipment, and supplies used in response and short-term recovery efforts to document expenditures for possible recovery of expenses from the responsible party or reimbursement by the state or federal government
10. Facilitation of critical incident stress management activities

#### G. After-action Reporting

The Director of SCOEM/HS, within two weeks of the start of response and short-term-recovery demobilization, will:

1. Schedule a meeting or teleconference with Terrorism Response member agencies to review and discuss emergency response and short-term recovery performance; and
2. Prepare an after-action report that may include recommended actions to improve future emergency response and short-term recovery performance.

### **§10-09 Appendix Review and Update**

The Director of the SCOEM/HS will convene a meeting or teleconference of Terrorism Response member agencies for the purpose of reviewing and revising, as appropriate, the Terrorism Response Chapter. The Director of the SCOEM/HS will recommend revisions to the County Manager no later than

March 1<sup>st</sup> of each year.

#### **§10-10 Reference Materials**

A. Sullivan County Fire Mutual Aid Plan

B. Sullivan County Emergency Medical Service Mutual Aid Agreement

#### **§10-11 Terms and Definitions**

**Biological Agents:** Microorganisms or toxins from living organisms that have infectious or noninfectious properties that produce lethal or serious effects in plants and animals.

**Chemical Agents:** Solids, liquids or gases that have chemical properties that produce lethal or serious effects in plants and animals.

**Consequence Management:** Measures to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses, and individuals affected by the consequences of terrorism.

**Credible Threat:** Any threat for which an interagency threat assessment indicates that the threat is credible and confirms the involvement of a WMD in the developing terrorist incident.

**Nuclear Weapons:** Weapons that release nuclear energy in an explosive manner as the result of nuclear chain reactions involving fission and or fusion of atomic nuclei.

**Technical Operations:** Actions to identify, assess, dismantle, transfer, dispose of, or decontaminate personnel and property exposed to explosive ordinance or WMD.

# Chapter 11

## Strategic National Stockpile

### CHEMPACK

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<b>§11-09</b>	<b>Readiness</b>
<b>§11-10</b>	<b>Response</b>

#### **§11-01 Acronyms**

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DPC	New York State Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYS DOH	New York State Department of Health
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDFS	Sullivan County Department of Family Services

SCDPEM	Sullivan County Division of Planning and Environmental Management
SCDPW	Sullivan County Division of Public Works
SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPHS	Sullivan County Public Health Nursing Services
SCPIO	Sullivan County Public Information Officer
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

## **§11-02 Introduction**

A public health emergency in Sullivan County or neighboring area involving exposure to a chemical nerve agent or an organophosphate-based pesticide would likely produce numerous casualties in urgent need of treatment. In such an event, today's limited local supply of nerve agent antidotes, in hospitals and/or with Emergency Medical Service (EMS) units, could quickly be committed and exhausted. The federal government has established the Strategic National Stockpile (SNS) to provide urgently needed medications and supplies to the affected area. However, following a federal decision to deploy, the SNS may take up to 12 hours to arrive in the affected area. Treatment for nerve agent exposure must begin sooner. With this in mind, the federal government has established the SNS CHEMPACK Project to provide a sustainable, supplemental source of urgently needed nerve agent antidotes for large-casualty events by pre-positioning these items at select hospitals throughout New York State including Sullivan County. In time of emergency the CHEMPACK nerve agent antidotes and related medical supplies would be available for distribution by Sullivan County to additional hospitals and EMS units in the area for treatment of nerve agent exposure.

## **§11-03 Purpose**

The purpose of this Chapter is to identify policies, procedures and responsibilities for the management, storage, distribution and use of nerve agent antidotes in Sullivan County to ensure the effective use of the CHEMPACK assets.

## **§11-04 Scope**

This Chapter applies to any exposure to chemical nerve agents where local medical treatment capabilities are exceeded, necessitating the use of CHEMPACK assets.

## **§11-05 Situation**

A public health emergency necessitating the need for CHEMPACK assets would most likely fall under one of the following two scenarios:

- A. A terrorism event involving a chemical nerve agent has produced symptomatic casualties in immediate need of supplies in the CHEMPACK Program.
- B. An accidental release of an organophosphate-based pesticide involving numerous symptomatic casualties in immediate need of supplies in the CHEMPACK Program.

## **§11-06 Assumptions**

- A. A deliberate or accidental nerve agent release can occur anywhere. Any major release would probably require additional supplies of nerve agent antidotes.
- B. The ‘forward’ placement of CHEMPACK assets in CRMC (hereafter known as the “Hub”) in Sullivan County will expedite delivery of antidotes to locations that require them in the event of a nerve agent emergency.
- C. The CHEMPACK distribution effort during an emergency will be the responsibility of the SCOEM/HS
- D. Hospital care providers may be the first to recognize the sign/symptoms of exposure to nerve agents, and may be the first in the County to utilize CHEMPACK assets.
- E. The decision to use CHEMPACK assets should be medically driven and can be made by local medical personnel.
- F. Hospital and County emergency response officials will closely coordinate their actions to effectively distribute CHEMPACK assets.
- G. False alarms of activations of CHEMPACK assets may occur and will require communication and coordination among Federal, State, hospital and County officials.
- H. Based upon incident demands, locally staged CHEMPACK assets may be exhausted, requiring additional CHEMPACK assets from other locations outside the County.
- I. In the event that the SNS is needed to support the incident, response operations will be conducted as stated in the SNS Section to Chapter 10, Sullivan County Terrorism Plan.

## **§11-07 Concept of Operations**

Sullivan County will open the CHEMPACK containers and use CHEMPACK assets only when it is determined that a nerve agent release has threatened the medical security of the community, has put multiple lives at a risk, is beyond local emergency response capabilities and it is medically necessary to save lives.

Distribution of CHEMPACK assets will involve numerous agencies within the County. The CHEMPACK program relies on a “Hub-and-Spoke” system that will allow asset coverage across the County and the State. CHEMPACK assets are stored in containers at the Hub hospital in Sullivan County. These containers are in one of two formats: hospital containers and EMS containers. Each container is preconfigured with color-coded boxes that, when an emergency occurs, will allow the container contents to be organized into portions that will be distributed to specified hospitals and EMS units in the County (“Spokes”). Hub and some Spoke locations have been pre-designated including how much CHEMPACK material they will initially receive. These designations are found on pages 9-10 and in Tab 1.

The designation of Spokes and the CHEMPACK assets assigned to each are for planning purposes only. During an actual event, the assets are distributed according to need. Thus, the Spoke locations and asset assignment could change.

The CHEMPACK program in Sullivan County occurs in two distinct phases.

A. Storage (Pre-Emergency)

CHEMPACK containers are stored in Sullivan County. To extend to the maximum shelf life of these CHEMPACK pharmaceuticals while stored, the federal Shelf Life Extension Program (SLEP) will apply and requires that the antidotes remain the property of the federal government while in storage and regulates the conditions of storage. This requires that the containers be electronically monitored for security and environmental conditions. While in storage CHEMPACK containers are continuously monitored for intrusion, environmental conditions (temperature), and electrical power.

The federal CHEMPACK personnel are responsible for any re-labeling and repackaging of the CHEMPACK materiel and will ensure the pharmaceuticals are maintained in a ready-to-use state.

B. Distribution (Emergency)

The Distribution Phase of utilizing CHEMPACK assets will only occur during an event involving nerve agent exposure that exceeds Sullivan County's response capabilities. The decision to use CHEMPACK assets resides with identified medical and emergency officials in Sullivan County as specified in §11-10 of this chapter.

An example of an event leading to the distribution of CHEMPACK assets is as follows: The beginnings of an event involving a nerve agent can be discovered in various ways including a device dispersing a nerve agent with victims at a location (e.g., sporting event, transportation terminal) becoming incapacitated, and/or victims seeking treatment at hospital emergency rooms and medical clinics. Local emergency response identifies a likely nerve agent. EMS begins treatment at the scene with existing nerve agent antidotes which will quickly be depleted. A request is made by EMS through dispatch to its assigned Hub hospital for CHEMPACK assets. The hospital medical control physician(s) authorizes that the CHEMPACK EMS container be opened and hospital personnel oversee the breakout of the CHEMPACK container(s) contents. The SCOEM/HS will provide for transport for the container assets to the EMS spoke location where they are used in the field to treat victims. Security will be provided by the appropriate law enforcement personnel.

Ambulatory victims may appear at hospital emergency rooms. Hospital nerve agent antidotes will be quickly exhausted. This triggers a request for CHEMPACK assets from spoke hospitals to hub hospitals. Hub hospital emergency department physicians would authorize the release of the CHEMPACK Hospital container assets. The SCOEM/HS will provide for transport for the container assets to the spoke hospital location. Security will be provided by the appropriate law enforcement

## **§11-08 Agency Roles/Responsibilities/Authorities**

A. Sullivan County Office of Emergency Management/Homeland Security (SCOEM/HS)

1. Authorize the opening of CHEMPACK assets as the situation warrants.
2. Receive immediate notification of the opening of CHEMPACK assets whenever authorized by another official or medical professional.
3. Notify the SCSD of the opening of CHEMPACK assets and the need for security.

4. Notify the SCPHN of the opening of the CHEMPACK assets, unless the Health Dept. had already notified SCOEM/HS of the opening.
5. Notify and coordinate other County agencies supporting the use of CHEMPACK assets.
6. Notify SEMO that CHEMPACK material is accessed, distributed, or used.
7. Ensure county agency personnel with key roles in the implementation of this chapter receive initial training and annual retraining. Training containers are available from the State CHEMPACK program.
8. Test this attachment at least annually through a table-top exercise. Functional drills may be conducted to test specific components of the Attachment.
9. Participate in Joint News Center (JNC) regarding the issuance of public information on the availability of treatment.

B. Sullivan County Public Health Services (SCPHS)

1. Authorize the opening of CHEMPACK assets as the situation warrants.
2. Receive notifications from the Hub hospital that CHEMPACK assets have been accessed.
3. Notify SCOEM/HS and DOH that CHEMPACK material is accessed, distributed, or used.
4. Provide information on CHEMPACK distribution and medication protocols to county emergency personnel and medical personnel as requested.
5. Coordinate hospital CHEMPACK training and exercising.

C. Law Enforcement Agencies

Provide security for CHEMPACK assets from the Hub to Spoke locations.

D. Sullivan County EMS Coordinator

1. Ensure that the EMS community is familiar with CHEMPACK assets.
2. At time of emergency, prioritize and assign CHEMPACK EMS assets among EMS Units as necessary.

E. Hudson Valley Regional Emergency Medical Advisory Committee (REMAC)

Develop policies, procedures, and triage, treatment, and transportation protocols for CHEMPACK EMS assets which are consistent with the standards of the State Emergency Medical Advisory Committee and which address specific local conditions.

F. Sullivan County CHEMPACK Hospital Storage Location (Hub)

1. Maintain CHEMPACK storage pursuant to federal and state guidelines including routine reporting requirements.
2. Develop and maintain a Hospital CHEMPACK Emergency Plan.
3. Authorize the opening of CHEMPACK assets as the situation warrants.
4. Immediately notify the SCOEM/HS, the SCPHN and the DOH at both the local and State level, that CHEMPACK material is accessed, distributed, or used. If such access is accidental or if there are SENSAPHONE false alarms, this notification should be made during normal business hours.
5. Upon notification of authorization of the opening of CHEMPACK assets provide staff to assist in container opening and loading

## **§11-09 Readiness**

### **A. Planning and Plan Maintenance**

This Chapter will be routinely updated and supplemented as Federal, State and County CHEMPACK plans and procedures evolve. Plan changes will be made based upon experiences and lessons-learned from drills and exercises. Contact numbers contained in this Chapter will be updated on a quarterly basis. The SCOEM/HS coordinates plan maintenance activities.

### **B. Training and Exercises**

County personnel with key roles in the implementation of this Attachment will receive initial training and annual retraining. This chapter will be tested at least annually through a table-top exercise involving key County agencies. Functional drills may be conducted to test specific components of this Attachment.

Practice EMS and/or Hospital CHEMPACK containers will be provided by NYS for use in training and exercises. Practice containers (PC) will be filled with boxes that replicate both the size and weight of the actual CHEMPACK containers. These training auto-injectors can be used repeatedly without any risk to individuals. The other material will consist of weighted marked CHEMPACK training boxes.

The SCOEM/HS coordinates training and exercising relative to this Attachment, with the exception of hospitals. The NYSDOH will coordinate hospital training and exercising.

## **§11-10 Response**

Distribution of CHEMPACK assets by Sullivan County will be integrated into the existing SCEMP.

### **A. Distribution Process**

Upon a decision by a Sullivan County officials or hospital medical personnel, CHEMPACK assets may be used to respond to a situation. Within Sullivan County, only the following can make the determination that CHEMPACK containers may be opened and used:

1. CRMC Emergency Room Physicians or Medical Control Physicians
2. Public Health Director
3. Director of SCOEM/HS
4. County Manager

CHEMPACK containers are stored in the Hub hospital in Sullivan County.

Upon notification of CHEMPACK activation, the SCOEM/HS will coordinate with the appropriate law enforcement agencies CHEMPACK security requirements. The SCOEM/HS will designate which vehicles will be the primary means for CHEMPACK transport. If there is any confusion or disagreement regarding the assignment and distribution of CHEMPACK assets to EMS Units, the County EMS Coordinator will prioritize and make final assignments.

### **B. Security**

CHEMPACK containers include a schedule IV controlled substance, diazepam, which must be secured according to Drug Enforcement Agency (DEA), Food and Drug Administration (FDA), and

state pharmaceutical regulations. The SCOEM/HS will coordinate with the local law enforcement agencies providing security measures for CHEMPACK asset distribution.

1. Receipt and Sign-off

This Chapter contains the methodology to transfer CHEMPACK assets from a storage location located within Sullivan County to an emergency scene or spoke hospital. Personnel authorized to transport CHEMPACK materiel may be any person having official duties for emergency response operations, and authorized by persons in charge of any given scene. A chain of custody for CHEMPACK materiel must be documented. A *Controlled Substance Custody Form* was developed by NYSDOH to record the transfer of materiel from a storage location to either an emergency scene or a hospital. This form is simple, so as not to delay the delivery of the assets to an emergency scene. Hospital supplies must be delivered directly to a doctor and/or a licensed pharmacist, and their signature recorded. An example *Controlled Substance Transfer Form* is included as TAB 2. Copies of this form will be attached to the outside of the CHEMPACK container for easy access in the event of an emergency.

A simple checklist to document the amount of CHEMPACK materiel returned to a cache location following an emergency (and the amount of supplies used) is found in TAB 3. This information must be reported to the NYSDOH after an emergency.

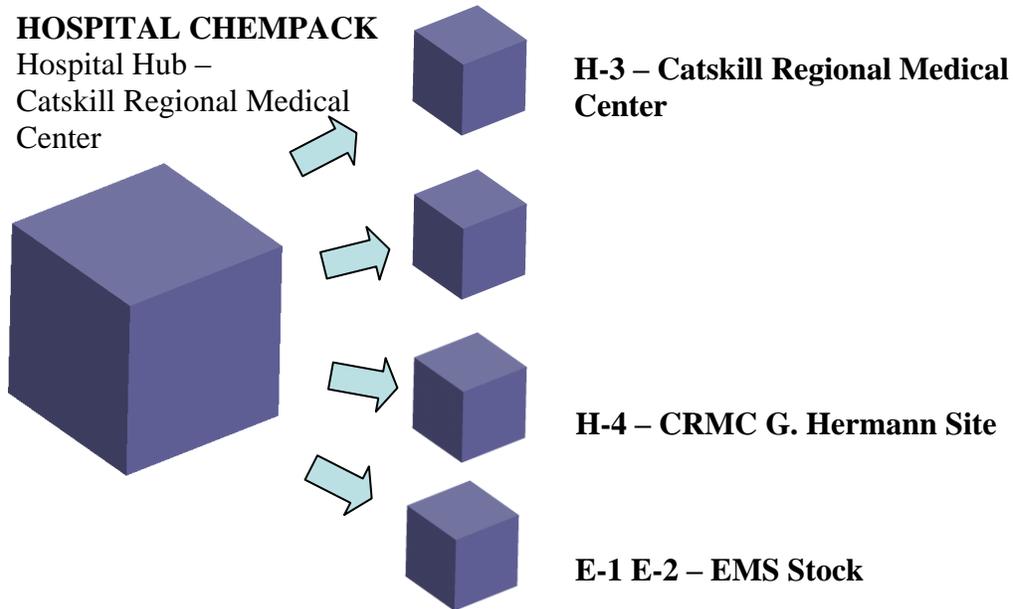
2. Long-term Dispensing Operations

Sullivan County officials will work with NYS officials to determine the need for extended or long term-dispensing efforts or for follow-on re-supply of required medications. Re-supply operations will be done through the SNS Program plans. Requests for additional SNS assets will be coordinated through the SCOEM/HS to SEMO.

TAB 1

**Catskill Regional Medical Center HOSPITAL CHEMPACK CACHE**

Hospital	Hospital Type
<b>Catskill Regional Medical Center</b>	<b>H-3 Host Hospital</b>
<b>CRMC G. Hermann Site</b>	<b>H-4 Spoke Hospital</b>
<b>EMS Stock</b>	<b>E-1</b>
<b>EMS Stock</b>	<b>E-2</b>





# CHEMPACK

## CONTROLLED SUBSTANCE TRANSFER FORM

### Instructions:

The delivery agent should verify the type of diazepam -EMT- (single use) or Hospital (multi-use) and the amount, to be transferred, sign for custody, part A below, and transfer the diazepam to the designated location(s). ***Hospital (multi-use) packages must be physically received by a staff physician and/or a pharmacist***, part B,C, or D below. EMS materials should be delivered, and physically received by the Person in Charge (PIC) on the emergency scene, part B, C or D.

#### PART D- Delivery of Diazepam to Location #3

The following controlled Substances have been removed from _____ for delivery to _____	
Hospital- Diazepam 5mg/ml 10 ml vials (25 per box)	Number of Boxes _____
EMS- Diazepam 5mg/ml auto-injector (150 per box)	Number of Boxes _____
Name of Recipient _____	Signature _____
Date _____	Time _____

#### PART C- Delivery of Diazepam to Location #2

The following controlled Substances have been removed from _____ for delivery to _____	
Hospital- Diazepam 5mg/ml 10 ml vials (25 per box)	Number of Boxes _____
EMS- Diazepam 5mg/ml auto-injector (150 per box)	Number of Boxes _____
Name of Recipient _____	Signature _____
Date _____	Time _____

#### PART B- Delivery of Diazepam to Location #1

The following controlled Substances have been removed from _____ for delivery to _____	
Hospital- Diazepam 5mg/ml 10 ml vials (25 per box)	Number of Boxes _____
EMS- Diazepam 5mg/ml auto-injector (150 per box)	Number of Boxes _____
Name of Recipient _____	Signature _____
Date _____	Time _____

#### PART A- RECEIPT of DIAZEPAM

The following controlled Substances have been removed from _____ for delivery to _____	
Hospital- Diazepam 5mg/ml 10 ml vials (25 per box)	Number of Boxes _____
EMS- Diazepam 5mg/ml auto-injector (150 per box)	Number of Boxes _____
Name & Shield Number of courier _____	Signature _____
Date _____	Time _____

**TAB 3**

**EXPENDITURE ACCOUNTING FORM**

**Dispensing Organization** \_\_\_\_\_

**Dispensing Organization Type (i.e. H1, H2, E1 etc)** \_\_\_\_\_

**Date of Incident:** \_\_\_\_\_

<b>Individual Items</b> <b>See back of form</b>	<b>Amount Received</b>	<b>Amount Distributed</b>	<b>Amount Returned</b>
<b>Mark 1 autoinjector Kits</b>			
<b>Atropine Sulfate 0.4mg/ml 20 ml</b>			
<b>Pralidoxime 1gm inj 20 ml</b>			
<b>Atropen 0.5ml</b>			
<b>Atropen 1.0ml</b>			
<b>Diazepam 5mg/ml autoinjector</b>			
<b>Diazepam 5mg/ml vial 10 ml</b>			
<b>Sterile Water for Injection (SWFI)</b>			

**SEE REVERSE SIDE FOR INDIVIDUAL ITEM AMOUNTS PER BOX**

# Chapter 12

## Incident Command Procedures

### Emergency Operations Center

<b>§12-01</b>	<b>Acronyms</b>
<b>§12-02</b>	<b>Agency Representatives</b>
<b>§12-03</b>	<b>EOC Manager</b>
<b>§12-04</b>	<b>Finance /Administration Section Coordinator</b>
<b>§12-05</b>	<b>Logistics Section Coordinator</b>
<b>§12-06</b>	<b>Operations Section Coordinator</b>
<b>§12-07</b>	<b>Planning Section Coordinator</b>

#### **§12-01 Acronyms**

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DPC	New York State Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYSDOH	New York State Department of Health
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDFS	Sullivan County Department of Family Services
SCDPEM	Sullivan County Division of Planning and Environmental Management
SCDPW	Sullivan County Division of Public Works
SCMIS	Sullivan County Management Information Service

SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPIO	Sullivan County Public Information Officer
SCPHS	Sullivan County Public Health Services
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

## **§12-02 Agency Representatives**

### **A. Position Description**

In many multi jurisdictional incidents, an agency or jurisdiction will send a representative to assist in coordination efforts. An agency representative is an individual assigned to an incident from an assisting or cooperating agency who has been delegated authority to make decisions on matters affecting that agency's participation at the incident. Agency representatives report to the Liaison Officer or to the EOC Director in the absence of a Liaison Officer.

### **B. Responsibilities:**

1. Check in properly at the EOC.
2. Obtain briefing from the Liaison Officer or EOC Director.
3. Inform assisting or cooperating agency personnel on the incident that the agency representative position for that agency has been filled.
4. Clarify any issues regarding your authority and assignment and what other in the organization do.
5. Establish communication link with home agency. If unable to do so, notify Communications Unit in the Logistics Section.
6. Obtain EOC organization chart, floor plan and telephone listings. Review the location and general duties of all sections and branches that have been activated.
7. Facilitate requests for support or information that your agency can provide.
8. Keep up-to-date on the general status of resources and activity associated with your agency.
9. Provide appropriate situation information to the Planning Section.
10. Keep your agency informed of the situation.
11. Attend briefings and planning meetings as required.
12. Provide input on the use of agency resources unless resource technical specialists are assigned from the agency.
13. Cooperate fully with the EOC Director and the General Staff on agency involvement at the incident.
14. Ensure the well-being of agency personnel assigned to the incident.
15. Advise the Liaison Officer of any special agency needs or requirements.
16. Report to home agency dispatch or headquarters on a prearranged schedule.
17. Ensure that all agency personnel and equipment are properly accounted for and released prior to departure.
18. Ensure that all required agency forms, reports and documents are complete prior to departure.
19. Have a debriefing session with the Liaison Officer or IC prior to departure.
20. Check out of EOC when demobilization is authorized.
21. Leave a forwarding phone number if necessary.

## **§12-03 EOC Manager**

### **A. Position Description**

The EOC Manager's responsibility is the overall management of the County EOC. On most incidents the command activity is carried out by a single EOC Manager. The EOC Manager is selected by qualifications and experience.

The EOC Manager may have a deputy, who may be from the same agency, or from an assisting agency. Deputies may also be used at section and branch levels of the NIIMS/ICS organization. Deputies must have the same qualifications as the person for whom they work as they must be ready to take over that position at any time.

### **B. Responsibilities**

1. Assess the situation and/or obtain a briefing from the prior EOC Manager.
2. Determine Incident Objectives and strategy for the operational period.
3. Determine level of staffing needed to begin dealing with the emergency. This may be increased or decreased later.
4. Determine what level incident this is.
5. Determine if a field operation is needed.
6. Establish the immediate priorities.
7. Ensure planning meetings are scheduled as required.
8. Approve and authorize the implementation of an Incident Action Plan.
9. Ensure that adequate safety measures are in place.
10. Coordinate activity for all Command and General Staff.
11. Coordinate with County Manager's Office, SEMO, and FEMA.
12. Approve requests for additional resources or for the release of resources.
13. Keep agency administrator informed of incident status.
14. Approve the use of trainees, volunteers, and auxiliary personnel.
15. Determine the operational period.
16. Authorize release of information to the news media.
17. Order the demobilization of the incident when appropriate.
18. Use SOP for briefing incoming IC.

### **C. Attachments:**

1. Sullivan County NIIMS/ICS Incident Organization Chart
2. Copy of Notification Procedure
3. Checklist for Emergency Preparedness
4. SOP for Transfer of Command

## **§12-04 Finance /Administration Section Coordinator**

### **A. Position Description**

The Finance/Administration Section Coordinator is responsible for managing all financial aspects of the incident. He/she is responsible for tracking all incident costs and providing guidance to the EOC Director on financial issues that may have an impact on incident operations.

### **B. Responsibilities:**

1. Check-In upon arrival at the EOC.
2. Report to the EOC Director.

3. Obtain a briefing on the situation
4. Review your position responsibilities.
5. Determine if other section staff is at the EOC.
6. Ensure that the section is set up properly and that appropriate personnel, equipment and supplies are in place. Set-up your work station.
7. Review organization in place at the EOC. Know where to go for information or support.
8. Clarify any issues you may have regarding your authority and assignment, and what others in the organization do.
9. Open and maintain section logs.
10. Organize and staff section as appropriate.
11. Identify collateral response organization(s) and positions.
12. Manage all financial aspects of an incident.
13. Confer with EOC Director on delegation of purchasing authority to section. Determine appropriate purchasing limits to delegate to Logistics Section.
14. Meet with Operations and Logistics Coordinators. Determine financial and administrative support needs. Review procedures for on-going support from section. Establish purchasing limits for Logistics Section.
15. Based on the situation as known or forecast, determine likely future Finance/Administration section personnel and support needs.
16. Review responsibilities of units in section and develop a plan for carrying out all responsibilities.
17. Activate organizational units within section as needed and designate leaders for each unit.
18. Request additional personnel for the section as necessary to maintain appropriate level of EOC operations.
19. Determine need for representation or participation of other agency representatives.
20. Adopt a proactive attitude. Think ahead and anticipate situations and problems before they occur.

### C. Operational Duties

1. Provide financial and cost analysis information as requested.
2. Gather pertinent information from briefings with responsible agencies.
3. Develop an operating plan for the Finance/Administration Section; fill supply and support needs.
4. Meet with assisting and cooperating agency representatives as needed.
5. Maintain daily contact with agency(s) administrative headquarters on Finance/Administration matters.
6. Ensure that section logs and files are maintained.
7. Carry out responsibilities of Finance/Administrative Section units that are not currently activated.
8. Maintain current displays associated with your area. Make sure that information reports or displays you prepare are clear and understandable.
9. Make sure that all contacts with the media are fully coordinated first with the SCPIO.
10. Participate in EOC Director's strategy meetings and planning meetings.
11. Conduct periodic briefings for section. Ensure that all organizational elements are aware of priorities.
12. Monitor section activities and adjust section organization as appropriate.
13. Resolve problems that arise in conduct of section responsibilities.
14. Brief EOC Director on major problem areas that now need or will require solutions.
15. Share status information with other with other sections as appropriate.
16. Keep agency administrators apprised of overall financial situation.
17. Brief your relief at shift change time.

#### D. Demobilization

1. Provide financial input to demobilization planning.
2. Authorize deactivation of organizational elements within the section when they are no longer required. Ensure that any open actions are handled by section or transferred to other EOC elements as appropriate.
3. Demobilize the Section and close out logs when authorized by the EOC Director.
4. Ensure that any open actions are assigned to the appropriate agency or element for follow-on support.
5. Ensure that any required forms or reports are completed prior to your release and departure.
6. Brief agency administrative personnel on all incident-related financial issues needing attention or follow-up.
7. Be prepared to provide input to the After Action Report.

### **§12-05            Logistics Section Coordinator**

#### A. Position Description

The Logistics Section Coordinator is responsible for providing all support needs to the incident (except air). Support needs include facilities, services, personnel, equipment and supplies. The Logistics Section Coordinator participates in the development and implementation of the Incident Action Plan, and activates and supervises the units within the Logistics Section.

#### B. Responsibilities:

1. Check-In upon arrival at the EOC.
2. Report to the EOC Director.
3. Obtain a briefing on the situation
4. Review your position responsibilities.
5. Determine if other section staff is at the EOC.
6. Ensure that the section is set up properly and that appropriate personnel, equipment and supplies are in place. Set-up your work station.
7. Review organization in place at the EOC. Know where to go for information or support.
8. Clarify any issues you may have regarding your authority and assignment, and what others in the organization do.
9. Open and maintain section logs.
10. Manage all incident logistics.
11. Provide logistical input to the EOC Director in preparing the Incident Action Plan.
12. Brief Branch Directors and Unit Leaders as needed.
13. Identify anticipated and known incident service and support requirements.
14. Request additional resources as needed.
15. Review and provide input to the Communications Plan, the Medical Plan and the Traffic Plan.
16. Supervise requests for additional resources.
17. Oversee demobilization of the Logistics Section.

### **§12-06            Operations Section Coordinator**

#### A. Position Description

The Operations Section Coordinator is responsible for the management of all tactical operations for the incident. The Operations Section Coordinator helps formulate and interprets strategy established by the EOC Director, and implements it tactically as per EOC procedures. The Operations Section Coordinator activates and supervises organizational elements in accordance with the Incident Action

Plan and directs its execution. The Operations Section Coordinator also directs the preparation of unit operational plans, requests or releases resources, makes expedient changes to the Incident Action Plan as necessary, and reports such changes to the EOC Director.

The Operations Section Coordinator ensures that the operations function is carried out including the coordination of response for all operational functions assigned to the EOC and ensures that operational objectives and assignments/missions identified in the Incident Action Plan are carried out effectively. The Operations Section Coordinator establishes the appropriate level of organization within the section continuously monitors the effectiveness of that organization and makes changes as required. The Operations Section Coordinator exercises overall responsibility for the coordination of operational activities within the section and ensures that all state agency actions under the section are accomplished within the priorities established. The Operations Section Coordinator reports to the EOC Director on all matters pertaining to section activities.

B. Responsibilities:

1. Check-In upon arrival at the EOC.
2. Report to the EOC Director.
3. Obtain a briefing on the situation
4. Review your position responsibilities.
5. Determine if other section staff is at the EOC.
6. Ensure that the Operations Section is set up properly and that appropriate personnel, equipment and supplies are in place. Set-up your work station.
7. Review organization in place at the EOC. Know where to go for information or support.
8. Clarify any issues you may have regarding your authority and assignment, and what others in the organization do.
9. Open and maintain section logs.
10. Meet with Communications Unit Leader.
  - a. Obtain briefing on on-site and external communications capabilities and restrictions.
    - 1) Establish operating procedure with Communications Unit for use of telephone and radio systems.
    - 2) Make any priorities or special requests known.
11. Attempt to determine estimated times of arrival of requested staff that are not yet on site.
12. Establish contact and determine status of collateral EOC's. Determine status of any requests for missions/assistance.
13. Meet with the Planning Section Coordinator. Obtain and review any major incident reports. Obtain from the Planning Section additional field operational information that may pertain to or affect section operation.
14. Based on the situation as known or forecast, determine likely future Operations Section needs.
15. Review responsibilities of the section. Develop plan for carrying out all responsibilities.
16. Make a list of key issues currently facing your Section. Clearly establish with assembles personnel action items to be accomplished within the current operational period.
17. Activate organizational elements within section as needed and designate supervisors for each element.
18. Determine need for representation or participation of other agency representatives.
19. Request additional personnel for the section as necessary for maintaining appropriate level of EOC operation.
20. Advise EOC Director of Section status.
21. Adopt a proactive attitude. Think ahead and anticipate situations and problems before they occur.

### C. Operational Duties

1. Ensure that section EOC logs and files are maintained.
2. Keep up to date on situation and resources associated with your section. Maintain current status at all times.
3. Maintain current displays associated with your area. Make sure that the information reports or displays you prepare are clear and understandable.
4. Provide situation and resources information to the Planning Section on a periodic basis or as the situation requires.
5. Make sure that all contacts with the media are fully coordinated first with the PIO..
6. Conduct periodic briefings and work to reach consensus among staff on objectives for forthcoming operational periods.
7. Attend and participate in strategy and planning meetings.
8. Work closely with the Planning Section Chief in the development of EOC Incident Action Plans.
9. Work closely with each supervisor to ensure operation's objectives as define in the current Incident Action Plan are being addressed.
10. Ensure that information for your sections and Agency Representatives is made available to the Planning Section.
11. Ensure that all fiscal and administrative requirements are coordinated through the Finance/Administration Section.
  - a. Notification of any emergency expenditures
  - b. Time sheets
12. Brief EOC Director on major problem areas that now need or will require solutions.
13. Brief supervisors periodically on any updated information you may have received.
14. Share status information with other sections as appropriate.
15. Brief your relief at shift change time.
16. Deactivate subordinate units when no longer required. Ensure that all paperwork is complete and logs are submitted to the Documentation Unit (or Planning Section).

### D. Demobilization

1. Authorize demobilization of organizational elements with the section when they are no longer needed. Ensure that any open sections are handled by section or transferred to other EOC elements as appropriate.
2. Demobilize the Section and close out logs when authorized by the EOC Director.
3. Ensure that any open actions are assigned to the appropriate agency or element for follow-on support.
4. Ensure that any required forms or reports are completed prior to your release and departure.
5. Be prepared to provide input to the After Action Report.
6. Manage tactical operations.
  - a. Interact with next lower level of Section (Branch, Division/Group) to develop the operations portion of the Incident Action Plan.
  - b. Request resources needed to implement the Operations Section's tactics as a part of the Incident Action Plan development (ICS 215).
7. Assists in development of the operations portion of the Incident Action Plan.
8. Supervise the execution of the Incident Action Plan for Operations.
  - a. Maintain close contact with subordinate positions.
  - b. Ensure safe tactical operations.
9. Request additional resources to support tactical operations.
10. Approve release of resources from assigned status (not release from the incident).
11. Make or approve expedient changes to the Incident Action Plan during the Operational Period as

necessary.

12. Maintain close communication with the IC.

13. Maintain Unit Log.

## **§12-07 Planning Section Coordinator**

### **A. Position Description:**

The Planning Section Coordinator is responsible for the collection, evaluation, dissemination and use of information about the development of the incident and the status of resources. Information is needed to understand the current situation, predict the probable course of incident events, and prepare alternative strategies and control operations for the incident. The Planning Section Coordinator conducts the Planning Meeting and is responsible for producing a written Incident Action Plan (if so directed by the IC). The Planning Section Coordinator activates and supervises units within the Planning Section; Situation Unit, Resource Unit, Documentation Unit, Demobilization Unit and Technical Specialists.

### **B. Responsibilities:**

1. Check-In upon arrival at the EOC.
2. Report to the EOC Director.
3. Obtain a briefing on the situation
4. Review your position responsibilities.
5. Determine if other section staff is at the EOC.
6. Ensure that the section is set up properly and that appropriate personnel, equipment and supplies are in place. Set-up your work station.
7. Review organization in place at the EOC. Know where to go for information or support.
8. Clarify any issues you may have regarding your authority and assignment, and what others in the organization do.
9. Open and maintain section logs.
10. Organize and staff section as appropriate.
11. Identify collateral response organization(s) and positions.
12. Collect from all available sources information about the incident.
13. Supervise preparation of the Incident Action Plan.
14. Modify the Incident Action Plan to meet changing needs as necessary.
15. Prior to the completion of the Incident Action Plan, prepare and distribute the EOC Director's objectives.
16. Provide input to the EOC Director and Operations Section Coordinator for the preparation of the Incident Action Plan by the Planning Section.
17. Conduct the Planning Meeting.
18. Identify out-of-service personnel and positions they are qualified to fill.
19. Assign out-of-service personnel to NIIMS/ICS organizational positions as appropriate.
20. Establish reporting requirements and reporting schedules for all NIIMS/ICS organizational elements.
21. Gather, post, and maintain current incident resource status including transportation, and support vehicles and personnel.
22. Determine need for any specialized resources in support of the incident.
23. If requested, assemble and disassemble resources not assigned to operations.
24. Identify coincidental information needs and gather as necessary.
25. Insure that information concerning special environmental needs is included in the Incident Action Plan.

26. Assemble information on alternative strategies based on projections.
27. Provide periodic predictions on incident potential and develop contingency plans (i.e. worst case scenario).
28. Advise General Staff of any significant changes in incident status.
29. Anticipate changes in resource needs.
30. Compile and display incident status information.
31. Oversee preparation of Incident demobilization plan.
32. Develop the incident traffic plan.
33. Develop the incident medical plan.
34. Incorporate the Incident Traffic Plan and supporting plans developed by other units (Incident Communications Plan etc.) into the Incident Action Plan.
35. Maintain Unit Log.
36. Perform operational planning for the Planning Section.
37. Insure coordination between the Planning Section and other Command and General staff.

## **Chapter 13**

# **Sullivan County Department of Family Services Disaster / Emergency Response Plan**

- §13-01 Acronyms**
- §13-02 Executive Summary**
- §13-03 Initial Actions in Disaster / Emergency Response**
- §13-04 Continuity of Child Welfare Services**
- §13-05 Provision of Child Welfare Services to New Cases**
- §13-06 Communication with SCDFS Child Welfare Case Workers & Other SCDFS Child Welfare Personnel**
- §13-07 Preservation of Program Records**

## **Attachments**

- Attachment A: SCDFS Disaster / Emergency Response Chain of Command**
- Attachment B: Emergency Preparedness Information**
- Attachment C: SCDFS Emergency Contact Numbers**
- Attachment D: Service Provider's Emergency Contact Numbers and Description of Continuity Business Plan Sheet**

## **§13-01 Acronyms**

A&E	Assessment & Evaluation
CHEMTREC	Chemical Transportation Emergency Center
CRMC	Catskill Regional Medical Center
DEC	New York State Department of Environmental Conservation
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operation Response Team
DPC	New York State Disaster Preparedness Commission
EAS	Emergency Alert System
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Service
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HAN	Health Alert Network
HEOP	Health Emergency Operations Plan
HIN	Health Information Network
HPN	Health Provider Network
IC	Incident Commander
JNC	Joint News Center
LEPC	Local Emergency Planning Committee
LHD	Local Health Department
MCI	Mass Casualty Incident
NIIMS/ICS	National Interagency Incident Management System/Incident Command System
NOAA	Voice of National Weather Service
NWS	National Weather Service
NYSDOH	New York State Department of Health
NYSP	New York State Police
RQ	Reportable Quantity
SC911	Sullivan County 911 Communication Center
SCDFS	Sullivan County Department of Family Services
SCDPEM	Sullivan County Division of Planning & Environmental Management
SCDPW	Sullivan County Division of Public Works
SCMIS	Sullivan County Management Information Services
SCOEM/HS	Sullivan County Office of Emergency Management/Homeland Security
SCPHS	Sullivan County Public Health Services
SCPIO	Sullivan County Public Information Officer
SCSD	Sullivan County Sheriff Department
SCEMP	Sullivan County Comprehensive Emergency Management Plan
SEMO	State Emergency Management Office
SNS	Strategic National Stockpile
SOG	Standard Operating Guides
VMAT	Veterinary Medical Assistance Team

## **§13-02 Executive Summary**

The ability for the Sullivan County Department of Family Services (SCDFS) to function is vital to the safety of individuals and families within the county, and to the success of the department operation. There are many types of disasters / emergencies that could occur that could have a negative impact on

SCDFS' operations. This plan results from the recognition on the part of SCDFS that a Disaster / Emergency Response plan is needed to enhance the department's ability to operate in a disaster or emergency situation. It was prepared by SCDFS representatives working as a team in a planning process recommended by the New York State Emergency Management Office (SEMO). This plan constitutes an integral part of a countywide emergency management and continuity of government program and contributes to its effectiveness.

The development of this plan included an identification and analysis of potential hazards that could affect SCDFS operations and an assessment of the capabilities existing in SCDFS to deal with potential hazards.

### **A. Comprehensive Approach**

Dealing with disasters and emergencies is an ongoing and complex undertaking. Thorough implementation of preparedness measures, including effective planning, is the key to successfully applying timely and effective response mechanisms during an actual emergency. Further, provisions for short and long term recovery assistance is essential in ensuring that SCDFS can maintain its obligations. This process is called Comprehensive Emergency Management to emphasize the inter-relationship of activities, functions, and expertise necessary to deal with disasters / emergencies.

### **B. Management Responsibilities**

The plan outlines the strategies and disaster / emergency management responsibilities for SCDFS. Assignments are made within the framework of the present capability and existing organizational responsibilities. The primary responsibility for responding to the disaster / emergency within the department rests with SCDFS and the SCDFS Commissioner. In addition, the SCDFS Commissioner has the authority to direct and coordinate disaster/ emergency operations within the department. This authority has been delegated to the SCDFS Disaster Preparedness Commission (DPC) liaison, who will serve as the SCDFS Disaster / Emergency Response Coordinator to coordinate all emergency management activities of the department.

SCDFS will organize their response to a disaster / emergency using the National Interagency Incident Management System (NIIMS)/Incident Command System (ICS). NIIMS/ICS is a management tool for the command, control and coordination of resources and personnel in an emergency.

Sullivan County Government responsibilities are closely related to the responsibility of the local levels of government within the County (*cities, towns and villages*) to manage all phases of an emergency. The County has the responsibility to assist the local governments in the event that they have fully committed their resources and are still unable to cope with any disaster / emergency. Similarly, New York State is obligated to provide assistance to the county after resources have been fully committed and the county is unable to cope with the disaster/emergency. SCDFS must ensure that the department can appropriately interface with the local and county response agencies in times of disasters / emergencies. Specific disaster/emergency management guidance for situations requiring special knowledge, technical expertise, and resources may be addressed in separate annexes attached to the plan.

### **C. Conclusion**

This plan will serve as the policy, authority, general guidelines for SCDFS in the continued provision of services in the event of a disaster / emergency.

## **§13-03 Initial Actions in Disaster / Emergency Response**

### **A. Initial Actions**

In the event of a disaster / emergency within Sullivan County, the specific resources of the SCDFS will be mobilized and employed as follows:

1. The County Manager or designee will contact the Commissioner of SCDFS or, if unavailable, the assigned alternate (*Director of Family Services*) in the event of a local disaster / emergency.

Either:

2. The County Manager or designee will
  - a. Request that SCDFS make specific services available at specific locations within the County, or
  - b. Request that the Commissioner of SCDFS or his designee evaluate a disaster / emergency situation and recommend a specific plan of intervention for the provision of family services.
3. After an approved plan of operation / action has been devised as per item 2a or 2b above, the Commissioner of SCDFS or his designee is responsible for its implementation:
  - a. Communications of the plan to the various individuals, groups, and / or agencies involved in the approved plan will be made by the Commissioner of SCDFS.
  - b. The Commissioner of SCDFS or his designee as dictated in the plan will effect deployment of resources to designated locations within the County.
  - c. The Commissioner of SCDFS will conduct supervision and / or on-going monitoring of the plan and the Commissioner of SCDFS will make periodic reports regarding the effectiveness of the plan to the County Manager.
  - d. The Commissioner of SCDFS or his designee, if needed, will suggest additions and / or modifications to the plan, and the County Manager shall approve changes in the plan.

### **B. SCDFS Disaster / Emergency Response Chain of Command**

*Attachment A - SCDFS Disaster / Emergency Response Chain of Command* is a flowchart of the chain of command in response to a disaster / emergency. The Commissioner of SCDFS is the designated disaster / emergency response coordinator for the department; the Director of Family Services will act as the substitute.

### **C. SCDFS Disaster / Emergency Response Mobilization**

In response to a disaster / emergency, the department will take the following actions in the mobilization of family services:

1. Notification – the Commissioner of SCDFS or his designee will be notified, as defined in the aforementioned, regarding any mobilization of departmental resources.
2. The primary point of assembly will be the Administrative Offices, SCDFS, unless otherwise specified in the disaster response plan.

### **D. SCDFS Disaster Emergency Response Basic Responsibilities**

In response to a disaster / emergency, the department has the following basic responsibilities:

1. The Commissioner will assume primary responsibility for departmental activities evolving from the County EOC. The Director of SCDFS will act as the alternate in charge of departmental activities in the event the Commissioner is unavailable.
2. Provide a team of professionals trained in critical incident stress management for those in need of such services.
3. Provide emergency family services.
4. Provide emergency 24-hour/7 day-per-week telephone crisis and referral services.
5. Complete paperwork and/or other administrative activities regarding emergency activities in accordance with departmental policies.
6. Deploy appropriate family services staff to disaster / emergency locations in the County.
7. Make periodic reports to the IC regarding the continued appropriateness of departmental activities in the crisis or disaster / emergency situation.

### **E. SCDFS Disaster / Emergency Response Specific Responsibilities**

In response to a disaster / emergency, SCDFS has the following specific responsibilities:

1. Support the identification, location and continuity of child welfare services to children in the departments care or supervision who are displaced or adversely affected in the event of a disaster / emergency.
2. Respond to new child welfare cases in areas adversely affected by the disaster / emergency, and provide family services in those affected areas.
3. Facilitate maintaining communication with SCDFS caseworkers and other essential child welfare personnel who are displaced as a result of the disaster / emergency.
4. Preserve and protect essential family service program records.
5. Coordinate family services and share information with neighboring counties and other states.

All of the aforementioned specific responsibilities are discussed in more depth in the upcoming sections of this plan document.

### **§13-04 Continuity of Child Welfare Services**

The SCDFS has developed procedures to support the identification, location and continuation of child welfare services to children in their care or supervision who are displaced or adversely affected in the event of a disaster / emergency taking place in Sullivan County.

SCDFS has the ability to identify and locate all children in the custody of the departments commissioner. This includes children that are in foster care or alternative placement settings (*group homes, relative placements and pre-adoptive placements*), both within the county and across county or state lines.

SCDFS maintains a database that shows the names and locations of children in the care and custody of the Commissioner. This database is updated weekly on the local server and saved on disk weekly. The backup disk is placed in a fire safe vault on Friday evenings. This information is available on the New York State CONNECTIONS system. This information is also maintained in hard copy binders located in the SCOEM/HS office and in the Director's office at SCDFS. Access to these binders is available to the following staff during an emergency:

- Commissioner of Family Services
- Director of Family Services

- Assistant Director of Family Services
- Foster Care Supervisors
- Designee of above as needed

SCDFS has the ability to identify and advocate for medically fragile children who rely on medical equipment or are in need of ongoing medical evaluation. For all children who are in the care and custody of the Sullivan County Commissioner, SCDFS has the ability, upon placement, to identify and advocate for medically fragile children (*who rely on medical equipment or are in need of ongoing medical evaluation*). Children who come into care will have their CONNECTIONS record reflect a specific medical need and the weekly database report will include a notation for each special need. New preventive cases will have this information noted in the CONNECTIONS system. In addition, the Department will collaborate with the Early Intervention Department of Sullivan County Public Health Services (SCPHS) and with the Sullivan County Community Services Department to identify and advocate for medically fragile children. The Early Intervention Department receives referrals from area physicians and parents on identified children and will be a source for identifying these children and advocating for their needs. Sullivan County Community Services works closely with the Center for Discovery, a residential and out-patient facility for medically fragile children. Children, who are not known to SCDFS and are identified as being medically fragile at a disaster site, will be referred to the SCPHS for further evaluation, equipment needs and case management.

Relative to communicating with SCDFS staff persons in the event of a disaster / emergency; the department has taken measures to ensure contact information is up to date and readily available. SCDFS has a current listing of all department personnel with corresponding emergency contact telephone numbers, which include home, business, cell and emergency backup numbers. This information is available in the Disaster binders located as noted in the aforementioned paragraph.

In addition, SCDFS has taken measures to ensure that all contracted children service provider's (*group homes and other congregate care facilities*) contact information is up to date and readily available. There is a listing of all foster parents with corresponding emergency contact numbers, as well as, biological parent contact information. This information is electronically updated each week and hard copy is placed in disaster binders.

SCDFS has the ability to activate and post toll-free numbers or reserve numbers for SCDFS staff, families, youth, foster care and other service providers to contact during and after a disaster / emergency. Foster parents are given emergency contact numbers when children are placed in their home. In addition, foster parents will receive disaster planning training in a group session presented by a professional disaster planner. The trainer will also provide the foster parents with a resource book, "Disaster Ready People for a Disaster Ready America" by James W. Satterfield & Harry W. Rhulen. An annual training will be provided for all foster parents.

SCDFS has the ability to post information for department staff, families, service providers, youth and the general public in the event of a disaster. The department has the ability to continuously update the web site in the provision of information relative to disaster / emergency updates, alternate transportation routes, toll-free numbers and other pertinent contact information. This will be accomplished via use of the Sullivan County Government web site, which is accessible via web-link: <http://www.co.sullivan.ny.us> . Additional information is also posted on the NYS Office of Children and Family Services website: <http://www.ocfs.state.ny.us> . In accordance with the SCEMP Chapter 4, information will also be available through various media outlets.

In the effort to coordinate services for children and families who cross Sullivan County or NYS lines; SCDFS has identified liaisons in neighboring counties and states. It is with these identified liaisons that SCDFS has the ability to share information (*within the limits of applicable Health Insurance Portability and Accountability Act of 1996 confidentiality standards*) from County or state automated databases in order to continue the provision of services to children and families. In addition, SCDFS is a part of Region V, New York State Office of Children and Family Services.

The neighboring counties and states wherein liaisons have been established are:

**Counties –**

- Dutchess  
Department of Social Services  
Director of Children’s Services  
60 Market Street  
Poughkeepsie, New York 12601  
(845)486-3000
  
- Orange  
Department of Social Services  
Director  
11 Quarry Road  
Goshen, New York 10924  
(845)291-4000
  
- Ulster  
Department of Social Services  
Deputy Commissioner  
1061 Development Court  
Kingston, New York 12401-1959  
(845)334-5194
  
- Delaware  
Department of Social Services  
Director  
111 Main Street  
Delhi, New York 13753  
(607)746-2325

**States –**

- Pennsylvania  
  
Pike County Children & Youth  
Director  
506 Broad Street  
Milford, Pa. 18337  
(570) 296-3446

and

Wayne County Children & Youth  
Director  
925 Court Street  
Honesdale, Pa. 18431  
(570)253-5102

The American Red Cross is the first responder during emergencies determined by the Sullivan County Emergency Management team and SEMO. They are the authorized providers of emergency shelters during a disaster. SCDFS is authorized, as the legal custodian, to share data about children in the care and custody of the Commissioner with agencies likely to be involved in running emergency shelters to help locate displaced children and families after a disaster / emergency. Other data sharing agreements are covered under established contracts with local provider agencies, residential centers and foster boarding homes. In addition to the above, Interstate Compact procedures will be followed for any requested or required assistance.

SCDFS has a memorandum of understanding with A Friend's House, Emergency Shelter Group in Orange County, New York to house runaway and homeless youth from Sullivan County. SCDFS also works closely with the Temporary Assistance unit within the department for emergency shelter and other emergency needs. The Planning and Operations functions of the SCEMP are responsible for ascertaining what human needs have been particularly affected by an emergency and responding to those unmet needs with the available resources of County and local government and with the assistance of volunteer agencies and the private sector. There may be established within the Operations Section a human needs group to perform the tasks associated with the above.

The Sullivan County Human Needs Group consists of representatives from County and local agencies, volunteer groups and the private sector, whose purpose is to assist in the coordination of the delivery of human services in Sullivan County and to advise the County Manager on human needs issues. The Sullivan County Human Needs Group will serve as the Human Needs Branch whenever such a Branch is utilized. Whenever a Human Needs Branch is not established by the Operations Section, the Operations Section will confer with the Chairperson of the Sullivan County Human Needs Group on human needs issues.

SCDFS has provided information to, and will encourage, birth families of placed children and families receiving in-home services to develop and update family disaster plans. SCDFS will reach out to all affected birth families to provide them with information about their family member. The department will provide these birth families with disaster / emergency preparedness information and SCDFS emergency contact numbers that they can call to check on the safety and status of their children after a disaster / emergency or evacuation.

*Attachment B - Emergency Preparedness Information* is a copy of the emergency preparedness information provided to these birth families.

*Attachment C - SCDFS Emergency Contact Numbers* is a copy of the SCDFS emergency contact numbers provided to these birth families. For security and confidentiality purposes, the contact information has been omitted, but will be provided to birth families and is kept on file at 911 and the SEMO.

## **§13-05 Provision of Child Welfare Services to New Cases**

SCDFS has developed a plan to respond to new child welfare cases in areas adversely affected by a disaster / emergency, and provide services in those areas.

Response to new reports of suspected child abuse will continue through the use of the existing answering service, beeper service and cell phone service. When a call is made to the State Central Registry, a report will be generated during normal business hours to the Local Department of Social Services (LDSS) office via the traditional method or via direct telephone contact to the LDSS office from the Registry. After hours and weekends, the Registry contacts the answering service to have the on call worker reached via a cell phone or beeper service. In the event the on call worker is not able to be reached, the Registry contacts a back up person directly from a pre-existing list of staff. The answering service and the back up staff have contact lists for SCDFS workers.

This plan has been developed to include key action steps to be taken in response to the disaster / emergency. In order to continue the provision of services to new child welfare cases in disaster / emergency affected areas; SCDFS plans on taking the following actions:

- SCDFS will conduct an initial assessment of the affected locations and needs of families, youth and service providers. Once the affected area has been identified by the Emergency Management team, caseworkers will directly reach out to the families they serve to offer assistance. In addition, all families on a caseworker's caseload are provided with emergency contact information when the case is opened.
- Children who are in the care and custody of the SCDFS Commissioner are listed on a database that identifies their placement location. The database is updated weekly.

In addition, all case information for the Child Protective Services, Preventive, Foster Care and Adoption is available through the New York State CONNECTIONS data system. That system can be accessed by any authorized worker from the state computer system in any LDSS office and in the Regional Office. SCDFS will work closely with the American Red Cross to identify and serve children that may have become separated from their parents because of the disaster / emergency. The Data Warehouse has a Foster Care Roster Report now available to monitor the current placement of children in care.

- SCDFS will provide information, support and services to families, youth and service providers disrupted or severely impacted by the disaster / emergency. The department will accomplish the distribution of the aforementioned by actively participating in the recovery efforts as described in the SCEMP and by direct contact with families on the caseload. New referrals for services will be channeled through the on site workers from the American Red Cross and Human Needs Group as defined in the SCEMP.
- SCDFS has developed plans with other service providers for the provision of additional programs / services for children, youth and families affected by the disaster / emergency. The plans include each provider must have a continuity of service plan in place and copy on file with the SCDFS, including emergency contact information.
- SCDFS has established plans for the location of a disaster / emergency field office and information sites, and relocating services to alternate locations as required by the incident.

In addition, staff can be assigned to contiguous county LDSS offices for access to the CONNECTIONS system and back up can be provided by the Regional Office.

- SCDFS has established toll free numbers that may be released to the general public in the effort to secure SCDFS assistance and / or services. In case of emergency, this number will be posted on the Sullivan County Government website and given to media for broadcast. In addition, SCDFS has established public access web sites for disaster / emergency information sharing. This will allow for sharing information relative to where to go for disaster / emergency assistance, provide updates on the disaster / emergency response, etc. The department has the ability to post information for staff, families, service providers, youth and general public. This will be accomplished via use of the Sullivan County Government web site, which is accessible via web-link: <http://www.co.sullivan.ny.us> .

The department has the ability to continuously update the web site in the provision of information relative to disaster / emergency updates, alternate transportation routes, toll-free numbers and other pertinent contact information. Additional information is also posted on the NYS Office of Children and Family Services website: <http://www.ocfs.state.ny.us> .

Also, in accordance with the SCEMP (*Chapter 4*), information will also be available through various media.

### **§13-06 Communication with SCDFS Child Welfare Case Workers & Other SCDFS Child Welfare Personnel**

SCDFS has developed plans to facilitate maintaining communication with case workers and other essential child welfare personnel who are displaced because of a disaster / emergency.

The department has encouraged staff to develop personal disaster plans and to keep those plans current. The plans include various means of contact information so that the department may remain in communication with the caseworkers and other child welfare personnel within SCDFS. Required communication contact information will include home, cell and fax numbers, and email addresses. In addition, alternative location communication contact information will be included as well.

SCDFS is requiring that all child welfare case workers and other child welfare personnel check in after a disaster / emergency declaration. Staff is provided information on the procedure to follow for check in.

SCDFS has emergency supplies located within the department for use in the event of a disaster / emergency declaration. These emergency supplies are available to all authorized personnel, as needed.

SCDFS personnel have been trained on the department's disaster / emergency response plan and participate in disaster / emergency declaration drills.

In addition to the American Red Cross response personnel, SCDFS has established personal and professional support services for staff in the event of a disaster / emergency declaration. The services are being made available to all employees via the SCDFS Employee Assistance Program (EAP). EAP is a 24 hour 7 days a week program that provides professional assistance dealing with problems that department staff and their families face on and off the job that can affect personal life, health and job including: being a parent, relationships with significant other, alcohol/drug problems, depression, job stress, financial concerns, legal problems, personal loss and other life stress. An EAP Specialist, a highly

trained professional with extensive experience working with these problems, will work with staff to address their concerns.

SCDFS has developed expectations of, and support for, contract staff in the event of a disaster / emergency declaration. Each service provider is required to complete an emergency contact sheet. This sheet provides details on the service provider's emergency contacts and describes their continuity of business plan. *Attachment C - Service Provider's Emergency Contact Numbers and Description of Continuity Business Plan* is a copy of the sheet the service provider is required to complete.

### **§13-07            Preservation of Program Records**

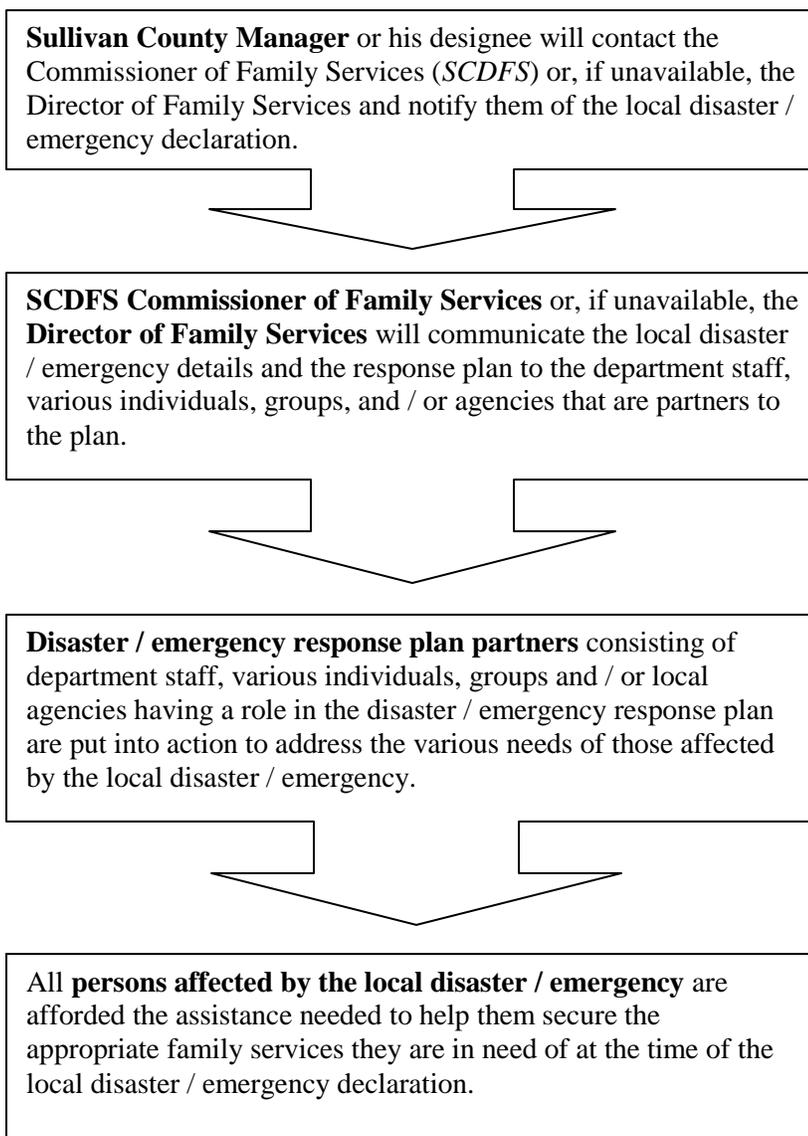
SCDFS has developed plans to preserve and protect essential program records. Preservation and protection of vital records will be accomplished via the establishment of back-up for information systems with case and client records. Computer records are put on disk weekly and placed in a fire proof safe. In addition, CONNECTIONS can be accessed from alternative (*off*) sites as noted in the aforementioned.

SCDFS has developed a plan to protect various data and equipment from environmental factors. Actions taken include the timely covering / bagging computers and pertinent office equipment, the installation of surge protectors in outlets hosting computer systems, etc.

SCDFS has assessed the critical nature of department paper records, and determined action steps to be taken to protect these records from potential damage in a disaster. Means to accomplish the protection of these records include the use of fire proof metal filing cabinets and a fire proof safe for computer disks. The majority of records are stored electronically.

# Attachment A:

## SCDFS Disaster / Emergency Response Chain of Command



# ***Attachment B:***

# **Emergency Preparedness Information**

# Emergency Preparedness Checklist



Federal Emergency Management Agency



American Red Cross

**T**he next time disaster strikes, you may not have much time to act. Prepare now for a sudden emergency.

Learn how to protect yourself and cope with disaster by planning ahead. This

checklist will help you get started. Discuss these ideas with your family, then prepare an emergency plan. Post the plan where everyone will see it—on the refrigerator or bulletin board.

For additional information about how to prepare for hazards in your community, contact your local emergency management or civil defense office and American Red Cross chapter.

## Emergency Checklist

### Call Your Emergency Management Office or American Red Cross Chapter

- Find out which disasters could occur in your area.
- Ask how to prepare for each disaster.
- Ask how you would be warned of an emergency.
- Learn your community's evacuation routes.
- Ask about special assistance for elderly or disabled persons.

#### Also...

- Ask your workplace about emergency plans.
- Learn about emergency plans for your children's school or day care center.

### Create an Emergency Plan

- Meet with household members to discuss the dangers of fire, severe weather, earthquakes and other emergencies. Explain how to respond to each.
- Find the safe spots in your home for each type of disaster.

- Discuss what to do about power outages and personal injuries.
- Draw a floor plan of your home. Mark two escape routes from each room.
- Show family members how to turn off the water, gas and electricity at main switches when necessary.
- Post emergency telephone numbers near telephones.
- Teach children how and when to call 911, police and fire.
- Instruct household members to turn on the radio for emergency information.
- Pick one out-of-state and one local friend or relative for family members to call if separated during a disaster (it is often easier to call out-of-state than within the affected area).
- Teach children your out-of-state contact's phone numbers.
- Pick two emergency meeting places.
  - 1) A place near your home in case of a fire.
  - 2) A place outside your neighborhood in case you cannot return home after a disaster.
- Take a basic first aid and CPR class.
- Keep family records in a water and fire-proof container.

### Prepare a Disaster Supplies Kit

Assemble supplies you might need in an evacuation. Store them in an easy-to-carry container such as a backpack or duffel bag.

#### Include:

- A supply of water (one gallon per person per day). Store water in sealed, unbreakable containers. Identify the storage date and replace every six months.
- A supply of non-perishable packaged or canned food and a non-electric can opener.
- A change of clothing, rain gear and sturdy shoes.
- Blankets or sleeping bags.
- A first aid kit and prescription medications.
- An extra pair of glasses.
- A battery-powered radio, flashlight and plenty of extra batteries.
- Credit cards and cash.
- An extra set of car keys.
- A list of family physicians.
- A list of important family information; the style and serial number of medical devices such as pacemakers.
- Special items for infants, elderly or disabled family members.

# Emergency Plan

## Out-of-State Contact

Name \_\_\_\_\_

City \_\_\_\_\_

Telephone (Day) \_\_\_\_\_ (Evening) \_\_\_\_\_

## Local Contact

Name \_\_\_\_\_

Telephone (Day) \_\_\_\_\_ (Evening) \_\_\_\_\_

## Nearest Relative

Name \_\_\_\_\_

City \_\_\_\_\_

Telephone (Day) \_\_\_\_\_ (Evening) \_\_\_\_\_

## Family Work Numbers

Father \_\_\_\_\_ Mother \_\_\_\_\_

Other \_\_\_\_\_

## Emergency Telephone Numbers

In a life threatening emergency, dial 911 or the local emergency medical services system number

Police Department \_\_\_\_\_

Fire Department \_\_\_\_\_

Hospital \_\_\_\_\_

## Family Physicians

Name \_\_\_\_\_ Telephone \_\_\_\_\_

Name \_\_\_\_\_ Telephone \_\_\_\_\_

Name \_\_\_\_\_ Telephone \_\_\_\_\_

## Reunion Locations

1. Right outside your home \_\_\_\_\_

2. Away from the neighborhood, in case you cannot return home \_\_\_\_\_

Address \_\_\_\_\_

Telephone \_\_\_\_\_

Route to try first \_\_\_\_\_

\_\_\_\_\_

# Escape Plan



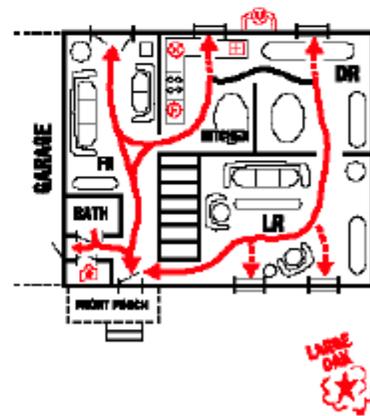
In a fire or other emergency, you may need to evacuate your house, apartment or mobile home on a moment's notice. You should be ready to get out fast.

Develop an escape plan by drawing a floor plan of your residence. Using a black or blue pen, show the location of doors, windows, stairways, and large furniture. Indicate the location of emergency supplies (Disaster Supplies Kit), fire extinguishers, smoke detectors, collapsible ladders, first aid kits and utility shut off points. Next, use a colored pen to draw a broken line charting at least two escape routes from each room. Finally, mark a place outside of the home where household members should meet in case of fire.

Be sure to include important points outside such as garages, patios, stairways, elevators, driveways and porches. If your home has more than two floors, use an additional sheet of paper. Practice emergency evacuation drills with all household members at least two times each year.

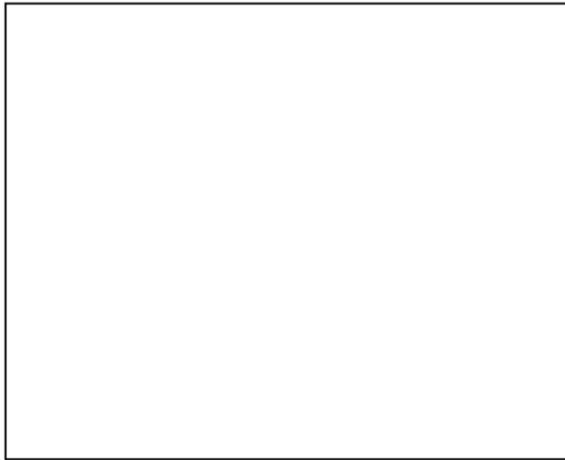
Example:

Floor one

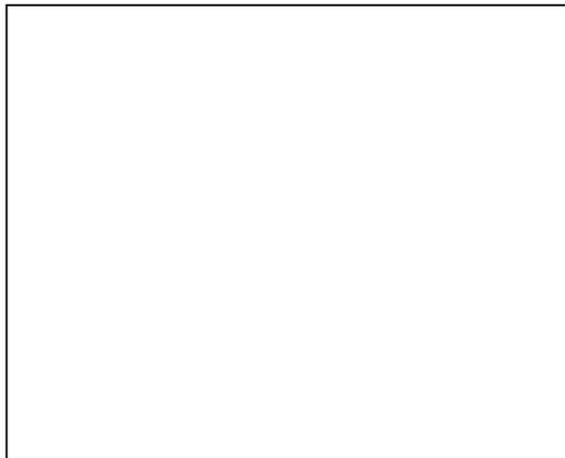


# Floor Plan

Floor One



Floor Two



Normal Exit Route



Emergency Exit Routes



Fire Extinguisher



Smoke Detectors



Disaster Supplies Kit



Doors



Collapsible Ladder



Reunion Location (Outside)



Stairways



Utility Shut Off



Windows



First Aid Kit

## Home Hazard Hunt

In a disaster, ordinary items in the home can cause injury and damage. Anything that can move, fall, break or cause a fire is a potential hazard.

- Repair defective electrical wiring and leaky gas connections.
- Fasten shelves securely and brace overhead light fixtures.
- Place large, heavy objects on lower shelves.
- Hang pictures and mirrors away from beds.
- Strap water heater to wall studs.
- Repair cracks in ceilings or foundations.
- Store weed killers, pesticides and flammable products away from heat sources.
- Place oily polishing rags or waste in covered metal cans.
- Clean and repair chimneys, flue pipes, vent connectors and gas vents.

## If You Need to Evacuate

- Listen to a battery powered radio for the location of emergency shelters. Follow instructions of local officials.

- Wear protective clothing and sturdy shoes.
- Take your Disaster Supplies Kit.
- Lock your house.
- Use travel routes specified by local officials.

If you are sure you have time ...

- Shut off water, gas and electricity, if instructed to do so.
- Let others know when you left and where you are going.
- Make arrangements for pets. Animals may not be allowed in public shelters.

## Prepare an Emergency Car Kit

Include:

- Battery powered radio, flashlight and extra batteries
- Blanket
- Booster cables
- Fire extinguisher (5 lb., A-B-C type)
- First aid kit and manual
- Bottled water and non-perishable high energy foods such as granola bars, raisins and peanut butter

- Maps, Shovel, Flares
- Tire repair kit and pump

## Fire Safety

- Plan two escape routes out of each room.
- Practice fire drills at least twice a year.
- Teach family members to stay low to the ground when escaping from a fire.
- Teach family members never to open doors that are hot. In a fire, feel the bottom of the door with the palm of your hand. If it is hot, do not open the door. Find another way out.
- Install smoke detectors on every level of your home. Clean and test them at least once a month. Change batteries at least once a year.
- Keep a whistle in each bedroom to awaken household in case of fire.
- Check electrical outlets. Do not overload outlets.
- Purchase and learn how to use a fire extinguisher (5 lb., A-B-C type).
- Have a collapsible ladder on each upper floor of your house.
- Consider installing home sprinklers.

The Federal Emergency Management Agency's Community and Family Preparedness Program and the American Red Cross Community Disaster Education Program are nationwide efforts to help people prepare for disasters of all types. For more information, please contact your local emergency management office and American Red Cross chapter. This brochure and other preparedness materials are available by calling FEMA at 1-800-480-2520, or writing: FEMA, P.O. Box 2012, Jessup, MD 20794-2012.

Publications are also available on the World Wide Web at:

FEMA's Web site: <http://www.fema.gov>

American Red Cross Web site: <http://www.redcross.org>

Your Local Contact is:

L-154  
ARC 4471  
Aug. 1993

HURRICANE • FIRE • HAZARDOUS MATERIALS SPILL

Federal Emergency Management Agency




# EMERGENCY PREPAREDNESS CHECKLIST



TORNADO • FLASH FLOOD • EARTHQUAKE • WINTER STORM

# Attachment C:

## SCDFS Emergency Contact Numbers

**\* Please Note:** For security and confidentiality reasons SCDFS Emergency Contact Numbers have been omitted on this attachment. However, the information will be on the form upon distribution to persons affected at the time of a disaster or emergency. It should also be noted that this information is on file with SC911 and SCOEM/HS.

### Front of SCDFS Emergency Contact Card



SULLIVAN COUNTY DEPARTMENT OF FAMILY SERVICES  
P.O. Box 231, 16 Community Lane, Liberty, New York 12754-0231

#### EMERGENCY CONTACT

(845) 292-0100      Extension \_\_\_\_\_

Caseworker \_\_\_\_\_

Office location \_\_\_\_\_

Email \_\_\_\_\_



### Back of SCDFS Emergency Contact Card



Sullivan County Government: [www.co.sullivan.ny.us](http://www.co.sullivan.ny.us)  
American Red Cross: [www.nyredcross.org](http://www.nyredcross.org)  
911 Emergency Control Center (845)583-7180

Emergency Medical Services (845) 434-9265  
SC Public Health Services (845)292-0100 x1  
Orange/Sullivan Red Cross (845)294-9785



#### Household Members Contact Information:

Family meeting place \_\_\_\_\_

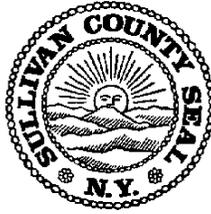
Out of area meeting place \_\_\_\_\_

Out of area contacts: \_\_\_\_\_

## ***Attachment D:***

# **Service Provider's Emergency Contact Numbers and Description of Continuity Business Plan Sheet**

**\*Please Note:** For security and confidentiality reasons Service Provider's Emergency Contact Numbers and Description of Continuity Business Plan Sheet detail has been omitted on this attachment. However, the information will be on the form upon distribution to persons affected at the time of a disaster or emergency. It should also be noted that this information is on file with SC911 and SCOEM/HS.



Sullivan County Department of Family Services  
**Contracted Service Provider Agencies**

***\*Important Note: Contact must be made with Sullivan County Department of Family Services (SCDFS) within twenty-four (24) hours of disaster / emergency; advising of location, condition and plan for children at site.***

**Name of Agency:** \_\_\_\_\_

**Address of Agency:** \_\_\_\_\_

**Telephone Numbers:** \_\_\_\_\_

**Contact Name:** \_\_\_\_\_

**Emergency Contact Information:**

<u>Name</u>	<u>Location</u>	<u>Telephone Number</u>
-------------	-----------------	-------------------------

Alternate Location(s): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Continuity of Service Plan: