

Hazard Analysis performed by NYS- Emergency Management Office
March 11th, 2004

Background

On March 11, 2004, the Town of Stillwater conducted a hazard analysis using the automated program, **HAZNY** (Hazards New York). **HAZNY** was developed by the American Red Cross and the New York State Emergency Management Office. The results of this hazard analysis are presented in this report.

HAZNY and the Town of Stillwater

HAZNY is an automated interactive spreadsheet that asks specific questions on potential hazards in a community and records and evaluates the responses to these questions. **HAZNY** also includes historical and expert data on selected hazards.

HAZNY is designed specifically for groups, rather than individual use. The Town of Stillwater assembled a group of local officials to consider and discuss the questions and issues raised by the **HAZNY** program. Representatives from the State Emergency Management Office facilitated the meeting and recorded the results.

The Results

The Group analyzed hazards potentially affecting the Town of Stillwater. **HAZNY** 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 16 hazards as follows:

<u>SEVERE STORM</u>	260
<u>TORNADO</u>	232
<u>TERRORISM</u>	220
<u>HAZMAT (IN TRANSIT)</u>	217
<u>FLOOD</u>	211
<u>TRANS ACCIDENT</u>	193
<u>ICE STORM</u>	186
<u>OIL SPILL</u>	186
<u>EARTHQUAKE</u>	181
<u>UTILITY FAILURE</u>	179
<u>WINTER STORM (SEVERE)</u>	179
<u>ICE JAM</u>	175
<u>WILDFIRE</u>	173
<u>DAM FAILURE</u>	130
<u>EXTREME TEMPERATURES</u>	124
<u>FUEL SHORTAGE</u>	122

Hazard(s) rated as Moderately High: Severe Storm

SEVERE STORM: 260, Moderately High Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Frequent Event

Onset: Several Hours Warning

Hazard Duration: Less Than One Day

Recovery Time: Three Days to One Week

Impact:

- Serious Injury or Death Unlikely
- Moderate Damage to Private Property
- Moderate Structural Damage to Public Facilities

The Group noted that the Highway Department has frequent activations in response to severe storms that occur in the Town.

Hazard(s) rated as Moderately Low: Tornado, Terrorism, Hazmat (In Transit), Flood, Trans Accident, Ice Storm, Oil Spill, Earthquake, Utility Failure, Winter Storm (Severe), Ice Jam, and Wildfire.

TORNADO: 232, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Likely

Frequency: A Rare Event

Onset: Several Hours Warning

Hazard Duration: Less Than One Day

Recovery Time: More Than Two Weeks

Impact:

- Serious Injury or Death to Large Numbers
- Severe Damage to Private Property
- Severe Structural Damage to Public Facilities

The Group recalled the May 1998 tornado in the Town. The Group noted that a tornado's

impact could max out the capabilities of the EMS system in the Town.

TERRORISM: 220, Moderately Low Hazard

Potential Impact: Several Locations

Cascade Effects: Some Potential

Frequency: A Rare Event

Onset: No Warning

Hazard Duration: Two to Three Days

Recovery Time: More Than Two Weeks

Impact:

- Serious Injury or Death to Extremely Large Numbers
- Moderate Damage to Private Property
- Moderate Structural Damage to Public Facilities

HAZMAT (IN TRANSIT): 217, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Rare Event

Onset: No Warning

Hazard Duration: Two to Three Days

Recovery Time: Three Days to One Week

Impact:

- Serious Injury or Death to Extremely Large Numbers
- Moderate Damage to Private Property
- Little or No Structural Damage to Public Facilities

FLOOD: 211, Moderately Low Hazard

Potential Impact: Throughout a Small Region

Cascade Effects: Some Potential

Frequency: A Regular Event

Onset: One Day Warning

Hazard Duration: Two to Three Days

Recovery Time: Three Days to One Week

Impact:

- Serious Injury or Death Unlikely
- Moderate Damage to Private Property
- Moderate Structural Damage to Public Facilities

The Group noted that flooding in the Town occurs along the Hudson River, along the

shore of Saratoga Lake, along Route 67, Route 4, Park Avenue, and Lake Road.

Washouts have occurred in the past along Brown Road and Stratton Lane.

TRANS ACCIDENT: 193, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Rare Event

Onset: No Warning

Hazard Duration: Less Than One Day

Recovery Time: Three Days to One Week

Impact:

- Serious Injury or Death to Extremely Large Numbers
- Little or No Damage to Private Property
- Little or No Structural Damage to Public Facilities

ICE STORM: 186, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Likely

Frequency: An Infrequent Event

Onset: One Day Warning

Hazard Duration: One Day

Recovery Time: Three Days to One Week

Impact:

- Serious Injury or Death Unlikely
- Moderate Damage to Private Property
- Moderate Structural Damage to Public Facilities

OIL SPILL: 186, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: An Infrequent Event

Onset: No Warning

Hazard Duration: Less Than One Day

Recovery Time: One to Two Days

Impact:

- Serious Injury or Death Unlikely
- Little or No Damage to Private Property
- Little or No Structural Damage to Public Facilities

EARTHQUAKE: 181, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Rare Event

Onset: No Warning

Hazard Duration: Less Than One Day

Recovery Time: Three Days to One Week

Impact:

- Serious Injury or Death is Likely, but not in Large Numbers
- Moderate Damage to Private Property
- Moderate Structural Damage to Public Facilities

UTILITY FAILURE: 179, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Unlikely

Frequency: An Infrequent Event

Onset: No Warning

Hazard Duration: One Day

Recovery Time: Less Than One Day

Impact:

- Serious Injury or Death Unlikely
- Little or No Damage to Private Property
- Little or No Structural Damage to Public Facilities

WINTER STORM (SEVERE): 179, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Regular Event

Onset: Several Days Warning

Hazard Duration: One Day

Recovery Time: One to Two Days

Impact:

- Serious Injury or Death Unlikely
- Little or No Damage to Private Property
- Little or No Structural Damage to Public Facilities

ICE JAM: 175, Moderately Low Hazard

Potential Impact: Several Locations

Cascade Effects: Highly Likely

Frequency: An Infrequent Event

Onset: One Day Warning

Hazard Duration: Two to Three Days

Recovery Time: Three Days to One Week

Impact:

- Serious Injury or Death Unlikely
- Moderate Damage to Private Property
- Moderate Structural Damage to Public Facilities

WILDFIRE: 173, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Rare Event

Onset: Several Hours Warning

Hazard Duration: Less Than One Day

Recovery Time: Less Than One Day

Impact:

- Serious Injury or Death Unlikely
- Severe Damage to Private Property
- Severe Structural Damage to Public Facilities

Hazard(s) rated as Low: Dam Failure, Extreme Temperatures, Fuel Shortage

DAM FAILURE: 130, Low Hazard

Potential Impact: Several Locations

Cascade Effects: Some Potential

Frequency: A Rare Event

Onset: No Warning

Hazard Duration: Less Than One Day

Recovery Time: One to Two Days

Impact:

- Serious Injury or Death Unlikely
- Little or No Damage to Private Property
- Little or No Structural Damage to Public Facilities

The Group noted that the nearby dams could impact the Town in the event of a failure are

low-head dams. The Group felt that there would be adequate warning time for the Town in the event of a dam failure farther upstream along the Hudson River drainage basin.

EXTREME TEMPERATURES: 124, Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Unlikely

Frequency: A Rare Event

Onset: Several Days Warning

Hazard Duration: More Than One Week

Recovery Time: Less Than One Day

Impact:

- Serious Injury or Death is Likely, but not in Large Numbers
- Little or No Damage to Private Property
- Little or No Structural Damage to Public Facilities

FUEL SHORTAGE: 122, Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Rare Event

Onset: Several Days Warning

Hazard Duration: More Than One Week

Recovery Time: Less Than One Day

Impact:

- Serious Injury or Death Unlikely
- Little or No Damage to Private Property
- Little or No Structural Damage to Public Facilities

RECOMMENDATIONS

Based on the results of this analysis, the State Emergency Management Office recommends that the Town of Stillwater investigate mitigation measures for Severe Storm, the highest ranked hazard, and the only Moderately High hazard, identified by this analysis.

TERRORISM

HAZMAT (IN TRANSIT)

TRANS ACCIDENT

OIL SPILL

EARTHQUAKE

UTILITY FAILURE

DAM FAILURE

*No warning was selected from the Onset Tab.

SEVERE STORM

*A frequent event was selected on frequency Tab.

TORNADO

TERRORISM

HAZMAT (IN TRANSIT)

TRANS ACCIDENT

*Serious injury and death in large or extremely large numbers was selected from the Impact Tab.

Possible Mitigation Measures by Hazard

Possible mitigation measures for selected hazards identified throughout New York State. This list is not exhaustive, but is intended as a guide in the consideration of measures to mitigate the associated hazards.

Natural Hazards

Hazard: Drought

- Public Awareness
- Retrofit/Upgrade Irrigation System
- Drought Resistant Vegetation
- Drought Preparedness/Planning
- Increase Water Conservation Standards

Hazard: Earthquake

- Planning and Zoning
- Retrofit/Upgrade Critical Facilities
- Seismic Retrofit
- Improve/Upgrade/Enforce Building Codes

Hazard: Epidemic/Blight/Infestation

- Public Awareness
- Preventative Actions (Spraying for West Nile Virus/Insect Management)
- Medical Stockpile (Planning and Training)

Hazard: Flood/Ice Jams

- Planning and Zoning
- Storm water Management
- Warning System
- Post Disaster Code Enforcement
- Major/Minor Structural Flood Control Projects
- Protective Measures for Critical Facilities
- Property Protection
- Protective Measures for Critical Facilities
- Wet/Dry Floodproofing

Hazard: Hurricane/Severe Storm/Tornado

- Public Awareness
- Evacuation Plan
- Warning System
- Develop/Improve/Enforce Building Codes in Hazard Areas
- Structural Retrofit

-Wind Resistant Design and Construction

Hazard: Ice Storm

- Structural Retrofit
- Redundant Utilities/Communications
- Tree Pruning
- Selective Planting around Utility Lines
- Public Awareness
- Develop/Improve/Enforce Building Codes in Hazard Areas
- Underground Wiring/Utilities

Hazard: Landslide

- Planning and Zoning
- Open Space Preservation
- Relocation of Structures
- Acquisition of Structures (Demolish and Convert to Open Space)

Hazard: Wildfire

- Public Awareness
- Evacuation Plan
- Warning System
- Redundant Utilities/Communications
- Tree Pruning
- Selective Planting/Vegetative Setback around Structures

Hazard: Winter Storm(Severe)

- Public Awareness
- Redundant Utilities/Communications
- Tree Pruning
- Warning System
- Develop/Improve/Enforce Building Codes in Hazard Areas
- Retrofit Critical Structures
- Hazard Resistant Construction

Technological Hazards

Hazard: Air Contamination

- Improve/Upgrade/Enforce Codes for Air Quality Standards
- Retrofit Existing Ventilation Systems
- Incorporate Air Contamination Standards in New Construction

Hazard: Dam Failure

- Warning System
- Public Awareness
- Evacuation Plan
- Inspections
- Dam Maintenance and Upgrades to Increased Safety Standards

*Hazard: **Explosion***

- Monitor/Retrofit/Upgrade Critical Facilities
- Blast Resistant Construction
- Emergency Evacuation Plan

*Hazard: **Fire (Structural)***

- Develop Codes for Fire Resistant Construction in New Construction
- Enforce/Improve/Upgrade/Enforce Fire Codes
- Public Awareness
- Retrofit Existing Structures

*Hazard: **Hazardous Materials Fixed Sites/Radiological Fixed Sites***

- Public Awareness
- Evacuation Plan
- Warning System
- Retrofit Key Storage and Operational Facilities
- Preparedness and Response Planning
- Isolation of Hazardous Materials

*Hazard: **Hazardous Materials in Transit/Radiological in Transit/Transportation***

Accident

- Public Awareness
- Emergency Service Measures (Preparedness and Response Planning)

*Hazard: **Structural Collapse***

- Retrofit/Upgrade Facilities
- Improve/Upgrade/Enforce Codes and Regulations
- Preparedness and Response (Evacuation Plan)

*Hazard: **Utility Failure***

- Public Awareness
- Structural Retrofit
- Redundant Utilities to Support Critical Facilities
- Redundant Communications

*Hazard: **Water Supply Contamination***

- Public Awareness
- Warning System
- Structural Retrofit
- Implement Procedures for Testing/Sampling of Water Supply
- Land Use Planning and Zoning

Human Caused Hazards

*Hazard: **Civil Unrest***

- Blast Resistant Construction

- Retrofit/Upgrade Lighting
- CCTV
- Crowd Control Planning
- Crowd Control Training (Multi Community/Agency Coordination)

Hazard: **Terrorism**

- Public Awareness
- Evacuation Plan
- Retrofit/Upgrade Critical Facilities
- Blast Resistant Windows
- Access Controls
- Retrofit/Upgrade Ventilation System
- Egress Improvements
- Improved Lighting
- CCTV
- Redundant Communications/Information Technology
- Redundant Utilities to Support Critical Facilities