

APPENDIX 1

TOWN OF BETHLEHEM

ALBANY COUNTY

New York State

Hazard Analysis Report



**Prepared by:
Albany County Critical Incident - Emergency Management Unit
March 2003**

**Capability Assessment and Planning Meeting
November 2005**

Background

On March 5, 2003, the Town of Bethlehem, in conjunction with the Albany County Critical Incident – Emergency Management Office, 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 Bethlehem

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 assembled a group of 50 officials from town government and support agencies from within the Town, County and State to consider and discuss the questions and issues raised by the *HAZNY* program. Attendees included representatives from:

Town of Bethlehem: Town Board, Police Department, Emergency Management Office, Engineering Department, Comptrollers Office, Highway Department, Parks & Recreation Department, Town Clerks Office, Water Department, Sewer Department, Building Department, Public Works Department, Slingerlands Fire Department, Selkirk Fire Department, Elsmere Fire Department, New York State: Office of Fire Prevention and Control, State Police, Environmental Conservation, State Emergency Management Office, Albany County: Highway Department, Emergency Management Office, Sheriff's Department Critical Incident Emergency Management, Fire Coordinator's Office, and the American Red Cross, National Weather Service, Cornell Cooperative Extension, Representatives from the Albany County Critical Incident – Emergency Management Office with the assistance of the State Emergency Management Office facilitated the meeting and recorded the results.

Disaster Mitigation Act of 2000

Requires all local governments to have an approved All-Hazard Mitigation Plan in place by November 1, 2004 to be eligible to receive disaster funding through the Hazard Mitigation Grant Program. The analysis of potential hazards is part of the planning process.

Capability Assessment and Planning Meeting

Based on the findings of the *HAZNY* Review and the information gained from the session, the above group reassembled in November of 2005 to review the information and data and to test and assess the ability to respond to the hazards as listed in this document.

The Results

The Group analyzed 23 hazards potentially affecting Bethlehem. *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 23 hazards as follows:

Terrorism	400.0
Hazardous Materials in Transit	339.7
Hazardous Material at Fixed Sites	326.3
Oil Spill	323.8
Land Slide	314.8
Transportation Accident	303.7
Ice Storm	293.8
Fire	288.2
Winter Storm	262.8
Utility Failure	258.2
Structural Collapse	250.2
Tornado	233.3
Radiological in Transit	231.0
Air Contamination	219.5
Severe Storm	219.2
Civil Unrest	194.5
Flood	190.5
Earth Quake	187.5
Epidemic	181.5
Water Supply Contamination	178.5
Extreme Temperatures	160.2
Explosion	159.2
Drought	152.2

High Hazards

The analysis yielded four high hazards. These are: **Terrorism, Hazardous Materials in Transit, Hazardous Materials at a Fixed Site, and Oil Spill.**

Moderately High Hazards

Six hazards were determined to be Moderately High Hazards. These are **Landslide, Transportation Accident, Ice Storm, Fire, Winter Storm (Severe), Utility Failure, And Structural Collapse.**

Moderately Low Hazards

Ten hazards were determined by the Group to be Moderately Low Hazards. These are **Tornado, Radiological in Transit, Air Contamination, Severe Storm, Civil Unrest, Flood, Earth Quake, Epidemic, Water Supply Contamination and Extreme Temperatures.**

Low Hazards

The analysis produced two Low Hazards. These are **Explosion and Drought.**

Based upon this analysis, the County Emergency Management Office recommends that the Town of Bethlehem investigate mitigation, preparedness and response measures for **Terrorism**, the highest rated hazard. Next, **Hazardous Material**, both fixed site and in-transit, and **oil spills** the next three highest rated hazards. In addition, mitigation measures should also be considered for all of the remaining Moderately High Hazards, including but not limited to, **Landslide, Transportation Accident, Ice Storm, Fire, Winter Storm, Utility Failure and Structural Collapse.**

TERRORISM: 400.0, High Hazard

Potential Impact: Large Region

Cascade Effects: Highly Unlikely

Frequency: Frequent Event

Onset: No Warning

Hazard Duration: More Than One Week

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 noted numerous potential target areas for a terrorist attack, fuel and chemical storage, pipeline, transportation routes and bridges. They considered the regular bomb threats at the local schools as terrorist related events based on the motive of the offenders. Currently the country is at war with Iraq and at a “high threat”, Homeland Security level orange.

HAZARDOUS MATERIAL IN TRANSIT: 339.7, High Hazard

Potential Impact: Large Region

Cascade Effects: Yes, highly likely

Frequency: Frequent Event

Onset: No Warning

Hazard Duration: Two to Three Days

Recovery Time: One to Two Days

Impact:

- Serious injury or death to extremely large numbers.
- Moderate damage to private property.
- Moderate structural damage to public facilities.

The Group noted that the Thruway and the local Interstates, along with several major local arterial roads are major hazardous materials transportation corridors through the town. In addition to highway traffic, the Town is the home for a major rail switching and marshalling yard and is crossed by a major gas pipeline. The group also noted aviation fuel and several listed extremely hazardous substances are regularly transported through the town. The Town has an annual average of at least one tractor-trailer accident where a hazardous material is released.

HAZARDOUS MATERIALS AT FIXED SITES: 326.8, High Hazard

Potential Impact: Small Region

Cascade Effects: Highly Likely

Frequency: Frequent Event

Onset: No Warning

Hazard Duration: Two to Three Days

Recovery Time: One to Two Days

Impact:

- Serious injury or death to extremely large numbers.
- Moderate damage to private property.
- Moderate structural damage to public facilities.

The Group noted the use of large quantities of chemicals at industry within the Town, specifically, GE Plastics and Owens Corning. The CSX rail yard regularly has tank cars with large amounts of hazardous materials on their property that are moved and switched within the yards. The river corridor has numerous fixed hazardous material sites and Selkirk is the home of a major gas terminal.

OIL SPILL: 323.8, High Hazard

Potential Impact: Small Region

Cascade Effects: Some Potential

Frequency: Frequent Event

Onset: No Warning

Hazard Duration: Two to Three Days

Recovery Time: One to Two Days

Impact:

- Serious injury or death is likely, but not in large numbers.
- Severe damage to private property.
- Severe structural damage to public facilities.

The group identified several fuel storage facilities along the Hudson River, which would have a major environmental impact.

LANDSLIDE: 314.8, Moderately High Hazard

Potential Impact: Small Region

Cascade Effects: Some Potential

Frequency: Regular Event

Onset: No Warning

Hazard Duration: More than One Week

Recovery Time: More than Two Weeks

Impact:

- Serious injury or death is likely, but not in large numbers.
- Severe damage to private property.
- Severe structural damage to public facilities.

The Town of Bethlehem suffered a dramatic landslide in the spring of 2000 along the banks of the Normanskill Creek. This caused the collapse of a retail business and closed a main thoroughfare through town. In

addition, the City of Albany's water supply was threatened. Repair and mitigation took close to a year to complete. The Normanskill creek meanders through the north region of the town and the banks are considered potentially unstable.

TRANSPORTATION ACCIDENT: 303.7, Moderately High Hazard

Potential Impact: Large Region

Cascade Effects: Highly likely

Frequency: Regular Event

Onset: No Warning

Hazard Duration: Less than One Day

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.

The Group noted the Town is in the southern flight path of the Albany County International Airport. The NYS Thruway bisects the town. The CSX rail yard services an abundant rail traffic, which significantly increases the frequency potential. The Town is also the location for a number of truck transporters, which deal in hazardous materials, and also has two major central schools districts that transport students each day.

ICE STORM: 293.8, Moderately High Hazard

Potential Impact: Large Region

Cascade Effects: Highly Likely

Frequency: Regular Event

Onset: One Day Warning

Hazard Duration: Four Days to One Week

Recovery Time: More Than Two Weeks

Impact:

- Serious injury or death is likely, but not in large numbers.
- Severe damage to private property.
- Severe structural damage to public facilities.

Ice storms with tree and utility damage are a regular event in the town.

FIRE: 288.2, Moderately High Hazard

Potential Impact: Several individual locations Cascade Effects: Highly Likely
Frequency: Frequent Event Onset: No Warning
Hazard Duration: Four Days to One Week Recovery Time: One to Two Days

Impact:

- Serious injury or death is likely but not in large numbers
- Moderate damage to private property.
- Little or no structural damage to public facilities.

WINTER STORM (SEVERE): 262.8, Moderately High Hazard

Potential Impact: Large Region Cascade Effects: Some Potential
Frequency: Frequent Event Onset: Up to One Day Warning
Hazard Duration: One Day Recovery Time: Two to Three Days

Impact:

- Serious injury or death is likely, but not in large numbers.
- Moderate damage to private property.
- Moderate structural damage to public facilities.

The group noted that storms of this nature are routine in this part of the State.

UTILITY FAILURE: 258.2, Moderately High Hazard

Potential Impact: Small Region Cascade Effects: Some Potential
Frequency: Regular Event Onset: No Warning
Hazard Duration: More than One Week Recovery Time: One to Two Days

Impact:

- Serious injury or death is likely but not in large numbers
- Moderate damage to private property.
- Little or no structural damage to public facilities.

The group noted that utility failure, while usually an integral part of ice and winter storms, as noted above, could also occur during other seasonal times as a result of insufficient capacity.

STRUCTURAL COLLAPSE: 250.2, Moderately High Hazard

Potential Impact: Several Individual Locations Cascade Effects: Highly likely
Frequency: Regular Event Onset: No Warning
Hazard Duration: Less Than One Day Recovery Time: Three Days to One Week

Impact:

- Serious injury or death to large numbers.
- Moderate damage to private property.
- Moderate structural damage to public facilities.

CIVIL UNREST: 245.5, Moderately High Hazard

Potential Impact: Several Individual Location Cascade Effects: Some Potential
Frequency: Regular Event Onset: No Warning
Hazard Duration: One Day Recovery Time: More than Two Weeks

Impact:

- Serious injury or death is likely but not in large numbers.
- Moderate damage to private property.
- Little or no structural damage to public facilities.

The group noted a student “walk out” which occurred this day.

TORNADO: 233.3, Moderately Low Hazard

Potential Impact: Small Region Cascade Effects: Highly Likely
Frequency: Infrequent Event Onset: No Warning
Hazard Duration: Less Than One Day Recovery Time: More Than Two Weeks

Impact:

- Serious injury or death is likely in extremely large numbers.
- Moderate damage to private property.
- Moderate structural damage to public facilities.

The group could not recall ever experiencing a tornado in the town, but they discussed how tornados have struck surrounding communities. They expected the damage to be severe in a very specific area of the town.

RADIOLOGICAL IN TRANSIT: 136.5, Low Hazard

Potential Impact: Large Region
Frequency: Rare Event
Hazard Duration: More than One Week

Cascade Effects: Some Potential
Onset: No Warning
Recovery Time: Three Days to One Week

Impact:

- Serious injury or death to extremely large numbers.
- Moderate damage to private property.
- Moderate structural damage to public facilities.

The group felt that this would most likely be a part of a transportation incident and should be reviewed with HazMat in transit.

AIR CONTAMINATION: 219.5, Moderately Low Hazard

Potential Impact: Large Region
Frequency: Frequent Event
Hazard Duration: Two to Three Days

Cascade Effects: Some Potential
Onset: Several day warning
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.

The group considered the yearly ozone warnings, which occur every summer.

SEVERE STORMS: 219.0, Moderately Low Hazard

Potential Impact: Small Region
Frequency: Regular Event
Hazard Duration: Less Than One Day

Cascade Effects: Some Potential
Onset: Several hour warning
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.

The group discussed past severe summer storms and the impact of a recent “Downburst” storm, which occurred in the neighboring Town of Guilderland. While these may be a concern, it is felt that mitigation and

preparedness for winter and ice storms, reviewed previously, should prepare the Town for this type of incident.

FLOOD: 190.5, Moderately Low Hazard

Potential Impact: Several Locations

Cascade Effects: Some Potential

Frequency: Regular Event

Onset: Several days warning

Hazard Duration: Two to Three Days

Recovery Time: One to Two Days

Impact:

- Serious injury or death is unlikely.
- Moderate damage to private property.
- Moderate structural damage to public facilities.

EARTHQUAKE: 187.5, Moderately Low Hazard

Potential Impact: Large Region

Cascade Effects: Highly Likely

Frequency: 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.

The group referred to State tables regarding the Towns soil type, location and history to compile this response.

EPIDEMIC: 181.5, Moderately Low Hazard

Potential Impact: Large Region
Frequency: Regular Event
Hazard Duration: More than One Week

Cascade Effects: Highly Unlikely
Onset: 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.

WATER SUPPLY CONTAMINATION: 178.5, Moderately Low Hazard

Potential Impact: Large Region
Frequency: Rare Event
Hazard Duration: One Day

Cascade Effects: Some Potential
Onset: No Warning
Recovery Time: One to Two Days

Impact:

- Serious injury or death is likely but not in large numbers.
- Little or no damage to private property.
- Moderate structural damage to public facilities.

EXTREME TEMPURATURE: 160.2, Moderately Low Hazard

Potential Impact: Large region
Frequency: Infrequent Event
Hazard Duration: Four Days to One Week

Cascade Effects: Some Potential
Onset: Several Days warning
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.

EXPLOSION: 159.2, Low Hazard

Potential Impact: Several individual locations Cascade Effects: Highly Likely
Frequency: Rare Event Onset: No Warning
Hazard Duration: Less Than One Day Recovery Time: One to Two Days

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.

The group noted the presence of bulk fuel storage sites, numerous rail tank cars, and the presence of natural and propane gas pipelines in the Town. Could be linked in mitigation and preparedness efforts with HazMat fixed site and in-transit reviews.

DROUGHT: 152.2, Low Hazard

Potential Impact: Large Region Cascade Effects: Some Potential
Frequency: Infrequent Event Onset: More than one week
Hazard Duration: More than One Week Recovery Time: Less than One Day

Impact:

- Serious injury or death is unlikely.
- Moderate damage to private property.
- Little or no structural damage to public facilities.

The Group felt that while the Town has had summer water shortages nothing closely resembling drought conditions should be anticipated.