

APPENDICES

Attachments and Supporting Documents

Appendix 1. HAZNY Analysis

Village of Mamaroneck Hazards Ratings

HAZNY Analysis

Background Summary

On June 27 and July 22, 2011, the Village of Mamaroneck 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 summary report.

***HAZNY* Process**

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. Village of Mamaroneck assembled a group of local officials, (Hazard Mitigation Planning Committee) to consider and discuss the questions and issues raised by the *HAZNY* program. Representative consultants from the Environmental Technology Group (ETG) facilitated the meeting and recorded the results.

The *HAZNY* Score Results

The Committee evaluated 38 hazards that potentially affect the Village of Mamaroneck. The *HAZNY* program rated each hazard based on the Committee's assessment and assigned a numerical rating score.

These rating values are categorized by *HAZNY* criteria as follows:

321 to 400 HIGH HAZARD

241 to 320 MODERATELY HIGH HAZARD

161 to 240 MODERATELY LOW HAZARD

44 to 160 LOW HAZARD

Based on the Hazards Mitigation Planning Committee evaluation, *HAZNY* rated 38 possible hazard events as follows:

| Hazard | Rating |
|-----------------------------------|---------------|
| FLOOD | 302 |
| COASTAL STORM | 253 |
| SEVERE STORM & THUNDER | 246 |
| FIRE | 240 |
| TRANS ACCIDENT HIGHWAY | 230 |
| WINDSTORM | 230 |
| WINTER STORM (SEVERE) | 230 |
| DAM FAILURE | 224 |
| UTILITY FAILURE | 221 |
| TERRORISM | 219 |
| ICE STORM | 217 |
| STORM SURGE / WAVE ACTION | 216 |
| HURRICANE | 212 |
| HAZMAT (IN TRANSIT) | 210 |
| EARTHQUAKE | 202 |
| OIL SPILL | 201 |
| LANDSLIDE | 199 |
| EXTREME TEMPS | 196 |
| TRANS ACCIDENT RAIL | 194 |
| EXPLOSION | 192 |
| WATER SUPPLY CONTAMINATION | 182 |
| HAZMAT (FIXED SITE) | 168 |
| STRUCTURAL COLLAPSE | 164 |
| EPIDEMIC | 160 |
| HAIL STORM | 159 |
| TORNADO | 155 |

| | |
|----------------------------------|-----|
| FUEL SHORTAGE | 142 |
| RADIOLOGICAL (FIXED SITE) | 140 |
| INFESTATION | 136 |
| RADIOLOGICAL (IN TRANSIT) | 134 |
| AIR CONTAMINATION | 132 |
| BLIGHT | 128 |
| ICE JAM | 123 |
| FOOD SHORTAGE | 119 |
| FUEL OIL SPILL | 113 |
| DROUGHT | 101 |
| CIVIL UNREST | 96 |
| WILDFIRE | 94 |

HAZARDS THAT OCCUR WITH NO WARNING*

FIRE

TRANSPORTATION ACCIDENT HIGHWAY

UTILITY FAILURE

TERRORISM

HAZMAT (IN TRANSIT)

EARTHQUAKE

OIL SPILL

LANDSLIDE

EXPLOSION

HAZMAT (FIXED SITE)

STRUCTURAL COLLAPSE

RADIOLOGICAL (IN TRANSIT)

AIR CONTAMINATION

FUEL OIL SPILL

* No warning was selected from the Onset Tab.

HAZARDS THAT OCCUR MOST OFTEN*

COASTAL STORM

SEVERE STORM & THUNDER

FIRE

TRANSPORTATION ACCIDENT HIGHWAY

WINTER STORM (SEVERE)

*A frequent event was selected on frequency Tab.

HAZARDS THAT PRESENT THE GREATEST THREAT TO LIFE*

DAM FAILURE

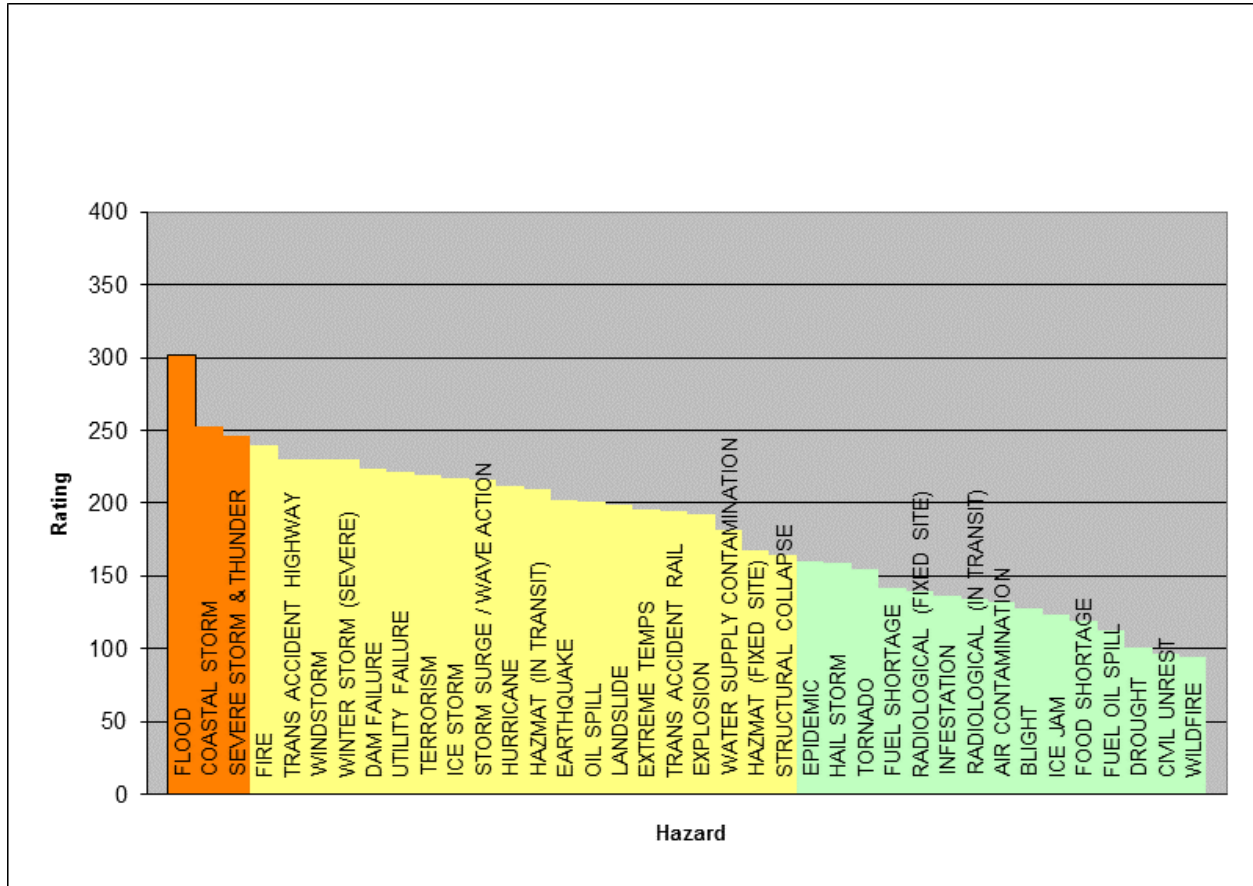
TERRORISM

WATER SUPPLY CONTAMINATION

EPIDEMIC

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

Figure 1. Chart of Mamaroneck Potential Hazards vs. Ratings



HAZNY Scoring details

No hazards were rated as high (Score range between 321 – 400)

Hazards rated as moderately high (241-320): FLOOD, COASTAL STORM, and SEVERE STORM & THUNDER

FLOOD: 302, Moderately High Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Likely

Frequency: A Regular Event

Onset: Several Hours Warning

Hazard Duration: Two to Three Days

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

COASTAL STORM: 253, Moderately High Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Likely

Frequency: A Frequent Event

Onset: Several Days 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

SEVERE STORM & THUNDER: 246, Moderately High Hazard

Potential Impact: Throughout a Small 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

Hazard(s) rated as moderately low (161-240): FIRE, TRANS ACCIDENT HIGHWAY, WINDSTORM, WINTER STORM (SEVERE), DAM FAILURE, UTILITY FAILURE, TERRORISM, ICE STORM, STORM SURGE / WAVE ACTION, HURRICANE, HAZMAT (IN TRANSIT), EARTHQUAKE, OIL SPILL, LANDSLIDE, EXTREME TEMPS, TRANS ACCIDENT RAIL, EXPLOSION, WATER SUPPLY CONTAMINATION, HAZMAT (FIXED SITE), STRUCTURAL COLLAPSE

FIRE: 240, Moderately Low Hazard

Potential Impact: Single Location

Cascade Effects: Highly Unlikely

Frequency: A Frequent Event

Onset: No Warning

Hazard Duration: Less Than One Day

Recovery Time: Less Than One Day

Impact:

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

TRANS ACCIDENT HIGHWAY: 230, Moderately Low Hazard

Potential Impact: Single Location

Cascade Effects: Some Potential

Frequency: A Frequent Event

Onset: No Warning

Hazard Duration: Less Than One Day

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

WINDSTORM: 230, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Regular Event

Onset: Several Hours Warning

Hazard Duration: Less Than One Day

Recovery Time: One to Two Weeks

Impact:

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

WINTER STORM (SEVERE): 230, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Frequent Event

Onset: Several Days Warning

Hazard Duration: Two to Three Days

Recovery Time: Three Days to One Week

Impact:

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

DAM FAILURE: 224, Moderately Low Hazard

Potential Impact: Throughout a Small Region

Cascade Effects: Highly Likely

Frequency: A Rare Event

Onset: Several Hours Warning

Hazard Duration: 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

UTILITY FAILURE: 221, Moderately Low Hazard

Potential Impact: Throughout a Small Region

Cascade Effects: Highly Likely

Frequency: A Regular Event

Onset: No 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

TERRORISM: 219, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Likely

Frequency: A Rare Event

Onset: No Warning

Hazard Duration: Less Than One Day

Recovery Time: More Than Two Weeks

Impact:

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

ICE STORM: 217, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Likely

Frequency: A Regular Event

Onset: Several Days Warning

Hazard Duration: Two to Three Days

Recovery Time: Three Days to One Week

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

STORM SURGE / WAVE ACTION: 216, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Regular Event

Onset: Several Days Warning

Hazard Duration: Two to Three Days

Recovery Time: One to Two Weeks

Impact:

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

HURRICANE: 212, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Likely

Frequency: An Infrequent Event

Onset: Several Days Warning

Hazard Duration: One Day

Recovery Time: More Than Two Weeks

Impact:

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

HAZMAT (IN TRANSIT): 210, Moderately Low Hazard

Potential Impact: Throughout a Small Region

Cascade Effects: Some Potential

Frequency: An Infrequent Event

Onset: No Warning

Hazard Duration: Less Than One Day

Recovery Time: More Than Two Weeks

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

EARTHQUAKE: 202, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Likely

Frequency: A Rare Event

Onset: No Warning

Hazard Duration: Less Than 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
- Moderate Structural Damage to Public Facilities

OIL SPILL: 201, Moderately Low Hazard

Potential Impact: Several Locations

Cascade Effects: Highly Unlikely

Frequency: A Regular Event

Onset: No Warning

Hazard Duration: Less Than One Day

Recovery Time: Three Days to One Week

Impact:

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

LANDSLIDE: 199, Moderately Low Hazard

Potential Impact: Single Location

Cascade Effects: Some Potential

Frequency: A Rare Event

Onset: No Warning

Hazard Duration: Less Than One Day

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

EXTREME TEMPS: 196, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Regular Event

Onset: Several Days Warning

Hazard Duration: Four days to 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

TRANS ACCIDENT RAIL: 194, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Likely

Frequency: A Rare Event

Onset: No Warning

Hazard Duration: Less Than One Day

Recovery Time: More Than Two Weeks

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

EXPLOSION: 192, Moderately Low Hazard

Potential Impact: Single Location

Cascade Effects: Highly Unlikely

Frequency: A Rare Event

Onset: No Warning

Hazard Duration: Less Than One Day

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

WATER SUPPLY CONTAMINATION: 182, Moderately Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Likely

Frequency: A Rare Event

Onset: Several Hours Warning

Hazard Duration: Two to Three Days

Recovery Time: Three Days to One Week

Impact:

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

HAZMAT (FIXED SITE): 168, Moderately Low Hazard

Potential Impact: Several Locations

Cascade Effects: Some Potential

Frequency: An Infrequent Event

Onset: No Warning

Hazard Duration: Less Than One Day

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

STRUCTURAL COLLAPSE: 164, Moderately Low Hazard

Potential Impact: Single Location

Cascade Effects: Some Potential

Frequency: A Rare 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
- Little or No Damage to Private Property
- Moderate Structural Damage to Public Facilities

Hazard(s) rated as low (44-160): EPIDEMIC, HAIL STORM, TORNADO, FUEL SHORTAGE, RADIOLOGICAL (FIXED SITE), INFESTATION, RADIOLOGICAL (IN TRANSIT), AIR CONTAMINATION, BLIGHT, ICE JAM, FOOD SHORTAGE, FUEL OIL SPILL, DROUGHT, CIVIL UNREST, WILDFIRE

EPIDEMIC: 160, Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: A Rare Event

Onset: More Than One Week Warning

Hazard Duration: More Than One Week

Recovery Time: More Than Two Weeks

Impact:

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

HAIL STORM: 159, Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Some Potential

Frequency: An Infrequent Event

Onset: Several Hours Warning

Hazard Duration: Less Than 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

TORNADO: 155, Low Hazard

Potential Impact: Throughout a Small Region

Cascade Effects: Highly Unlikely

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

FUEL SHORTAGE: 142, Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Likely

Frequency: A Rare Event

Onset: More Than One Week Warning

Hazard Duration: More Than One Week

Recovery Time: More Than Two Weeks

Impact:

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

RADIOLOGICAL (FIXED SITE): 140, Low Hazard

Potential Impact: Single Location

Cascade Effects: Highly Unlikely

Frequency: A Rare Event

Onset: Several Hours Warning

Hazard Duration: More Than One Week

Recovery Time: More Than Two Weeks

Impact:

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

INFESTATION: 136, Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Unlikely

Frequency: A Rare Event

Onset: More Than One Week 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
- Little or No Damage to Private Property
- Little or No Structural Damage to Public Facilities

RADIOLOGICAL (IN TRANSIT): 134, Low Hazard

Potential Impact: Single Location

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
- Little or No Damage to Private Property
- Little or No Structural Damage to Public Facilities

AIR CONTAMINATION: 132, 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: 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

BLIGHT: 128, Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Unlikely

Frequency: A Rare Event

Onset: More Than One Week Warning

Hazard Duration: More Than One Week

Recovery Time: More Than Two Weeks

Impact:

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

ICE JAM: 123, Low Hazard

Potential Impact: Several Locations

Cascade Effects: Highly Unlikely

Frequency: An Infrequent Event

Onset: More Than One Week Warning

Hazard Duration: Four days to One Week

Recovery Time: Three Days to One Week

Impact:

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

FOOD SHORTAGE: 119, Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Unlikely

Frequency: A Rare Event

Onset: More Than One Week Warning

Hazard Duration: More Than One Week

Recovery Time: One to Two Weeks

Impact:

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

FUEL OIL SPILL: 113, Low Hazard

Potential Impact: Single Location

Cascade Effects: Highly Unlikely

Frequency: A Rare 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

DROUGHT: 101, Low Hazard

Potential Impact: Throughout a Large Region

Cascade Effects: Highly Unlikely

Frequency: A Rare Event

Onset: More Than One Week 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

CIVIL UNREST: 96, Low Hazard

Potential Impact: Several Locations

Cascade Effects: Highly Unlikely

Frequency: A Rare Event

Onset: One Day 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

WILDFIRE: 94, Low Hazard

Potential Impact: Several Locations

Cascade Effects: Highly Unlikely

Frequency: A Rare Event

Onset: One Day 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

Hazard Analysis Matrix - Village of Mamaroneck

[illegible]