Appendix B
HAZNY Evaluation Factors

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Factor 1: SCOPE Ground Rules

This factor looks at two aspects of scope: (1) What area or areas in your jurisdiction could be impacted by the hazard and (2) What are the chances of the hazard triggering another hazard causing a cascade effect?

Where could this hazard occur? Indicate where in your jurisdiction this hazard could potentially occur. Indicate not just where one instance of the hazard might impact but all the potential areas that future instances of the hazard might impact. Whew assessing impact assumes a CREDIBLE WORST CASE hazard event. Plotting the impact area or areas on a map, either paper or computerized, can help in making the selection among these choices:

- A SINGLE LOCATION
- SEVERAL INDIVIDUAL LOCATIONS
- THROUGHOUT A SMALL REGION
- THROUGHOUT A LARGE REGION

Few hazards can impact only a SINGLE LOCATION. Examples are a jurisdiction with one small flood plain or a jurisdiction with landslide potential in only one location.

Many hazards are capable of impacting SEVERAL INDIVIDUAL LOCATIONS. This does not mean the hazard occur simultaneously at these location but could occur at any one or more of them. Examples are multiple flood plains, potential civil disturbance sites, explosions, and transportation accidents.

Where a single or several individual locations actually comprise a significant area, the impact area should be classified as throughout a LARGE or SMALL REGION. A small region may involve a large neighborhood or the downtown section of a city. Examples of hazards that could impact small regions are floods, hazardous material releases, and dam failures. A LARGE REGION would extend for miles and comprise a significant portion of your jurisdiction. Some examples are: hurricanes, forest fires, hazardous material releases.

Many hazards could occur ANYWHERE in your jurisdiction (tornadoes, severe winter storms, extreme temperatures) and should also be classified as THROUGHOUT A LARGE REGION. Even though a large tornado may only impact part of your jurisdiction, a large tornado could potentially impact any part of your jurisdiction. Therefore, the area of potential impact is THROUGHOUT A LARGE REGION.

If your analysis is for a facility or industrial site, treat your site as a jurisdiction thus if a hazard could impact your entire site this should be categorized as a LARGE REGION. TROUGHOUT A SMALL REGION would be a portion of your site.

Could This Hazard Trigger Another Hazard?

For this factor we are looking at a particular hazard's capability of triggering additional hazards. Many hazards can trigger the occurrence of other hazards. For example, a major earthquake can cause urban fires and/or hazardous chemical releases. Likewise, a severe winter storm can cause transportation accidents.

When assessing this factor, again assume a CREDIBLE WORSE CASE hazard event. The worst case event can vary from factor to factor.

The choices for this are:
- -NO, HIGHLY UNLIKELY
- -YES, SOME POTENTIAL
- -YES, HIGHLY LIKELY

The potential for one hazard triggering another hazard can vary depending on geographic area. A flood plain in an undeveloped area may have little potential for triggering another hazard while a flood plain in an area with a water treatment plant could trigger a water supply failure if flooding occurs. The potential for cascade effect for a hazard can vary depending on the geographic area. A flood plain in an undeveloped area may have little cascade potential while a flood plain in an area with a water treatment plant could trigger a water supply failure if flooding occurs.

Factor 2: FREQUENCY Ground Rules

Frequency is simply a prediction of how often a hazard will occur in the future. We are NOT looking for the frequency of the credible worst case event but an occurrence that would require the activation of your jurisdiction's emergency response forces.

History is a good indicator of future events and should be reviewed before making this selection. However, for some hazards recent activity may increase or decrease frequency about or below that which history indicates (e.g.., development in a previously undeveloped flood plain, substitution of non-hazardous materials for hazardous chemicals at local industry).

The frequency factor choices include a descriptive term and quantifying definition: \

DESCRIPTIVE TERM	**QUANTIFIER**
- 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

If the quantifying information is not available and cannot be estimated, simply look for the descriptive term that best fits the hazard.

Factor 3: IMPACT Ground Rules

For impact, return to the map where the area of potential impact was plotted and estimate the hazard's impact on your community. You should base the impact on the CREDIBLE WORST CASE EVENT. The analysis looks individually on people, private property, and public facilities,

IMPACT ON PEOPLE:

We are concerned here only about the hazard's ability to seriously injure or kill people. The choices include:

SERIOUS INJURY OR DEATH IS UNLIKELY
SERIOUS INJURY OR DEATH IS LIKELY BUT NOT IN LARGE NUMBERS
SERIOUS INJURY OR DEATH IS LIKELY IN LARGE NUMBERS SERIOUS INJURY OR DEATH IS LIKELY IN EXTREMELY LARGE NUMBERS (catastrophe)

A serious injury is one that would require immediate medical attention, without which the injured person's life or limb is threatened.

These categories permit the user, when interpreting terms like "large numbers," to apply them to their own jurisdiction. When interpreting such terms we recommend the following:

-SERIOUS INJURY OR DEATH IS LIKELY, BUT NOT IN LARGE NUMBERS should apply when the casualties can be adequately treated through the normal operation of the emergency medical system in your jurisdiction.
-SERIOUS INJURY OR DEATH IS LIKELY IN LARGE NUMBERS should apply when the number of casualties requires a full or near full activation of your jurisdiction's medical facilities' disaster plans. In other words, the local EMS system is "waxed out."
-SERIOUS INJURY OR DEATH IS LIKELY IN EXTREMELY LARGE NUMBERS should apply when the numbers of casualties overwhelms the local emergency medical system and substantial outside assistance is required.

If your analysis is for a facility or industrial site you should assess death or injury to the surrounding community as well as your site if both are serviced by the sample.

IMPACT ON PRIVATE PROPERTY:

Here we look for physical or economic damage to private property including structures, homes and businesses, belongings, and income. If someone is temporarily put out of work or can not operate a business as a result of the hazard, this is considered an

impact on private property. Private property also includes farms and agricultural products.

The choices are:

-LITTLE OR NO DAMAGE
-MODERATE DAMAGE
-SEVERE DAMAGE

The line drawn between moderate and severe damage may not be easily defined. A few homes may be severely damaged by a flood but other property damage in the community is slight. Because this analysis always looks at the impact on the entire community, this should be classified as moderate damage. Severe damage to crops could be severe damage to an agricultural community and only moderate damage to a suburban community. NOTE: If your analysis is for a facility or industrial site, do not assess damage to property outside your site.

DAMAGE TO COMMUNITY INFRASTRUCTURE:

Here we are concerned specifically with structural damage to the infrastructure that serves your jurisdiction, including key government buildings, roads, bridges, and sewer, water and power lines. If we looked at overall damage to public property we would be duplicating the type of damage we found for private property and not examining a different aspect of a hazard's impact on communities.

The choices are:

-LITTLE OR NO STRUCTURAL DAMAGE
-MODERATE STRUCTURAL DAMAGE
-SEVERE STRUCTURAL DAMAGE

As with private property damage, these categories can be easily misapplied. "Severe" Damage in one or two structures may be moderate damage to the overall community.

If your analysis is for a facility or industrial site, you should assess damage to the public infrastructure (roads, bridges, water/sewer lines) that your facility necessarily uses both inside and outside of your site.

Factor 4: ONSET Ground Rules

This is simply in inquiry **into** warning time: 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. Other hazards provide no warning (e.g.., Oklahoma City bombing) so the response depends on existing plans, if any. For Time of Onset analysis, a CREDIBLE WORST CASE hazard even should be the basis.

The choices are:

-NO WARNING
-SEVERAL HOURS WARNING -ONE DAY WARNING -SEVERAL DAYS WARNING
-A WEEK OR MORE WARNING

For some hazards, there can be a different warning time for each location (e.g.., dam failure). In that case, use the shortest warning time that is credible and associated **with a CREDIBLE WORST CASE EVENT.**

Factor 5: DURATION Ground Rules

Two questions are asked, (1) How long does the hazard remain active? And (2) how long do emergency operations continue? For both questions a CREDIBLE WORST CASE SCENARIO should be considered.

HAZARD DURATION
The choices are:

-LESS THAN ONE DAY
-ONE DAY
-TWO TO THREE DAYS
-FOUR DAYS TO A WEEK
-MORE THAN ONE WEEK

Consider how long the hazard remains active. A flood is over once the water recedes. A tornado is over after it leaves. A hazardous chemical release is over once the air is cleansed of the toxic chemical. For each of these examples the impact of the hazard remains well after the hazard has become inactive. However, measures only the actual time the hazard is active - longer-term impacts are measured in the next assessment: Incident Stabilization Time.

INCIDENT STABILIZATION TIME
The choices are:

-LESS THAN ONE DAY
-ONE TO TWO DAYS
-THREE DAYS TO ONE WEEK
-ONE TO TWO WEEKS
-MORE THAN TWO WEEKS

Incident stabilization time is measured by determining how long emergency operations for your jurisdiction continue once the hazard is inactive. The hazard is considered stabilized for purposes of this assessment when the emergency operations return to normal.