

## Hazards Analysis

The primary goal of this step is to identify the hazards that exist in your facility and in your community.

Then, you will determine what types of effects these hazards may have on the facility's ability to ensure continuity of care. This is a determination of vulnerability, which will be accomplished through the use of ideas from the Emergency Preparedness Committee and data from the research, displayed on a Capability Shortfall Matrix and Risk Maps.

The following is an excerpt from a leading textbook, *Emergency Management: Principles and Practices for Local Government*. This narrative best describes the hazards analysis process.

### The Hazards Vulnerability Analysis Process

"Accurate predictions about time, place, and magnitude of all potential emergencies are nearly impossible to make. Hence, broad-based preparedness, response, and recovery plans will always be needed. The basic questions a hazards analysis must answer are not those relating to prediction, but rather:

*If hazard X develops into a crisis of Y magnitude,*

*what would be the most likely impact upon the Z vulnerability of people and property at risk in a given area?*

Can we prevent X from occurring, decrease Y and/or minimize Z? If so, to what extent and in what combination can measures be taken to do so in a cost-effective manner?

Can hazard X be prevented or substantially controlled from developing into a crisis, or must we concentrate on mitigating/preventing subsequent damage to people and property?

How do the interrelationships of the X, Y, and Z factors of one potential emergency compare with those of others we face?

A hazards analysis should be designed to answer these questions using hard objective data to the extent possible. A properly prepared and periodically updated hazard analysis is the emergency manager's primary tool for managing hazards and should:

Enable emergency managers to set priorities and goals commensurate with the degree of local public need for protection.

Provide descriptive information on every major hazard affecting a given area and a methodology for comparison of vastly different types of hazards.

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Justify management decisions for altering program and staffing assignments that may vary from previous norms.

Substantiate decisions about resource allocations and justify budget requests.

Encourage identification of technical and research needs in emergency management.

Provide tools to raise the level of understanding of public officials to influence the adoption of prevention/mitigation measures and the expenditure of scarce resources to do so.

Enable the establishment of a viable national database of hazard vulnerability, and other relevant and comparable information for national comprehensive emergency management (CEM) planning.

*The effectiveness of a hazards analysis depends upon its being performed in the context of CEM, and therefore should address:*

*All hazards - Natural, man-made and attack - both those known to occur and cause damage, and those having a reasonable likelihood of occurrence and damage-producing effects.*

*Four management phases - Mitigation, preparedness, response, and recovery - actions taken in any or all of the phases can positively or negatively affect vulnerability of the population and property at risk.*

*All government levels and the private sector - Each has a separate but interdependent role in disaster management and information and experience to apply to hazards analysis.*

In addition, a hazards analysis should be designed to answer the questions and fulfill the purposes aforementioned. For all hazards analyzed, the following information should be provided:

Nature and scope of hazards and where they are likely to occur.

References to secondary emergencies or disasters that can be or have been triggered by a primary event. Detailed description of historical events as examples of what occurs when a particular hazard develops into an emergency/disaster.

Historical incidence data nationally and/or statewide including information on hazard severity scales applied to

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measure the magnitude of the event.

Location of fixed sites that may pose dangers (e.g. nuclear power plants).

Mapping of hazardous zones based on past occurrences or potential events (e.g. hurricane paths, floodplains, railroads, highways).

Historical damage data expressed in dollars and aggregated for a period of years or months for a selected number of hazards.

Suggested mitigation measures.

Listings of emergency and disaster declarations issued."<sup>1</sup>

## Notes:

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<sup>1</sup> Whittaker, Hilary and Ketchum, Jaynelle Marie, Comprehensive Emergency Management Bulletin #2, National Governors Association, Godschalk, David R., Disaster Mitigation and Hazard Management, **Emergency Management: Principles and Practices for Local Government**, International City Management Association, Washington, D.C., 1991, pp. 144-45.