

# Hazardous Materials and Terrorist Incident Planning Curriculum Guidelines

## Hazard Analysis and Threat Assessment

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## **Introduction**

A hazards analysis and threat assessment includes (1) identifying hazards associated with the storage, handling, processing and transportation of hazardous materials, (2) identifying potential targets of terrorism within the jurisdictional area, (3) conducting a vulnerability analysis to identify people, property, and environments susceptible to damage should a hazardous materials release or related terrorist incident occur, and (4) conducting a risk analysis to determine the probability of various types of emergencies and estimates of resulting damage.

Training should provide the knowledge and skills necessary to conduct a comprehensive hazards analysis/threat assessment for a jurisdiction or facility. Skill development should include the ability to assess the jurisdiction's or facility's hazards analysis/threat assessment needs, determine appropriate methods, collect and interpret data, and report the results. Specifically included is the use of tables and other tools for determining the level of concern, establishing hazard and vulnerability zones, and identifying related priorities. More sophisticated and technical approaches to hazards analysis may also be covered, if appropriate, or references provided for additional training and assistance.

## **Training Audience**

Potential training audiences are all participants in the planning process that have been assigned responsibility for conducting a hazards analysis/threat assessment that exceeds the competencies covered under Planning Essentials. Possible audience members include:

- Community planning team members
- Facility planners and managers
- Response agency representatives
- Federal counter-terrorism planning team members
- Prevention personnel
- Technical experts and consultants

## **Prerequisites or Presumed Prior Knowledge/Skills of Students**

Students are assumed to possess Planning Orientation and Planning Essentials levels of competency in hazards analysis. Consideration should be given to students that have a defined responsibility for conducting higher level hazards analyses for a jurisdiction or facility as a regular part of their job.

## **Typical Program Format**

Seminar-type instructor-led program, approximately one to two days in length. Longer programs may be appropriate where more complex studies are planned or when actual field surveys are included as training activities. Training managers may wish to combine this instruction with a module on capability assessment for audiences that perform both tasks.

## Methodology Recommendations

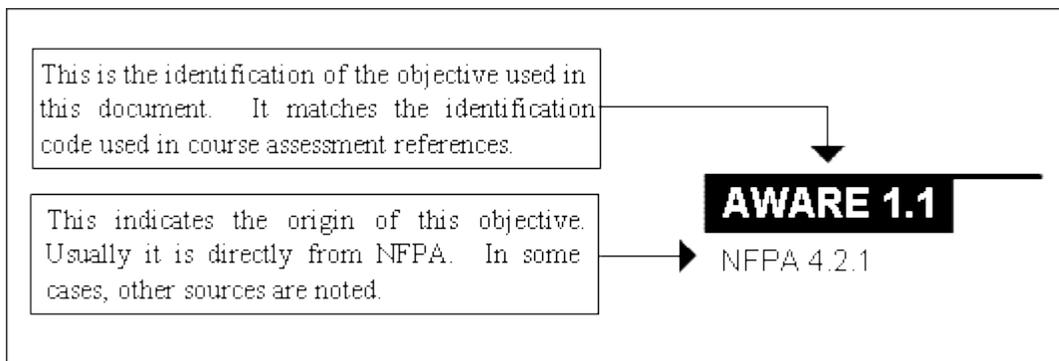
The successful accomplishment of training objectives should result in enhanced student proficiency in applying the principles of hazards analysis and threat assessment to a specific jurisdiction's or facility's planning needs and processes. Training should focus on developing knowledge of the steps and components of hazards analysis and threat assessment, and on developing skill in performing hazard identification, potential target identification, vulnerability analysis, and risk analysis. Trainees must understand the significance and application of hazards analysis and threat assessment information, and develop the ability to recognize and develop useful and meaningful data on which to base subsequent emergency operations planning and prevention programmatic and organizational decisions.

Much of the content for analyzing hazards and assessing threats can be introduced through self-study, but training should include formal classroom instruction with significant time spent in individual and small group work. Activities should focus on skill development in extracting hazard identification and vulnerability information from available data sources, using threat alert histories in identifying possible terrorist targets, determining vulnerable zones and potential terrorist targets from maps and hazard data, and performing the analyses leading to accurate risk determination. Content testing is appropriate for demonstrating knowledge of the steps involved in hazards analysis and threat assessment, listing types of hazard and threat information, and identifying the components of a completed hazards analysis and threat assessment.

Because of the interdisciplinary nature of hazards analysis and threat assessment work, training audiences should be heterogeneous and, whenever possible, small-group work should be conducted to encourage cross-disciplinary interactions. Integration of the information learned by the trainee can be demonstrated in a post-class activity involving the development of a limited hazards analysis and threat assessment using data from the trainee's home jurisdiction or facility, or scenarios provided by the instructor. Members of planning teams that are conducting a complex hazards analysis and threat assessments should be trained together, if possible, with student activities based on actual work responsibilities and assignments.

## Recommended Training Objectives

### Objective Identification Legend



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## Hazard Analysis and Threat Assessment 1.

### HAZAN - 1.1.

Given an assignment to conduct a hazards analysis and threat assessment for a jurisdiction or facility, describe the process to be used for conducting the study.

#### HAZAN - 1.1.1.

Describe the purpose and benefits of conducting a hazards analysis and threat assessment, including appropriate applications of the results in planning.

#### HAZAN - 1.1.2.

Describe the basic steps in a hazards analysis and threat assessment (hazards identification, threat identification, vulnerability analysis, risk analysis).

#### HAZAN - 1.1.3.

Identify types and sources of information commonly used in hazards analysis and threat assessment.

### HAZAN - 1.2.

Given an assignment to conduct a hazards analysis and threat assessment for a jurisdiction or facility, demonstrate the ability to identify hazards and situations that pose a serious threat in the planning area.

#### HAZAN - 1.2.1.

Describe the process and data sources to be used for hazards and threat identification.

#### HAZAN - 1.2.2.

Identify the location of hazardous materials facilities and major transportation routes within the planning area.

#### HAZAN - 1.2.3.

Identify the types, quantities, and specific locations of hazardous materials used by facilities within the planning area.

#### HAZAN - 1.2.4.

Identify the types and quantities of hazardous materials transported in or through the planning area.

#### HAZAN - 1.2.5.

Assess the storage conditions of hazardous materials in the planning area (e.g., containment, packaging, security, release detection).

#### HAZAN - 1.2.6.

Identify the nature of hazards (e.g., flammable, explosive, toxic) most likely to accompany hazardous materials spills or releases.

<b>HAZAN - 1.2.7.</b>	Identify types of terrorist targets for each of the following areas within a jurisdiction: transportation system and commuting routes, public works facilities, public gathering areas, high risk hazardous materials facilities and storage areas, communications systems, targets with high economic impact, and areas of symbolic or historical value.
<b>HAZAN - 1.3.</b>	Given the results of the hazard identification and threat assessment, demonstrate the ability to analyze and map the vulnerability of people, property, business interests, and environments in the planning area.
<b>HAZAN - 1.3.1.</b>	Describe the process and data sources to be used for vulnerability analysis.
<b>HAZAN - 1.3.2.</b>	Identify methods to screen and prioritize hazards for more in-depth analysis.
<b>HAZAN - 1.3.3.</b>	Identify the level of concern for chemical hazards.
<b>HAZAN - 1.3.4.</b>	Estimate the credible worst-case scenario for hazardous materials and terrorist incident threats.
<b>HAZAN - 1.3.5.</b>	Determine the extent of vulnerable zones for identified hazards using worst-case scenarios.
<b>HAZAN - 1.3.6.</b>	Map vulnerable zones, and identify conditions that influence the zone of impact.
<b>HAZAN - 1.3.7.</b>	Identify susceptible human populations, property, business interests, and environments in the vulnerable zone, including high-risk populations, critical facilities, and sensitive environments.
<b>HAZAN - 1.4.</b>	Given a hazard identification, threat assessment and vulnerability analysis for a community or facility, demonstrate the ability to assess the risk of injury or damage due to a hazardous materials release or terrorist incident in the planning area.
<b>HAZAN - 1.4.1.</b>	Describe the process and data sources to be used for risk assessment.

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**HAZAN - 1.4.2.** Estimate the probability of occurrence of worst-case scenarios, and describe unusual conditions, such as the possibility of simultaneous incidents.

**HAZAN - 1.4.3.** Assess community and facility safeguards, response capabilities in place, and incident histories (as necessary).

**HAZAN - 1.4.4.** Describe the type of harm to human populations and damage to property, business interests, and environments expected in worst-case situations.

**HAZAN - 1.4.5.** Categorize, prioritize, and/or rank hazards and threats for planning, as appropriate.

**HAZAN - 1.5.** Given the hazard and threat identification, vulnerability analysis, and risk assessment for a community or facility, demonstrate the ability to prepare a comprehensive hazard analysis and threat assessment report.

**HAZAN - 1.5.1.** Identify and describe hazards, threats and related conditions in the planning area.

**HAZAN - 1.5.2.** Describe the vulnerability of populations, property, business interests, and environments to hazardous materials and terrorist threats in the planning area.

**HAZAN - 1.5.3.** Describe the risk of injury and/or damage from hazardous materials and terrorist incidents in the planning area, and prioritize risks for planning, as appropriate.