

# Hazardous Materials and Terrorist Incident Response Planning Curriculum Guidelines

<b>PLANNING Training Issues</b>	Planning Orientation Training Guidance	Planning Essentials Training Guidance	Planning Specialties Introduction	Commodity Flow Studies	Hazard Analysis	Capability Assessment	Planning for Protective Actions	Plan Implementation & Maintenance	Facility Planning	Planning for Public Education	Appendix A Planning Guide Summaries	Appendix B Planning Models	Appendix C Planning for Terrorist Incidents	Appendix D NRT ICP Guidance
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## ***About the Planning Guidelines***

The Planning Curriculum Guidelines are intended to assist public sector training managers and employers to understand the requirements for training public sector personnel involved in planning for hazardous materials and terrorist emergencies. Existing regulatory requirements are defined, and training recommendations are offered to help public sector training managers improve the quality and effectiveness of hazardous materials and terrorist incident response planning.

The Planning Curriculum Guidelines are organized into 14 sections. The first section addresses general planning training issues and includes:

- What is a plan?
- Requirements for hazardous materials planning.
- The planning process.
- The need to train.
- The scope of the planning Curriculum

The second through eleventh sections address training objectives that should be achieved by public sector employees performing various hazardous materials and terrorist incident response planning functions. The competency areas are:

- Planning Orientation
- Planning Essentials
- Planning Specialties
  - Commodity Flow Study
  - Hazard Analysis
  - Capability Assessment
  - Planning for Protective Actions
  - Plan Implementation and Maintenance
  - Facility Planning
  - Planning for Public Education

The final 4 sections are appendices provided a reference in using the *Guidelines*, and include:

- Appendix A: Planning Guide Summaries
- Appendix B: Planning Models
- Appendix C: Terrorist Incident Planning Models
- Appendix D: National Response Team's Integrated Contingency Plan Guidance

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**Planning for Hazardous Materials and Terrorist Incidents**

**Curriculum Guidelines**

**Planning Training Issues**

## Planning

# General Training Issues

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### What is a Plan?

According to the Federal Emergency Management Agency (FEMA), an emergency operations plan (EOP) is a document that:

- Assigns responsibility to organizations and individuals for carrying out specific actions at projected times and locations in an emergency.
- Sets forth lines of authority and organizational relationships, and shows how all actions will be coordinated.
- Describes how people and property will be protected in emergencies and disasters.
- Identifies personnel, equipment, facilities, supplies, and other resources available for use during response and recovery operations.
- Identifies steps to address mitigation concerns during response and recovery activities.

The fundamental logic that underlies the development of emergency plans is that these and related decisions must be addressed before an incident occurs. During an emergency, no time exists to resolve such issues or to practice and refine roles and responsibilities. The complex analysis and preparation required to establish an effective emergency operations capability must be completed in advance so that public officials and response personnel can act quickly and decisively to control dangerous situations and protect the public.

Given this rationale, an emergency plan must be more than just a document. To be effective, all personnel who will participate in a hazardous materials or terrorist incident response must know their roles and responsibilities and be competent in the tasks they will perform. This goal is greatly enhanced by participation of tasked organizations in an integrated planning process, including exercising the plan and periodically revising the plan as needed.

The elements covered in a hazardous materials or terrorist incident response plan and the approach to planning will vary, depending on the jurisdiction's or facility's unique needs. However, all plans should contain: (1) an analysis of the emergencies likely to occur; (2) an assessment of available resources and existing capabilities; (3) detailed response operations strategies and assignments that address notification, command and control, life safety, and other functional requirements; and (4) identification of prevention measures that can mitigate the seriousness of an emergency or prevent it from occurring. The level of detail captured in the plan will also vary, but must be adequate to allow tasked organizations and individuals to develop comprehensive SOPs in their assigned areas.

### Requirements for Hazardous Materials and Terrorist Incident Response Planning

The responsibility to plan for and, if possible, prevent or mitigate hazardous materials or terrorist emergencies is a fundamental extension of the civic responsibility of state and local organizations to ensure the safety of responders and to protect the public. Congress recognizes this government responsibility for emergency management in the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended. Hazardous materials emergency planning is also required under a number of other federal laws and regulations.

### **The Emergency Planning and Community Right-to-Know Act (EPCRA) Title III of Superfund Amendments and Reauthorization Act of 1986 (SARA)**

EPCRA and Title III of SARA require the formation of state emergency response commissions (SERCs), tribal emergency response commissions (TERCs), emergency planning districts, and local emergency planning committees (LEPCs). Each LEPC must develop, exercise, and maintain an emergency plan that identifies: (1) facilities and transportation routes related to specific chemicals; (2) response procedures of facilities and local emergency and medical personnel; (3) names of community and facility emergency coordinators; (4) procedures for notifying officials and the public in the event of a hazardous material

release; (5) methods for detecting a release and identifying areas and populations at risk; and (6) schedules for exercising the emergency plan.

**OSHA 29 CFR Part 1910.120**

The Occupational Safety and Health Administration (OSHA) regulations (29 CFR Part 1910.120) require employers involved in hazardous waste operations to develop and implement an emergency response plan for employees. The elements of this plan must include: (1) recognition of emergencies; (2) methods and procedures for alerting employees; (3) evacuation procedures and routes; (4) means and methods for emergency medical treatment; (5) lines of authority; (6) on-site decontamination procedures; (7) site control means; and (8) methods for evaluating the plan.

**Resource Conservation and Recovery Act (RCRA)**

Under subtitle C of RCRA, the Environmental Protection Agency (EPA) implements standards for the treatment, storage, and disposal of hazardous wastes through permits issued by EPA or an authorized state. Permit requirements include a facility contingency plan, with required opportunities for local government and public comment and input into the plan development.

**FEMA Emergency Operations Plan Requirements**

Planning requirements for jurisdictions receiving FEMA funds are set forth in 44 CFR Part 302, effective May 12, 1986. This regulation requires states and local governments to prepare emergency operations plan (EOPs) that: (1) identify available personnel, equipment, facilities, supplies, and other resources in the jurisdiction; and (2) describe the method or scheme for coordinating actions taken by individuals and government services in the event of emergencies, including those involving hazardous materials.

**Coordination with Federal Response**

State and local hazardous materials emergency preparedness should include plans for coordination with and support for federal response to emergencies. The National Contingency Plan (NCP) is coordinated by the National Response Team under section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The NCP provides for federal support to local responders during hazardous materials transportation and fixed facility incidents. The Federal Response Plan (FRP), coordinated by FEMA, describes resources and support for state and local governments during natural and man-made disasters, including major hazardous materials emergencies.

**Other Facility Planning Requirements**

Facilities that store, handle, or transport certain types and quantities of hazardous materials may be subject to additional federal contingency planning regulations. In this context, the term “facility” is meant to have a wide connotation, and may include, but is not limited to, any mobile or fixed onshore or offshore building, structure, installation, equipment, pipe, or pipeline. A particular facility may be subject to one or more of the following federal regulations:

- EPA’s Oil Pollution Prevention Regulation (SPCC and Facility Response Plan Requirements)— 40 CFR part 112.7(d) and 112.20 to 112.21
- MMS’s Facility Response Plan Regulation—30 CFR part 254
- RSPA’s Pipeline Response Plan Regulation—49 CFR part 194
- USCG’s Facility Response Plan Regulation—33 CFR part 154, subpart F
- EPA’s Risk Management Programs Regulation—40 CFR part 68
- OSHA’s Emergency Action Plan Regulation—29 CFR 1910.38(a)
- OSHA’s Process Safety Standard—29 CFR 1910.119
- EPA’s Resource Conservation and Recovery Act Contingency Planning Requirements—40 CFR part 264, subpart D, 40 CFR part 265, subpart D, and 40 CFR part 279.52

In addition, states and local jurisdictions may mandate regulatory requirements and procedures that must be considered in hazardous materials and terrorist incident response planning. Local governments and facilities are encouraged to coordinate the development of hazardous materials and terrorist incident response plans with relevant state and local agencies to ensure compliance with any additional regulatory requirements.

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### The Planning Process

There is no single correct way to write a hazardous materials or terrorist incident emergency plan. Each entity must plan according to its own situation, based on such factors as geographic size, types of hazards, populations at risk, resources, and level of preparedness. Jurisdictions and facilities should choose the planning elements and processes most appropriate to their circumstances. However, every community and industry needs to evaluate its preparedness for hazardous materials incidents and plan accordingly.

Various explanations of the planning process can be found in the literature, including those described in the *Guide for All-Hazard Emergency Operations Planning* (FEMA SLG 101), *Hazardous Materials Emergency Planning Guide* (NRT-1), *Technical Guidance for Hazards Analysis* (EPA/FEMA/DOT), *Handbook of Chemical Hazard Analysis Procedures* (FEMA/DOT/EPA), and *Emergency Management Guide for Business & Industry* (FEMA 141). These documents and approaches to planning, which are briefly described in Appendices A and B, incorporate the generic functional requirements of planning, although the steps and procedures may be defined somewhat differently. Jurisdictions and facilities should review these and/or other models to select a process that best meets their unique planning needs and preferences.

Whatever model is adopted for the planning process, a team approach is strongly recommended. A planning team is the best mechanism for incorporating the various types of expertise needed in planning, building consensus among organizations and individuals affected by the plan, and promoting professional relationships and understanding among responders. Team members can also help ensure that plans are adequately implemented, evaluated, and maintained after promulgation, and that personnel are given the training and tools they need to achieve competency in their assigned roles and responsibilities.

No specific format is mandated for the results of hazardous materials or terrorist incident response planning. SLG 101 discusses format options for all-hazard and hazard-specific community plans. NRT's *Integrated Contingency Plan Guidance* (see Appendix C) describes an approved format for consolidating multiple plans that facilities may have to prepare in compliance with various federal regulations. However, a format is "good" if users understand it, are comfortable with it, and can extract the information they need. FEMA recommends that planning teams consider the following design characteristics when deciding upon a format: organization, progression, consistency, adaptability, and compatibility.

The approach taken in these *Guidelines* identifies two fundamental planning products, both of which are derived from a common hazards analysis and capability assessment base: (1) an emergency operations plan that addresses preparedness for, response to, and short-term recovery from hazardous materials or terrorist incidents; and (2) a prevention/mitigation section of the plan that addresses measures designed to eliminate or reduce the effects of potential emergencies (e.g., land use planning, building codes, inspections, equipment testing, release detection, site security, containment, and fail safe engineering). Note that community development planning, long-term recovery, and organizational administrative planning (financial management, personnel management, record keeping, labor relations, etc.) are outside the intended scope of the *Guidelines*.

### The Need to Train

The skill and training of individual responders is only one aspect of safe and effective emergency operations. Terrorist and hazardous materials incidents are complex and involve the coordinated and timely actions of many different persons, often under stressful conditions. The quality of this coordination—based on clearly defined lines of authority, adequate communication systems, availability of resources when needed, etc.—may play a more important role than individual responder training in minimizing injuries and maximizing control of the emergency.

In hazardous materials and terrorist instigated emergencies, the importance of pre-response planning cannot be overstated. Plans provide a mechanism for evaluating operational strategies, defining roles and proce-

dures, communicating organizational assignments, and assessing the adequacy of responder training. The integrated team planning process fosters trust and cooperation among individuals and organizations that must work together during an incident. Planning also leads to effective mitigation and prevention measures, thus providing communities and facilities with an opportunity to eliminate or reduce the costly and tragic effects of hazardous materials incidents before they occur.

Effective response and prevention planning depends upon the ability of the people who do the work. The quality of hazard analyses and capability assessments, and the effectiveness of response and prevention plans, is directly related to the competency of the personnel assigned responsibility for performing related tasks—public and private sector officials, agency and program managers, planners, technical experts, and many others.

OSHA's regulation 29 CFR 1910.120(q) requires that all employees be properly trained to perform their roles in response to hazardous materials emergencies. By convention, this is extended to responders to terrorist incidents as well. Employers are not now federally required to train personnel involved in planning. However, federal guidelines strongly recommend that all personnel who participate in the hazardous materials or terrorist incident response planning process at the state and local levels be trained to full competency to perform their roles.

**The Scope of the Planning Curriculum**

The *Hazardous Materials and Terrorist Incident Response Planning Curriculum* addresses training needed by persons who have a defined role in the development, implementation, evaluation, and maintenance of hazardous materials and terrorist incident emergency plans and standard operating procedures (SOPs). These critical documents must be prepared by state governments, local communities/jurisdictions, community support services organizations (hospitals, schools, mass care, business/industry, etc.), public sector agencies, and private sector facilities that store, use, or transport significant quantities of hazardous materials.

Training requirements for the curriculum span a tremendous variety of functions, skills, and audiences. In the public sector, functional responsibilities include directing and controlling the planning process, collecting data and managing information, identifying hazards, analyzing related vulnerabilities, estimating risk, assessing capabilities, serving as operational experts in writing plans and SOPs, implementing and integrating the results with other planning efforts, designing and evaluating complex exercises, and updating the plan on a regular basis. Individuals performing this work include community officials, SERC and LEPC members, agency and program managers, emergency managers, fire service workers, police, emergency medical services personnel, public works officials, community services and volunteer organization representatives, consultants and technical experts, and many others.

In the private sector, similar roles and functions must be performed. In addition, facilities that meet certain criteria must also conduct technically sophisticated analyses for chemicals they store, handle, or transport; develop production/process safety management plans and employee safety plans; and comply with employee and community right-to-know requirements and other reporting mandates. Potential training audiences include industry owners and executives, business planners, production/process managers, functional managers (e.g., communications, public information, emergency response, etc.), safety officers, technical experts, and others employed by the facility. Local government personnel who have responsibilities for reviewing and approving facility plans and/or enforcing compliance with existing regulations and standards may also benefit by training in this area.

This diversity of audiences and roles presents a special challenge for managing training for hazardous materials and terrorist response planning. Access to training audiences is more complex because the interdisciplinary nature of the audience suggests a broad range of possible training delivery mechanisms. Audience members may have limited time available for training in planning since this role is often viewed as an ancillary duty to primary work responsibilities. Finally, hazardous materials and terrorist incident training resources may be limited, necessitating an emphasis on response training, with planning and prevention receiving a lower organizational priority.

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# Planning

## General Training Issues

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### Organization of the Planning Curriculum Guidelines

The goal of the *Hazardous Materials and Terrorist Incident Response Planning Curriculum* is to enhance the knowledge, skills, and attitudes of a broad spectrum of state and local training audiences, thus promoting better hazardous materials and terrorist incident planning by jurisdictions and facilities. The curriculum is organized into three training levels based on general skill requirements of the target audience: [Planning Orientation](#), [Planning Essentials](#), and [Planning Specialties](#). These areas are briefly described below; more detailed information on each is presented in subsequent sections of the *Guidelines*.

### Planning Orientation

The Planning Orientation curriculum area provides an introduction to hazardous materials and terrorist incident response planning, with an emphasis on the need for effective plans and the benefits to be derived. Instruction is designed to help individual students identify their roles and responsibilities in the planning process, and motivate them to participate fully and effectively as planning team members. Desired training competencies include an awareness level understanding of general hazardous materials and terrorist incident planning concepts, processes, and legal requirements. No prerequisite knowledge of planning and emergency management concepts is assumed, and no skill development is attempted. Training should result in a positive attitudinal change and a general understanding of the planning function.

### Planning Essentials

The Planning Essentials curriculum area provides participants with the knowledge and skills they need to develop a basic integrated hazardous materials and terrorist incident emergency plan for a jurisdiction or facility. The primary training audience is local planning team members. Training objectives cover a broad range of general competencies, including the ability to function effectively in a team environment, assist in or conduct a basic hazards analysis and capability assessment, work with others to analyze options and draft sections of the plan, and participate in plan implementation, evaluation, and maintenance.

Planning Essentials addresses basic skills, with an emphasis on the student's ability to interpret and use information provided by various technical specialists in developing the plan. More advanced planning skills are covered in the Planning Specialties curriculum area, discussed below. Audience members are assumed to already possess training competencies covered in Planning Orientation and an expertise in the professional discipline that the student represents on the planning committee. Managerial, administrative, and logistic requirements for organizing the planning process, including staff recruitment and assignments, are not addressed.

### Planning Specialties

Recognizing that many skills are needed to support the planning process above those involved in basic plan development, the Planning Specialties curriculum area has been organized to articulate additional, often more advanced learning competencies. State and local planning needs and training requirements will vary considerably in these specialty areas. Hence, the curriculum supports selective focused training by jurisdictions and facilities in only those specialty skill areas where training is needed at any given time.

The list of specialty areas included in the curriculum is intended to reflect the prevailing needs of state and local training organizations. It is anticipated that more specialty areas will be defined over time, and some may be eliminated or modified as needs change. Specialty skill training areas identified for the current edition of the *Guidelines* include the following:

- Commodity Flow Study
- Hazards Analysis and Threat Assessment
- Capability Assessment
- Planning for Protective Actions
- Plan Implementation and Maintenance
- Facility Planning
- Planning for Public Education

**Content of the Guidelines**

The following sections of the *Guidelines* identify training requirements for each major curriculum area: Planning Orientation, Planning Essentials, and Planning Specialties. These requirements are defined primarily in the form of terminal and enabling objectives that describe basic competencies needed by audience members to successfully perform related tasks. Narrative information describing the curriculum area, target audiences, subject matter content, and recommended training methodologies is included, as appropriate.

The training requirements described in this model support the tasks needed to produce comprehensive OSHA and SARA Title III plans and facility plans. They reflect the general planning philosophies and team approaches incorporated in FEMA and NRT guidance. As noted previously, the training requirements address a variety of audiences and needs. A challenge for state and local training managers will be to match the unique roles and responsibilities of personnel in their jurisdictions with the categories used in this model, or to tailor the model to meet their specific needs.

**Appendices**

The four appendices to this section of the Guidelines provide reference information for the design and delivery of planning instruction. The four appendices are:

**Appendix A- Planning Guide Summaries**

This appendix provides content summaries of key reference documents used in the preparation of the *Hazardous Materials Planning Curriculum Guidelines*. These materials include the *Guide for All-Hazard Emergency Operations Planning* (FEMA SLG 101), *Hazardous Materials Emergency Planning Guide* (NRT-1), *Technical Guidance for Hazards Analysis* (EPA/FEMA/DOT), *Handbook of Chemical Hazard Analysis Procedures* (FEMA/DOT/EPA), and *Emergency Management Guide for Business & Industry* (FEMA 141).

**Appendix B- Planning Models**

This appendix provides an outline of the different planning models and approaches to planning promulgated in the key reference documents described in Appendix A.

**Appendix C- Terrorism Incident Response Planning Models**

This appendix provides an outline of evolving adaptations of the general planning models for specific application to response planning for terrorist incidents. It also includes a sample response resource guide for the evolving body of federal, state, local and private sector specialized resources that are available to assist local responders in handling terrorist incidents.

**Appendix D- National Response Team’s Integrated Contingency Plan Guidance**

This appendix provides a full reprint of the NRT’s definitive guidance on integrated diverse facility planning requirements and deliverables into one functional facility emergency response plan, or integrated contingency plan.

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**Hazardous Materials and  
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# Planning Orientation

# Planning Orientation

## General Training Considerations

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### Introduction

The Planning Orientation curriculum area provides an introduction to hazardous materials and terrorist incident response planning, with an emphasis on the need for planning and the benefits to be derived. Instruction should help individual students identify their roles and responsibilities in the planning process, and motivate them to participate fully and effectively as planning team members. Desired training competencies include an awareness level understanding of general hazardous materials and terrorist incident planning concepts, processes, and legal requirements. No previous knowledge is assumed, and no skill development should be attempted. Training should result in a positive attitudinal change and the achievement of a general understanding of the planning function.

### Audience

The primary training audience for Planning Orientation includes all potential participants in the hazardous materials and terrorist incident planning process from jurisdictions, government and response agencies, community services organizations, private sector facilities and transporters, and other businesses and industries. Specifically included are elected and appointed officials, CEOs, program managers, and others who are able to influence jurisdictional and organizational planning priorities and resources. In addition, training is encouraged for the broad spectrum of persons who have a “stake” in planning, i.e., they may be impacted by the results of planning, although they have no defined role in the actual development of emergency plans. Thus, audience members might include:

- Jurisdiction and facility planning team members
- LEPC and SERC members
- Local and state government officials, including elected and appointed
- Facility owners and managers
- Representatives of government and response agencies, including SOP writers
- Representatives of community support services and volunteer organizations
- Emergency responders and mitigation/prevention personnel
- Citizens in the impacted planning jurisdiction
- Special interest and advocacy groups
- Emergency program managers

### Methodology Recommendations

The typical training delivery format for Planning Orientation is a brief (one to four hours) presentation or seminar led by an experienced and dynamic facilitator. Whenever possible, the audience should include representatives from a broad range of organizations and disciplines, thereby promoting a heightened understanding of the diverse interests and requirements associated with hazardous materials and terrorist incident response planning. Since training should motivate and encourage attitudinal change, the use of presentation graphics and instructional media (slides, videotapes, etc.) is particularly appropriate. Other considerations include:

- Training must be tailored to audience needs, recognizing that some students may have no understanding of emergency management or the challenges associated with interdepartmental planning and coordination.
- When possible, training should permit group interactions and foster initial team building.
- Training experiences should be practical and constructive to promote positive attitudinal change. The discussion of hazardous materials and terrorist threats, which is important to focus attention and clarify program need, should emphasize positive solutions through community and industrial planning and cooperation.
- Course materials should include local examples and issues to help generate interest and participation in local planning processes.
- Recruitment of students may be an issue due to lack of preexisting interest in the subject. “Teaser” programs and strategies to peak community interest and enrollment may be appropriate.

## Recommended Training

### Planning Orientation

The following instructional objectives describe student competencies recommended for orienting planning team members and others to the subject of hazardous materials and terrorist incident response planning. The legislative and regulatory basis for this training can be found primarily in the requirements specified in OSHA 1910.120 for development of employers' emergency response plan, SARA Title III for development of planning jurisdiction emergency response plans, and various federal agency regulations for development of facility and transporter emergency response plans. Sources for the material include the planning guidance in FEMA SLG 101, NRT-1, and other reference documents, the most important of which are described in the Appendices. The objectives are designed to be comprehensive, i.e., to address the training requirements of all identified audience members; thus, training developers and instructors will need to tailor these objectives to meet local audience interests, needs, and planning processes.

ORIENT-1

#### Objective Identification Legend

This is the identification of the objective used in this document. It matches the identification code used in course assessment references. (See the Training Program Management section of this document.) Decimal numbers (such as ORIENT-1.1) indicate enabling objectives supporting the primary objective.

*Identification*

*Recommended Training Objectives*

<b>ORIENT-1</b>	Given a description of potential hazardous materials and terrorist incident risks, explain the purpose and benefits of integrated hazardous materials emergency planning, and describe typical roles and participants in the emergency management system.
<b>ORIENT-1.1</b>	Describe the nature of the hazardous materials and terrorist incident threat and associated risks for the government, industry, and community, including the relationship between natural and technological hazards.
<b>ORIENT-1.2</b>	Describe the purpose and benefits of a comprehensive and integrated approach to hazardous materials and terrorist incident response planning, including the relationships among plans, SOPs, and exercises.
<b>ORIENT-1.3</b>	Describe the roles and general responsibilities of federal, state, and local government agencies and private sector organizations in integrated hazardous materials and terrorist incident preparedness, response, recovery, and mitigation/prevention.
<b>ORIENT-2</b>	Given a jurisdiction or facility with the need to develop an integrated hazardous materials plan, identify legal requirements impacting the planning process and product.

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## Recommended Training

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- ORIENT-2.1** Identify hazardous materials planning requirements for state and local jurisdictions contained in the following authorities:
- Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended
  - Title III of the Superfund Amendments Reauthorization Act (SARA)
  - Hazardous Materials Emergency Planning Guide (NRT-1)
  - OSHA 29 CFR 1910.120 and EPA 40 CFR

- ORIENT-2.2** List legislation and regulations that affect facility planning requirements, including:
- EPA's Oil Pollution Prevention Regulation (SPCC and Facility Response Plan Requirements)— 40 CFR part 112.7(d) and 112.20 to 112.21
  - MMS's Facility Response Plan Regulation—30 CFR part 254
  - RSPA's Pipeline Response Plan Regulation—49 CFR part 194
  - USCG's Facility Response Plan Regulation—33 CFR part 154, subpart F
  - EPA's Risk Management Programs Regulation—40 CFR part 68
  - OSHA's Emergency Action Plan Regulation—29 CFR 1910.38(a)
  - OSHA's Process Safety Standard—29 CFR 1910.119
  - OSHA's HAZWOPER Regulation—29 CFR 1910.120
  - EPA's Resource Conservation and Recovery Act Contingency Planning Requirements—40 CFR part 264, subpart D, 40 CFR part 265, subpart D, and 40 CFR part 279.52

- ORIENT-2.3** Describe the characteristics and advantages of all-hazard planning and hazard-specific planning.

- ORIENT-3** Given the assignment to conduct hazardous materials and terrorist emergency planning, identify the scope and elements of an integrated hazardous materials and terrorist incident emergency plan.

- ORIENT-3.1** Define the scope (in terms of types of emergencies and functions to be addressed) of an integrated hazardous materials and terrorist emergency plan for a jurisdiction or facility.

- ORIENT-3.2** Identify the elements of an integrated hazardous materials and terrorist emergency plan that are necessary to meet local, state, and federal requirements and guidelines.

- ORIENT-4** Given the assignment to conduct hazardous materials and terrorist incident emergency planning, identify and describe the major steps, participants, and other resources needed in the planning process.

*Note: Various explanations of the planning process can be found in the literature, including those described in the Guide for All-Hazard Emergency Operations Planning (FEMA SLG 101), Hazardous Materials Emergency Planning Guide (NRT-1), Technical Guidance for Hazards Analysis (EPA/FEMA/DOT), Handbook of Chemical Hazard Analysis Procedures (FEMA/DOT/EPA), and Emergency Management Guide for Business & Industry (FEMA 141), and NRT's Integrated Contingency Plan Guidance. These approaches to planning, which are briefly described in Appendix B, incorporate the generic functional requirements of planning, although the steps and procedures may be defined somewhat differently. Jurisdictions and facilities should select and/or modify these models to best meet their unique planning needs and preferences.*

- ORIENT-4.1** Identify and describe the major steps in the planning process to be used.





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**Hazardous Materials and  
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**Planning Essentials**

# Planning Essentials

## General Training Considerations

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### Introduction

The Planning Essentials curriculum provides participants with the knowledge and skills they need to develop a basic integrated hazardous materials and terrorist incident emergency plan for a jurisdiction or facility. The primary training audience is local planning team members. Training objectives cover a broad range of generic competencies, including the ability to function effectively in a team environment, assist in or conduct a basic hazards analysis and capability assessment, work with others to analyze options and draft sections of the plan, and participate in plan implementation, evaluation, and maintenance.

Planning Essentials covers basic skills, with an emphasis on the ability to interpret and use information provided by various technical specialists in developing the plan. More advanced planning skills are addressed in Planning Specialties. Audience members are assumed to already possess training competencies covered in Planning Orientation and an expertise in the professional discipline that the student represents on the planning committee. It is further assumed that managerial, administrative, and logistic requirements for organizing the planning process, including staff recruitment and assignments, have already been accomplished. The training competencies for senior management of the overall planning process are addressed separately in this guidance as a planning specialty area.

### Audience

The training audience for Planning Essentials includes planning team members who have a defined responsibility in researching, preparing, implementing, and maintaining hazardous materials and terrorist incident response plans for jurisdictions or facilities. These persons generally represent their organization or functional specialty in an integrated planning process. Audience categories can be summarized as follows:

- For communities, training audiences may include local government emergency planners, SERC/LEPC and Area Committee members, hazardous materials officers and team leaders, emergency program managers, public sector agency representatives, community support services and volunteer organization representatives, and various technical specialists.
- For private sector facilities, audience members may include industry owners and executives, general planners, production/process managers, functional managers (e.g., communications, public information, emergency response, etc.), safety officers, technical experts, and others employed by the facility.
- Personnel who have responsibilities for reviewing and approving facility plans and/or enforcing compliance with existing community regulations and standards may also benefit by training.

### Methodology Recommendations

It is recognized that the planning needs of different jurisdictions and facilities, and the resulting training needs of planning team members, can vary greatly, depending on such factors as geographic size, demographics, hazards, local resources, and political preferences. However, Planning Essentials is intended to address the generic training requirements of all hazardous materials and terrorist incident response planners. Training managers, course developers, and instructors may need to tailor materials to meet the unique needs and interests of different audiences, incorporating elements covered in Planning Specialties, as appropriate.

Training can typically be accomplished in two to four days of classroom instruction led by an experienced facilitator. Breaking training into modules (e.g., Hazards Analysis) that are delivered at different times is also possible, and this approach may be beneficial if timed to coincide with planning team assignments. However, team building is very important in the planning process, so continuity of student groupings throughout training is recommended. Other training considerations include the following:

- Training should focus on the actual development of local plans, with the product and participation in the group planning process used to demonstrate student mastery of the objectives.

- Audience should be heterogeneous, reflecting the diverse community members and professional disciplines involved in the planning process. It is highly recommended that team members who will work together in subsequent planning efforts be trained together as a team.
- Course methodology should emphasize group interactions, team building, and resolution of interpersonal conflicts, as well as the development of the plan product itself.
- Course materials should be multi-tracked in terms of type of plan (OSHA, SARA, etc.) to facilitate tailoring the instruction to the needs of the audience.
- Instruction should include practical strategies for merging local plan requirements and needs (i.e. merging several plan requirements into one development effort) to foster more efficient planning efforts.
- Instruction should emphasize the need for on-going planning commitments by the team and the organizations they represent.
- Instruction should emphasize the need for ongoing evaluation at each step in the planning process.
- Instructors should emphasize that steps in the planning process, although taught sequentially, may actually be performed simultaneously.

## Recommended Training

### Planning Essentials

The following instructional objectives describe competencies recommended for training planning team members and others in the essentials of hazardous materials and terrorist incident response planning. The legislative and regulatory basis for this training can be found primarily in the requirements specified in OSHA 1910.120 for development of employers' emergency response plan, SARA Title III for development of planning jurisdiction emergency response plans, and various federal agency regulations for the development of facility and transporter emergency response plans. The objectives incorporate generic concepts and processes derived from various sources in the planning literature. Several of the most important reference documents, and more specific models for planning, are described in the Appendices. The objectives are intended to be comprehensive, i.e., to address the training requirements of all identified audience members; thus, training developers and instructors will need to tailor these objectives to meet local audience interests, needs, and planning processes.

**Objective Identification Legend**

**ESSN-1**

This is the identification of the objective used in this document. It matches the identification code used in course assessment references. (See the Training Program Management section of this document.) Decimal numbers (such as ESSN-1.1) indicate enabling objectives supporting the primary objective.

*Identification*

*Recommended Training Objectives*

<b>ESSN-1</b>	Given an assignment as a planning team member and an overview of the planning process to be used, describe an appropriate planning strategy and identify team member responsibilities in the process.
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## Planning Essentials

### Recommended Training

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<b>ESSN-1.1</b>	Describe the benefits of a team approach to planning and identify skills necessary to participate in the team planning process.
<b>ESSN-1.2</b>	Identify team members with related roles, coordination requirements, available resources, and administrative support systems.
<b>ESSN-1.3</b>	Describe roles of participants in the team planning process, to include organizational and/or functional areas of responsibility.
<b>ESSN-1.4</b>	Demonstrate an understanding of the planning process mission statement, goals, and objectives.
<b>ESSN-1.5</b>	Describe the expected results of the planning process, to include the plan format and time lines.
<b>ESSN-2</b>	Given a review of pertinent information sources and data collection methods, demonstrate the ability to identify, acquire and summarize background information related to individual organizational and/or functional area(s) of responsibility that will impact the team planning process.
<b>ESSN-2.1</b>	Demonstrate the ability to identify, gather, and review copies of policies, plans, and authorities (e.g., community Emergency Operations Plans, mitigation/prevention plans, response agency SOPs, facility plans, codes and ordinances, etc.).
<b>ESSN-2.2</b>	Demonstrate the ability to review critiques of actual incidents, exercises, and drills and identify issues to be addressed in the plan.
<b>ESSN-2.3</b>	Demonstrate the ability to review changes and trends impacting the jurisdiction, organization, or facility and identify issues to be addressed in the plan.
<b>ESSN-2.4</b>	Demonstrate the ability to interview managers, public officials, technical specialists, and practitioners in organizations affected by the plan and identify issues to be addressed in the plan.
<b>ESSN-2.5</b>	Identify, aggregate, and summarize related planning issues, priorities, concerns, and challenges.
<b>ESSN-3</b>	Given an assignment as a planning team member and an overview of the planning process to be used, identify and describe the purpose, benefits, major steps, and participant's role in Hazards Analysis & Capability Assessment.

<b>ESSN-3.1</b>	Explain the purpose, benefits, and major steps in conducting a Hazards Analysis.	PLANNING Training Issues
<b>ESSN-3.2</b>	Explain the purpose, benefits, and major steps in conducting a Capability Assessment.	
<b>ESSN-3.3</b>	Identify responsibilities in the Hazards Analysis & Capability Assessment processes, as appropriate.	
<b>ESSN-3.4</b>	Describe the methods and expected results of the Hazards Analysis & Capability Assessment processes, including roles of various planning team members and technical specialists.	Planning Orientation Training Guidance
<b>ESSN-4</b>	Given an assignment as a planning team member and an overview of the planning process to be used, demonstrate the ability to identify, collect, review and interpret the Hazards Analysis & Capability Assessment data.	Planning Essential Training Guidance
<b>ESSN-4.1</b>	Demonstrate the ability to collect or assist in collecting the data, as required.	Planning Specialists Introduction
<b>ESSN-4.2</b>	Demonstrate the ability to review and interpret the data.	Commodity Flow Studies
<b>ESSN-4.3</b>	Demonstrate the ability to identify, map, and prioritize hazards, risk areas, and vulnerable zones, and identify capability shortfalls and excesses (gap analysis).	Hazard Analysis
<b>ESSN-5</b>	Given an assignment as a planning team member and the results of research and input from other planning team members, describe the issues and solutions to be addressed in the plan and identify needed assignments for developing the plan.	Capability Assessment
<b>ESSN-5.1</b>	Describe issues and solutions to be addressed in the plan by examining existing plans, Hazards Analysis results, Capability Assessment results and other pertinent information.	Planning for Protective Actions
<b>ESSN-5.2</b>	Identify plan development tasks to be assigned to planning team and other organizational representatives.	Plan Implementation & Maintenance
<b>ESSN-6</b>	Given identified issues and solutions to be addressed in the plan and assignments to planning team members, demonstrate the ability to participate in developing or updating the Integrated Hazardous Materials and Terrorist Incident Response Emergency Plan, to address preparedness, response and short term recovery.	Facility Planning
<b>ESSN-6.1</b>	Identify the planning elements necessary to comply with regulatory requirements, standards, and guidelines.	Planning for Public Education
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## Planning Essentials

### Recommended Training

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<b>ESSN-6.1.1</b>	If developing or updating a jurisdictional plan, describe format guidelines specified in SLG-101 and NRT-1.
<b>ESSN-6.1.2</b>	If developing or updating a facility or organization plan, describe format guidelines specified in the NRT's Integrated Contingency Plan guidance.
<b>ESSN-6.2</b>	Demonstrate the ability to develop or update the plan to meet the required regulatory elements.
<b>ESSN-7</b>	Given identified issues and solutions to be addressed in the plan and assignments to planning team members, demonstrate the ability to participate in developing or updating a comprehensive prevention/mitigation section in the plan.
<b>ESSN-7.1</b>	Identify prevention/mitigation strategies and techniques to address the identified issues and solutions.
<b>ESSN-7.2</b>	Demonstrate the ability to write the plan to meet all identified prevention/mitigation planning needs.
<b>ESSN-8</b>	Given a completed draft hazardous materials plan, demonstrate the ability to participate in the plan review and appraisal process.
<b>ESSN-8.1</b>	Identify the purpose and benefits of reviewing the plan.
<b>ESSN-8.2</b>	Demonstrate the ability to conduct an internal draft plan review to assess adequacy and completeness.
<b>ESSN-8.3</b>	Demonstrate the ability to facilitate an external review of the draft plan, which may include peer review, management review, community input, and state/federal review.
<b>ESSN-8.4</b>	Demonstrate the ability to make necessary revisions, and promote formal plan promulgation.
<b>ESSN-9</b>	Given a completed hazardous materials and terrorist incident response plan, describe an appropriate strategy and identify methods for implementing the plan.
<b>ESSN-9.1</b>	Identify the purpose and benefits of conducting plan implementation.

<b>ESSN-9.2</b>	Identify roles and responsibilities for plan implementation, to include available resources, administrative systems, and time lines.	PLANNING Training Issues
<b>ESSN-9.3</b>	Describe the strategy and methods for plan implementation, to include: <ul style="list-style-type: none"> <li>Disseminating copies of the plan</li> <li>Briefing and orienting users of the plan</li> <li>Coordinating the plan with other planning efforts</li> <li>Coordinating the plan with other training efforts</li> </ul>	
<b>ESSN-10</b>	Given a completed hazardous materials plan, describe an appropriate strategy and identify methods for evaluating and maintaining the plan.	Planning Essentials Training Guidance
<b>ESSN-10.1</b>	Identify the purpose and benefits of conducting plan evaluation and maintenance.	Planning Specialists Introduction
<b>ESSN-10.2</b>	Identify roles and responsibilities for plan evaluation and maintenance.	Commodity Flow Studies
<b>ESSN-10.3</b>	Describe the strategy and methods for plan evaluation and maintenance, to include: <ul style="list-style-type: none"> <li>Monitoring changes, trends, and actual events impacting the plan</li> <li>Developing, conducting, and evaluating exercises and drills</li> <li>Periodically updating and revising the plan</li> </ul>	Planning Specialists Training Guidance
		Hazard Analysis
		Capability Assessment
		Planning for Protective Actions
		Plan Implementation & Maintenance
		Facility Planning
		Planning for Public Education
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PLANNING Training Issues	Planning Orientation Training Guidance	Planning Essentials Training Guidance	Planning Specialties Introduction	Commodity Flow Studies	Hazard Analysis	Capability Assessment	Planning for Protective Actions	Plan Imple- mentation & Maintenance	Facility Planning	Planning for Public Education	Appendix A Planning Guide Summaries	Appendix B Planning Models	Appendix C Planning for Terrorist Incidents	Appendix D NRT ICP Guidance
Planning Specialties Training Guidance														

Hazardous Materials  
Planning Curriculum Guidelines:

# Planning Specialties Introduction

# Planning Specialties

## Introduction

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### Introduction

Recognizing that many skills are needed to support the planning process beyond those involved in basic plan development, the Planning Specialties curriculum has been organized to articulate additional, often more advanced learning competencies. It is anticipated that state and local planning needs and training requirements will vary considerably in these specialty areas. Hence, the curriculum supports selective focused training by jurisdictions in only those specialty skill areas where training is needed at any given time.

The list of specialty areas included in the curriculum is intended to reflect the prevailing needs of state and local training organizations. It is anticipated that more specialty areas will be defined over time, and some may be eliminated or modified as needs change. Specialty skill training areas identified for the current edition of the *Guidelines* include the following:

- Commodity Flow Study
- Hazards Analysis
- Capability Assessment
- Planning for Protective Actions
- Plan Implementation and Maintenance
- Facility Planning
- Planning for Public Education

Other topics planned or under discussion include Organizing the Planning Process, Planning Information Management, Exercising the Plan, SOP Writing, Illicit Use of Hazardous Materials, Liability Issues in Hazardous Materials, Marketing the Plan, and Public Information/Education Programs. Recommendations or feedback on the selection of topic areas for inclusion in future editions of the *Guidelines* should be directed to William Lewis, Emergency Management Institute, FEMA.

### Audience:

The training audience for the Planning Specialties curriculum includes jurisdiction and/or facility hazardous materials planning team members that have been assigned responsibilities requiring advanced level knowledge and skills, i.e., exceeding that needed to develop a basic plan as defined in Planning Essentials. Included are representatives of local government and response agencies, community services organizations, private sector facilities and transporters, and other businesses and industries. Since audience members will vary somewhat according to the topic, they are defined in more detail for each specialty area. However, a generic listing might include:

- Jurisdiction and facility planning team members
- LEPC and SERC members
- Facility owners and managers
- Representatives of government and response agencies
- Representatives of community support services and volunteer organizations
- Mitigation/prevention personnel
- Consultants and technical experts
- Emergency program managers

PLANNING Issues	Planning Orientation Training Guidance	Planning Essentials Training Guidance	Planning Specialties Introduction	Commodity Flow Studies	Hazard Analysis	Capability Assessment	Planning for Protective Actions	Plan Implementation & Maintenance	Facility Planning	Planning for Public Education	Appendix A Planning Guide Summaries	Appendix B Planning Models	Appendix C Planning for Terrorist Incidents	Appendix D NRT ICP Guidance
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### Methodology Recommendations

The typical training delivery format for Planning Specialties is a one to two day course led by an experienced instructor. However, more or less time may be appropriate, depending on the subject area, degree of complexity, and related planning requirements. Training managers may also wish to combine Planning Specialties modules for audiences that need training in more than one area, or add one or more modules to Planning Essentials. Other training considerations include the following:

- Audience members are assumed to already possess basic competencies in hazardous materials plan development. Otherwise, experience and expertise among audience members may vary significantly.
- Training should be tailored to audience needs, focusing on the specific jurisdiction's or facility's planning requirements and individual assignments in the planning process.
- Course materials should include local examples, and activities should be based on local issues and data to the extent possible.
- Where local teams are conducting complex studies, members should be trained concurrently, and training should permit group interactions and foster team building.

More information on training scope, audiences, and appropriate methodologies is presented on subsequent pages for each specialty topic area.



PLANNING Training Issues	Planning Orientation Training Guidance	Planning Essentials Training Guidance	Planning Specialties Introduction	<b>Commodity Flow Studies</b>	Hazard Analysis	Capability Assessment	Planning for Protective Actions	Plan Imple- mentation & Maintenance	Facility Planning	Planning for Public Education	Appendix A Planning Guide Summaries	Appendix B Planning Models	Appendix C Planning for Terrorist Incidents	Appendix D NRT ICP Guidance
PlanningSpecialties Training Guidance														

**Hazardous Materials  
and Terrorist Incident  
Response Planning**

Curriculum Guidelines:

**Commodity  
Flow Study**

### **Scope/Objectives of Training**

Most communities, whether large or small, are origins, destinations, or through-routes for hazardous materials transportation. In order to plan and prepare for possible hazardous materials and terrorist transportation incidents, planners need basic data on the types and quantities of chemicals transported through the jurisdiction. The process of acquiring and analyzing this information, referred to here as a commodity flow study, is one of the first steps in preparing a community's integrated hazardous materials emergency plan. Results can be used to analyze current traffic patterns, focus planning efforts on existing needs, and reduce the potential for incidents to occur.

This training specialty area builds on Planning Essentials competencies to provide participants with the knowledge and skills they need to prepare a simple commodity flow study. Content areas covered by training should include the purpose and benefits of conducting commodity flow studies, an overview of appropriate data collection methods, generic steps in the process, related statistical concepts, and sources of additional assistance and information. Where appropriate, more specific models and procedures followed by the jurisdiction can be introduced. Applications and limitations of the study results in the planning process should also be reviewed.

### **Audience**

Potential training audiences include all participants in the planning process that have been assigned responsibility for conducting a commodity flow study that exceeds the competencies covered under Planning Essentials. Possible audience members include:

- Community planning team members
- Facility planners and managers
- Response agency representatives
- Prevention personnel, transport inspectors
- 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 and related skills. Consideration should be given to students that have a defined responsibility for conducting a commodity flow study for a jurisdiction 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 commodity flow studies are planned or when actual field surveys are included as training activities.

### **Methodology and Training Delivery Considerations**

Training should provide students with knowledge of the steps and components of a generic commodity flow study, and skill in performing various data collection methods. Trainees must understand the significance and application of commodity flow study information, and develop the ability to recognize and develop useful and meaningful data on which to base subsequent emergency operations and prevention programmatic and organizational decisions.

Much of the subject matter in this specialty area can be introduced through self-study, but training should include formal classroom instruction with time spent in individual and small group work. Activities should focus on skill development in identifying, collecting, and interpreting various types of commodity flow data, and in using this information in the planning process. Limited field surveys, reviews of shipping papers, role plays of driver interviews, etc. are particularly appropriate for promoting learning. Realistic local situations and scenarios should be used as the basis for activities, when possible.

Integration of the information learned by trainees can be demonstrated in a post-class activity involving the development of a limited commodity flow study based on data from the jurisdiction or scenarios provided by the instructor. For this reason, members of jurisdictional planning teams should be trained together, if possible, using the planned study as the basis for activities. Content testing is appropriate for demonstrating knowledge of the steps involved in a commodity flow study and methods of data collection.

**Objective Identification Legend**

**CFS-1**

This is the identification of the objective used in this document. It matches the identification code used in course assessment references. (See the Training Program Management section of this document.) Decimal numbers (such as CFS-1.1) indicate enabling objectives supporting the primary objective.

*Identification*

***Recommended Training Objectives***

<b>CFS-1</b>	Given a jurisdiction with the need to develop an integrated hazardous materials emergency plan, describe the purpose and benefits of conducting a commodity flow study, including appropriate applications of the results in planning.
<b>CFS-1.1</b>	Describe the purpose and benefits of conducting a commodity flow study in hazardous materials planning.
<b>CFS-1.2</b>	Describe appropriate applications of the results of commodity flow studies in hazardous materials planning.
<b>CFS-2</b>	Given an assignment to conduct a commodity flow study for a jurisdiction, identify major steps in the process, such as the following: <ol style="list-style-type: none"> <li>(1) Identify the specific purpose(s) of the study.</li> <li>(2) Review baseline information appropriate to the study.</li> <li>(3) Design the study.</li> <li>(4) Conduct field surveys.</li> <li>(5) Analyze the results.</li> <li>(6) Apply the results to the study purpose and objectives.</li> </ol>
<b>CFS-3</b>	Given an assignment to conduct a commodity flow study for a jurisdiction, identify the specific purpose(s) of the study.
<b>CFS-3.1</b>	Assess the emergency management needs and other possible applications and uses for hazardous materials transportation data in the jurisdiction.
<b>CFS-3.2</b>	Identify the specific types of hazardous materials transportation data needed for the study.

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## Commodity Flow Study

### Recommended Training

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<b>CFS-4</b>	Given the specific purpose(s) of a commodity flow study for a jurisdiction, demonstrate the ability to identify and review existing baseline information appropriate to the study.
<b>CFS-4.1</b>	Describe common sources of existing information that can be used to identify roads available to hazardous materials transportation.
<b>CFS-4.2</b>	Describe common sources of existing information on vehicle traffic patterns, chemical flows, and accident histories in the jurisdiction.
<b>CFS-5</b>	Given the specific purpose(s) and baseline data of a commodity flow study for a jurisdiction, demonstrate the ability to design a field investigation appropriate to the study.
<b>CFS-5.1</b>	Compare baseline information with project goals to determine whether a field investigation should be undertaken.
<b>CFS-5.2</b>	Identify options and considerations for determining survey locations.
<b>CFS-5.3</b>	Identify options and considerations for determining survey times and repetitions.
<b>CFS-5.4</b>	Identify the personnel and other resource requirements associated with selected field survey methods.
<b>CFS-6</b>	Given an area to be surveyed and the commodity flow study design for a jurisdiction, demonstrate the ability to implement common data collection methods.
<b>CFS-6.1</b>	Describe common methods and demonstrate the appropriate use of placard surveys.
<b>CFS-6.2</b>	Describe common methods and demonstrate the appropriate use of shipping papers reviews.
<b>CFS-6.3</b>	Describe common methods and demonstrate the appropriate use of driver interviews.
<b>CFS-6.4</b>	Describe common methods and demonstrate the appropriate use of facility surveys.
<b>CFS-6.5</b>	Describe the advantages and disadvantages of various data recording procedures that can be used in field surveys.
<b>CFS-7</b>	Given hazardous materials transportation data for a jurisdiction, demonstrate the ability to apply appropriate sampling techniques to the collection and interpretation of the data.
<b>CFS-7.1</b>	Describe key statistical concepts (e.g., Poisson distribution, expected and observed value, confidence intervals) relevant to traffic flow analysis.
<b>CFS-7.2</b>	Make appropriate conclusions and inferences based on sample characteristics and collected data.

<b>CFS-8</b>	Given hazardous materials transportation data and analyses for a jurisdiction, demonstrate the ability to apply the results in planning.
<b>CFS-8.1</b>	Map or otherwise display and report the results of the commodity flow study to obtain a clear picture of hazardous materials transportation in the jurisdiction.
<b>CFS-8.2</b>	Compare the study results and project goals to identify action items and a schedule for implementing them through the jurisdiction's plan development and implementation process.

PLANNING Training Issues	Planning Orientation Training Guidance	Planning Essentials Training Guidance	Planning Specialties Introduction	Commodity Flow Studies	Hazard Analysis	Capability Assessment	Planning for Protective Actions	Plan Implementation & Maintenance	Facility Planning	Planning for Public Education	Appendix A Planning Guide Summaries	Appendix B Planning Models	Appendix C Planning for Terrorist Incidents	Appendix D NRTICP Guidance
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	Planning Orientation Training Guidance	Planning Essentials Training Guidance	Planning Specialties Introduction	Commodity Flow Studies	<b>Hazard Analysis</b>	Capability Assessment	Planning for Protective Actions	Plan Implementation & Maintenance	Facility Planning	Planning for Public Education	Appendix A Planning Guide Summaries	Appendix B Planning Models	Appendix C Planning for Terrorist Incidents	Appendix D NRT ICP Guidance
	Planning Specialties Training Guidance													

**Hazardous Materials and  
Terrorist Incident  
Response Planning**

**Curriculum Guidelines:**

# **Hazards Analysis and Threat Assessment**

# Hazards Analysis/Threat Assessment

## General Training Considerations

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### Scope/Objectives of Training

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.

### 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 and Training Delivery Considerations

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.

**HAZAN-1**

**Objective Identification Legend**

This is the identification of the objective used in this document. It matches the identification code used in course assessment references. (See the Training Program Management section of this document.) Decimal numbers (such as HAZAN-1.1) indicate enabling objectives supporting the primary objective.

*Identification*

***Recommended Training Objectives***

<b>HAZAN-1</b>	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.
<b>HAZAN-1.1</b>	Describe the purpose and benefits of conducting a hazards analysis and threat assessment, including appropriate applications of the results in planning.
<b>HAZAN-1.2</b>	Describe the basic steps in a hazards analysis and threat assessment (hazards identification, threat identification, vulnerability analysis, risk analysis).
<b>HAZAN-1.3</b>	Identify types and sources of information commonly used in hazards analysis and threat assessment.
<b>HAZAN-2</b>	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.
<b>HAZAN-2.1</b>	Describe the process and data sources to be used for hazards and threat identification.
<b>HAZAN-2.2</b>	Identify the location of hazardous materials facilities and major transportation routes within the planning area.
<b>HAZAN-2.3</b>	Identify the types, quantities, and specific locations of hazardous materials used by facilities within the planning area.

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## Recommended Training

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<b>HAZAN-2.4</b>	Identify the types and quantities of hazardous materials transported in or through the planning area.
<b>HAZAN-2.5</b>	Assess the storage conditions of hazardous materials in the planning area (e.g., containment, packaging, security, release detection).
<b>HAZAN-2.6</b>	Identify the nature of hazards (e.g., flammable, explosive, toxic) most likely to accompany hazardous materials spills or releases.
<b>HAZAN-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-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-3.1</b>	Describe the process and data sources to be used for vulnerability analysis.
<b>HAZAN-3.2</b>	Identify methods to screen and prioritize hazards for more in-depth analysis.
<b>HAZAN-3.3</b>	Identify the level of concern for chemical hazards.
<b>HAZAN-3.4</b>	Estimate the credible worst-case scenario for hazardous materials and terrorist incident threats.
<b>HAZAN-3.5</b>	Determine the extent of vulnerable zones for identified hazards using worst-case scenarios.
<b>HAZAN-3.6</b>	Map vulnerable zones, and identify conditions that influence the zone of impact.
<b>HAZAN-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-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-4.1</b>	Describe the process and data sources to be used for risk assessment.
<b>HAZAN-4.2</b>	Estimate the probability of occurrence of worst-case scenarios, and describe unusual conditions, such as the possibility of simultaneous incidents.
<b>HAZAN-4.3</b>	Assess community and facility safeguards, response capabilities in place, and incident histories (as necessary).
<b>HAZAN-4.4</b>	Describe the type of harm to human populations and damage to property, business interests, and environments expected in worst-case situations.

**Recommended Training**

**HAZAN-4.5** Categorize, prioritize, and/or rank hazards and threats for planning, as appropriate.

**HAZAN-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-5.1** Identify and describe hazards, threats and related conditions in the planning area.

**HAZAN-5.2** Describe the vulnerability of populations, property, business interests, and environments to hazardous materials and terrorist threats in the planning area.

**HAZAN-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.

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**Hazardous Materials and  
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Response Planning**

**Curriculum Guidelines:**

# **Capability Assessment**

# Capability Assessment

## General Training Considerations

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### Scope/Objectives of Training

A capability assessment provides information designed to help the planning team evaluate preparedness, prevention, and response resources and capabilities. It includes an assessment of fixed site business and industry resources, transportation resources, and community (response and government agency) resources that could be called upon in the event of a potential emergency identified in the jurisdiction's or facility's hazards analysis.

Training should provide the knowledge and skills necessary to conduct a capability assessment for a jurisdiction or facility. Skill development should include the ability to assess the jurisdiction's or facility's capability assessment needs, determine appropriate methods, collect and interpret data, and report the results. Specifically included is the use of checklists, criteria, surveys, and other methods to identify available resources, determine requirements for accessing them, evaluate deficiencies in existing plans and procedures, and assess the effectiveness of emergency response, prevention, and recovery efforts. The successful accomplishment of training objectives should result in enhanced student proficiency in applying general principles of capability assessment to specific jurisdiction or facility planning needs and processes.

### Audience

Potential training audiences include all participants in a jurisdiction or facility planning process that have been assigned responsibility for conducting a capability assessment study. Possible audience members include:

- Community planning team members
- Facility planners and managers
- Response agency representatives
- 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 capability assessment. Consideration should be given to students that have a defined responsibility for conducting a higher level capability assessment as a regular part of their job for a jurisdiction or facility.

### 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 hazard analysis for audiences that perform both tasks.

### Methodology and Training Delivery Considerations

Training should focus on providing knowledge of the steps and components of a comprehensive capability assessment and on developing related skills. Trainees must understand the significance and application of capability 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 assessing capabilities 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 capability assessment information from available data sources, identifying and assessing existing resources, assessing the effectiveness of emergency management activities, and identifying and evaluating planning shortfalls.

Integration of the information learned by the trainee can be demonstrated in a post-class activity involving the development of a limited capability assessment based on the hazards analysis and resource data from the trainee's home jurisdiction or facility, or from scenarios provided by the instructor. Content testing is appropriate for demonstrating knowledge of the steps involved in capability assessment, listing types of community and facility resources, and identifying the components of a completed capability assessment.

**Objective Identification Legend**

CAP-1

This is the identification of the objective used in this document. It matches the identification code used in course assessment references. (See the Training Program Management section of this document.) Decimal numbers (such as CAP-1.1) indicate enabling objectives supporting the primary objective.

*Identification*

**Recommended Training Objectives**

<b>CAP-1</b>	Given an assignment to conduct a capability assessment for a jurisdiction or facility, describe the process to be used for conducting the study.
<b>CAP-1.1</b>	Describe the purpose and benefits of conducting a capability assessment, including appropriate applications of the results in planning.
<b>CAP-1.2</b>	Describe the advantages and disadvantages of alternative methods for conducting the capability assessment (checklists, criteria, surveys, expert panels, etc.).
<b>CAP-1.3</b>	Identify specific types and sources of information needed to conduct the capability assessment.
<b>CAP-2</b>	Given the process to be used for conducting a capability assessment for a jurisdiction or facility, assess the adequacy of existing resources to support preparedness, prevention/mitigation, response, and short-term recovery activities.
<b>CAP-2.1</b>	Determine the type, amount, capabilities, and accessibility of existing <u>facility</u> resources.
<b>CAP-2.2</b>	Determine the type, amount, capabilities, and accessibility of existing <u>transporter</u> resources.
<b>CAP-2.3</b>	Determine the type, amount, capabilities, and accessibility of existing <u>community</u> resources.
<b>CAP-3</b>	Given hazardous materials and terrorist incident response plans and SOPs, a completed hazard and threat analysis, an evaluation of existing resources, critiques of incidents, exercises, and drills, and other pertinent information, demonstrate the ability to assess the jurisdiction's or facility's capability to prepare for, respond to, and recover from worst-case incidents identified in the hazard analysis.

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## Capability Assessment

### Recommended Training

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<b>CAP-3.1</b>	Evaluate response issues and concerns identified through surveys and reviews of hazardous materials incident critiques, exercises, and drills.
<b>CAP-3.2</b>	Assess the adequacy of the jurisdiction's or facility's concept of operations, including roles and functional assignments, for responding to and recovering from worst-case incidents.
<b>CAP-3.3</b>	Assess the adequacy of existing resources for implementing the concept of operations in worst-case incidents.
<b>CAP-3.4</b>	Assess the adequacy of organizational policies and SOPs for implementing the concept of operations in worst-case incidents.
<b>CAP-3.5</b>	Assess the level of competency of emergency personnel to respond in worst-case incidents identified in the hazard analysis..
<b>CAP-4</b>	Given hazardous materials and terrorist incident response plans and SOPs, a completed hazard and threat analysis, an evaluation of existing resources, critiques of incidents, exercises, and drills, and other pertinent information, demonstrate the ability to assess the jurisdiction's or facility's capability to prevent or mitigate the effects of identified risks.
<b>CAP-4.1</b>	Evaluate prevention issues and concerns identified through surveys or reviews of hazardous materials incident critiques, exercises, and drills.
<b>CAP-4.2</b>	Assess the adequacy of prevention measures, including roles and functional assignments, for preventing or mitigating the effects of identified risks.
<b>CAP-4.3</b>	Assess the adequacy of existing resources for implementing necessary prevention measures.
<b>CAP-4.4</b>	Assess the adequacy of organizational policies and SOPs for implementing necessary prevention measures.
<b>CAP-4.5</b>	Assess the level of competency of prevention personnel to implement necessary prevention measures.
<b>CAP-5</b>	Given the results of the capability assessment analysis, prepare a comprehensive written report.
<b>CAP-5.1</b>	Describe preparedness, mitigation/prevention, response, and short-term recovery capability shortfalls identified in the analysis.
<b>CAP-5.2</b>	Identify additional resources that may be needed to prepare for, prevent/mitigate, respond to, and recover from worst-case hazardous materials incidents.
<b>CAP-5.3</b>	Describe deficiencies in community and/or facility safety plans and procedures identified in the analysis, and recommend modifications, as appropriate. .

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**Hazardous Materials and  
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Response Planning**

**Curriculum Guidelines:**

**Planning for  
Protective Actions**

## Planning for Protective Actions

# General Training Considerations

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### Scope/Objectives of Training:

Planning for protective actions addresses policy and procedures for providing personal protection to the public, including protection in place and evacuation. Considerations include public education, alert and warning systems, the availability of appropriate shelter, the nature and duration of hazardous materials releases, traffic flow and control, reception and care facilities, health and medical services, protection of water and sewage systems, ongoing incident assessment, and other emergency response functions and capabilities.

Training should provide a working knowledge of the benefits and limitations of various protection strategies, including evacuation, in-place protection, and a combination thereof. Participants should gain an understanding of the need for protective action planning and important planning considerations. They should develop the ability to implement a decision-making process for any given hazardous materials emergency or terrorist incident situation and respective protective action options, and learn strategies and techniques for communicating the desired protection action to the general public to elicit the best possible response.

Plans for protective actions must address roles, strategies, and procedures for a broad range of emergency preparedness and response activities. Depending on the jurisdiction's or facility's needs, planning may involve very complex analyses, decisions, and negotiations that must be addressed before incidents occur. Therefore, the goal of training is to give participants the knowledge and skills they need to assess existing capabilities in this area, identify needed resources, and establish systems for promoting effective response in any realistic hazardous materials incident scenario.

### Audience:

The training audience includes decision makers, planning team members, SOP writers, and agency and organization representatives with responsibilities related to mass care and protective actions in hazardous materials emergencies. Possible audience members include:

- Community planning team members
- Local Emergency Planning Committees
- Government and response agency representatives
- Facility planners and managers
- Community support services and volunteer group representatives
- Incident Commanders
- Public Information Officers
- Warning Officers
- Emergency Management Officials

### Prerequisites or Presumed Knowledge/Skills of Students:

Students should have mastered basic skills in hazardous materials and terrorism incident response planning, and have assigned responsibilities for hazardous materials and terrorist incident response planning for a jurisdiction or facility. They should understand basic concepts of the Incident Command System, public relations and education, and emergency information and warning.

### Typical Program Format:

An instructor-facilitated one to two day program with lecture/discussion, student and/or tabletop exercises, and case study reviews. Longer programs may be appropriate where more complex studies, student activities, and field work are planned.

**Methodology and Training Delivery Considerations:**

Planning for protective actions requires knowledge and skills in a broad range of disciplines and emergency response functions. Typically, many different government agencies, community organizations, and private sector groups are assigned related responsibilities under the emergency plan. For these reasons, the use of planning teams is particularly suited for this type of planning. Whenever possible, planning teams should be trained together to promote information sharing, inter-organizational understanding, and cooperation. Other considerations include:

- The training competencies identified for this curriculum area assume that a comprehensive hazards and threat analysis and capability assessment have been completed for the jurisdiction or facility. If this assumption is incorrect, training managers may wish to incorporate additional competencies from other planning specialty areas in the instruction.
- Instructional content should stress the interrelationships among planning processes, preparedness activities, response actions, and the public information and education components of emergency management.
- Training methodologies should emphasize small group interactions among various participants in the planning process. Hazardous materials and terrorist incident case examples should be incorporated into the course, using student activities or tabletop exercises to promote and evaluate skill/learning objectives.
- An instructional cadre concept, emphasizing diverse organizational interests and expertise, is particularly appropriate for this type of training.

**Objective Identification Legend**

**EVAC-1**

This is the identification of the objective used in this document. It matches the identification code used in course assessment references. (See the Training Program Management section of this document.) Decimal numbers (such as EVAC-1.1) indicate enabling objectives supporting the primary objective.

*Identification*

*Recommended Training Objectives*

<b>EVAC-1</b>	Given a hazards and threat analysis and capability assessment for a jurisdiction or facility, demonstrate the ability to develop decision-making criteria for implementing protective actions.
<b>EVAC-1.1</b>	Describe the purpose and benefits of various protective action strategies, including evacuation, in-place sheltering, water supply protection, sewage system protection, and relocation.
<b>EVAC-1.2</b>	Compare the advantages and disadvantages of evacuation and in-place protection options for mass care in hazardous materials emergencies.

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## Planning for Protective Actions

### Recommended Training

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#### EVAC-1.3

Identify factors to consider in selecting a protective action strategy in a hazardous materials or terrorist incident situation, including:

- The nature of the threat
- The population at risk
- Time factors involved
- Weather conditions
- Communications
- Response capabilities

#### EVAC-1.4

Identify and assess resources available for implementing various protective actions, including capabilities of organizations assigned related responsibilities under the plan.

#### EVAC-1.5

Develop decision-making criteria for implementing protective actions that address evacuation (precautionary, general, and selective), in-place sheltering, and other options in emergency situations identified in the hazards analysis.

#### EVAC-2

Given the assignment to plan for protective actions for a jurisdiction or facility, demonstrate the ability to assess existing systems, strategies, and procedures for notifying, warning, and informing the public about protective action decisions.

#### EVAC-2.1

Identify factors that influence the public's understanding of and response to protective actions in hazardous materials emergencies.

#### EVAC-2.2

Assess existing public education programs for informing the public about protective actions in the event of a hazardous materials emergency, including citizen roles and responsibilities.

#### EVAC-2.3

Assess existing warning and emergency public notification systems for implementing protective actions in a hazardous materials emergency.

#### EVAC-3

Given a hazards and threat analysis and capability assessment for a jurisdiction or facility, demonstrate the ability to assess existing systems, strategies, and procedures for evacuating populations at risk in a hazardous material or terrorist incident.

#### EVAC-3.1

Identify eight considerations when planning an evacuation, as follows:

- (1)Emergency scene access and evacuation routes
- (2)Areas of responsibility
- (3)Geographical area, size and type
- (4)Evacuation area
- (5)Weather conditions
- (6)Transportation
- (7)Resisters
- (8)Mass care centers and shelters

#### EVAC-3.2

Identify four constraints to an effective evacuation, as denoted in the Hans and Sells Study conducted for the U.S. Environmental Protection Agency, as follows:

- (1)Time delay
- (2)Notification time
- (3)Mobilization time
- (4)Travel time

<b>EVAC-3.3</b>	Identify six steps for implementing the evacuation process, as follows:  (1)Form work groups (2)Track personnel assignments (3)Use map coordinates for making assignments (4)Issue evacuation warnings (5)Identify relocation shelters (6)Use the three-phase notification process
<b>EVAC-3.4</b>	Assess systems, strategies, and procedures for moving people out of risk areas (availability of vehicles, evacuation routes and alternatives, controlling traffic, special populations, etc.)
<b>EVAC-3.5</b>	Assess preparedness for reception and care of evacuees (shelter locations, supplies, notifying family members, health and medical care, mutual aid agreements, etc.)
<b>EVAC-3.6</b>	Assess decision-making criteria and procedures for re-entry after an evacuation.
<b>EVAC-4</b>	Given a hazards and threat analysis and capability assessment for a jurisdiction or facility, demonstrate the ability to assess existing systems, strategies, and procedures for implementing in-place sheltering and other protective actions in a hazardous materials or terrorist incident.
<b>EVAC-4.1</b>	Assess systems, strategies, and procedures for initiating and implementing in-place protection.
<b>EVAC-4.2</b>	Assess systems, strategies, and procedures for initiating and implementing water supply protection.
<b>EVAC-4.3</b>	Assess systems, strategies, and procedures for initiating and implementing sewage system protection.
<b>EVAC-4.4</b>	Assess systems, strategies, and procedures for monitoring toxic releases, continually assessing the potential for injury and damage, notifying the public as necessary, and terminating response activities.
<b>EVAC-5</b>	Given an assessment of the jurisdiction’s or facility’s capabilities to implement protective action options in hazardous materials or terrorist incidents, demonstrate the ability to develop related emergency plans and procedures.
<b>EVAC-5.1</b>	Describe potential problems and capability shortfalls for implementing protective actions in worst-case hazardous materials or terrorist incidents.
<b>EVAC-5.2</b>	Identify additional resources that may be needed to prepare for and implement protective actions in worst-case hazardous materials incidents.
<b>EVAC-5.3</b>	Identify recommended changes to hazardous materials and terrorist incident response plans (addressing, for example, sections on the concept of operations, roles and responsibilities, direction and control, warning systems and emergency public notification, resource management, health and medical, personal protection of citizens, ongoing incident assessment, and human services).
<b>EVAC-5.4</b>	Describe modifications to jurisdiction and/or facility policies and procedures that are required to facilitate the recommended plan changes.

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**Hazardous Materials  
 Planning Curriculum Guidelines:  
 Plan Implementation  
 and Maintenance**

## Plan Implementation and Maintenance

# General Training Considerations

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### Scope/Objective of Training

Training in this curriculum area will provide students with the knowledge, skills, and practical tools they need to successfully implement a completed hazardous materials response plan, anticipate future outcomes, monitor and evaluate the plan's effectiveness, and revise it as appropriate to improve the jurisdiction's or facility's emergency operations and prevention/mitigation capabilities. Instruction builds on Planning Essentials competencies to help participants develop the feedback loop necessary for long-term plan maintenance and enhancement.

The content of training addresses (1) plan implementation, including promulgation and dissemination of the plan, orientation of plan users, and integration of multi-jurisdictional planning efforts; (2) validation of the plan, including methods of plan review, plan testing, and exercising; and (3) plan maintenance, including development of strategies and processes to identify, illuminate, and correct problems with the plan. Other subject areas potentially include environmental scanning, management audits, performance audits, and other long-term and strategic planning concepts.

Training focuses on the role of the planning manager or administrator in establishing systems and strategies for plan implementation and maintenance. This person may also participate in (and need training in) the actual writing and development of the plan, as defined in Planning Essentials and other Planning Specialties areas. Furthermore, the planning manager or administrator may function as the jurisdiction's or facility's Exercise Manager/Officer. However, advanced competencies in exercise design and development will be covered in a separate Planning Specialty area in subsequent editions of these *Guidelines*.

### Audience

The training audience includes all personnel involved in the implementation, validation, and maintenance of a completed hazardous materials plan for their respective jurisdiction or facility. Audience members potentially include planners and decision makers for agencies and organizations represented in the plan, community leaders, and others interested in improving hazardous materials preparedness. Possible audience members are:

- Community planning team members
- Local Emergency Planning Committee members
- Government and response agency representatives
- Facility planners and managers
- Community support services and volunteer group representatives
- Exercise program managers and exercise officers
- Emergency Management Officials

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

Students should possess Planning Orientation and Planning Essentials competencies and previous experience in community or organizational planning. They should have job responsibilities directly related to the management and administration of hazardous materials plans and planning processes for a jurisdiction or facility.

### Typical Program Format

One to two days of classroom instruction with an emphasis on activities designed to help students develop strategies and mechanisms to assess, evaluate, and refine existing hazardous materials plans. Job aids to facilitate later work may be desirable. Training program managers may wish to combine this instruction with more in-depth materials on exercise design and development for audiences that perform both roles.

**Methodology and Training Delivery Considerations**

- Ideally, training audiences should be heterogeneous, reflecting the wide range of personnel involved in the integrated hazardous materials planning process. If possible, individuals who work together as members of a planning team should be trained together.
- Training methodologies should emphasize small group interactions and practical activities based on actual plans and realistic situations. Since teamwork and continuity are important in plan implementation and maintenance, it is recommended that student groupings be maintained throughout training.
- Generic case studies or scenarios should be available for use with audiences from diverse communities and organizations. The instructor should be able to flexibly tailor, update, or substitute these materials, depending on audience needs.
- Training emphasizes skills and attitudes needed for students to become effective long-term community change agents. Emphasis will be placed on methods and techniques for effecting meaningful change.

**Objective Identification Legend**

PI&M-1

This is the identification of the objective used in this document. It matches the identification code used in course assessment references. (See the Training Program Management section of this document.) Decimal numbers (such as PI&M-1.1) indicate enabling objectives supporting the primary objective.

*Identification*

**Recommended Training Objectives**

<b>PI&amp;M-1</b>	Given the goals and objectives of the integrated hazardous materials planning process for a jurisdiction or facility, develop a strategy for plan implementation.
<b>PI&amp;M-1.1</b>	List organizations and key personnel who should participate in plan implementation, including: <ul style="list-style-type: none"> <li>• Planning team members</li> <li>• Organizations, groups, and facilities assigned responsibilities under the plan</li> <li>• Local, state, and federal oversight agencies</li> <li>• Community support services organizations affected by the plan</li> </ul>
<b>PI&amp;M-1.2</b>	Establish objectives for plan review and validation as part of the plan development process.
<b>PI&amp;M-2</b>	Given a completed integrated hazardous materials plan for a jurisdiction or facility, develop strategies to ensure proper promulgation and dissemination of the plan.

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<b>PI&amp;M-2.1</b>	Identify the steps necessary to ensure proper promulgation of the plan.
<b>PI&amp;M-2.2</b>	Determine the information needs of various groups, and develop strategies to orient them to their roles and assignments under the plan.
<b>PI&amp;M-2.3</b>	Develop strategies to orient the public on the plan, including clarifying technical information as necessary to promote public understanding.
<b>PI&amp;M-3</b>	Given an approved integrated hazardous materials plan for a jurisdiction or facility, develop strategies to ensure coordination with multi-jurisdictional planning efforts.
<b>PI&amp;M-3.1</b>	Identify and assess options for coordinating and integrating the plan within the jurisdiction and/or facility.
<b>PI&amp;M-3.2</b>	Develop strategies to communicate the substance of the plan to other jurisdictions, including surrounding communities, state offices, and federal (national/regional) personnel involved in related planning efforts.
<b>PI&amp;M-3.3</b>	Develop strategies to establish communication links with local, state, and federal organizations to obtain feedback on emergency management program changes that may affect the plan.
<b>PI&amp;M-4</b>	Given an approved integrated hazardous materials plan for a jurisdiction or facility, develop strategies to ensure that organizations and personnel are capable of carrying out their assigned responsibilities.
<b>PI&amp;M-4.1</b>	Develop strategies to ensure that each organization develops the SOPs necessary to facilitate the accomplishment of assigned tasks under the plan.
<b>PI&amp;M-4.2</b>	Develop strategies to assess related training needs.
<b>PI&amp;M-4.3</b>	Identify training programs and assistance available in the public and private sectors.
<b>PI&amp;M-5</b>	Given implementation of an approved integrated hazardous materials plan for a jurisdiction or facility, develop strategies for monitoring changes and trends that impact the plan or planning process.
<b>PI&amp;M-5.1</b>	Identify changes and trends that could impact the plan or planning process, including but not limited to: <ul style="list-style-type: none"><li>• Economic</li><li>• Legal</li><li>• Political</li><li>• Technological</li><li>• Social</li><li>• Demographic</li></ul>
<b>PI&amp;M-5.2</b>	Identify strategies for collecting and assessing information from reviews or critiques of actual hazardous materials incidents affecting the jurisdiction.

Plan Implementation and Maintenance  
**Recommended Training**

<b>PI&amp;M-5.3</b>	Identify strategies to ensure that various organizations with a role under the plan provide feedback as changes occur that may affect the plan.
<b>PI&amp;M-6</b>	Given implementation of an approved integrated hazardous materials plan for a jurisdiction or facility, participate in the design and development of an exercise program that is useful for evaluating and updating the plan.
<b>PI&amp;M-6.1</b>	Describe five types of exercises and their appropriate use in plan evaluation, to include: <ul style="list-style-type: none"> <li>• Drill</li> <li>• Orientation</li> <li>• Table top</li> <li>• Functional</li> <li>• Full Scale</li> </ul>
<b>PI&amp;M-6.2</b>	Identify the goals and objectives of the hazardous materials exercise program and its relationship to the overall planning process.
<b>PI&amp;M-6.3</b>	Identify methods to be used for determining hazardous materials exercise needs, addressing at a minimum: <ul style="list-style-type: none"> <li>• Number and type of exercises to be conducted</li> <li>• Functions to be tested (preparedness, response, recovery, and mitigation/prevention)</li> <li>• Exercise goals and objectives</li> <li>• Appropriate scenarios</li> </ul>
<b>PI&amp;M-6.4</b>	Identify exercise criteria, resources, and reference materials.
<b>PI&amp;M-6.5</b>	On specific exercises, establish effective policies and plans for working with the Exercise Manager, organizational participants, and others to: <ul style="list-style-type: none"> <li>• Control the exercise</li> <li>• Recruit and brief participants</li> <li>• Record and evaluate exercise play</li> <li>• Critique exercise results and identify follow-up actions</li> </ul>
<b>PI&amp;M-7</b>	Given changes and trends that impact the plan or planning process, incident critiques, exercise results, expert opinion, and other information, develop strategies for conducting periodic reviews and updates of the plan.
<b>PI&amp;M-7.1</b>	Determine whether goals and objectives established in the plan have been achieved.
<b>PI&amp;M-7.2</b>	Evaluate changes and trends, incident critiques, exercise results, expert opinion, and other information to assess the need for plan revisions.
<b>PI&amp;M-7.3</b>	Identify strategies for making the needed revisions to the plan and for implementing the plan revisions.
<b>PI&amp;M-7.4</b>	Identify strategies and timetables for reviewing and updating the plan on a periodic basis.

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PlanningSpecialties Training Guidance														

**Hazardous Materials and  
Terrorism Incident  
Response Planning**

**Curriculum Guidelines:**

**Facility Planning**

## Facility Planning

# General Training Considerations

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### Scope/Objectives of Training

Facility Planners develop, validate, and maintain emergency response plans and safety plans for any facility subject to federal contingency planning regulations, as well as other facilities that wish to improve emergency preparedness through planning. They also develop procedures to ensure compliance with federal, state, and local mandates for participation in community planning and right-to-know activities. In this context, the term “facility” is meant to have a wide connotation and may include, but is not limited to, any mobile or fixed onshore or offshore building, structure, installation, equipment, pipe, or pipeline.

The Facility Planning specialty area provides participants with the knowledge and skills they need to develop a basic hazardous materials and terrorist threat emergency plan for a facility. The primary training audience is facility planners and planning team members. Training objectives cover a broad range of generic competencies, including the ability to function effectively in a team environment, assist in or conduct a basic hazards and threat analysis and capability assessment, work with others to analyze options and draft sections of the plan, and participate in plan implementation, evaluation, and maintenance.

The legislative and regulatory basis for this training can be found primarily in the requirements specified in OSHA 1910.120 for development of employers’ emergency response plans, SARA Title III for development of planning jurisdictions’ emergency response plans, and various federal agency regulations for the development of facility and transporter emergency response plans. The competencies defined here incorporate generic concepts and processes derived from various sources in the planning literature. Several of the most important reference documents, and more specific models for planning, are described in the Appendices. The training objectives are intended to be comprehensive, i.e., to address the requirements of all identified audience members; thus, training developers and instructors will need to tailor these objectives to meet local audience interests, needs, and planning processes.

### Audience

The training audience for Facility Planning includes planning team members who have a defined responsibility in researching, preparing, implementing, and maintaining hazardous materials and terrorist threat facility plans. These persons generally represent an organizational or functional specialty in an integrated planning process for the facility. Audience members may include industry owners and executives, business planners, production/process managers, functional managers (e.g., communications, public information, emergency response, etc.), safety officers, technical experts, and others employed by the facility. Personnel who have responsibilities for reviewing and approving facility plans and/or enforcing compliance with existing community regulations and standards may also benefit by training.

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

Training covers basic skills, with an emphasis on the ability to interpret and use information provided by various technical specialists in developing the plan. More advanced planning skills are addressed under other Planning Specialties. Audience members are assumed to already possess training competencies covered under Planning Orientation, as well as an expertise in the professional discipline that the student represents on the planning committee. It is further assumed that managerial, administrative, and logistic requirements for organizing the planning process, including staff recruitment and assignments, have already been met.

### Typical Program Format

Training can typically be accomplished in two to four days of classroom instruction led by an experienced facilitator. Breaking training into modules (e.g., Hazards Analysis and Threat Assessment) that are delivered at different times is also possible, and this approach may be beneficial if timed to coincide with planning team assignments. However, team building is very important in the planning process, so continuity of student groupings throughout training is recommended.

**Methodology and Training Delivery Considerations**

It is recognized that the planning needs of facilities, and the resulting training needs of planning team members, can vary greatly, depending on such factors as business size, demographics, product mix, hazards, local resources, and planning preferences. However, training described here is intended to address the generic training requirements of all hazardous materials facility planners. Training managers, course developers, and instructors may need to tailor these materials to meet the unique needs and interests of different audiences, incorporating elements covered in other Planning Specialties, as appropriate. Other training considerations include the following:

- Training should focus on the actual development of facility plans, with the work product and participation in the group planning process used to demonstrate student mastery of the objectives.
- Audiences should be heterogeneous, reflecting the diverse groups and professional disciplines represented in the planning process. It is highly recommended that team members who will work together in subsequent planning efforts be trained together.
- Course methodology should emphasize group interactions, team building, and resolution of interpersonal conflicts, as well as the development of the plan product itself.
- Course materials can be multi-tracked by type of plan (OSHA, EPA, etc.) to facilitate tailoring the instruction to the needs of different audiences.
- If possible, instruction should address practical strategies for consolidating planning requirements (i.e. merging several requirements into one plan development effort) to foster greater planning efficiency.
- Instruction should emphasize the need for on-going planning commitments by the team and the organizations they represent.
- Instruction should emphasize the need for ongoing evaluation at each step in the planning process.
- Instructors should emphasize that steps in the planning process, although taught sequentially, may actually be performed simultaneously.

**Objective Identification Legend**

FACIL-1

This is the identification of the objective used in this document. It matches the identification code used in course assessment references. (See the Training Program Management section of this document.) Decimal numbers (such as FACIL-1.1) indicate enabling objectives supporting the primary objective.

*Identification*

*Recommended Training Objectives*

<b>FACIL-1</b>	Given an assignment as a facility planning team member, describe an appropriate planning strategy and team member responsibilities in the process.
<b>FACIL-1.1</b>	Describe the benefits of a team approach to planning, and identify skills necessary to participate in the team planning process.
<b>FACIL-1.2</b>	Identify individual roles and responsibilities in the facility planning process, to include work expectations, administrative support systems, and time lines.

PLANNING Training Issues	Planning Orientation Training Guidance	Planning Essentials Training Guidance	Planning Specialties Introduction	Commodity Flow Studies	Hazard Analysis	Capability Assessment	Planning for Protective Actions	Plan Implementation & Maintenance	Facility Planning for Public Education	Appendix A Planning Guide Summaries	Appendix B Planning Models	Appendix C Planning for Terrorist Incidents	Appendix D NRT/ICP Guidance
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## Recommended Training

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<b>FACIL-1.3</b>	Identify the need to coordinate planning with outside groups (e.g., local government, surrounding jurisdictions, state offices, federal/regional offices such as EPA and FEMA, RRTs, and CAER.)
<b>FACIL-1.4</b>	Demonstrate understanding of the planning process mission statement, goals, and objectives.
<b>FACIL-1.5</b>	Describe the expected results of the planning process, to include required planning elements and plan format.
<b>FACIL-1.6</b>	Identify resources needed to conduct the planning process, including personnel, budgets, and technical capabilities, and solicit these resources within the company.
<b>FACIL-2</b>	Given an assignment as a facility planning team member, demonstrate the ability to conduct a review of federal, state, and local authorities applicable to the planning process.
<b>FACIL-2.1</b>	Describe the purpose and benefits of completing a review of existing plans and authorities.
<b>FACIL-2.2</b>	Identify methods and procedures for reviewing plans and authorities (collecting and organizing information, identifying and clarifying issues, identifying incompatibilities and shortfalls, etc.), including associated costs and staffing requirements.
<b>FACIL-2.3</b>	Identify planning regulatory requirements that apply to the facility, to include consideration of: <ul style="list-style-type: none"> <li>• SARA Title III</li> <li>• EPA's Oil Pollution Prevention Regulation (SPCC and Facility Response Plan Requirements)—40 CFR part 112.7(d) and 112.20 to 112.21</li> <li>• MMS's Facility Response Plan Regulation—30 CFR part 254</li> <li>• RSPA's Pipeline Response Plan Regulation—49 CFR part 194</li> <li>• USCG's Facility Response Plan Regulation—33 CFR part 154, subpart F</li> <li>• EPA's Risk Management Programs Regulation—40 CFR part 68</li> <li>• OSHA's Emergency Action Plan Regulation—29 CFR 1910.38(a)</li> <li>• OSHA's Process Safety Standard—29 CFR 1910.119</li> <li>• OSHA's HAZWOPER Regulation—29 CFR 1910.120</li> <li>• EPA's Resource Conservation and Recovery Act Contingency Planning Requirements—40 CFR part 264, subpart D, 40 CFR part 265, subpart D, and 40 CFR part 279.52 State and local policies, codes, ordinances, etc.</li> </ul>
<b>FACIL-2.4</b>	Describe the advantages and disadvantages of all-hazard planning and hazard-specific planning.
<b>FACIL-3</b>	Given an assignment as a facility planning team member, demonstrate the ability to conduct background research appropriate to the planning requirement.

<b>FACIL-3.1</b>	Identify critical internal and external products, services, and operations that impact the facility plan, including: <ul style="list-style-type: none"> <li>• Internal products and services and the facilities and equipment needed to produce them</li> <li>• External products and services provided by suppliers, especially sole source vendors</li> <li>• Services such as electrical power, water, sewer, gas, telecommunications, and transportation</li> <li>• Operations, equipment, and personnel vital to the continued functioning of the facility</li> </ul>	PLANNING Training Issues
<b>FACIL-3.2</b>	Identify, gather, and review copies of existing hazardous materials and terrorist incident response plans (community emergency plans, mitigation/prevention plans, response agency SOPs, facility plans, etc.).	
<b>FACIL-3.3</b>	Review critiques of actual incidents, exercises, and drills conducted by the facility or by the community with participation by the facility.	Planning Orientation Training Guidance
<b>FACIL-3.4</b>	Review important changes and trends impacting the facility.	
<b>FACIL-3.5</b>	Conduct surveys, interviews, etc. to gather expert opinion on planning needs, as required.	Planning Essentials Training Guidance
<b>FACIL-3.6</b>	Identify and summarize related planning issues, priorities, concerns, and challenges.	
<b>FACIL-4</b>	Given the planning process to be used by the facility, identify the purpose, benefits, methods, expected results, and participant roles in hazards analysis and capability assessment.	Planning Specialties Introduction
<b>FACIL-4.1</b>	Describe the purpose and benefits of conducting a hazards and threat analysis.	
<b>FACIL-4.2</b>	Describe the purpose and benefits of conducting a capability assessment.	Commodity Flow Studies
<b>FACIL-4.3</b>	Describe the methods to be used and the expected results of the facility's hazards and threat analysis and capability assessment processes.	
<b>FACIL-4.4</b>	Identify organizational and team member responsibilities in the facility's hazards and threat analysis and capability assessment processes, including the roles of various technical specialists.	Planning Specialties Training Guidance
<b>FACIL-5</b>	Given the facility's production processes, potential hazards, and potential terrorist target areas, demonstrate the ability to identify, collect, and interpret hazards and threat analysis and capability assessment data needed for planning.	
<b>FACIL-5.1</b>	Collect or assist in collecting data, as identified in <i>Technical Guidance for Hazards Analysis</i> .	Planning for Protective Actions
<b>FACIL-5.2</b>	Identify types of emergencies that have occurred in the community, at the facility, and in similar facilities.	
		Plan Implementation & Maintenance
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		Appendix B Planning Models
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## Recommended Training

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<b>FACIL-5.3</b>	Identify geographic factors that could contribute to potential emergencies.
<b>FACIL-5.4</b>	Identify types of emergencies that could occur from technological process or system failures.
<b>FACIL-5.5</b>	Identify types of emergencies that could occur as a result of human error.
<b>FACIL-5.6</b>	Identify types of emergencies that could result from the design or construction of the facility and production processes.
<b>FACIL-5.7</b>	Identify types of emergencies that could result from terrorist acts or other deliberate criminal sabotage.
<b>FACIL-5.8</b>	For each potential emergency, identify possible complications and relationships to other emergency events, and estimate the probability of occurrence.
<b>FACIL-5.9</b>	Identify and evaluate internal and external resources and capabilities that could be applied in an emergency.
<b>FACIL-5.10</b>	Conduct an insurance review to identify and evaluate facility insurance coverage and benefits in various types of emergency situations.
<b>FACIL-5.11</b>	Review and interpret the data.
<b>FACIL-5.12</b>	Identify, map, and prioritize hazards, terrorist targets, risk areas, and vulnerable zones, and identify capability shortfalls and excesses (gap analysis).
<b>FACIL-6</b>	Given the results of the facility's hazards and threat analysis and capability assessment, demonstrate the ability to identify issues and solutions to be addressed in the plan, and assignments for developing the plan.
<b>FACIL-6.1</b>	Identify issues and solutions to be addressed in the facility plan by examining existing plans, hazards and threat analysis results, capability assessment results, and other pertinent information.
<b>FACIL-6.2</b>	Identify facility plan development tasks and assignments.
<b>FACIL-7</b>	Given identified issues and solutions to be addressed in the facility plan, participate as assigned in developing or updating the hazardous materials and terrorist incident emergency operations plan, to address preparedness, response and short-term recovery.
<b>FACIL-7.1</b>	Identify the planning elements necessary to comply with regulatory requirements, standards, and guidelines.
<b>FACIL-7.2</b>	Develop or update the emergency operations plan to meet the required planning elements.
<b>FACIL-8</b>	Given identified issues and solutions to be addressed in the facility plan, participate as assigned in developing or updating a comprehensive prevention/mitigation section in the plan.

Facility Planning  
**Recommended Training**

<b>FACIL-8.1</b>	Identify prevention/mitigation strategies and techniques to address the identified issues and solutions.	PLANNING Training Issues
<b>FACIL-8.2</b>	Develop or update the plan to meet all identified prevention/mitigation planning needs.	
<b>FACIL-9</b>	Given a draft facility hazardous materials plan, participate as assigned in the plan review and appraisal process.	Planning Orientation Training Guidance
<b>FACIL-9.1</b>	Describe the purpose and benefits of reviewing the facility plan.	Planning Essentials Training Guidance
<b>FACIL-9.2</b>	Conduct an internal review of the draft facility plan to assess adequacy and completeness.	
<b>FACIL-9.3</b>	Facilitate an external review of the draft facility plan, which may include peer review, management review, and local, state and federal review.	Planning Specialists Introduction
<b>FACIL-9.4</b>	Make necessary revisions, and promote formal plan promulgation.	Commodity Flow Studies
<b>FACIL-10</b>	Given an approved hazardous materials facility plan, describe appropriate strategies and identify methods for implementing the plan.	Planning Specialists Training Guidance
<b>FACIL-10.1</b>	Describe the purpose and benefits of implementing the plan.	
<b>FACIL-10.2</b>	Describe the strategy and methods to be used for implementing the plan, to include: <ul style="list-style-type: none"> <li>Disseminating copies of the plan</li> <li>Briefing and orienting users of the plan</li> <li>Integrating the plan with other plans and work processes within the facility</li> </ul>	Hazard Analysis
<b>FACIL-10.3</b>	Identify options and develop strategies for coordinating the plan with multi-jurisdictional planning efforts.	Capability Assessment
<b>FACIL-10.4</b>	Identify options and develop strategies for ensuring that personnel are adequately trained to carry out their assigned responsibilities under the plan.	Planning for Protective Actions
<b>FACIL-10.5</b>	Identify roles and responsibilities for implementing the plan, to include available resources, administrative systems, and time lines.	Plan Implementation & Maintenance
<b>FACIL-11</b>	Given an approved hazardous materials facility plan, describe appropriate strategies and identify methods for evaluating and maintaining the plan.	Facility Planning for Public Education
<b>FACIL-11.1</b>	Describe the purpose and benefits of evaluating and maintaining the plan.	Appendix A Planning Guide Summaries
<b>FACIL-11.2</b>	Identify options and develop strategies for monitoring changes and trends affecting the facility and/or jurisdiction.	Appendix B Planning Models
<b>FACIL-11.3</b>	Identify options and develop strategies for critiquing actual incidents and accidents that occur, and for identifying and implementing remedial actions.	Appendix C Planning for Terrorist Incidents
		Appendix D NRT/ICP Guidance

## Recommended Training

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**FACIL-11.4**

Identify options and develop strategies for developing, conducting, and evaluating exercises and drills.

**FACIL-11.5**

Identify options and develop strategies for conducting an annual audit of the facility plan and/or periodically updating and revising the facility plan, as necessary.

**FACIL-11.6**

Identify roles and responsibilities for evaluating and maintaining the facility plan, to include available resources, administrative systems, and time lines.

**FACIL-11.7**

Work with planning team members, facility managers, and other facility and community representatives to test planning concepts and measures (e.g., through tabletop exercises and drills), as necessary.

PLANNING Training Issues	Planning Orientation Training Guidance	Planning Essentials Training Guidance	Planning Specialties Introduction	Commodity Flow Studies	Hazard Analysis	Capability Assessment	Planning for Protective Actions	Plan Imple- mentation & Maintenance	Facility Planning	Planning for Public Education	Appendix A Planning Guide Summaries	Appendix B Planning Models	Appendix C Planning for Terrorist Incidents	Appendix D NRT ICP Guidance
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**Hazardous Materials and  
Terrorist Incident  
Response Planning**

**Curriculum Guidelines:**

**Planning for  
Public Education**

## Planning for Public Education

### General Training Considerations

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Note: There are several aspects and potential training requirements associated with hazardous materials and terrorist threat public education. These include training for Public Information Officers (PIOs) and others who design and develop related programs, strategies, and outreach materials; training for media representatives and others who influence the perceptions of the public; and training for planners in “marketing” the plan to gain public support for the planning process. The Planning Specialty area described here identifies general competencies for individual members of the public.

#### Scope/Objectives of Training

Training in this curriculum area provides an overview of the hazardous materials and terrorist threat emergency management system, with an emphasis on the citizen’s role in that system. No skill development is attempted. Training should result in a positive attitudinal change, an improved awareness of threats to personal and community safety, an enhanced understanding of the need for and benefits of jurisdictional and facility planning and emergency management, and motivation to improve personal and community preparedness.

Benefits to be derived from training the general public include a greater understanding of and support for the jurisdiction’s emergency management system and capabilities; improved citizen understanding of appropriate actions to take in hazardous materials and terrorist incident emergency situations; heightened cooperation with responders and prevention/mitigation personnel; and enhanced citizen planning and preparedness for potential incidents in the home or neighborhood.

#### Audience

The audience for public education training includes all persons who have a “stake” in the hazardous materials and terrorist threat emergency management system, although they have no defined role in the development and implementation of emergency operations and mitigation/prevention plans. Potential audience members include the general public, community groups, volunteer groups, business/industry associations, employee groups, and others with a self-interest in improving community and individual/family preparedness.

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

Participants are assumed to have an interest in hazardous materials and terrorist threats facing the community, as well as the jurisdiction’s ability to provide effective hazardous materials and terrorist threat emergency management. However, no prior knowledge of community plans and systems is required to participate in training.

#### Typical Program Format

A short (one to two hours or as need is expressed by the customer) facilitator-led presentation or seminar.

#### Methodology and Training Delivery Considerations

Training should emphasize opportunities for interaction with audience members to identify and address individual perceptions and concerns. Whenever possible, use of dynamic media (video, slides, computer simulations, CD-ROM, etc.) is encouraged to promote interest and motivate support. Depending on audience needs and time, simple activities, exercises, or role plays emphasizing local examples and realistic personal situations may be appropriate.

The instructor should be able to discuss a broad range of topics of potential interest to audience members, including the community’s readiness to cope with terrorist threats, community and household hazardous materials threats; requirements of the Emergency Planning and Community Right to Know Act; pertinent jurisdiction and facility plans and capabilities; technical resources and ways to access community information (MSDS forms, chemical inventories, release reports, etc.), and materials available from EPA, DOT, FEMA, NIEHS, and other federal, state, and local sources.

**Objective Identification Legend**

EDUC-1

This is the identification of the objective used in this document. It matches the identification code used in course assessment references. (See the Training Program Management section of this document.) Decimal numbers (such as EDUC-1.1) indicate enabling objectives supporting the primary objective.

*Identification*

**Recommended Training Objectives**

<b>EDUC-1</b>	Given residency in a specific jurisdiction, identify the purpose, benefits, and components of the jurisdiction's hazardous materials and terrorist threat emergency management system.
<b>EDUC-1.1</b>	Describe the hazardous materials threat within the jurisdiction, to include the routine use of chemicals by the general public from everyday sources.
<b>EDUC-1.2</b>	Describe the terrorist threat within the jurisdiction and discriminate between real hazards and misperceptions of hazards currently held in general public opinion within the jurisdiction.
<b>EDUC-1.3</b>	Identify major legislation affecting the jurisdiction's hazardous materials emergency management system, including the Emergency Planning and Community Right-to-Know Act.
<b>EDUC-1.4</b>	Describe the jurisdiction's hazardous materials emergency management system.
<b>EDUC-1.4.1</b>	Describe the four phases of the comprehensive emergency management system (preparedness, response, recovery, and mitigation/prevention).
<b>EDUC-1.4.2</b>	Explain the purpose and participants in the jurisdiction's integrated response system.
<b>EDUC-1.4.3</b>	Explain the purpose and participants in the jurisdiction's prevention and mitigation system.
<b>EDUC-1.4.4</b>	Describe general requirements for facility planning, safety management, and emergency response.
<b>EDUC-1.5</b>	Identify the purpose and participants in the jurisdiction's hazardous materials and terrorist threat planning process.
<b>EDUC-1.5.1</b>	Identify the jurisdiction's LEPC planning district and planning requirements.

PLANNING Training Issues
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Planning Essentials Training Guidance
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Commodity Flow Studies
Hazard Analysis
Capability Assessment
Planning for Protective Actions
Plan Implementation & Maintenance
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## Planning for Public Education

### Recommended Training

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<b>EDUC-1.5.2</b>	Identify major steps and participants in the hazardous materials and terrorist incident planning process, to include hazards analysis, capability assessment, plan development, and plan evaluation.
<b>EDUC-1.5.3</b>	Identify major components in the jurisdiction's hazardous materials and terrorist incident response plan.
<b>EDUC-2</b>	Given residency in a specific jurisdiction, describe the citizen's role in the jurisdiction's hazardous materials and terrorist threat emergency management system.
<b>EDUC-2.1</b>	Identify the personal and community benefits of citizen participation in the jurisdiction's hazardous materials and terrorist threat emergency management system.
<b>EDUC-2.2</b>	Identify ways to participate in and contribute to the jurisdiction's hazardous materials and terrorist threat emergency management system (e.g. provide feedback, serve as resource, attend meetings, join committees)
<b>EDUC-2.3</b>	Describe the citizens' role in individual and family preparedness.
<b>EDUC-2.3.1</b>	Identify steps in conducting a personal hazards analysis, to include threats to the neighborhood.
<b>EDUC-2.3.2</b>	Identify components of a personal and family preparedness plan.
<b>EDUC-2.3.3</b>	Identify steps in testing and maintaining personal/family preparedness plans.
<b>EDUC-3</b>	Given residency in a specific jurisdiction, identify personal actions to promote hazardous materials and terrorist threat emergency management.
<b>EDUC-3.1</b>	Identify available sources of assistance and information and requirements for accessing them.
<b>EDUC-3.2</b>	Develop an action plan for promoting hazardous materials and terrorist threat emergency management and personal/family preparedness.

PLANNING Training Issues	Planning Orientation Training Guidance	Planning Essentials Training Guidance	Planning Specialties Introduction	Commodity Flow Studies	Hazard Analysis	Capability Assessment	Planning for Protective Actions	Plan Imple- mentation & Maintenance	Facility Planning	Planning for Public Education	Appendix A Planning Guide Summaries	Appendix B Planning Models	Appendix C Planning for Terrorist Incidents	Appendix D NRT ICP Guidance
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**Hazardous Materials  
and Terrorist Incident  
Response Planning**

**Curriculum Guidelines:**

## **Appendix A: Planning Guide Summaries**

## Planning Guide Summaries

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This appendix provides content summaries of key reference documents used in the preparation of the *Hazardous Materials Planning Curriculum Guidelines*. These materials include the *Guide for All-Hazard Emergency Operations Planning* (FEMA SLG 101), *Hazardous Materials Emergency Planning Guide* (NRT-1), *Technical Guidance for Hazards Analysis* (EPA/FEMA/DOT), *Handbook of Chemical Hazard Analysis Procedures* (FEMA/DOT/EPA), and *Emergency Management Guide for Business & Industry* (FEMA 141). More information on the planning models described in these materials is presented in Appendix B.

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### **Federal Emergency Management Agency, *Guide for All-Hazard Emergency Operations Planning*, SLG 101, September 1996.**

The Guide is designed as a “toolbox” of ideas and advice, not a sample emergency operations plan (EOP). It is intended primarily for use by personnel responsible for EOP development and maintenance in state and local emergency management agencies. It establishes no requirements, and its recommendations may be used, adapted, or disregarded.

This SLG replaces Civil Preparedness Guide (CPG) 1-8, *Guide for the Development of State and Local Emergency Operations Plans* (dated September 10, 1990); CPG 1-8A, *Guide for the Review of State and Local Emergency Operations Plans*, (dated October 1992); and CPG 1-10, *Guide for the Development of a State and Local Continuity of Government Capability* (dated July 27, 1987), which have been rescinded.

The document is organized as follows:

- Chapter 1 explains what an EOP is at the state and local levels, why the EOP is a necessary part of a comprehensive approach to emergency management, and how the EOP relates to other aspects of the comprehensive, risk-based, all-hazard approach.
  - Chapter 2 describes the approach FEMA recommends for a step-by-step process of risk-based, all-hazard emergency operations planning (see Appendix B for more detail).
  - Chapter 3 suggests how to format the results of the planning process in a written EOP. Components discussed include the Basic Plan, functional annexes, hazard-specific appendices, SOPs, and checklists.
  - Chapter 4 lists and discusses elements of the Basic Plan, and provides detailed examples of the types of tasking that should be assigned to agencies, organizations, and individuals under the plan.
  - Chapter 5 explains the purpose of functional annexes, and provides a brief description of eight core functions: Direction and Control, Communications, Warning, Emergency Public Information, Evacuation, Mass Care, Health and Medical Services, and Resource Management.
  - Chapter 6 notes unique aspects of certain hazards, including associated regulatory requirements. It suggests how to address hazardous materials in the all-hazard EOP rather than in a stand-alone plan. The chapter is not meant to replace hazard-specific planning guidance issued by the National Response Team.
  - Chapter 7 contains information on integrating State EOPs with the Federal Response Plan, so that all levels of government can provide a coordinated response to communities in need.
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## Planning Guide Summaries

### National Response Team, *Hazardous Materials Emergency Planning Guide*, NRT-1, March 1987.

This guidance is intended to help local communities prepare for potential incidents involving hazardous materials. It describes how to form a local planning team, find a team leader, identify and analyze hazards, identify existing response equipment and personnel, write a plan, and keep the plan up to date. The information can be used both by local communities developing their own plan, and by local emergency planning committees formed in accord with the “Emergency Planning and Community Right-to-Know Act of 1986.”

State officials seeking to develop a state emergency plan that is closely coordinated with local plans can adapt this guidance to their purposes. Likewise, officials of chemical plants, railroad yards, and shipping and trucking companies can use the guide to coordinate their own hazardous materials emergency planning with that of the local community.

The guidance deals specifically with response to hazardous materials incidents—both at fixed facilities (manufacturing, processing, storage, and disposal) and during transportation (highways, waterways, rail, and air). Plans for responding to radiological incidents and natural emergencies such as hurricanes, floods, and earthquakes are not the focus of this guidance, although most aspects of plan development and appraisal are common to these emergencies.

The guide is intended to focus community activity on emergency preparedness and response; provide communities with information useful in organizing the planning task; furnish criteria to determine risk and to help communities decide whether they need to plan for hazardous materials incidents; help communities conduct planning that is consistent with their needs and capabilities; and provide a method for continually updating a community’s emergency plan.

The document is organized as follows:

- Chapter 1: Introduction
- Chapter 2: Selecting and Organizing the Planning Team
- Chapter 3: Tasks of the Planning Team
- Chapter 4: Developing the Plan
- Chapter 5: Hazardous Materials Planning Elements
- Chapter 6: Plan Appraisal and Continuing Planning

Several appendices provide helpful information for community planning. In particular, Appendix A includes a detailed summary of Title III of SARA, and Appendix D presents criteria that can be used to assess a state or local hazardous materials emergency response preparedness program.

### U.S. Environmental Protection Agency, Federal Emergency Management Agency, and U.S. Department of Transportation, *Technical Guidance for Hazards Analysis*, December 1987.

The purpose of this guide is to help local emergency planning committees (LEPCs) conduct site-specific hazards analyses for airborne releases of extremely hazardous substances (EHSs), as required by Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), also known as the Emergency Planning and Community Right-to-Know Act (EPCRA). Although these substances may also threaten property and the environment, this guide is primarily concerned with lethal effects of airborne substances on humans.

This document represents a joint effort by EPA, FEMA, and DOT to provide coordinated and coherent technical guidance. Although the guide can be useful to all community and industry planners, it is intended especially for LEPCs established under the provisions of SARA. The three steps of hazards analysis—hazards identification, vulnerability analysis, and risk analysis—provide a decision-making process for the LEPCs to follow as they undertake the development of comprehensive emergency plans mandated by SARA Title III.

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## Appendix A

# Planning Guide Summaries

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This document is organized as follows:

Chapter 1: Introduction and Overview

Chapter 2: Hazards Analysis: An Overview

2.1 - Hazards Identification

2.2 - Vulnerability Analysis for Airborne Extremely Hazardous Substances

2.3 - Risk Analysis

Chapter 3: Step-by-Step Procedures for Conducting a Hazards Analysis of Extremely Hazardous Substances

Chapter 4: Using the Results of a Hazards Analysis

Appendices:

Appendix A: Acronyms and Glossary of Terms

Appendix B: The Criteria Used to Identify Extremely Hazardous Substances

Appendix C: The List of Extremely Hazardous Substances

Appendix D: Additional Information on Levels of Concern

Appendix E: Sample Profile

Appendix F: Fire and Reactivity Hazards

Appendix G: Equations Used for the Estimation of Vulnerable Zones

Appendix H: General Considerations for Evacuation or In-Place Sheltering

Appendix I: Information Collecting to Evaluate Sites for Emergency Planning

Appendix J: Methods for Evaluating Hazards Used by Facilities

Appendix K: Evaluation Guide for Available Computer Applications Addressing Hazardous Materials Emergency Response Planning

Appendix L: Selected Bibliography

Appendix M: EPA and FEMA Regional Contacts

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### **Federal Emergency Management Agency, U.S. Department of Transportation, and U.S. Environmental Protection Agency, *Handbook of Chemical Hazard Analysis Procedures*.**

The *Handbook of Chemical Hazard Analysis Procedures* has several objectives, one of which is to expand *NRT-1* and the *Technical Guidance on Hazards Analysis* documents by including information for explosive, flammable, reactive, and otherwise dangerous chemicals. Although *NRT-1* was aimed at addressing planning for all types of hazardous materials, SARA Title III required local planners to focus on a specific initial list of acutely toxic chemicals (referred to as Extremely Hazardous Substances) due to their high inhalation toxicity when airborne, and this was the primary focus of the supplemental guidance document. By introducing additional methodologies on how to plan for these and other dangerous chemicals, this handbook serves as a stepping stone from *NRT-1* and the *Technical Guidance on Hazards Analysis* to a more comprehensive approach for emergency planning.

Beyond providing additional methodologies for assessing the potential impacts of hazardous materials releases, this handbook also expands the three-step hazards analysis approach (hazard identification, vulnerability analysis, and risk analysis) presented in *NRT-1* and its supplement by introducing a four-step approach involving hazard identification, consequence analysis, probability analysis, and risk analysis. In addition, it provides a tutorial on hazardous chemicals, suggestions for applying hazard analysis results to writing and updating an emergency plan, and an expanded discussion of issues relating to sheltering-in-place (in-place protection) and evacuation.

The document is organized as follows:

Chapter 1: Introduction

Chapter 2: Key Properties of Chemical Substances

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Chapter 3: Actions Upon Release to the Environment  
 Chapter 4: Fire Hazards of Chemical Substances  
 Chapter 5: Explosion Hazards of Chemical Substances  
 Chapter 6: Toxicity Hazards of Chemical Substances  
 Chapter 7: Reactivity Hazards of Chemical Substances  
 Chapter 8: Hazardous Material Classification Systems  
 Chapter 9: Overview of the Hazard Analysis Process  
 Chapter 10: Hazard Identification Guidelines  
 Chapter 11: Probability Analysis Procedures  
 Chapter 12: Consequence Analysis Procedures  
 Chapter 13: Formulation of a Planning Basis  
 Chapter 14: Use of Hazard Analysis Results in Emergency Planning

Appendices:

- Appendix A: A Tutorial on Fundamental Mathematical Skills
- Appendix B: Technical Basis for Consequence Analysis Procedures
- Appendix C: Overview of “Shelter-in-Place” Concepts
- Appendix D: Chemical Compatibility Chart
- Appendix E: Guide to Installation of the ARCHIE Computer Program
- Appendix F: Basis of Probability Analysis Procedures

**Federal Emergency Management Agency, *Emergency Management Guide for Business and Industry*, FEMA 141, October 1993.**

This guide provides step-by-step advice on how to create and maintain a comprehensive emergency management program. It can be used by manufacturers, corporate offices, retailers, utilities, or any organization where a sizable number of people work or gather. It applies equally to businesses large or small, whether they operate from a high-rise building or an industrial complex, and whether they own, rent or lease property.

Users of the document need not have in-depth knowledge of emergency management. All that is required is the authority to create a plan and a commitment from the chief executive officer to make emergency management part of the corporate culture.

Businesses that already have a plan can use this guide as a resource to assess and update the plan. The guide is organized as follows:

Section 1: Four Steps in the Planning Process—how to form a planning team; how to conduct a vulnerability analysis; how to develop a plan; and how to implement the plan. The information can be applied to virtually any type of business or industry.

Section 2: Emergency Management Considerations—how to build such emergency management capabilities as life safety, property protection, communications, and community outreach.

Section 3: Hazard-Specific Information—technical information about specific hazards the facility may face.

Section 4: Information Sources—where to turn for additional information.

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## **Appendix B: Planning Models**

## Appendix B

# Planning Models

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Various explanations of the planning process can be found in the literature, including those described in the *Guide for All-Hazard Emergency Operations Planning* (FEMA SLG 101), *Hazardous Materials Emergency Planning Guide* (NRT-1), *Technical Guidance for Hazards Analysis* (EPA/FEMA/DOT), *Handbook of Chemical Hazard Analysis Procedures* (FEMA/DOT/EPA), and *Emergency Management Guide for Business & Industry* (FEMA 141). These approaches to planning, which are briefly described here, incorporate the generic functional requirements of planning, although the steps and procedures may be defined somewhat differently. Jurisdictions and facilities should select and/or modify these models to best meet their unique planning needs and preferences.

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### **Federal Emergency Management Agency, *Guide for All-Hazard Emergency Operations Planning*, SLG 101, September 1996.**

Chapter 2 of this Guide, [The Planning Process](#), describes principles and major steps recommended for developing an all-hazard plan for protecting lives and property within the jurisdiction. In particular, the benefits of a team approach to planning are emphasized, including the role of the Chief Executive Official (CEO). Steps in the development and continual refinement of an emergency operations plan (EOP) are summarized as follows:

- I. **Research**—This phase involves reviewing the jurisdiction’s planning framework, analyzing the hazards faced by the jurisdiction, determining the resource base, and noting characteristics of the jurisdiction that could affect emergency operations. Steps in research include:
  - A. Review applicable laws, regulatory requirements, local plans, mutual aid agreements, and existing guidance.
  - B. Conduct a Hazard/Risk Analysis
    1. Identify hazards
      - a. List hazards that concern emergency management
      - b. Determine whether these hazards have occurred or could occur
    2. Profile hazards and their potential consequences
      - a. Develop information on each hazard (frequency, magnitude, location, etc.)
      - b. Develop information on the potential consequences of the hazard
    3. Compare and prioritize risks
    4. Create and apply scenarios
  - C. Determine the resource base—list and quantify resources available for emergency response and recovery. Compare them with those needed for an effective emergency response to determine shortfalls.
  - D. Note special facets of the planning environment—geographic and topographic features that may affect operations, transportation routes, special populations, demographic and other trends, etc.
- II. **Development**—During this phase, the EOP is written through steps similar to these: developing a rough draft of the basic plan, functional annexes, and hazard-specific appendices; conducting preliminary briefings and interviews; conducting initial planning meetings and establishing committees for parts of the EOP; working with committees on successive drafts; preparing necessary graphics, and producing and circulating a final draft for planning team review and comment; holding meetings to obtain feedback and concurrence from organizations with identified responsibilities under the plan; obtaining official promulgation of the EOP; and printing and distributing the EOP.

- III. **Validation**—During this phase, the EOP is checked for conformity to applicable regulatory requirements and the standards of federal and state agencies. Recommended steps include conducting tabletop exercises with key representatives of tasked organizations as a practical means to help validate the plan; consulting with and participating in plans reviews with the next level of government; and using functional and full-scale emergency management exercises to determine if an EOP is understood and “works.”
- IV. **Maintenance**—As problems emerge, situations change, gaps become apparent, and requirements are altered, the plan must be continually adapted to remain useful and up-to-date. Possible steps include:
- A. Remedial Action Process designed to (1) capture information from exercises, post-disaster critiques, self-assessments, audits, administrative reviews, and the like which may indicate deficiencies; (2) bring together members of the planning team to discuss problems and to consider and assign responsibility for remedies; and (3) tracking and following up on assigned actions.
  - B. Revision Process for review and modification of the EOP on at least an annual basis.
  - C. Implementing Documents to ensure that each tasked organization or individual develops the SOPs necessary to facilitate the accomplishment of assigned tasks.

Attachment C of the Guide, Hazardous Materials, provides additional information on plan requirements for locating hazardous materials at fixed facilities and on transport routes, estimating vulnerable zones, determining vulnerability, and assessing risk. Planning considerations unique to hazardous materials are described under the following major headings:

- Direction and control
- Emergency public information
- Evacuation
- Mass care
- Health and medical
- Resource management

**National Response Team, *Hazardous Materials Emergency Planning Guide*, NRT-1, March 1987.**

This guidance presents a comprehensive approach to hazardous materials planning. However, it is emphasized that every community must plan according to its own situation. Small communities with few planning resources, or communities with few or no threatening hazards, can choose the planning elements appropriate to their circumstances. Steps in the planning process can be summarized as follows:

- I. Organizing the Planning Process
  - A. Selecting the planning team
  - B. Selecting the team leader
  - C. Organizing for planning team responsibilities, including staffing, managing the planning tasks, and the use of computers
- II. Review of Existing Plans
  - A. Reviewing applicable state and local emergency plans
  - B. Consulting with state and local agencies and volunteer organizations, regional offices of federal agencies, local industry and industrial associations, the RRT and OSC, etc.

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## Appendix B

# Planning Models

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- III. Hazards Analysis
  - A. Hazards Identification
  - B. Vulnerability Analysis
  - C. Risk Analysis
- IV. Capability Assessment—sample questions are presented to help the planning team evaluate preparedness, prevention, and response resources and capabilities in the following three categories:
  - A. Facility resources
  - B. Transporter resources
  - C. Community resources
- V. Developing the Plan
  - A. Developing or revising a hazardous materials appendix to a multi-hazard EOP
  - B. Developing or revising a plan covering only hazardous materials

Planning elements and plan requirements that should be considered in this phase of the process are described in detail, including the following fourteen response functions:

- Initial Notification of Response Agencies
- Direction and Control
- Communication (among Responders)
- Warning Systems and Emergency Public Notification
- Public Information/Community Relations
- Resource Management
- Health and Medical
- Response Personnel Safety
- Personal Protection of Citizens
- Fire and Rescue
- Law Enforcement
- Ongoing Incident Assessment
- Human Services
- Public Works

- VI. Plan Appraisal and Continuing Planning
  - A. Plan Review and Approval
    - 1. Internal review
    - 2. External review
  - B. Keeping the plan up-to-date
  - C. Continuing planning
    - 1. Exercises
    - 2. Incident review
    - 3. Training

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**U.S. Environmental Protection Agency, Federal Emergency Management Agency, and U.S. Department of Transportation, *Technical Guidance for Hazards Analysis*, December 1987.**

This guidance is compatible with and recommends the same approach to hazardous materials planning as NRT-1. However, significantly more detail is presented on the Hazards Analysis step of the process. The hazards analysis is separated into two phases. The first phase is the initial screening of all facilities reporting Extremely Hazardous Substances (EHSs) on their premises in excess of their threshold planning quantities (TPQs). The initial screening is performed to establish priorities among reporting facilities using credible worst case assumptions. The second phase represents a reassessment by order of priority of the potential hazards posed by the reporting facilities. This is accomplished through the reevaluation of the assumptions used for the initial screening.

Both the initial screening and the reevaluation phases utilize the three basic steps of hazards analysis: hazards identification, vulnerability analysis, and risk analysis. Steps in the process are summarized as follows:

**Initial Screening**

- I. Hazards Identification
  - A. List facilities that have reported EHSs in the community in excess of the TPQ.
  - B. Contact each facility on the list for information on the EHSs present.
  - C. Obtain information on transportation routes of EHSs, if possible.
  - D. Obtain information on hazardous materials, facilities, and transportation routes (other than for those with EHSs above the TPQ) listed by SERCs (optional).
  
- II. Vulnerability Analysis
  - A. Estimate the vulnerable zone for screening using credible worst case assumptions.
  - B. Identify characteristics of human populations within the estimated vulnerable zone.
  - C. Identify critical facilities within the estimated vulnerable zone.
  
- III. Risk Analysis
  - A. Collect information obtained in hazards identification and vulnerability analysis.
  - B. Make rough estimate of risks based on the likelihood of a release and severity of consequences.
  - C. Identify those facilities with higher priority due to the estimated risks they pose.

**Planning for Facilities by Priority**

- IV. Hazards Identification
  - A. Contact each facility on the list and other expert sources for additional information.
  - B. Obtain additional information on typical transportation conditions, if possible.
  
- V. Vulnerability Analysis
  - A. Reestimate the vulnerable zone using reevaluated assumptions from the facility and other expert sources.
  - B. Identify characteristics of human populations within the estimated vulnerable zone.
  - C. Identify critical facilities within the estimated vulnerable zone.
  
- VI. Risk Analysis
  - A. Collect all information obtained in hazards identification and vulnerability analysis in a table.
  - B. Obtain additional information on community and facility safeguards, response capabilities, and accident records.
  - C. Make a judgment of the probability of release and severity of consequences.
  - D. Organize all information (from A, B, and C) in a matrix format.
  - E. Rank risks.
  - F. Develop or revise emergency plans for higher priority facilities.

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# Planning Models

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### Federal Emergency Management Agency, U.S. Department of Transportation, and U.S. Environmental Protection Agency, *Handbook of Chemical Hazard Analysis Procedures*.

This guide presents four basic steps for conducting a hazard analysis, and a related fifth step that takes advantage of the knowledge gained during the effort to develop a comprehensive emergency plan. These steps include:

- I. Hazard Identification—location, identification, and characterization of potential spill sources and accident sites in the jurisdiction or locality of concern. This step essentially concludes with the identification and/or postulation of fundamental accident scenarios requiring further consideration and analysis. Results from the probability analysis which follows can often help in further refining these scenarios. Methods discussed include:
  - Enforcement of right-to-know laws
  - Use of fire department and building inspection records
  - Industry questionnaires
  - Meetings with business organizations and trade groups
  - Meetings with individual business personnel
  - Queries of rail, marine, and pipeline transportation companies
  - Truck traffic surveys
  - Use of permit records
  - Use of the “Yellow Pages”
  - Access to detailed chemical property data and hazard information
- II. Probability Analysis—evaluation of the likelihood of individual accident scenarios. This step permits examination and/or prioritization of potential accident scenarios in terms of their probability of occurrence. Categories of activities discussed include:
  - Bulk transportation by highway
  - Bulk transportation by rail
  - Bulk transportation by barge or other marine vessel
  - Transportation by pipeline
  - Bulk storage, processing, or handling at fixed facilities
  - Transportation of packaged hazardous materials
  - Transportation by air
- III. Consequence Analysis—evaluation of the consequences and impacts associated with the occurrence of postulated accident scenarios. This step provides an understanding of the nature and outcome of an accident and permits examination and/or prioritization of scenarios in terms of their potential impact on people and property. The Automated Resource for Chemical Hazard Incident Evaluation (ARCHIE) computer program and a set of hazard assessment procedures and models are discussed.
- IV. Risk Analysis—combination of results from the accident probability and consequence analysis efforts to provide a measure of overall risk associated with the specific activity or activities. The effort permits examination and/or prioritization of scenarios in terms of *overall* risk. Steps include:
  - Definition of annual accident probability categories
  - Definition of accident severity categories
  - Application of screening guidelines

V. Formulation of a Planning Basis—use of the results of the above activities during actual development and preparation of an emergency plan. The material includes discussion of 43 separate topics in 13 subject areas, as follows:

- Notification
- Command and Communications
- Evacuation
- Fire response
- Health Care
- Personal Protection
- Public Relations
- Spill Containment and Cleanup
- Spill Documentation
- Spill Monitoring
- Post-Spill Recovery
- Training
- Waste Disposal

**Federal Emergency Management Agency, *Emergency Management Guide for Business & Industry*, FEMA 141, October 1993.**

This document emphasizes the emergency planning and management needs of business and industry. Four steps are identified in the planning process, as follows:

- I. Establish a Planning Team
  - A. Form the team
  - B. Establish authority
  - C. Issue a mission statement
  - D. Establish a schedule and budget
  
- II. Analyze Capabilities and Hazards
  - A. Where do you stand right now?
    1. Review internal plans and policies
    2. Meet with outside groups
    3. Identify codes and regulations
    4. Identify critical products, services, and operations
    5. Identify internal resources and capabilities
    6. Identify external resources
    7. Do an insurance review
  
  - B. Conduct a vulnerability analysis
    1. List potential emergencies
    2. Estimate probability
    3. Assess the potential human impact
    4. Assess the potential property impact
    5. Assess the potential business impact
    6. Assess internal and external resources
    7. Add the columns

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- III. Develop the Plan
  - A. Identify challenges and prioritize activities
  - B. Write the plan
  - C. Establish a training schedule
  - D. Coordinate with outside organizations
  - E. Maintain contact with other corporate offices
  - F. Review, conduct training and revise
  - G. Seek final approval
  - H. Distribute the plan
  
- IV. Implement the Plan
  - A. Integrate the plan into company operations
  - B. Conduct training (including exercises and drills)
  - C. Evaluate and modify the plan

The guide also identifies planning considerations that are unique to hazardous materials, as well as core operational considerations of emergency management, in the following categories:

- Direction and Control
- Communications
- Life Safety
- Property Protection
- Community Outreach
- Recovery and Restoration
- Administration and Logistics

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**Appendix C:  
Terrorist Incident Response  
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## Terrorism Incident Response Planning Models

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Terrorism and weapons of mass destruction (WMD) are the subject of much-needed attention, both in the news media and by government officials at all levels of emergency response. WMDs are “weapons or devices that are intended, or have the capability, to cause death or serious bodily injury to a significant number of people, through the release, dissemination, or impact of toxic poisonous chemicals; disease organisms; or radiation or radioactivity.” While major metropolitan areas across the United States have done WMD planning since the mid-1990s, when the Nunn-Lugar-Domenici provision of the National Defense Authorization Act of 1997 legislation first provided funding for the planning, the events of September 11, 2001 have released a torrent of money to combat terrorism. Some communities have found it easier to use this money to buy specialized equipment rather than do spend the money on intensive planning efforts required at the local level. “It’s easier to show the County Commissioners new decontamination equipment than convince them that the same amount of money spent on a WMD plan is well worth the investment,” said one county planner.

A January 2002 study by the National Association of Counties (NACo) and the National Association of County/City Health Officials (NACCHO) found that more than 90% of the 300 responding public health departments reported that their counties were ill-prepared to respond to any sort of bioterrorist event. Using a scale of 1 to 5, with 1 - “no plan in place,” and 5 - “having a well understood and tested plan in place,” counties were asked to rate their levels of preparedness. Only 3 percent of the jurisdictions ranked themselves at 5.

Local jurisdictions know they must plan how to respond themselves because multiple strikes in various locations may make it impossible for neighboring communities to assist. State and federal response resources are likely to be hours, if not days, away. WMD event-specific factors include:

- planning for more extensive and longer term mutual aid operations
- planning more extensive casualty care operations
- preparing to fit local response operations into a larger federal response environment than would occur in hazardous materials incidents
- preparing for more complex technical operations in the face of more esoteric and unusual chemical and biological threats
- preparing emergency communications systems to accommodate a much larger volume of traffic and greater number of users
- planning for more extensive notification requirements and more far-reaching resource request coordination
- preparing for sustaining critical government operations in the face of infrastructure damage akin to that experienced in large disasters
- preparing for managing public communications in an environment of high public concern and hysteria

Communities and states have already completed much of the first steps toward a WMD response plan by going through the State Domestic Preparedness Equipment Program for the Office of Domestic Preparedness (ODP). Each community followed a needs assessment process that indicated how terrorism funds could best be applied against a domestic preparedness strategy for the entire state. The steps are listed below:

Step 1 – Identification and Coordination of Jurisdictions

Step 2 – Risk Assessment Process

Step 3 – Capabilities and Needs Assessment

Step 4 – Jurisdiction Prioritization Matrix

Step 5 – Three-year Projection Forms

Step 6 – Additional Training Information

Step 7 – Emergency Response Team Survey

Step 8 – Recommendations for State and Local Response to WMD Terrorism Incidents

Step 9 – Statewide Domestic Preparedness Strategy

# Terrorism Incident Response Planning Models

## Planning for Response to Terrorist Incidents

The process for planning for terrorist incidents is evolving. Two basic approaches to WMD planning are commonly used today.

The first approach is an all hazards, functional planning approach which often uses the existing Community Emergency Operations Plan (EOP) as the guiding plan, with a separate annex to anticipate and exercise unique responses for the requirements of a terrorist incident. In this approach, the threat of a terrorist incident is treated as a subset of the many other hazards that a community must prepare for.

The second approach is terrorist threat specific, and treats the threat of a terrorist incident as a separate entity requiring unique and separate planning and preparation for response. A prime example is the Metropolitan Medical Strike Team Model. Terrorist threat specific planning can provide greater flexibility in terms of methods for assessing worst-case scenarios and allows closer focus on terrorist threats, but also can be more resource intensive and can require additional response planning teams and documentation duplicative of other response planning occurring in the jurisdiction.

This appendix provides a brief discussion of both approaches, followed by a response resource guide describing many of the additional response resources available to local response to terrorist incidents, to be considered in response planning.

### 1. All-Hazards, Functional Planning Approach

#### Community EOP with Terrorism Annex

The first approach is that the roles, responsibilities, and principles of planning for WMD incidents are very similar at the local level to those for hazardous materials incidents and other emergencies that affect communities on a regular basis. A comprehensive Community Emergency Operations Plan (EOP) that has been thoroughly reviewed, is well understood by all response and support agencies, and that has been exercised completely will work whether an incident is a hazardous materials incident or a WMD attack.

#### Federal Response Plan

The all-hazard approach is mirrored in the Federal Response Plan (FRP), which describes the mechanisms and structures that the federal government will use to mobilize resources and conduct activities to assist State and local response efforts. The FRP uses a functional approach to group the types of federal assistance that a state is most likely to need under 12 Emergency Support Functions (ESF). The FRP describes how each of the signatory agencies contributes to the response efforts. It was developed under the provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288, as amended).

The Terrorism Annex to the FRP describes the policies, situation, planning assumptions, concept of operations, and responsibilities for handling a WMD incident. Many states and communities use this same approach when planning how to tailor their own response to a terrorist event.

The following planning assumptions have been drawn from the Terrorism Incident Annex to the Federal Response Plan:

- No single agency at the local, State, Federal, or private-sector level possesses the authority and expertise to act unilaterally on many difficult issues that may arise in response to a threat or act of terrorism, particularly if WMD are involved.

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# Terrorism Incident Response Planning Models

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- An act of terrorism, particularly an act directed against a large population center within the United States involving WMD, may produce major consequences that would overwhelm the capabilities of many local and State governments almost immediately.
- Major consequences involving WMD may overwhelm existing Federal capabilities as well, particularly if multiple locations are affected.
- Local, State, and Federal responders will define working perimeters that may overlap. Perimeters may be used to control access to the area, target public information messages, assign operational sectors among responding organizations, and assess potential effects on the population and the environment. Control of these perimeters may be enforced by different authorities, which will impede the overall response if adequate coordination is not established.
- If appropriate personal protective equipment is not available, entry into a contaminated area (i.e., a hot zone) may be delayed until the material dissipates to levels that are safe for emergency response personnel. Responders should be prepared for secondary devices.
- Operations may involve geographic areas in a single State or multiple States, involving responsible FBI Field Offices and Regional Offices, as appropriate. The FBI and FEMA will establish coordination relationships as appropriate, based on the geographic areas involved.
- Operations may involve geographic areas that spread across U.S. boundaries. The Department of State is responsible for coordination with foreign governments.

The FRP may be implemented concurrently with the:

- National Plan for Telecommunications Support in Non-Wartime Emergencies, which provides a basis for ESF #2
- National Oil and Hazardous Substances Pollution Contingency Plan, known as the National Contingency Plan (NCP), which provides the basis for ESF #10
- Federal Radiological Emergency Response Plan (FRERP), which details the Federal response to a peacetime radiological emergency.
- Presidential Decision Directive 39 (PDD-39) and PDD-62 that set forth U.S. counterterrorism policy

The FRP Terrorism Incident Annex (called for in PDD-39) describes the concept of operations for a unified response to a terrorism incident involving two or more of the following plans: the FRP, the Federal Bureau of Investigation (FBI) Weapons of Mass Destruction (WMD) Incident Contingency Plan, and the Department of Health and Human Services (HHS) Health and Medical Services Support Plan for the Federal Response to Acts of Chemical/Biological Terrorism (discussed in the next section).

## The Community Emergency Operations Plan (EOP)

Many community EOPs, which are developed using this same approach, consist of a basic plan, functional annexes, and hazard-specific appendices. These are supplemented, as needed, by standard operating procedures (SOPs) and checklists for implementation of the plan.

Federal agencies, including the United States Fire Administration (USFA) and the Environmental Protection Agency (EPA), remind local LEPCs to be sure they update their emergency plans before adding information about response to a WMD incident.

FEMA's Guide for All-Hazard Emergency Operations Planning and the National Response Team's Hazardous Materials Emergency Planning Guide (NRT-1) state that the decision to develop a hazard-specific appendix (including WMD-specific) should be based on special planning requirements not common to other hazards addressed in the functional annex, and on regulatory considerations that may require extensive, detailed planning that is inappropriate for inclusion in the annex.

# Terrorism Incident Response Planning Models

According to the latest FEMA Guidance for All-Hazard Emergency Operations Planning, the situation section for a Terrorism Incident Annex (TIA) should discuss what constitutes a potential or actual WMD incident. It should present a concise, clear, and accurate overview of potential events and discuss a general concept of operations for response. Any information already included in the EOP need not be duplicated in the TIA. The situation overview should include as much information as possible that is unique to WMD response actions, including maps, environment, population, and provisions for working with Federal crisis and consequence management agencies.

Assumptions for working with levels beyond the county or local jurisdiction should include:

- The first responder or health and medical personnel will, in most cases, initially detect and evaluate the potential or actual incident, assess casualties (if any), and determine whether assistance is required.
- If so, State support will be requested and provided. This assessment will be based on warning or notification of a WMD incident that may be received from law enforcement, emergency response agencies, or the public.
- The incident may require Federal support. To ensure that there is one overall Lead Federal Agency (LFA), the Federal Emergency Management Agency (FEMA) is authorized to support the Department of Justice (DOJ) as delegated to the Federal Bureau of Investigation [FBI] until the Attorney General transfers the overall LFA role to FEMA.
- In addition, FEMA is designated as the lead agency for consequence management within the United States and its territories. FEMA retains authority and responsibility to act as the lead agency for consequence management throughout the Federal response. In this capacity, FEMA will coordinate Federal assistance requested through State authorities using normal FRP mechanisms.
- Federal response will include experts in the identification, containment, and recovery of WMD (chemical, biological, or nuclear/radiological). See Appendix ?, a brief description of some of the Federal resources available.
- Federal consequence management response will entail the involvement of FEMA, additional FRP departments and agencies, and the American Red Cross, as required.

In addition to the documents discussed above, information to assist with this planning can be found in the following FEMA documents:

- **Introduction to State and Local EOP Planning Guidance**  
Federal FY 2002 supplemental funding totaling \$100 million is being provided to state and local governments to update their all-hazards Emergency Operations Plans (EOP), to include a focus on WMD incidents. The purpose of this guidance is to help state and local governments fine-tune their EOPs and address critical planning considerations to include interstate and intrastate mutual aid agreements, resource typing, resource standards, protection of critical infrastructure, inventory of critical response equipment and teams, continuity of operations and family and community preparedness
- **Managing the Emergency Consequences of Terrorist Incidents – Interim Guidelines**  
This is an interim planning guide that is designed to provide state and local emergency management planners with a framework for developing supplemental emergency operations plans that address the consequences of a terrorist attack involving weapons of mass destruction. It provides a consistent planning approach that encourages the efficient integration of state, local and federal terrorism response activities and provides the most current information regarding planning and operational challenges faced by communities that have dealt with terrorist events.

PLANNING	Issues
Orientation	Guidance
Essentials	Guidance
Specialties	Introduction
Commodity	Flow Studies
Hazard	Analysis
Capability	Assessment
Planning	Protective Actions
Plan	Implementation & Maintenance
Facility	Planning
Planning	for Public Education
Appendix	A Planning Guide Summaries
Appendix	B Planning Models
Appendix	C Planning for Terrorist Incidents
Appendix	D NRT/ICP Guidance

## Terrorism Incident Response Planning Models

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- **Tool Kit for Managing the Emergency Consequences of Terrorist Incidents**  
This tool kit provides forms, checklists and charts to facilitate state and local planning for a terrorist incident. It includes a capability assessment survey, a checklist of functional responsibilities and emergency public information activities as well as tools for direction and control, managing resources and disseminating warnings.
- **CONPLAN – Federal Interagency Domestic Terrorism Concept of Operations Plan**  
The CONPLAN provides overall guidance to federal, state and local agencies concerning how the federal government would respond to a potential or actual terrorist threat or incident that occurs in the United States, particularly one involving WMD.
- **Hazardous Materials Planning Guide 2001 Update**  
This 2001 update of the National Response Team’s Hazardous Materials Emergency Planning Guide (NRT-1) provides guidance on developing state and local emergency response plans for hazardous materials events. It can be found under “New Publications.” The National Response Team is made up of 16 federal agencies, each with responsibilities and expertise in emergency response to hazardous chemical releases, oil discharges and other toxic spills.
- **Comprehensive HazMat Emergency Response – Capability Assessment Program (CHER-CAP)**  
CHER-CAP is a comprehensive preparedness program offered by FEMA to local communities and Tribal governments to address HazMat incidents. It is designed to help communities better understand HazMat risks, identify planning deficiencies, update plans, train first responders and identify systemic strengths and needed improvements.
- **CSEPP (Chemical Stockpile Emergency Preparedness Program) Planning Guidance**  
The primary strategic document providing state, local and Army installation planners with guidelines for formulating and coordinating emergency plans and the associated emergency response systems for chemical events that may occur at the chemical agent stockpile storage locations in the continental United States.

### **2. Terrorist Threat-Specific Planning Approach**

#### **The Metropolitan Medical Strike Team Model**

The second approach is exemplified by the Metropolitan Medical Strike Team Model (MMST). The first MMSTs were established as prototypes in Arlington County in the metropolitan area of Washington, DC and in preparation for the 1996 Centennial Olympic Games in Atlanta. More than 120 cities and metropolitan areas have used the funds provided by the Department of Health and Human Services (DHHS) to plan and equip systems with specially trained first responders, special pharmaceuticals and decontamination equipment, on-site health care, and enhanced emergency medical transportation and emergency room capabilities.

This approach was developed from the Domestic Preparedness Program of the Nunn-Lugar-Domenici legislation, which also called for the Army’s Chemical and Biological Defense Command (CBD-COM) to design a train-the-trainer program to build on the existing knowledge and capabilities of local first responders—fire, law enforcement, and medical personnel and hazmat technicians—who would face a WMD incident during the first hours.

MMSTs are designed to provide initial, on-site response and provide for transportation of decontaminated patients to hospital emergency rooms in the event of a terrorist attack. They are also capable of providing medical and mental health care to victims of such attacks and moving victims to other regions if local health care resources are overrun. MMSTs consist of fire service, EMS, physicians, nurses, and law enforcement officials. The team is divided into three groups which rotate assignments. Therefore, one task force is always on duty, the second is on standby and the third is off.

When an accident involving hazardous materials occurs, whether transportation or fixed-facility, parameters exist. Terrorism exists without parameters. While those who use the MMST model acknowledge that a nuclear or chemical WMD event is, inherently, a hazmat incident, their approach states that “there are

# Terrorism Incident Response Planning Models

significant differences between the two types of incident that influence a civil jurisdiction's response planning, organization, training, equipment, operational procedures, and coordination requirements."

An introduction to San Jose's Response Plan for Terrorist Incidents involving WMD Nuclear, Biological, or Chemical Agents (NBC) states that such a terrorist incident may be characterized by:

- The use of WMD designed to inflict mass casualties
- The high lethality of biological or chemical agents
- The extremely toxic environment resulting from NBC/WMD
- The initial ambiguity in determining what type of NBC weapon or agent is involved
- The potential for a combination of weapons/agents each presenting different response requirements, i.e., explosives and chemical agents or simultaneous explosives, chemical agents, and radioactive material dispersal
- The narrow window-of-response time to administer lifesaving antidotes for chemical agents and antibiotics for biological agents
- The need for immediate medical treatment for mass casualties
- The need for immediately available specialized pharmaceuticals
- The need for specialized WMD/NBC detection equipment
- The need for a timely, efficient, and effective mass decontamination system
- The need for an organized, trained, and equipped health and medical services emergency response unit to immediately augment the local HAZMAT/EMS response
- The need for pre-event coordination with hospitals and medical treatment centers to establish medical treatment protocols, stock appropriate pharmaceuticals, and determine treatment procedure requirements and
- The need to accomplish advance planning and coordination to respond to each of the needs identified above

Following is the MMST Model Table of Contents, showing how the plan is organized:

- Introduction
- Mission, Concept of Operations, Organization, and NDMS Interface
- Training (DRAFT)
- NBC use Indicators and Response Concerns for First Responders
- Operations Management Guide:
  - Describes each of the four phases in which NBC terrorism preparedness and response activities are categorized: awareness, alert, warning, and response
  - Lists the indications of a Terrorist Incident involving NBC/WMD and outlines the operational considerations
  - Describes coordination of response efforts and use of ICS for initial command and control, and expansion of ICS to unified command
- Operational Checklists
- Bioterrorism Response Plan: Recognition and Evaluation
- Bioterrorism Response Plan: Casualty Management Strategy
- Bioterrorism Response Plan: Site Management Strategy
- Bioterrorism Response Plan: Site Management Strategy Table
- Bioterrorism Response Plan: Non-Site Management Strategy
- Mass Fatality Management
- Recovery Plan
- Supplemental Planning Guide - Health & Medical Services
- Supplemental Planning Guide - Law Enforcement
- Appendix A - Incident Exposure Report
- Appendix B - Patient Decontamination Procedure
- Appendix C - Technical Decontamination Procedure
- Appendix D - Emergency Decontamination Procedure
- Appendix E - Equipment Cache Requirements
- Appendix F - Pharmaceutical Support

PLANNING Training Issues	Planning Orientation Training Guidance	Planning Essentials Training Guidance	Planning Specialties Introduction	Commodity Flow Studies	Hazard Analysis	Capability Assessment	Planning for Protective Actions	Plan Implementation & Maintenance	Facility Planning	Planning for Public Education	Appendix A Planning Guide Summaries	Appendix B Planning Models	Appendix C Planning for Terrorist Incidents	Appendix D NRTICP Guidance
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**Hazardous Materials and  
Terrorist Incident  
Response Planning**

**Curriculum Guidelines:**

**Appendix D:  
National Response Team's  
Integrated Contingency Plan  
Guidance**

*Note: This material was published in the Federal Register on Wednesday, June 5, 1996, and is reprinted in its entirety in this appendix. Page numbers shown are those from the Federal Register publication.*

PLANNING Training	Planning Orientation Training Guidance	Planning Essentials Training Guidance	Planning Specialties Introduction	Commodity Flow Studies	Hazard Analysis	Capability Assessment	Planning for Protective Actions	Plan Imple- mentation & Maintenance	Facility Planning	Planning for Public Education	Appendix A Planning Guide Summaries	Appendix B Planning Models	Appendix C Planning for Terrorist Incidents	Appendix D NRTICP Guidance
Planning Specialties Training Guidance														