TCRP
REPORT 86

Public Transportation Security
Volume 7

Public Transportation Emergency Mobilization and Emergency Operations Guide

TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

TRANSIT COOPERATIVE RESEARCH PROGRAM

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Public Transportation Emergency Mobilization and Emergency Operations Guide

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SUBJECT AREAS
Planning and Administration • Safety and Human Performance • Public Transit • Rail

Research Sponsored by the Federal Transit Administration in Cooperation with the Transit Development Corporation

TRANSPORTATION RESEARCH BOARD

WASHINGTON, D.C.
2005
www.TRB.org

TRANSIT COOPERATIVE RESEARCH PROGRAM

The nation's growth and the need to meet mobility, environmental, and energy objectives place demands on public transit systems. Current systems, some of which are old and in need of upgrading, must expand service area, increase service frequency, and improve efficiency to serve these demands. Research is necessary to solve operating problems, to adapt appropriate new technologies from other industries, and to introduce innovations into the transit industry. The Transit Cooperative Research Program (TCRP) serves as one of the principal means by which the transit industry can develop innovative near-term solutions to meet demands placed on it.

The need for TCRP was originally identified in *TRB Special Report 213—Research for Public Transit: New Directions,* published in 1987 and based on a study sponsored by the Urban Mass Transportation Administration—now the Federal Transit Administration (FTA). A report by the American Public Transportation Association (APTA), *Transportation 2000*, also recognized the need for local, problem-solving research. TCRP, modeled after the longstanding and successful National Cooperative Highway Research Program, undertakes research and other technical activities in response to the needs of transit service providers. The scope of TCRP includes a variety of transit research fields including planning, service configuration, equipment, facilities, operations, human resources, maintenance, policy, and administrative practices.

TCRP was established under FTA sponsorship in July 1992. Proposed by the U.S. Department of Transportation, TCRP was authorized as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). On May 13, 1992, a memorandum agreement outlining TCRP operating procedures was executed by the three cooperating organizations: FTA, The National Academies, acting through the Transportation Research Board (TRB); and the Transit Development Corporation, Inc. (TDC), a nonprofit educational and research organization established by APTA. TDC is responsible for forming the independent governing board, designated as the TCRP Oversight and Project Selection (TOPS) Committee.

Research problem statements for TCRP are solicited periodically but may be submitted to TRB by anyone at any time. It is the responsibility of the TOPS Committee to formulate the research program by identifying the highest priority projects. As part of the evaluation, the TOPS Committee defines funding levels and expected products.

Once selected, each project is assigned to an expert panel, appointed by the Transportation Research Board. The panels prepare project statements (requests for proposals), select contractors, and provide technical guidance and counsel throughout the life of the project. The process for developing research problem statements and selecting research agencies has been used by TRB in managing cooperative research programs since 1962. As in other TRB activities, TCRP project panels serve voluntarily without compensation.

Because research cannot have the desired impact if products fail to reach the intended audience, special emphasis is placed on disseminating TCRP results to the intended end users of the research: transit agencies, service providers, and suppliers. TRB provides a series of research reports, syntheses of transit practice, and other supporting material developed by TCRP research. APTA will arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by urban and rural transit industry practitioners.

The TCRP provides a forum where transit agencies can cooperatively address common operational problems. The TCRP results support and complement other ongoing transit research and training programs.

TCRP REPORT 86: Volume 7

Project J-10B(1)
ISSN 1073-4872
ISBN 0-309-08833-X
Library of Congress Control Number 2005928011

Price $25.00

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The members of the technical advisory panel selected to monitor this project and to review this report were chosen for recognized scholarly competence and with due consideration for the balance of disciplines appropriate to the project. The opinions and conclusions expressed or implied are those of the research agency that performed the research, and while they have been accepted as appropriate by the technical panel, they are not necessarily those of the Transportation Research Board, the National Research Council, the Transit Development Corporation, or the Federal Transit Administration of the U.S. Department of Transportation.

Each report is reviewed and accepted for publication by the technical panel according to procedures established and monitored by the Transportation Research Board Executive Committee and the Governing Board of the National Research Council.

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The Transportation Research Board of The National Academies, the National Research Council, the Transit Development Corporation, and the Federal Transit Administration (sponsor of the Transit Cooperative Research Program) do not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to the clarity and completeness of the project reporting.

Published reports of the

TRANSIT COOPERATIVE RESEARCH PROGRAM

are available from:

Transportation Research Board
Business Office
500 Fifth Street, NW
Washington, DC 20001

and can be ordered through the Internet at
http://www.national-academies.org/trb/bookstore

Printed in the United States of America

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FOREWORD

By S. A. Parker
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Homeland Security Presidential Directive-5 (HSPD-5) spawned the National Incident Management System, "a consistent nationwide approach for federal, state, tribal, and local governments to work effectively and efficiently together to prepare for, prevent, respond to, and recover from domestic incidents, regardless of cause, size, or complexity." *Public Transportation Emergency Mobilization and Emergency Operations Guide*, the seventh volume of *TCRP Report 86: Public Transportation Security*, has been developed to highlight key considerations for public transportation agencies working with their local communities to enhance mobilization capabilities. It provides recommendations and tools based on an extensive research effort conducted with public transportation systems; local, state and federal emergency planning agencies; and first responders around the country. It describes activities that may be taken by public transportation systems to

- Promote early recognition of emergency events that have the potential to overwhelm the capabilities of the transportation system to respond and that require activation of available local and mutual aid resources;
- Expedite response to an emergency event occurring on transportation-system property by promoting the rapid deployment of personnel and equipment to address, manage, and resolve the event;
- Coordinate the application and integration of additional organized, qualified resources from other agencies (e.g., regional, state, and federal) in response to a major emergency; and
- Ensure that public transportation resources are available to support the response to emergency events occurring in the transportation system's service area and that these resources can be effectively integrated into an extended program for both response and recovery.

This volume of *TCRP Report 86: Public Transportation Security* will be of interest to transit general managers; transit emergency-response, law-enforcement, and security officials; and operations, training, and human-resources staffs. It will also be of interest to federal, state, and local emergency-response and emergency-management representatives. This volume was prepared by McCormick Taylor, Inc., under TCRP Project J-10B(1).

Emergencies arising from terrorist threats highlight the need for transportation managers to minimize the vulnerability of passengers, employees, and physical assets through incident prevention, preparedness, response, and recovery. Managers are seeking to reduce the chances that transportation vehicles and facilities will be targets or instruments of terrorist attacks and to be prepared to respond to and recover from such possibilities. By being prepared to respond to terrorism, each public transportation agency is simulta-

neously prepared to respond to natural disasters such as hurricanes, floods, and wildfires, as well as human-caused events such as hazardous materials spills and other incidents.

This is the seventh volume of *TCRP Report 86: Public Transportation Security*, a series in which relevant information is assembled into single, concise volumes, each pertaining to a specific security problem and closely related issues. These volumes focus on the concerns that transit agencies are addressing when developing programs in response to the terrorist attacks of September 11, 2001, and the anthrax attacks that followed. Future volumes of the report will be issued as they are completed.

To develop this volume in a comprehensive manner and to ensure inclusion of significant knowledge, available information was assembled from numerous sources, including a number of public transportation agencies. A topic panel of experts in the subject area was established to guide the researchers in organizing and evaluating the collected data and to review the final document.

This volume was prepared to meet an urgent need for information in this area. It records practices that were acceptable within the limitations of the knowledge available at the time of its preparation. Work in this area is proceeding swiftly, and readers are encouraged to be on the lookout for the most up-to-date information.

Volumes issued under *TCRP Report 86: Public Transportation Security* may be found on the TRB website at http://www4.trb.org/trb/crp.nsf/All+Projects/TCRP+J-10.

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PUBLIC TRANSPORTATION EMERGENCY MOBILIZATION AND EMERGENCY OPERATIONS GUIDE

SUMMARY

Emergency mobilization is the act of preparing for major catastrophic events, which may affect public transportation systems or their service areas, by assembling and organizing resources, including people, equipment, facilities, communications systems, expert technical support, and public information systems and protocols. Mobilization is the process that ensures that the right people will deploy appropriate resources at the correct time. It is central to the public transportation industry's ability to ensure the provision of service under normal and emergency conditions.

Effective mobilization requires a partnership of local, regional, state, and federal agencies. Mobilization capabilities are typically documented in a series of plans, procedures, protocols, training programs, exercise simulations and scenarios, and after-action reports that contribute to the system's emergency response and management capabilities.

Public transportation operators and systems play vital roles in response to and recovery from emergencies and other unexpected catastrophic events. These systems, and their capabilities to mobilize resources, are profoundly affected by the decisions and directives of others during these activities. To address these effects and ensure the most effective response possible, it is advisable that public transportation providers become more actively involved with their local communities in planning and preparing for emergencies.

THE GUIDE

All public transportation systems, whatever their size and service environment, place a high priority on passenger safety and security. Recent events have focused renewed attention on the importance of preparedness for emergencies.

This Guide has been prepared to support the activities of public transportation systems working to improve their emergency response capabilities and coordination with their local communities. It provides suggestions and tools based on research conducted with transit systems; local, state, and federal emergency planning agencies; and first responders across the United States.

A survey completed by 89 transit operators for this project identifies key areas where transit agencies have developed mobilization capabilities, and other areas where activities are under way. Using the results of the survey, this Guide focuses on topics that may be of use to transit personnel in meeting their mobilization planning objectives. This Guide addresses the following:

- The emerging emergency planning framework within which public transit agencies must work to enhance emergency mobilization capabilities (see Section 2);
- The basic concepts of the incident command system (ICS) and a recommended process for developing an incident management organization (IMO) appropriate for public transportation agencies (see Section 3);
- The transit emergency planning process and a recommended outline for an emergency operations plan for use in the transportation environment (see Section 4);
- Considerations for evacuation planning and community support appropriate to a range of different transportation modes and different sized systems (see Section 5);
- Considerations for terrorism preparedness based on lessons learned from the historical record of attacks used to target public transportation vehicles, facilities, and operations (see Section 6); and
- Key activities that should be considered by the transportation system in developing plans, standards, and baselines for mobilizing resources to respond to potential indicators of a terrorist event, and to manage a full-blown emergency resulting from terrorism (see Section 7).

No single government agency at the local, state, or federal level possesses the authority or expertise to act alone on the many complex issues associated with emergencies. Coordinating planning and assigning responsibilities across and among various levels of government is an evolving process. Information contained in this Guide provides an important initial step for public transportation systems in supporting homeland security planning efforts that take advantage of lessons learned to date in the transportation and governmental sectors.

MOBILIZATION CONFERENCE

As a part of the research for this project, the research team convened a conference of regional transportation and emergency response professionals, *Public Transportation Emergency Mobilization Guidelines: A Conference*, in Philadelphia, Pennsylvania, at the headquarters of the Southeastern Pennsylvania Transportation Authority (SEPTA) on October 28-29, 2003. A diverse group of 52 professionals participated, representing a broad array of organizations and agencies, from FTA, SEPTA, New Jersey Transit, and other large and small public transportation and paratransit organizations, law enforcement, labor, transportation management associations (TMAs), universities, healthcare entities, fire services, metropolitan planning organizations (MPOs), emergency management agencies (EMAs), and utilities. The Conference was used to validate many of the presented research results. Recommendations from participants were given special emphasis in the final preparation of this Guide.

SECTION **1**

INTRODUCTION

The national preparedness system (NPS) under development within the Department of Homeland Security (DHS) holds significant implications for the operations and priorities of homeland security officials, emergency managers, and first responders. The NPS documents and the procedures issued in 2004 and 2005 will guide federal funding allocation decisions, direct federal and non-federal efforts to build emergency response capabilities, establish the means by which homeland security priorities will be set, and save lives and property when catastrophes occur. Work on the NPS stems from authority set out in the Homeland Security Act of 2002 (P.L. 107-296), the DHS appropriations legislation for FY2005 (P.L. 108-334), and executive directives issued by President George W. Bush.

Six basic documents constitute the NPS. First, the draft National Preparedness Goal (NPG) sets a general goal for national preparedness, identifies the means of measuring such preparedness, and establishes national preparedness priorities. Second, 15 planning scenarios set forth examples of catastrophic situations to which non-federal agencies are expected to be able to respond. Third, the Universal Task List (UTL) identifies specific tasks that federal agencies, and non-federal agencies as appropriate, would be expected to undertake. Fourth, the Target Capabilities List identifies 36 areas in which responding agencies are expected to be proficient in order to meet the expectations set out in the UTL. Fifth, the National Response Plan (NRP) sets out the framework through which federal agencies (and voluntary agencies) operate when a catastrophe occurs. Sixth, the National Incident Management System (NIMS) identifies standard operating procedures and approaches to be used by respondent agencies as they work to manage the consequences of a catastrophe. These documents (and other ancillary agreements) are intended to establish a national system to ensure that the response to a catastrophe will be as efficient and effective as possible.

Emergency mobilization is the act of preparing for major events that may affect the transportation system or its service area through assembling and organizing resources, including people, equipment, facilities, communications systems, expert technical support, and public information systems and protocols. Mobilization is often defined as the process which ensures that the right people will deploy appropriate resources at the correct time.

Most incidents experienced in the transportation environment are handled by public transportation supervisors and personnel according to established policies, plans, and procedures. Some categories of emergency events, however, require the involvement of multiple jurisdictions, functional agencies, and emergency responder disciplines. Such emergencies require effective and efficient coordination across a broad spectrum of organizations and may include

- Natural disasters, such as floods, earthquakes, hurricanes, tornadoes, droughts, and winter storms;
- Accidents, such as chemical spills, industrial accidents, radiological or nuclear incidents, explosions, and utility outages;
- Civil or political incidents, including unrest or disorder resulting from riots, public demonstrations, and strikes;
- Designated special events, such as major sporting events, festivals, the Olympics, and international summit conferences; and
- Terrorist or criminal incidents, including chemical, biological, radiological, or nuclear releases, as well as more traditional acts involving explosives and armed assaults, and cyber threats or attacks.

During major emergencies, the capabilities of transportation agencies to mobilize resources are profoundly affected by the decisions and directives of others, including law enforcement; fire and emergency medical services; local, regional, and state emergency planning agencies; and local and state government. To better manage these effects, public transportation operators are becoming more actively involved with their local communities in planning and preparing for emergencies. Often, planning agencies and local and state governments already include transportation agencies in their plans without understanding their capabilities and limitations and without sufficient provisions for coordinating in an emergency.

This Guide has been developed to highlight key considerations for public transportation agencies working with their local communities to enhance mobilization capabilities. It provides recommendations and tools based on an extensive research effort conducted with public transportation systems, local, state, and federal emergency planning agencies, and first responders around the country. It describes activities for public transportation systems to

- Expedite response to an event occurring on transportation property by promoting the rapid deployment of per-

sonnel and equipment to address, manage, and resolve the event;
- Promote early recognition of emergency events with the potential to overwhelm the capabilities of the transportation system to respond and that require activation of available local and mutual aid resources;
- Coordinate the application and integration of additional organized, qualified resources from other agencies (regional, state, and federal) in response to a major emergency; and
- Ensure that public transportation resources are available to support the response to emergency events occurring in the transportation system's service area and that these resources can be effectively integrated into an extended program for both response and recovery.

For the public transportation system, this level of integration creates

- An efficient, expeditious method to mobilize resources throughout the transportation organization;
- A consistent system to track resource availability and location throughout the transportation system; and
- A proactive approach for coping with large-scale incidents.

For the surrounding community, this integration often

- Brings a new partner to the planning process, with valuable resources to support community emergencies; and
- Contributes to greater preparedness in the event of an incident that occurs on transportation property, to which the local community must respond.

ROLE OF PUBLIC TRANSPORTATION IN MAJOR EMERGENCIES

During major emergencies, public transportation systems can provide specific functions and services that are identified in local emergency operations plans (EOPs) and detailed in transportation system plans and procedures. The functions may include

- Emergency evacuation of citizens from affected area(s), coordinated with local law enforcement and other public safety agencies, the local/regional/state emergency operations center (EOC); the state department of transportation; and local highway, bridge, and tunnel authorities;
- Identification and transportation of citizens with disabilities and other citizens who are often dependent on public transportation and who may be unable to reach an evacuation staging area;
- Evacuation of schools and day-care centers, and support for managing the reuniting of parents and children in the immediate aftermath of a major event;
- Temporary/in-place sheltering of evacuated citizens in air-conditioned/heated vehicles and stations;
- Transportation, in-facility transfer, or evacuation of populations in hospitals, nursing homes, hospices, and other community and private facilities;
- Transportation of emergency workers and volunteers to and from an emergency staging site;
- Transportation of meals, goods, and supplies to an affected area for victims, for emergency responders, or to support recovery operations;
- Provision of respite facilities and vehicles for emergency workers;
- Communications support for emergency responders (using hand-held and on-board vehicle radios, alphanumeric pagers and personal digital assistants [PDAs], cell phones, transportation dispatch facilities, and transportation communications infrastructure);
- Identification of routes and schedules to support the safe transportation of emergency responders, public utilities and support personnel, and essential personnel to an incident site or staging area;
- Provision of vehicles and equipment to support emergency operations and incident stabilization;
- Provision of estimates and information on the application of available resources to the movement of people or supplies;
- Provision of skilled craftsmen and heavy equipment to support initial debris removal during search and rescue operations;
- Provision of fuel, parts, supplies, and mechanics to support maintenance of emergency vehicles;
- Provision of damage assessments and emergency repairs; and
- Provision of public information on agency websites and using public relations facilities and capabilities.

Untested response capabilities, explored by several communities over the last few years as part of the Nunn-Lugar-Domenici Domestic Preparedness Program and newly evolving homeland security programs, include

- Use of transportation sprinkler systems and water supplies to support mass decontamination;
- Use of vehicle wash and maintenance facilities to decontaminate emergency vehicles and equipment;
- Provision of vehicle support for warm zone operations with trained bus operators using personal protective equipment (PPE);
- Use of vehicles/facilities as temporary morgue(s);
- Use of on-scene vehicles to provide barriers, shields, and shelter for contaminated (or potentially contaminated) victims who disrobe as part of decontamination;
- Use of in-place, transportation agency contracts with hazardous waste management companies to support site clean-up and decontamination;

- Use of transportation personnel with basic first aid training to support emergency or secondary triage and tagging of victims;
- Use of transportation vehicles for mobile command posts and secondary (back-up) communications centers; and
- Integration of automated station and vehicle announcements and passenger information displays with local and regional intelligent transportation systems (ITS) technology to support centralized management of passenger, pedestrian, and vehicle management from the community's EOC.

In providing these functions during major emergencies, public transportation agencies demonstrate their commitment to

- Respond rapidly and effectively to natural and human-caused threats and disasters;
- Support the needs of emergency management and public safety agencies;
- Be prepared for and well-protected against attacks; and
- Quickly and efficiently restore their systems to full capability.[1]

MOBILIZATION CONSIDERATIONS

Building on the foundation provided by the existing incident management and emergency response systems used in their communities, most public transportation agencies address a range of issues to ensure the effective mobilization of resources during emergencies. Depending on the size of the transit agency, and the modes of service provided, public transportation managers, supervisors and personnel may develop plans, policies, and procedures for the following activities:

- Identifying who at the agency makes the decision to commit significant transit agency resources and personnel, perhaps diverting them from their regular assignments? What is the line of succession in the event that the executive director or other key leadership is unavailable?
- Does the system have policies and procedures in place, reinforced through training and drilling, which provide an incident management organization to direct transportation activities at the scene of an emergency? Typical responsibilities may include
  - Establishing command of the scene (first transportation personnel on scene, then transition to appropriate supervisor, manager, etc.);
  - Isolating scene perimeters and denying entry;
  - Conducting an incident assessment and reporting to operations control;
  - Requesting resources appropriate to the incident;
  - Identifying staging areas;
  - Briefing arriving first responders;
  - Establishing the on-scene transportation command post and operations;
  - Ensuring the presence of a transportation safety liaison for local responders;
  - Establishing priorities for use of available public transportation resources; and
  - Fulfilling the system's responsibilities under the mutual aid agreements in place with local and/or regional agencies and jurisdictions.
- Another important question is does the system use a two-pronged approach to emergency response, with field operations at the emergency scene, based at a public transportation command post, and policy/support/service operations directed by the EOC?
  - How and under what circumstances will the EOC be activated to provide this direction and coordinate responsibilities?
  - Does the system's executive leadership report to the EOC for major emergencies?
  - Has the system designated a back-up facility/location in the event that the initial EOC site is destroyed or contaminated?
  - Are notification and activation procedures for the EOC clearly understood by dispatchers/controllers and executive leadership?
  - Has the system made provisions to ensure that the EOC, once activated, will be staffed at all times with personnel with the authority to make decisions, both within the system's organizational structure, and in coordination with local, regional, and state government agencies and private businesses?
  - Will the EOC maintain extended (12-hour) shifts to direct expanded service operations, provide service rerouting, respond to emergency requests, provide overall direction, make policy decisions, and direct contact with the media?
  - Do public transportation EOC facilities have all required communications equipment for rapid coordination with local law enforcement and traffic management centers (TMCs)?
- With respect to interface with EMA(s), which agencies have responsibility for planning and coordinating emergency response/evacuation for the agency's service area? Will a public transportation representative be sent to the community EOC to coordinate with other agencies during a major emergency? How will coordinated response for activities such as evacuation, sheltering in place, and supporting emergency responders be managed between the transit agency and the community EOC?

[1] Federal Highway Administration, *Homeland Security and ITS: Using Intelligent Transportation Systems to Improve and Support Homeland Security*, Supplement to the National ITS Program Plan: A Ten-Year Vision, 2002.

- Regarding electrical power management, if an emergency damages electrical power systems, how will the agency identify the extent of damage, coordinate with power providers to receive real-time status updates, shut off power where electrical lines are damaged or if there is an imminent safety hazard to employees and/or the general public, make necessary repairs to restore systems to the extent possible, and restore electrical systems to full service?
- With respect to public information, the public must be informed of service changes and alternatives during an emergency. How will this information be conveyed to the media and local agencies responsible for managing the community emergency?
- When a disaster strikes, there is an immediate need for damage assessments. The public transportation system must be prepared to provide inspections for its facilities. How will the public transportation agency designate structural damage inspection responsibilities in a disaster for rapid damage assessment, detailed damage assessment, and, perhaps, assisting local inspectors?
- If an emergency renders any of the agency's present dispatch or communications centers inoperative, what other operations control center locations will be used?
- If any of the agency's garages or other facilities becomes unusable, what alternate vehicle storage locations will be used which are both practical and expedient? If an emergency renders the normal fueling locations inoperable, how will vehicles practically re-fuel from an alternate site?
- In the event of a discontinuance of public transportation services, alternative means of transportation must be found as quickly as possible. If a significant portion of the vehicle fleet or operation system is destroyed or otherwise rendered inoperable or overwhelmed, what agencies are available to supplement service?
- Has the system developed radio communications protocols and procedures that optimize information flow during an emergency, emphasizing designated points of contact, radio discipline, and interoperability with local responders?

In addressing these considerations, Figure 1-1 demonstrates the challenges of coordinating emergency mobilization activities across increasingly more serious categories of events. For events categorized as disasters, many different agencies, bringing different authorities and resources, will be integrated into the response. In addition, the public will be less prepared to handle the consequences of the disaster and will require considerable guidance, resources, and support. This situation can be contrasted with a minor incident, which may require only a single responding unit from local law enforcement.

BASIS FOR GUIDE

To assess the current transportation capabilities for emergency mobilization and to identify areas where additional guidance or recommendations may be useful to industry, a survey of the public transportation industry's emergency planning, preparedness, and incident scene management capabilities was conducted. Appendix A presents a copy of the survey questionnaire. This survey was used to identify specific topics to be included in this Guide. Appendix B provides a detailed analysis of survey findings. Appendix B is not included herein but is available as *TCRP Web-Only Document 25.*

Survey results show that considerable activity has been performed to support emergency mobilization capabilities in the transportation industry. These results also identify areas where required coordination with local and regional communities has not yet occurred.

Eighty-nine public transportation agencies submitted responses to the survey. Of these respondents

- 67 operate systems with bus and/or paratransit vehicles, but no rail vehicles;
- 17 operate systems with bus and/or paratransit vehicles and rail vehicles, including light rail, commuter rail, and/or heavy rail;
- 4 operate systems with rail only, including light rail, commuter rail, and/or heavy rail; and
- 1 operates ferries only.

Results from this survey demonstrate that

- 90 percent of the systems have identified the emergency and disaster events most likely to occur on their systems and in their service areas;
- 80 percent of the systems have defined roles for their supervisors and personnel to prepare for, respond to, and recover from emergency incidents;
- 80 percent of the systems provide contact information to ensure continual access to critical internal decision-makers (i.e., senior management, supervisors, and specialized contractors and resources);
- 70 percent of the systems organize their emergency response activities by type of event (e.g., fire, flood, bomb threat, explosion, etc.);
- 66 percent of the systems have plans and procedures developed which reference and use the incident command system (ICS);
- 54 percent of the systems have developed specific procedures for establishing an incident command post, and for requesting, staging, and tracking resources and personnel; and
- 50 percent of the systems have established internal EOCs to facilitate management decision-making and support field operations and emergency incident sites.

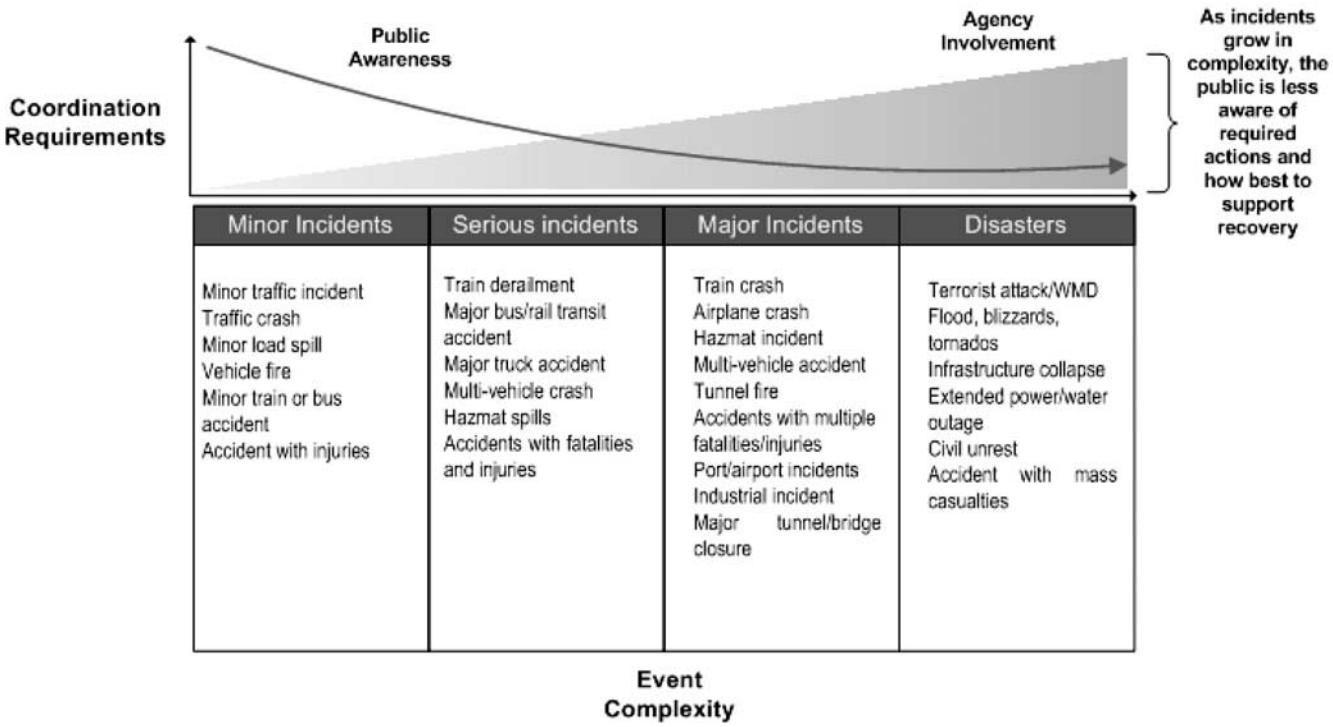


Figure 1-1. Expanding requirements for effective mobilization.[2]

However, while most public transportation systems have procedures in place for their own activities, fewer systems have plans that include coordination agreements with outside agencies:

- 70 percent have mutual aid and other support agreements with appropriate local and state agencies; and
- Less than 60 percent have plans or procedures in place when events require coordination with others outside the system.

The survey also asked public transportation systems about various aspects of their employee training for handling emergencies. Specific activities that the survey referred to included emergency response simulation drills, no notice drills and tabletop simulations, and implementation of the ICS. Overall, the results pointed out that the likelihood of having these types of training varied significantly by mode:

- 83 percent of rail-only systems (which also tend to be large) regularly conduct these types of training;
- 57 percent of systems with both bus and rail regularly conduct these types of training; and
- 36 percent of bus-only systems regularly conduct these types of training.

About 40 percent of surveyed systems, regardless of size, report that they have not trained all personnel according to their responsibilities on how to respond to emergencies.

At the local level of coordination

- 82 percent of the survey respondents state that they meet regularly with other community agencies in the emergency planning process and
- 76 percent of the survey respondents have reviewed their system's emergency capabilities and resources with these community agencies.

When asked to identify concerns with the local emergency planning process

- 42 percent of the systems questioned the extent of their local emergency planning community's understanding of public transportation's role in an emergency;
- 35 percent of the systems questioned the priority placed on post-incident traffic management and transportation issues;
- 34 percent of the systems questioned assessments made by the local planning agencies about the effects of evacuation plans and routes on local traffic;
- 32 percent of the systems were concerned that public transportation may not be fully used as an evacuation system (in comparison to reliance on automobiles); and

[2] Graph courtesy Maryland Department of Transportation Emergency Services Group, 2004.

- 29 percent of the systems thought that public information needs may not be adequately addressed in local emergency planning.

More than 75 percent of survey respondents considered "very important" or "critical" the following components of their emergency preparedness and response programs:

- Options for community evacuation and the use of reverse routing strategies,
- Public information for evacuation and service status, and
- Safety of transportation system and employees.

Overall, 57 percent of the public transportation systems have integrated with local, state, and federal homeland security programs to develop and coordinate protective measures for times of heightened threat.

OBJECTIVES AND ORGANIZATION OF THIS GUIDE

Based on the survey findings, this Guide has been prepared to emphasize those activities critical for emergency mobilization in the transportation environment. This Guide addresses

- In Section 2 the emergency planning framework within which public transportation agencies must work to enhance emergency mobilization capabilities;
- In Section 3 the basic concepts of the ICS and a process for developing an incident management organization (IMO) appropriate for public transportation agencies;
- In Section 4 the emergency planning process, and an outline for an EOP for use in the transportation environment;
- In Section 5 considerations for evacuation planning and community support appropriate to a range of different transportation modes and differently-sized systems;
- In Section 6 how transportation systems can mobilize for new threats, including lessons learned from the historical record of attacks used to target public transportation vehicles, facilities, and operations;
- In Section 7 key activities that should be considered by the transportation system in developing plans, standards, and baselines for mobilizing resources to respond to potential indicators of a terrorist event and to manage a full-blown emergency resulting from terrorism; and
- In Section 8 a list of references cited in the Guide, by section, is provided.

APPENDIXES

This Guide also includes additional supporting information in four appendixes:

- Appendix A contains the emergency mobilization survey instrument and the accompanying cover letter that were used to solicit information on the status of the public transportation systems' integration into the mobilization process.
- Appendix B includes a detailed analysis of survey findings. It is not provided herein, but is available as *TCRP Web-Only Document 25.*
- Appendix C contains a discussion of the ICS.
- Appendix D documents a collection of reference materials developed by public and private sector agencies and organizations that may be useful to public transportation systems working to improve preparedness and response capabilities.

SECTION **2**

FRAMEWORK FOR EMERGENCY MOBILIZATION

Public transportation agencies do not lead emergency management planning for metropolitan areas. Instead, local planning agencies designate them to provide specific support functions in major community emergencies. For events occurring on their systems, most public transportation agencies request local support and ultimately rely on local responders to manage the incident and initiate outreach with regional and state resources. However, transportation managers, supervisors, and personnel are important in resolving incidents on their systems and restoring service.

Without integration into the local planning process, the public transportation system's ability to manage a major event can be greatly impaired. In addition, the local community, by working with the public transportation system, learns to incorporate public transportation capabilities and resources into community response plans and emergency management efforts. These activities provide the foundation of an effective mobilization program.

Public transportation agencies face many challenges when attempting to integrate their resources, capabilities, needs, and requirements into the local planning process. These challenges are largely the result of the complexity of this process, which places the burden of considerable requirements on its participants for effective coordination and representation. In addition, the creation of new offices for homeland security at the local, regional, state, and federal levels has introduced a new group of agencies, authorities, and responsibilities into the process.

Local governments have primary responsibility in planning for and managing the consequences of emergencies. Primary participants in this process include

- Local emergency management agencies (EMAs) and offices of emergency management (OEMs);
- Local/regional offices of homeland security (OHSs);
- Local emergency planning committees (LEPCs);
- Local public safety agencies (e.g., law enforcement, fire and emergency medical services, hazardous materials units, strategic weapons and tactical [SWAT] units, and other specialized resources);
- Local hospitals and medical associations;
- Local environmental and worker safety protection agencies;
- Local councils and governing boards; and
- Local business alliances, chambers of commerce, and commercial improvement districts.

In fulfilling their emergency planning functions, these agencies typically are concerned with the following types of activities:

- Operation of warning systems (e.g., types of warnings, how they will be distributed, obligations on receiving warnings);
- Pre-impact preparations, including
  - Relationships between type of emergency and necessary preparations,
  - Responsibilities of different agencies for preparedness, and
  - Location of sites of greatest risk;
- Emergency evacuation procedures, including
  - Conditions under which evacuation is authorized;
  - Routes to be followed and destinations; how people of age, who are ill, who are institutionalized, or combinations thereof will be accommodated; and
  - Locations and facilities for emergency shelters;
- Concept of operations for field response, including use of the incident command system and unified command (UC)
- Activation and management of emergency operations centers (EOCs), including locations, equipment, operation, staffing, and redundancy;
- Communications and required interoperability;
- Search and rescue (SAR) needs and required capabilities;
- Public order maintenance during emergency operations;
- Public information requirements during emergencies; and
- Medical facility and morgue management during mass casualty events.

These local organizations also coordinate compliance with state and federal requirements for emergency planning and preparedness. As indicated in Figure 2-1, local planning activities conform to guidelines, requirements and recommendations issued by state emergency management agencies and other departments. State guidelines, in turn, comply with requirements and recommendations issued at the federal level.

Emergency response, too, is guided by the framework presented in Figure 2-1. Local resources must be first expended and exhausted before the request for state assistance. State

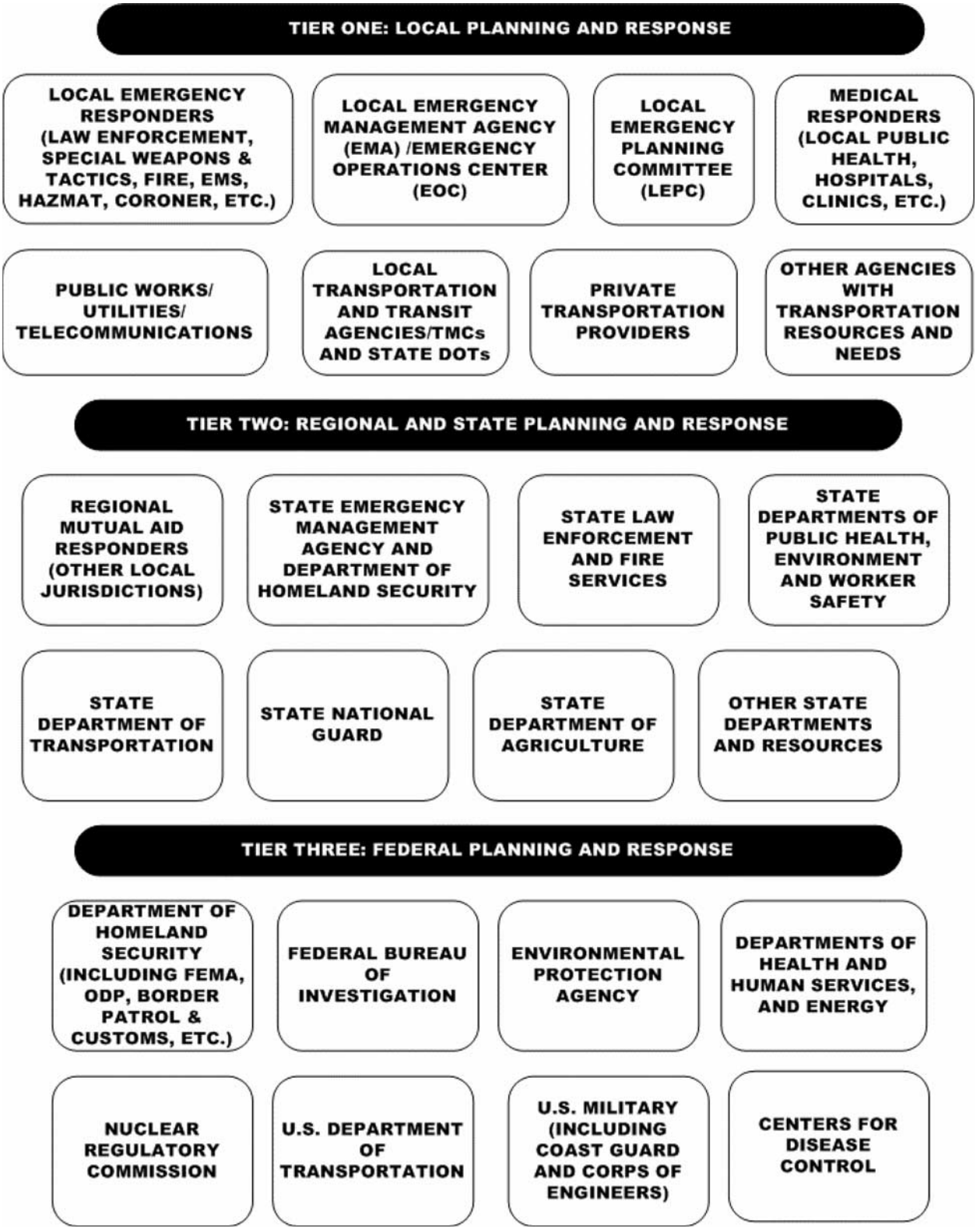


Figure 2-1. Tiers of emergency planning and response.

resources must then be overwhelmed before federal assistance can be requested. Since 2003, new authorities granted to the U.S. Department of Homeland Security (DHS) have made it easier for federal resources to be released for a local emergency. However, for most incidents, as specified in the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288), resources must be applied and expended by the lowest response level before receiving additional support from the next level of government.

DEPARTMENT OF HOMELAND SECURITY REQUIREMENTS

To organize response to major emergencies that require federal involvement, DHS has developed the National Response Plan (NRP) and the National Incident Management System (NIMS). The NRP establishes a comprehensive, national, all-hazards approach to domestic incident management across a spectrum of activities. It is predicated on NIMS, a nationwide template enabling government and nongovernmental responders to respond to all domestic incidents using a coordinated and modular approach based on the Incident Command System (ICS). Figure 2-2 shows the relationship between the NRP and NIMS.

National Response Plan

The NRP integrates key concepts from existing federal plans, such as the Federal Response Plan (FRP), the Federal Radiological Emergency Response Plan (FRERP), the National Contingency Plan (NCP), and the U.S. Government Domestic Terrorism Concept of Operations Plan (CONPLAN). In addition, through the implementation of NIMS, NRP embodies an all-hazards perspective that provides the structure and mechanisms for national-level policy and operational direction for domestic incident management. The NRP is intended to be a truly national, comprehensive preparedness and response system that will govern federal response to a wide range of incidents and provide a policy framework for coordinating federal, state, and local governments; nongovernmental organizations; and private sector resources.

The NRP, available at http://www.dhs.gov/interweb/assetlibrary/NRP_FullText.pdf, was released in final form in December 2004. The NRP includes the following sections:

- **Base Plan**: Consists of Concept of Operations, Coordinating Structures, Roles and Responsibilities, Definitions, etc.
- **Emergency Support Function Annexes**: Groups capabilities and resources into functions that are most likely needed during an incident (e.g., Transportation, Firefighting, and Mass Care).
- **Support Annexes**: Describes common processes and specific administrative requirements (e.g., Public Affairs, Financial Management, and Worker Safety and Health).
- **Incident Annexes**: Outlines core procedures, roles, and responsibilities for specific contingencies (e.g., Biological, Radiological, and Cyber Incident, and HAZMAT Spills)
- **Appendixes**: Consists of a Glossary, Acronyms, Authorities, and a Compendium of National Interagency Plans

Figure 2-3 depicts the NRP.

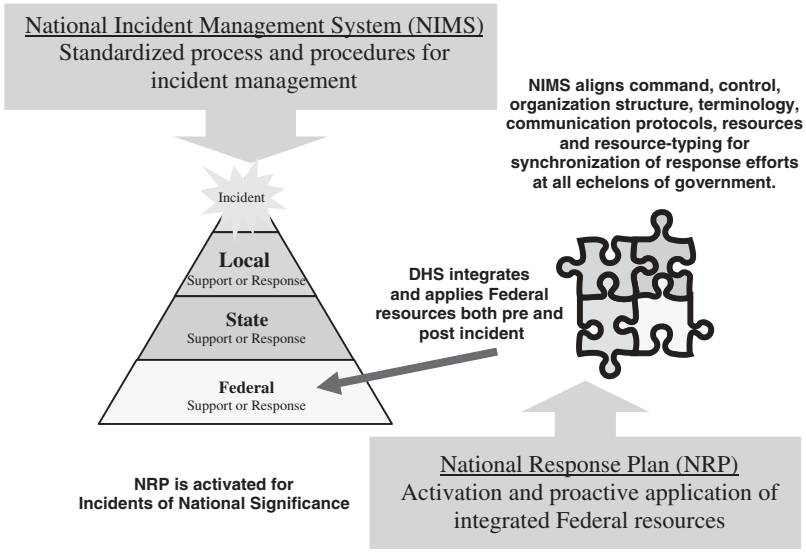


Figure 2-2. National Response Plan and National Incident Management System.

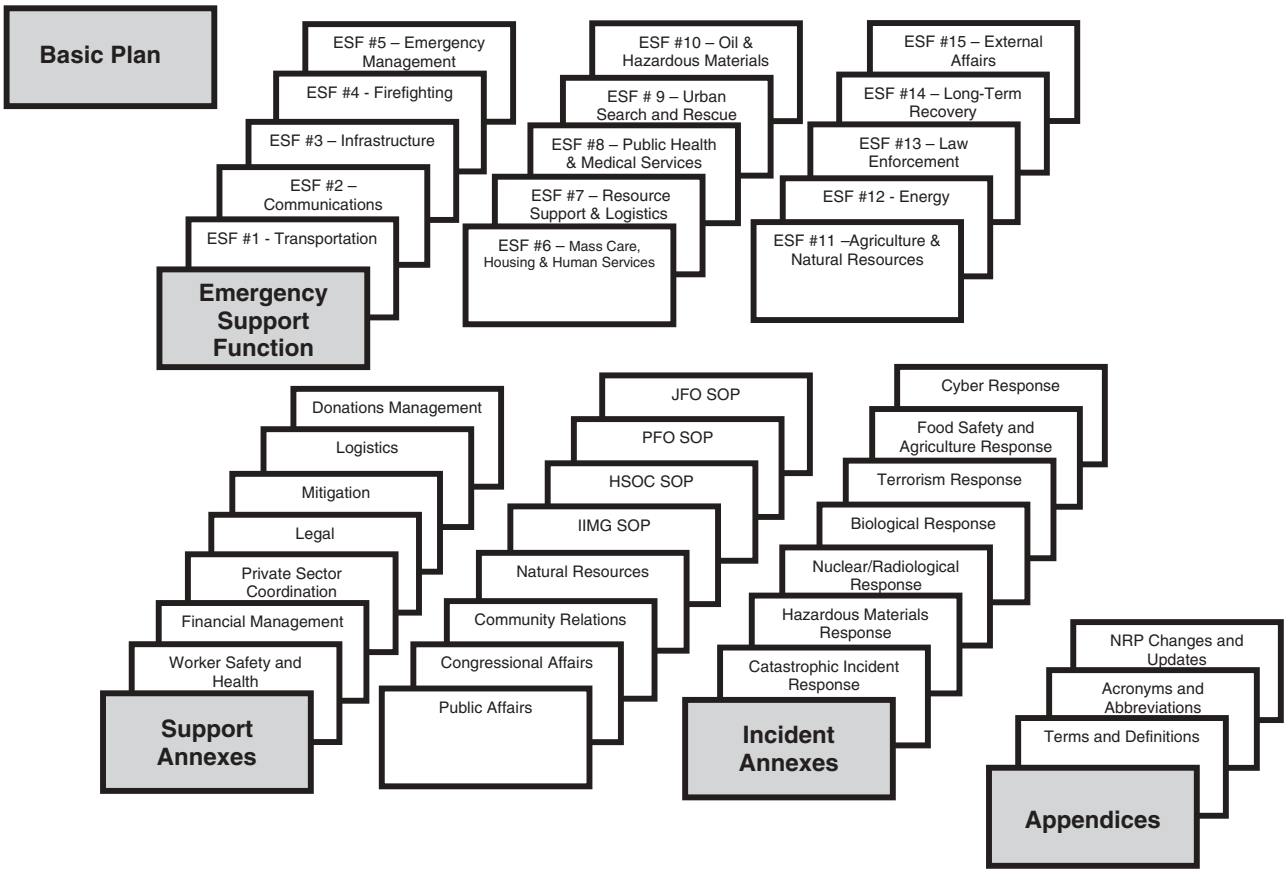


Figure 2-3. Organization of National Response Plan.

The NRP does not alter or impede the ability of Federal, State, local, or tribal departments and agencies to carry out their specific authorities and assumes that incidents are typically managed at the lowest possible geographic, organizational, and jurisdictional level.

The NRP distinguishes between incidents that require DHS coordination, termed "Incidents of National Significance," and most incidents occurring each year that are handled by responsible jurisdictions or agencies through other established authorities and existing plans. Incidents of National Significance are those high-impact events that require a coordinated and effective response by an appropriate combination of Federal, State, local, tribal, private-sector, and nongovernmental entities in order to save lives, minimize damage, and provide the basis for long-term community recovery and mitigation activities.

The NRP bases the definition of Incidents of National Significance on the following four criteria:

1. A Federal department or agency acting under its own authority has requested the assistance of the Secretary of Homeland Security.
2. The resources of State and local authorities are overwhelmed and Federal assistance has been requested by the appropriate State and local authorities. Examples include
   - Major disasters or emergencies as defined under the Stafford Act; and
   - Catastrophic incidents.
3. More than one Federal department or agency has become substantially involved in responding to an incident. Examples include
   - Credible threats, indications or warnings of imminent terrorist attack, or acts of terrorism directed domestically against the people, property, environment, or political or legal institutions of the United States or its territories or possessions; and
   - Threats or incidents related to high-profile, large-scale events that present high-probability targets such as National Special Security Events (NSSEs) and other special events as determined by the Secretary of Homeland Security, in coordination with other Federal departments and agencies.

4. The Secretary of Homeland Security has been directed to assume responsibility for managing a domestic incident by the President.

As an example, Figure 2-4, excerpted from the NRP, shows the process in place through which the second of these criteria is applied to activate Stafford disaster assistance. This graphic introduces several new organizations to the federal response process, including the Homeland Security Operations Center (HSOC), the Interagency Incident Management Group (IIMG), and the Joint Field Office (JFO). These organizations reflect the new role of DHS in the Federal disaster response and assistance process.

Organizing Resources Using Emergency Support Functions (ESFs)

To support the standard typing of resources for response to events, the NRP has identified 15 Emergency Support Functions (ESFs). These ESFs are also referenced as the standard resource categories in NIMS. The ESFs serve as the coordination mechanism to assist State, local, and tribal governments or Federal departments and agencies conducting missions of primary Federal responsibility. ESFs may be selectively activated for both Stafford Act and non-Stafford Act incidents where Federal departments or agencies request DHS assistance. Table 2-1 presents these ESFs and provides examples of the scope of activities that might be included in each one.

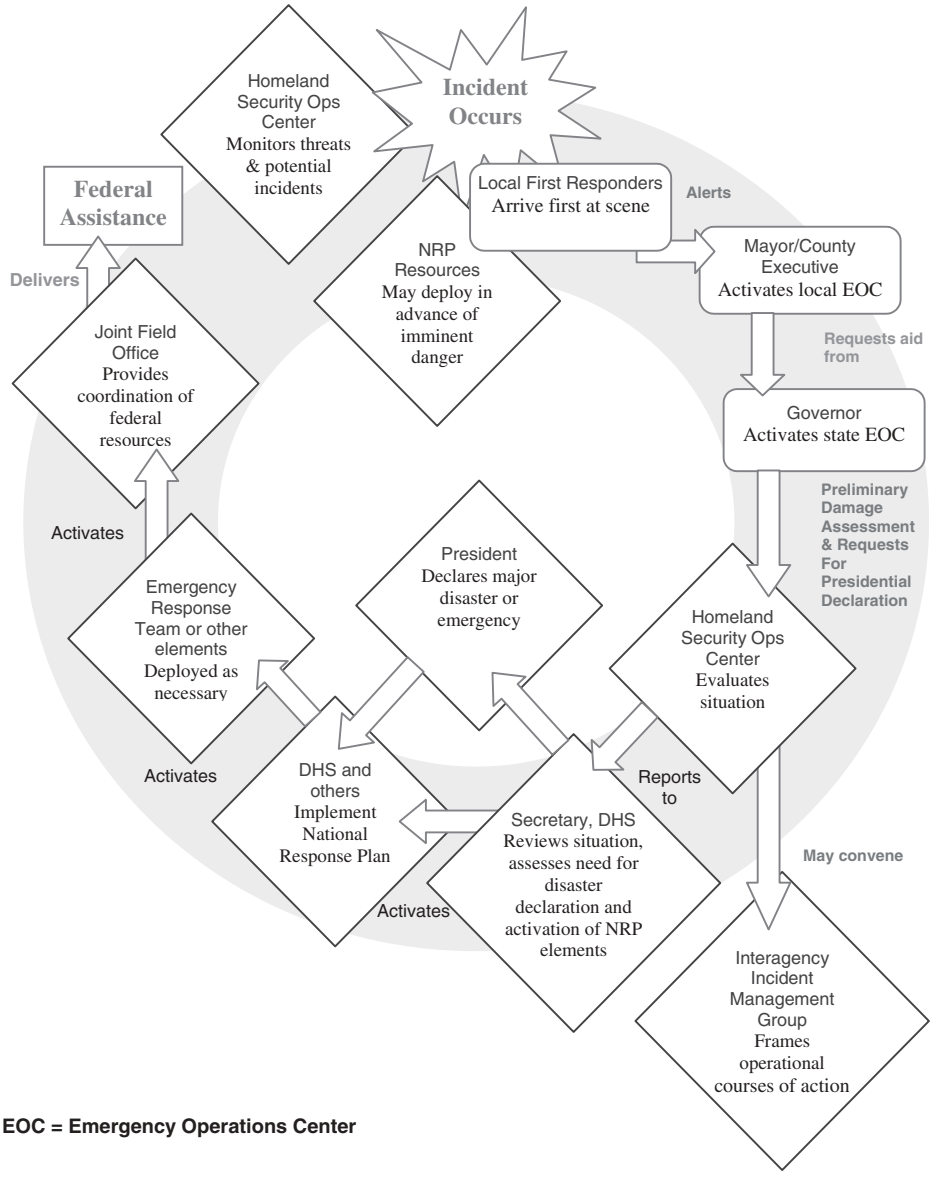


Figure 2-4. Overview of initial Federal involvement under the Stafford Act.

TABLE 2-1 Emergency support functions

ESF	Scope of Activities
ESF #1 - Transportation	• Transportation support/movement of civil population • Transportation safety • Restoration/recovery of transportation infrastructure • Movement restrictions • Damage and impact assessment
ESF #2 - Communications	• Coordination with telecommunication industry • Restoration/repair of telecommunications infrastructure • Protection, restoration, and sustainment of national cyber and information technology resources
ESF #3 – Infrastructure (Public Works and Engineering)	• Infrastructure protection and emergency repair • Infrastructure restoration • Engineering services, construction management • Critical infrastructure liaison
ESF #4 - Firefighting	• Firefighting activities • Resource support to rural and urban firefighting operations
ESF #5 - Emergency Management	• Coordination of incident management efforts • Issuance of mission assignments • Resource and human capital • Incident action planning • Financial management
ESF #6 - Mass Care, Housing, and Human Services	• Mass care • Disaster housing • Human services
ESF #7 - Resource Support	• Resource support (e.g., facility space, office equipment and supplies, and contracting services)
ESF #8 - Public Health and Medical Services	• Public health • Medical service and mental health services • Mortuary services
ESF #9 - Urban Search and Rescue	• Life-saving assistance • Urban search and rescue
ESF #10 - Oil and Hazardous Materials Response	• Environmental safety and short- and long-term cleanup
ESF #11 - Agriculture and Natural Resources	• Nutrition assistance • Animal and plant disease/pest response • Food safety and security

(*continued on next page*)

Each ESF is composed of primary and support agencies. The NRP identifies primary agencies on the basis of authorities, resources, and capabilities. Support agencies are assigned based on resources and capabilities in a given functional area. Not all Incidents of National Significance result in the activation of ESFs. It is possible that an Incident of National Significance can be adequately addressed by DHS and other Federal agencies through activation of certain NRP elements (e.g., Principal Federal Official (PFO), IIMG) without the activation of ESFs. Similarly, operational security considerations may dictate that activation of NRP elements be kept to a minimum, particularly in the context of certain terrorism prevention activities.

National Incident Management System

NIMS is a comprehensive approach to incident management that is applicable at all jurisdictional levels and across functional disciplines. NIMS was released on March 1, 2004 at: http://www.fema.gov/nims/nims_compliance.shtm#nimsdocument.

The intent of NIMS is to:

- Be applicable across a full spectrum of potential incidents and hazard scenarios, regardless of size or complexity, and

TABLE 2-1 (Continued)

ESF	Scope of Activities
	• Natural/cultural resources and historic properties protection and restoration
ESF #12 - Energy	• Energy infrastructure assessment, repair, and restoration • Energy industry utilities coordination • Energy forecast
ESF #13 - Public Safety and Security	• Facility and resource security • Security planning and technical and resource assistance • Public safety/security support • Support for access, traffic, and crowd control
ESF #14 - Long-Term Community Recovery and Mitigation	• Social and economic community impact assessment • Long-term community recovery assistance to States, local governments, and the private sector • Mitigation analysis and program implementation
ESF #15 - External Affairs	• Emergency public information and protective action guidance • Media and community relations • Congressional and international affairs • Tribal and insular affairs

- Improve coordination and cooperation between public and private entities in various domestic incident management activities.

NIMS provides a framework for interoperability and compatibility by balancing flexibility and standardization:

- NIMS provides a flexible framework that facilitates government and private entities at all levels working together to manage domestic incidents. This flexibility applies to all phases of incident management, regardless of cause, size, location, or complexity.
- NIMS provides a set of standardized organizational structures, as well as requirements for processes, procedures, and systems designed to improve interoperability.

NIMS consists of six components that work together as a system to provide a national framework for preparing for, preventing, responding to, and recovering from domestic incidents. These components include

- Command and management,
- Preparedness,
- Resource management,
- Communications and information management,
- Supporting technologies, and
- Ongoing management and maintenance.

Command and Management: NIMS standard incident management structures are based on three key organizational systems:

- The Incident Command System (ICS), which defines the operating characteristics, management components, and structure of incident management organizations throughout the life cycle of an incident;
- Multi-agency coordination systems, which define the operating characteristics, management components, and organizational structure of supporting entities; and
- Public information systems, which include the processes, procedures, and systems for communicating timely and accurate information to the public during emergency situations.

Figure 2-5 depicts the integration of NIMS command and coordinating structures into the NRP.

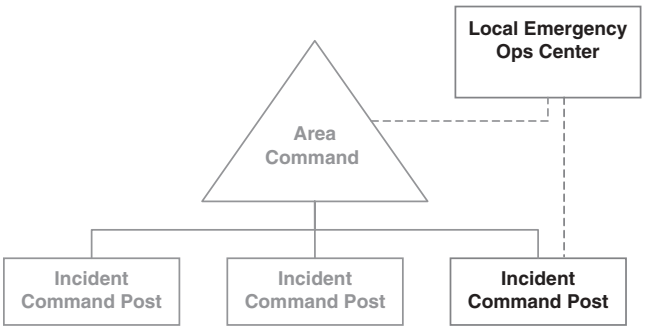


Figure 2-5. Command and coordinating structures in NIMS/NRP

Preparedness: Effective incident management begins with a host of preparedness activities. These activities are conducted on a "steady-state" basis, well in advance of any potential incident. Preparedness involves a combination of

- Planning, training, and exercises;
- Personnel qualification and certification standards;
- Equipment acquisition and certification standards;
- Publication management processes and activities; and
- Mutual aid agreements and Emergency Management Assistance Compacts.

Resource Management: When fully implemented, NIMS will define standardized mechanisms and establish requirements for describing, inventorying, mobilizing, dispatching, tracking, and recovering resources over the life cycle of an incident.

Incident Command Structure

Most emergencies are managed at the local level. On-scene, incident command posts are established. Unified Command is established if multiple agencies respond to an incident site. Area Command is established if multiple incident scenes must be coordinated at the same time.

Multi-agency Coordination Centers

The support and coordination components consist of multi-agency coordination centers/emergency operations centers (EOCs) and multi-agency coordination entities. Multi-agency coordination centers/EOCs provide central locations for operational information-sharing and resource coordination in support of on-scene efforts. Figure 2-6 illustrates examples of such centers.

Figure 2-6. Multi-agency coordination centers.

Multi-agency Coordination Entities

Multi-agency coordination entities aid in establishing priorities among the incidents and associated resource allocations, resolving agency policy conflicts, and providing strategic guidance to support incident management activities. Figure 2-7 shows examples of such entities.

In accordance with NIMS processes, resource and policy issues are addressed at the lowest organizational level practicable. If the issues cannot be resolved at that level, they are elevated to the next level for resolution.

Figure 2-7. Federal multi-agency coordination entities.

Communications and Information Management: NIMS identifies the requirements for a standardized framework for communications, information management, and information-sharing support at all levels of incident management.

- Incident management organizations must ensure that effective, interoperable communications processes, procedures, and systems exist across all agencies and jurisdictions.
- Information management systems help ensure that information flows efficiently through a commonly accepted architecture. Effective information management enhances incident management and response by helping to ensure that decision making is better informed.

Supporting Technologies: Technology and technological systems provide supporting capabilities essential to implementing and refining NIMS. Examples include

- Voice and data communication systems;
- Information management systems, such as record-keeping and resource tracking; and
- Data display systems.

Supporting technologies also include specialized technologies that facilitate ongoing operations and incident management activities in situations that call for unique technology-based capabilities.

Ongoing Management and Maintenance: DHS established the NIMS Integration Center to provide strategic direction and oversight in support of routine review and con-

tinual refinement of both the system and its components over the long term.

IMPLICATIONS FOR PUBLIC TRANSPORTATION AGENCIES

In addressing requirements identified in the NRP and NIMS, most public transportation agencies may choose to consider the following activities:

- Review NRP/NIMS requirements and identify the elements relevant for the public transportation agency in coordinating with its emergency response communities at the local/regional/state level. Special attention may be paid to public transportation resources available to address the 15 Emergency Support Functions specified in the NRP/NIMS.
- Review protocols developed by local/regional/state emergency management agencies and emergency response agencies to support implementation of NIMS. Identify impacts on transit activities and emergency response functions.
- Revise memoranda of understanding/memoranda of agreement with local/regional/state emergency management agencies and emergency responders to reflect NIMS requirements and to formalize mutual aid protocols (required in both the NRP and NIMS).
- Revise the transit agency's emergency operations plan to reflect NRP and NIMS organizational structures, terminology, definitions of emergency and Incidents of National Significance, revised memoranda of understanding/memoranda of agreement, and local/regional/state communication and coordination protocols.
- Provide a copy of the revised transportation emergency operations plan to the local/regional/state emergency management agency.
- Develop a system for 24/7 emergency notification from/communication with the local/regional/state emergency management agency and/or emergency operations center.
- Review existing transportation commitments to city/county/state emergency operations plans, and verify transit agency resources and document emergency management capacity.
- Develop an inventory of the transit agency's emergency management capacity and update it annually, submitting the revised inventory to the appropriate local/regional/state emergency management agency.
- Designate a member of the transit agency to participate in city/county emergency management agency board meetings, training, and other activities.
- Designate a member of the transit agency to serve as a contact person for the local/regional/state emergency coordinator on matters in connection with the local/regional/state incident management system protocol.
- Develop a procedure to provide the local/regional/state emergency operations center with information received from transportation personnel regarding the traffic capacity along routes and any unusual incidents that may affect emergency services, and keep the emergency operations center regularly informed of any route changes.
- Revise transportation emergency operating procedures to reflect NIMS/NRP terminology and protocols, revised memoranda of understanding/memoranda of agreement with local/regional/state emergency management and response agencies, and revised commitments to city/county/state emergency operations plans.
- Designate a representative from the transit agency to serve as a liaison with the local/regional/state emergency management agency and to report to the local/regional/state emergency operations center upon activation.
- Prepare to provide, at the incident scene, a representative, if requested to do so by the local/regional/state emergency management agency or emergency responders, to assist in coordinating the provision of the transportation agency's services.
- Participate in the training conducted by the local/regional/state emergency management agency and assist, to the degree the transportation agency deems appropriate, the local/regional/state emergency management agency in the development and delivery of training programs in connection with the local/regional/state incident management system.
- Develop a formal process for addressing requests from the local/regional/state emergency management agency or emergency operations center in connection with the response to and recovery from a major emergency incident.
- Prepare/update training to reflect revised transportation emergency plans, procedures, and coordination protocols with local/regional/state emergency management agencies and emergency responders.

SECTION **3**

ORGANIZING FOR INCIDENT MANAGEMENT

Section 2 identified the pivotal role of the incident command system (ICS) in the standardized emergency management framework now required by DHS. This section describes how the incident command system concepts and principles can be incorporated into public transportation emergency response.

Local public safety agencies, including law enforcement, fire and emergency services, and specialized response units (e.g., hazardous materials and special weapons and tactics), are the primary responders for major emergencies occurring in their communities. These agencies have the lead in establishing the incident command system (and the unified command structure, if applicable) and coordinate communications with the local emergency operations centers (EOCs), local government officials, and the media.

For example, in a fire or hazardous materials release (including a weapon of mass destruction: chemical, biological, or radiological), the fire department will usually be in charge. In the event of an explosive threat, hijacking, robbery, hostage situation, homicide, suicide, or threat of violence, law enforcement will usually be in charge. Public transportation agencies play a subordinate role in response and must work within the incident command system established by the lead agency to support resolution of the emergency.

Coordination with public safety agencies can be greatly improved if public transportation systems have an emergency response capability that parallels the incident command system. This structure, often called an incident management organization (IMO), applies basic incident command system tenets and terminology to emergency response efforts managed by public and private agencies without primary authority at the scene.

Use of an incident management organization in the public transportation environment is recommended by

- The FTA (in FTA's Top 20 Security Action Item List)[1];
- APTA in its checklist for emergency preparedness[2];
- The National Fire Protection Association (NFPA) in *NFPA 1600: Standard on Disaster/Emergency Management and Business Continuity Programs*; and
- The International Association of Chiefs of Police (IACP) in *Critical Incident Protocol: A Public and Private Partnership*.

Given that many public transportation systems have little experience with major emergencies and disasters, the potential benefits of an incident management organization are not always readily apparent. Each public transportation system's standard operating procedures (SOPs) are typically adequate to manage normal conditions and minor emergencies. During day-to-day service with minor incidents, public transportation personnel generally perform routine tasks with little interaction from public safety agencies. Standard procedures and routine communication channels provide adequate information on surrounding circumstances.

During a major incident, however, numerous agencies respond. Unfamiliar and unanticipated tasks are required. The normal flow of information may be interrupted, and normally predictable system activities may no longer occur. Frequently, more equipment and personnel are required to stabilize the scene, and many of the materials needed may not be available locally. Federal and state financial resources may be required to support response and recovery.

At an incident managed using incident command system principles, responding resources are staged to ensure appropriate usage. Rather than just haphazardly applying resources, the best resource for a given task is applied. An incident command system organization is structured to ensure a manageable span-of-control, allowing supervisors to keep track of response activities and personnel without becoming overwhelmed by events. EOCs coordinate and communicate with each other across local, regional, state, and federal jurisdictions, facilitating the acquisition and delivery of resources to the scene and supporting the Incident Commander's decisions to expand or contract the incident command system or to form a unified command structure. (Appendix C provides an overview of incident command system principles, concepts, and requirements for transportation personnel.)

[1] FTA's Top 20 Action Item Number 3 states: "The security and emergency management plans are an integrated system program, including regional coordination with other agencies, security design criteria in procurements, and organizational charts for incident command and management systems."

[2] See http://www.apta.com/services/safety/checklist.cfm.

THE PUBLIC TRANSPORTATION INCIDENT MANAGEMENT ORGANIZATION

Public transportation-based and municipal emergencies may require extraordinary arrangements and measures to be undertaken. As a critical element of preparedness, many public transportation systems have established incident management organizations that

- Are based on the existing organization for managing response to routine incidents;
- Preserve existing reporting relationships and authorities of employees, supervisors, managers, division and department heads, and top management;
- Allow for the formation of incident response teams to address specific issues arising at facilities, system wide, or within the local community;
- Allow for integration with local responders; and
- Provide for 24-hour-a-day, seven-day-a-week coverage.

A successful response to a large-scale emergency depends on each public transportation employee adhering to his or her specific responsibilities, attending to designated functions, and reporting through the management structure designated in the incident management organization. Within this structure, specific responsibilities may be assigned to individuals, teams, or groups of teams to support incident management within a public transportation facility, to ensure the protection of passengers and employees throughout the system and to promote the rapid restoration of service.

The incident management organization is described in the public transportation system's emergency operations plan (EOP). The public transportation emergency operations plan defines the operating and management principles used to prepare the system for emergency situations, to enable the system to provide effective and timely response, and to document lessons learned systematically in order to improve the system's program continuously.

As described in the emergency operations plan, the incident management organization is designed to ensure that all departments that may become involved in an internal large-scale or municipal emergency are fully aware of their respective roles and responsibilities. The emergency operations plan is not intended as a detailed action plan, but as a guide for those having defined roles and responsibilities during a major emergency. Supplemental information, such as contingency planning, specific emergency procedures and detailed protocols are provided separately, or as references or appendixes to the emergency operations plan.

By clarifying relationships between and among management levels within the system, a well-documented program enables the transportation system to be proactive when addressing preparedness and response concerns. Supervisors and managers understand their roles in the system and which management personnel are responsible for approving, reviewing, and enforcing emergency operations plan policies and procedures.

For many systems, the incident management organization, documented in the public transportation emergency operations plan, assures a level of response, both on-scene and at the policy/support level with the components shown in Figure 3-1. Ultimately, as indicated in Figure 3-2, the public transportation incident management organization probably should be integrated with the community incident command system at the field level and for the public transportation system to remain integrated into an evolving response network through coordinated activity occurring in the system's emergency operations center.

HYPOTHETICAL RESPONSE EXAMPLE

As a hypothetical example of this approach, Figure 3-3 provides an overview of emergency response that could be used in the rail public transportation environment. Key elements of the field response for this approach are defined in Table 3-1.

The policy/support response to this hypothetical event is managed by a joint bus-rail-paratransit EOC, which provides a central location where incident operations activities are directed and coordinated. Public transportation personnel managing the EOC are authorized and responsible for implementing all requirements, as defined by the system's emergency operations plan and emergency procedures. When an emergency occurs, the EOC evaluates the facts, determines the type and level of response required, and immediately begins communication, coordination, and control functions appropriate for the specific incident, through bus, rail, and paratransit dispatch.

Once an incident occurs at the rail station, the first person on scene reports the event to rail operations control. Upon receiving notification of the incident, rail dispatch manages immediate concerns about vehicle movement and passenger evacuation on the affected line(s). This activity most likely would involve

- Implementing emergency procedures for communicating with trains and controlling vehicle movements;
- Implementing procedures for evacuation of passengers and employees affected by the event;
- Re-routing trains around the affected station;
- Powering down overhead or third-rail systems at the affected station or on the affected line(s);
- Addressing the status and condition of station ventilation systems;
- Managing alarms in tunnels and along the track structure;
- Initiating manual operations and speed restrictions (in the event of damaged signals/ATC);

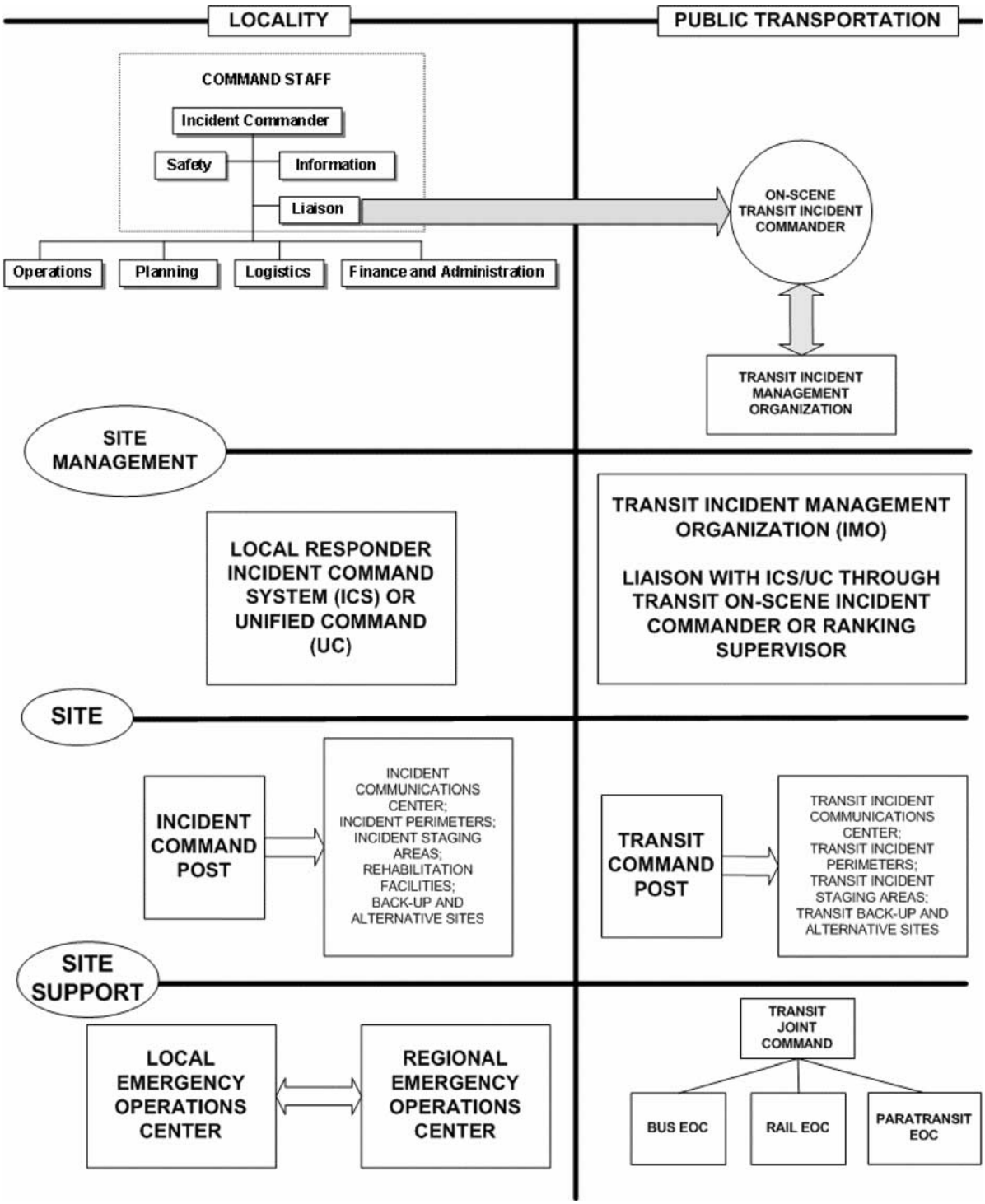


Figure 3-1. Relationship between local ICS/UCs and public transportation IMO.

- Communicating with buses for supplemental or emergency service (as required);
- Contacting maintenance supervisors and other field support personnel for assistance (as required),
- Performing management notifications;
- Responding to incoming calls;
- Continuing to collect information from scene and system service area;
- Initiating a partial or complete system shutdown (e.g., if it appears that the incident may be an act of terrorism);
- Communicating with passengers at the site; and
- Communicating with affected passengers downstream.

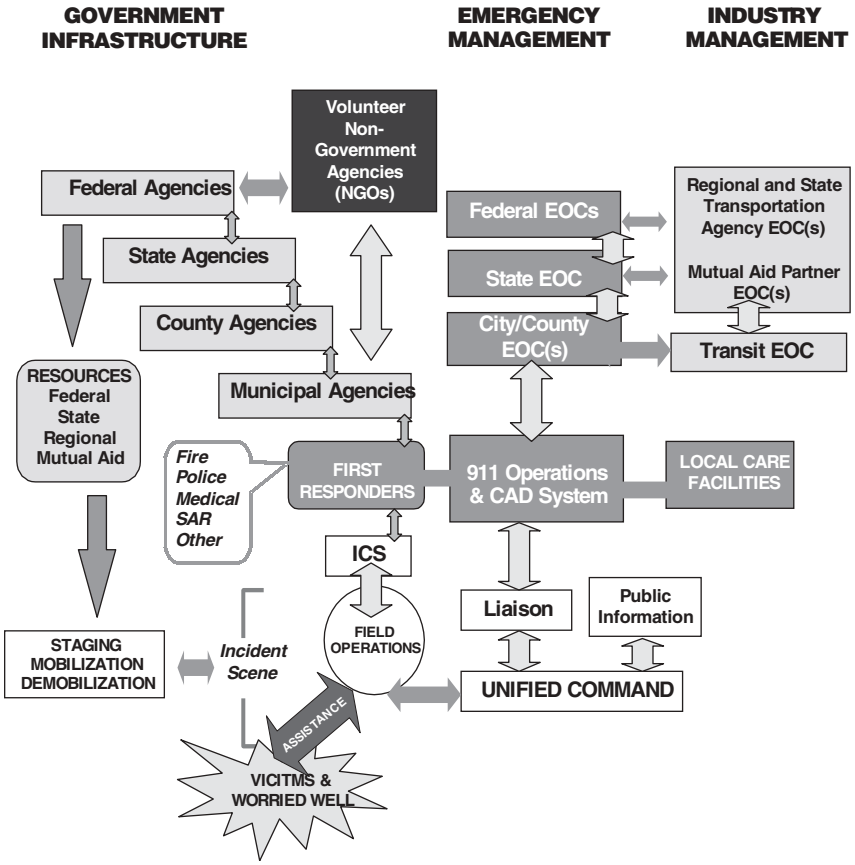


Figure 3-2. Fully integrated response system.

At this time, rail operations control center personnel probably also would notify local responders. Based on information received from the first person on scene, and subsequent updates, rail operations control would typically provide the 911 Call Center with the following (if available):

- Specific location of incident;
- Directions to, and street address of, most appropriate access point;
- Special instructions about parking or approaching the access point from street;
- Summary of incident (including the need for specialized teams or equipment);
- If possible, estimated number of injured persons and severity of injuries;
- Estimate of the duration before resolution;
- Status of system vehicle movements (e.g., all vehicle movements are stopped);
- Status of traction power (e.g., power supply and vehicle are de-energized); and
- Special instructions about who will meet the responders, where, and whether they will be escorted to scene.

The rail operations control center probably would also review previously established criteria for the activation of the joint transit bus and rail emergency operations center (public transportation EOC). Assuming the event meets threshold requirements, rail operations control typically would perform all notifications for initiation of the public transportation emergency operations center.

In the meantime, on site at the incident, the first person on scene probably would establish command and initiate the system's facility response plan. Following this plan, typically, command over the system's on-site response would transfer to the facility supervisor designated in the facility response plan, who may be referred to as the facility emergency response team leader (FERP team leader). During the transfer, the FERP Team Leader probably would assume communication with rail operations control and provide a complete incident size-up, including the following information:

- Status of customer communications;
- Conditions at site (e.g., smoke, fire, and debris);
- Affected incident boundaries (where, specifically, these conditions are located);
- Estimated number of casualties (injured and deceased);
- Current status of power, ventilation, and emergency systems (e.g., fire suppression, alarms, and back-up power);
- Initial assessment of damage to facility;
- Resources available at site to activate facility response plan (personnel and equipment);

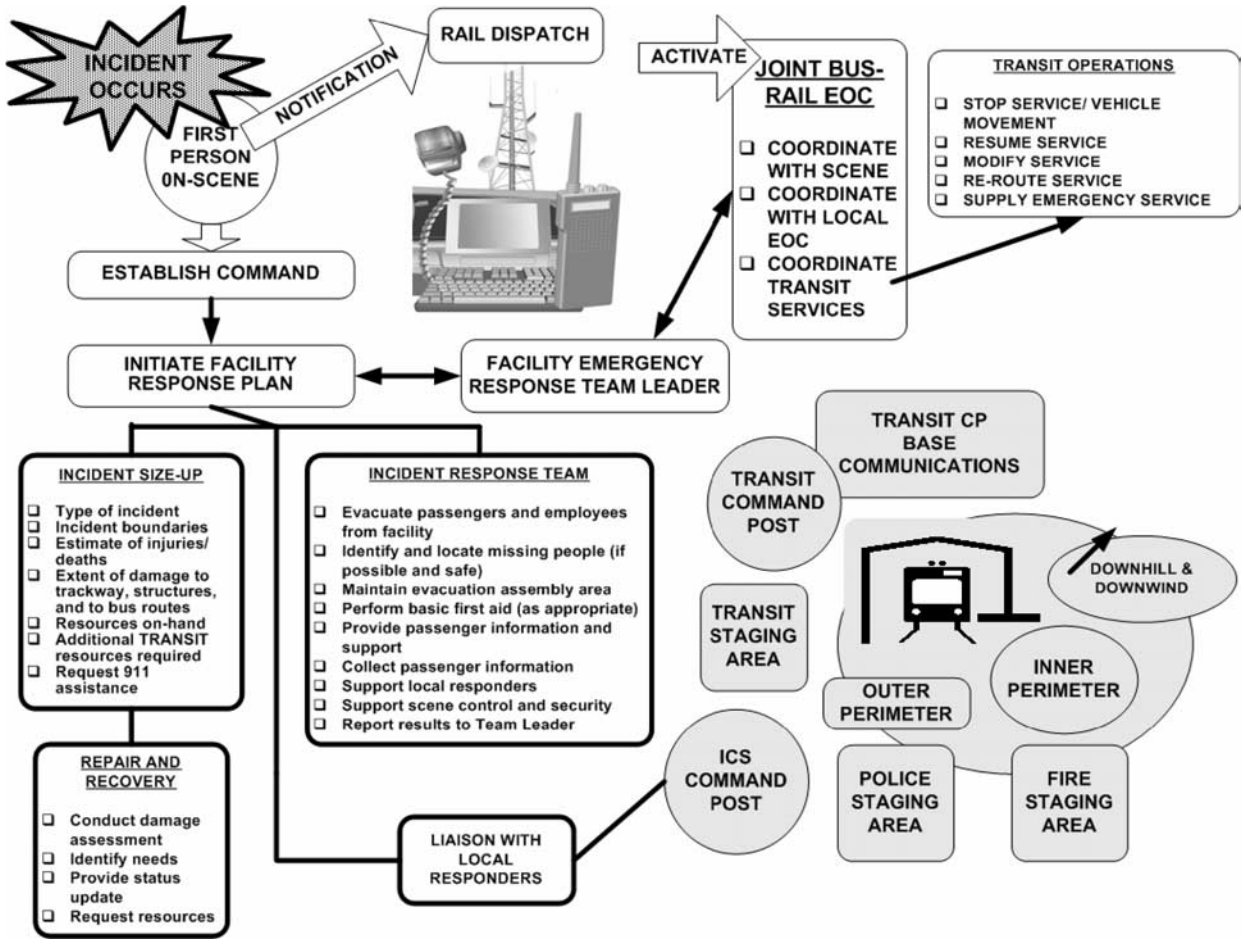


Figure 3-3. Response to event at rail station.

- Required resources to stabilize scene (e.g., heavy wrecking equipment, debris removal, engineering assessments, and scene safety assessment);
- Specialized resources required from local responders (e.g., firefighting, search and rescue, Hazmat response, and scene security and perimeter control); and
- Status of activation of the FIRP (passenger evacuation, employee identification and accountability system, assembly points, potential staging areas for local responders, and check-in points for reporting public transportation personnel).

Rail operations control personnel typically would relay new or revised information from this size-up to the 911 Call Center personnel, who would then relay the information to responders en route.

By assuming command, the facility response plan team leader becomes responsible for

- Ongoing assessment of situation and notification to rail operations control about changing conditions at the incident site;
- Implementing and managing on-scene elements of FERP;
- Identifying and requesting additional resources, including a replacement for the train operator, if necessary;
- Coordinating with emergency response personnel who arrive on scene;
- Ensuring that actions or activities of public transportation personnel do not conflict with, or hinder, activities of emergency responders; and
- Providing periodic status reports to rail operations control.

During response to any emergency incident, every effort should be made to prevent injury to any person and to obtain medical aid for anyone already injured. Managing injured passengers and employees takes first priority in the use and deployment of resources available to the public transportation system.

Depending on the number and needs of injured passengers and employees at the station, as well as the general conditions at the station (e.g., smoke, debris, fire, and structural concerns), the FERP team leader may prioritize among full or partial implementation of pre-existing facility emergency response procedures for

- Personnel accountability (i.e., are all employees who would be expected to be at the facility accounted for?);

TABLE 3-1 Elements of field response

- On-scene Transit Incident Commander. Individual responsible for coordinating incident response activities at scene of incident. Bus or rail transportation supervisory personnel normally assume the IC role.
- Different Personnel Perform IC Function Depending on Location of Incident. Public transportation systems should be concerned about events that occur at facilities, in the field, and in the community.
  - For events occurring at a public transportation facility, the IC role will typically be assumed by the pre-designated Facility Emergency Response Team Leader (FERTL) or his or her pre-designated back up.
  - For events occurring in the field, the vehicle operator serves as the on-scene incident commander until relieved by a superior.
  - When an incident occurs that does not require assistance from an outside incident response agency, either the FERTL or the first public transportation system supervisor at the scene should be designated the IC and establish a command post.
  - When one or more outside agencies respond to an incident, unified command should be established for the incident. Generally, the public transportation system IC should become the liaison between the system and the incident response agency IC and work within the unified command structure to support the response.
  - For events where there is no on-scene component, such as a response effort in support of a community emergency, incident command may be vested in the public transportation emergency operations center, which will coordinate all required support activity with the local EOC.
- Facility Incident Response Teams (FIRTs). These teams are composed of pre-designated personnel specifically assigned to assist with an on-site incident within each major public transportation facility. These employees are already located at the facility, and have pre-established responsibilities to support facility evacuation and shutdown, passenger service, damage assessment and repair, power management, and service restoration.
- Incident Response Teams (IRTs). If a major emergency occurs that requires extensive response from employees not currently assigned to or located at specific facilities, IRTs should be activated, composed of pre-designated employees specifically assigned to assist with field operations at various public transportation centers and stations throughout the system's service area. IRT members should be assigned to specific locations convenient to the areas in which they live, and may be scheduled, in advance, to report in staggered shifts, enabling extended operational periods (i.e., 12 hours into incident, 24 hours into incident, 48 hours into incident).
- Members of FIRTs and IRTs are typically trained in ICS operations, search and rescue, first aid and triage, and scene safety.

- Evacuation (i.e., have all mobile passengers and employees been evacuated from the scene?);
- Assembling lists of missing persons;
- Search and rescue;
- Assistance/first aid for passengers and employees with injuries;
- Fire suppression;
- Use of emergency equipment;
- Perimeter control; and
- Ensuring adequate protection against secondary attacks at collection/assembly points for passenger and employee evacuation (if the event appears to be related to terrorism or crime).

Employee protection is of critical importance during this component of the response. Before initiating any activities that place employees in potentially dangerous conditions, the FERP team leader probably should conduct or delegate conduct of a scene safety assessment and ensure that employees have an appropriate level of protective equipment.

Throughout this initial response period, which ranges from 5 to 20 minutes, communication with affected employees and passengers is critical. The FERP team leader should find an effective way to tell passengers

- That local responders have been notified and are on their way;
- Where to go;
- To offer assistance to those who may need it;
- What to do if they cannot walk or move;
- What to do if someone they know or are traveling with cannot move or is unconscious;
- Not to use their cell phones (if the event appears related to terrorism given that cell phones could trigger an explosive detonator);
- What will be expected of them (and provided for them) at the evacuation assembly area (e.g., providing information, check out by local responders, and notification of family members); and
- How they can request additional assistance from public transportation personnel at the scene.

By this point, local responders typically will have arrived on scene. Members of the FERP team probably have been designated to meet the responders and bring them to the scene, informing them of any scene safety considerations and their activities to date, as well as information about ongoing first aid/search and rescue activities (as appropriate and if performed). Protocols are needed for transferring responsibility for incident command and conveying status and information.

Primary activity for scene management would typically be turned over to local responders, who would implement procedures for an incident command system or for unified command. The FERP team leader would then likely become the on-scene transit incident coordinator, responsible for liaison with the local incident commander or his or her liaison officer. The FERP team leader and team members would usually then:

- Work to support the on-scene response effort, as directed by the local incident commander or liaison officer; and
- Implement those procedures in the facility response plan concerned with passenger management, damage assessment, and restoration of service.

Figure 3-4 shows a possible configuration for the joint command bus-rail-paratransit emergency operations center. Figure 3-5 provides an example of this organizational configuration, which would sustain the remainder of the hypothetical incident.

ROLES AND RESPONSIBILITIES

In the organization shown in Figure 3-5, the following sections and departments support emergency operations:

Planning

When an extended incident occurs, the Planning Section is generally responsible for determining necessary service

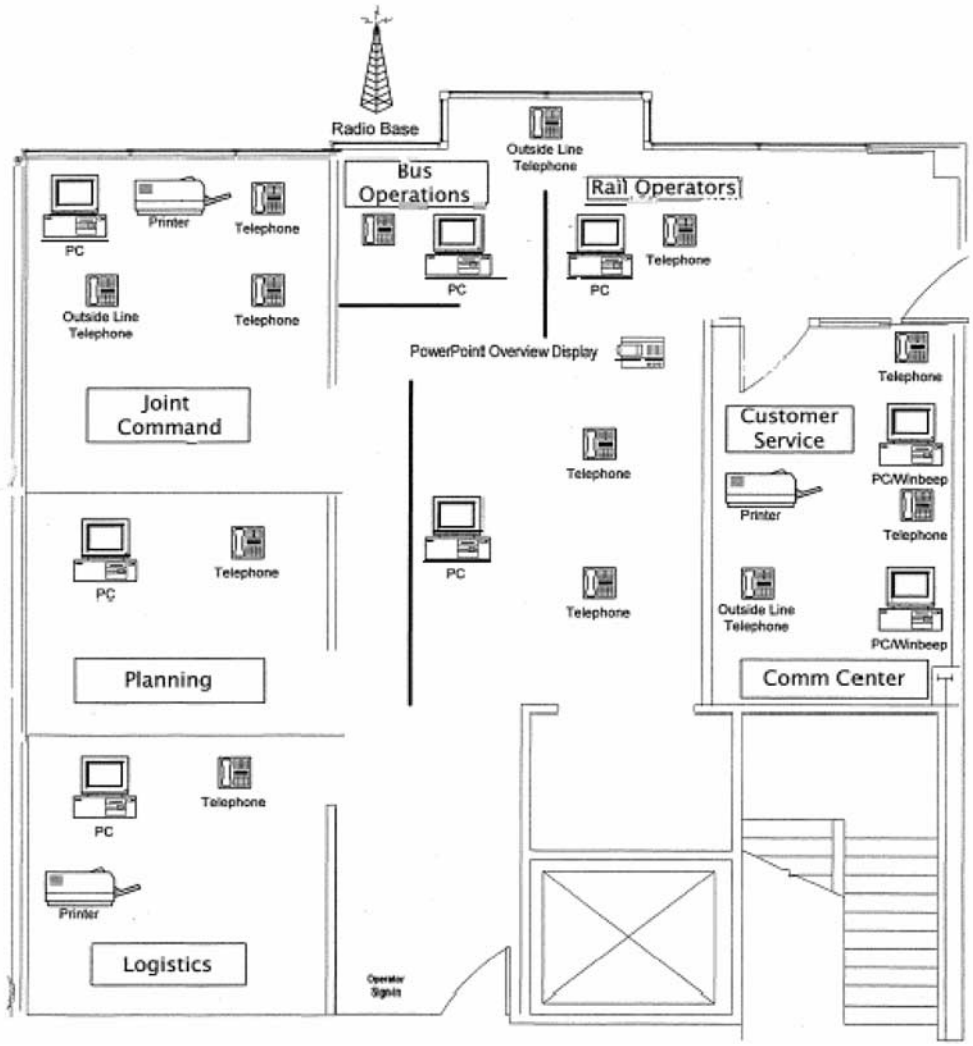


Figure 3-4. Sample joint command emergency operations center.

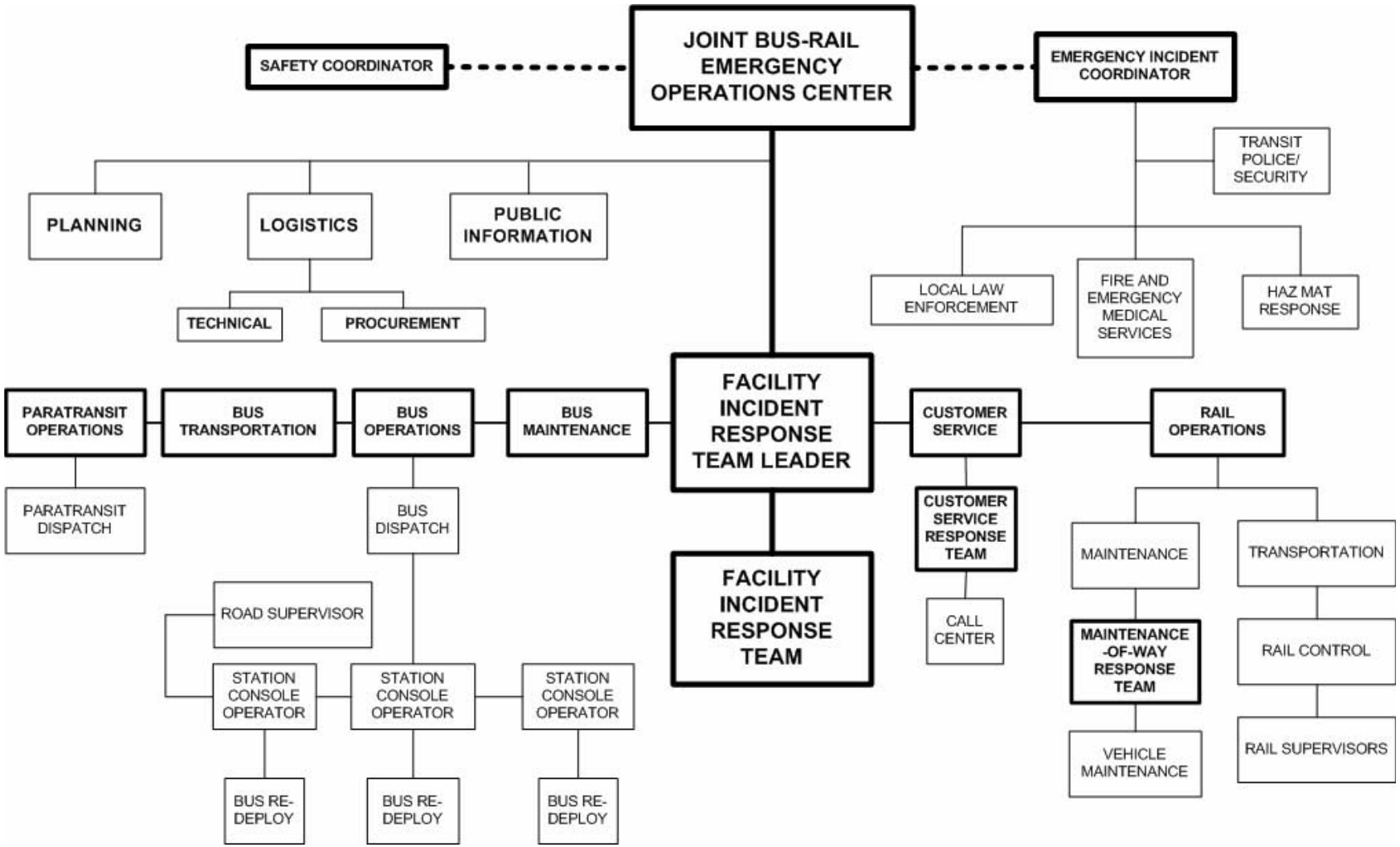


Figure 3-5. Fully expanded public transportation IMO.

changes and allocating available resources during the incident for continuation of public transportation services for the community. Using the incident command system forms provided in the appendix to the public transportation system's emergency operations plan, Planning usually facilitates completion of the forms to ensure a coordinated plan is developed and implemented during the emergency response and recovery phases of the incident. In addition, the Section very often is responsible for assisting in developing a service recovery plan. The typical activities within the Planning Section are as follows:

- Implementation of the incident command system planning process and documentation, including the use of designated incident command system forms adapted for the public transportation system;
- Evaluation of service restoration information and formulation of a service recovery plan relative to the incident; and
- Collection and analysis of all damage and service-related information. In addition, the Section posts and keeps current all information on the status display boards and maps in the incident operations center (IOC).

Operations

The Operations Section usually is responsible for the operation, maintenance, and coordination of transportation services. The following functional areas usually support this Section:

- Transportation Supervision. Road and Rail Supervisors are generally responsible for service delivery and coordinating the on-site response to incidents. They very often assume the role of the public transportation system IC and report to the IC of a unified inter-agency command post.
- Maintenance of Way (MOW). MOW usually repairs and restores track, signals, and power systems, and other rail-related facilities and provides heavy rescue equipment needed for rail-related incidents.
- Operational Communications. Operational Communications generally arranges for and coordinates any repairs, maintenance, or tactical requirements on the radio, CCTV, and supervisory control and data acquisition (SCADA) systems.
- Bus/Rail Equipment Maintenance. This functional support area most often provides the response for any vehicle needs, including tow vehicles or re-railing equipment. In addition, it provides the necessary mechanics and/or technicians at the scene, as required.
- Human Resources. This area generally assists employees with employee benefits, crisis counseling, disability claims, and so forth, and arranges for shelter to displaced employees resulting from the incident. This unit very often works with the appropriate county or city emergency operations center(s) to fulfill this need.
- Data Collection and Records. This functional area usually maintains an official history of the incident to ensure that it is completely documented. In addition, it very frequently maintains and files all IOC messages and provides necessary guidance to members of the IOC for individual documentation procedures.

Security

The Security Section may assist the local police in effecting a quick resolution as police take on the role of incident commander when the incident is a potential or actual crime scene. Security Section personnel may coordinate crowd control, help evacuate customers and/or employees, and coordinate traffic control and security around and within the incident site.

System Safety

The System Safety Section often is responsible for the coordination of evacuation from unsafe areas and control of access to these areas. This includes the movement of persons from hazardous or threatened areas to lower-risk areas; the identification, evaluation, and cleanup of spills or release of hazardous materials; and the evaluation of the safety of incident response and recovery activities. The on-scene transit incident commander may have to coordinate the evacuation until the System Safety Section employee arrives.

Risk Management

Risk management generally manages all legal claims for compensation filed against the public transportation system. It often accepts, as the official agent for the system, all legal claims resulting from damage and personal injury. In addition, this function usually provides counsel in areas of claims for bodily injury and property damage compensation.

Finance

The Finance Section generally manages the financial aspects of the incident, including cost analysis and forecasts, except for those decisions within the scope of operating departments. Often, the Finance Section consists of the following functions:

- Payroll. Payroll usually maintains records of all personnel and the time worked during the incident and maintains appropriate records for reimbursement purposes from the Federal or state government.
- Accounting. Accounting most often allocates petty cash or other funds for emergency supplies.
- Procurement and Contracts. Procurement and contracts generally assists in contracting and the procurement of services and larger materials orders.

Public Information

The Public Information Section most often provides public information officers (PIOs) from the public transportation system's communications department, who usually act as the authoritative source of information to the public, news media, and other public transportation system personnel. These personnel also typically coordinate dissemination of accurate instructions and information to public transportation employees and respond to media inquiries.

Customer Service

The Customer Service Section often manages all aspects of customer service during an incident, including request for IRTs to be assigned to specific locations within the public transportation system's service area and development of customer information. The section is generally the conduit through which service updates are provided via the system's internal communications systems, including beeper and paging systems, radio, and cell phones, to the system's customer service offices and to the IRTs.

Logistics

The Logistics Section most often develops, maintains, and coordinates the sources and procurement of equipment, systems, and materials required. The Logistics Section often is composed of several functional areas. Support provided by the Logistics Section usually includes, but is not limited to, providing the following:

- Incident Operations Centers with tables, chairs, and any other physical requirements;
- Tangible products that may be required during an incident that are not related to vehicles or personnel (e.g., rain gear, flares, tools, and hard hats);
- Equipment other than buses, automobiles, trucks, and LRVs, including forklifts, pressure washers, backhoes, and any other required equipment;
- An ongoing source of information to the Planning Section on the current status of electrical power and telephone capabilities within the public transportation system's service area; and
- Damage assessment reports of the system's facilities, properties, and equipment to the JOC Section.

Damage assessment reports are usually compiled from inspections performed by public transportation system field units and technical resources, including transit engineering, facilities maintenance, and maintenance-of-way personnel. Contracted engineering services may be used to supplement public transportation system internal technical resources. Additionally, public transportation system technical personnel often provide technical assistance, as needed.

COORDINATION WITH PUBLIC TRANSPORTATION EMERGENCY OPERATIONS CENTER AND LOCAL EMERGENCY OPERATIONS CENTERS

The public transportation on-scene supervisor (or incident commander) usually serves as the communications link at the command post under a unified command system with the fire services department. The supervisor generally informs the fire department of any conditions that may affect their operations at the incident scene. The public transportation system most often is responsible for furnishing training manuals and materials and for providing training exercises to the fire department to enhance firefighter knowledge of public transportation systems, thereby improving their proficiency in handling system-related emergencies.

Municipal, county, and state law enforcement agencies with jurisdiction in the area of a public transportation incident scene will respond if their services are requested. These agencies will coordinate with the transit police (if available and as appropriate) and will provide crowd control, vehicle traffic control, emergency medical aid, evacuation, outer perimeter control, and other duties as needed. As with the fire departments, the public transportation system generally is responsible for furnishing training manuals and materials and for providing training exercises to the law enforcement agencies to enhance their knowledge of the system.

City and county emergency management departments act as the coordinating agencies among public transportation and local and state incident response agencies in matters of emergency planning. They also are responsible for warning public transportation personnel of imminent emergency situations or if an area-wide disaster has been declared. These emergency management departments may have developed emergency plans that assign to the public transportation system regional emergency transportation planning responsibility for the community.

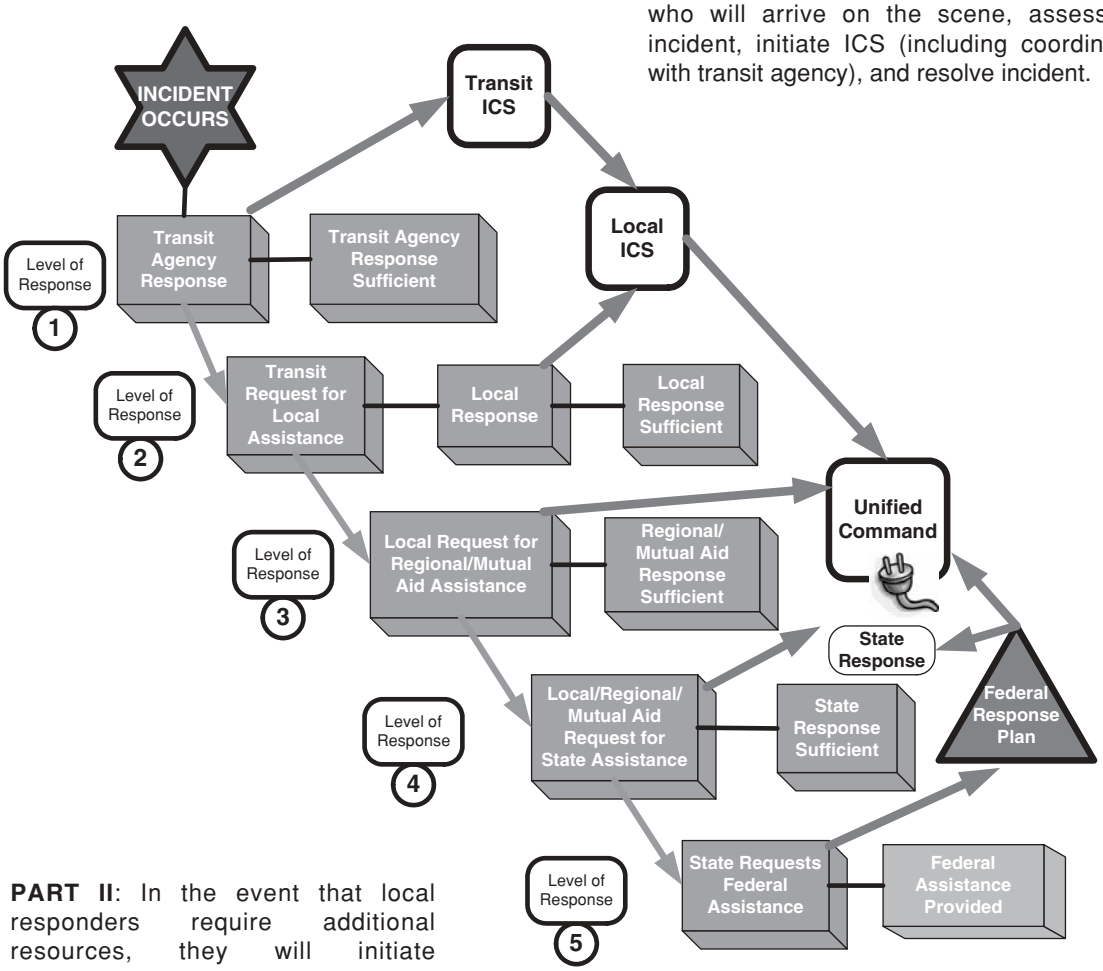
The development and maintenance of the public transportation system's IMO fulfills the planning phase of this responsi-

bility. If an area-wide disaster is declared, the public transportation system generally assigns personnel to the appropriate city and county EOCs to act as the onsite resource for regional public transportation issues. Coordination for activation of this process across local, mutual aid, regional, state, and Federal agencies is presented in Figure 3-6.

BENEFITS OF IMO RESPONSE

Using a response organization, such as the one described above, helps to ensure that the public transportation system will be able to satisfy critical response objectives and effectively reap the benefits of planned and coordinated response.

PART I: When an incident occurs at the transportation system, the first employee on the scene will initiate the system's response protocol (Incident Command System [ICS] or specific procedures). If this activity is insufficient to manage the event, 911 notification will be made to local responders, who will arrive on the scene, assess the incident, initiate ICS (including coordination with transit agency), and resolve incident.



PART II: In the event that local responders require additional resources, they will initiate regional/mutual aid response, form Unified Command with these responders, and resolve incident. In the event that these resources are overwhelmed, notification will be made requesting State assistance. State ESFs will be initiated, and the incident will be resolved.

PART III: If State assistance is insufficient, the Governor will request Federal resources. Pending Presidential Declaration, Federal resources will be provided – based on the Federal Response Plan – to resolve the incident.

Figure 3-6. Activation of public transportation, local, regional, state and federal resources.

This organization ensures critical elements of preparedness, including the following considerations as shown in Table 3-2.

IMO Implementation Considerations

When implementing its incident management organization, the public transportation system probably should pay special attention to the following considerations.

Authority

Bus operations control, rail operations control, and paratransit dispatch generally will all have the authority and responsibility for implementing the incident response requirements of the public transportation system's emergency operations plan. When an incident occurs, operations control most often will evaluate the facts; determine the type and levels of initial response required; and immediately begin communications, coordination, and control functions appropriate for the situation.

Checklists

Checklists and other forms that describe the specific tasks of public transportation personnel responding to an incident are a critical part of the system's emergency operations plan. These checklists and forms probably should be maintained in accordance with the emergency operations plan and subsequent revisions. Probably employees should be required to be familiar and comply with all applicable checklist requirements. Probably routine evaluation of this capability should be performed.

Incident Reporting Requirements

Timely, accurate, and thorough reporting of facts is essential for effective control of any emergency situation. Appropriate response requirements can be determined only after evaluating the facts reported from the incident scene. Given that similar categories of emergencies do not always require the same level of response, emergency response agencies should be advised, as early as possible, of the specifics of each incident. Therefore, selection of the best response strategy will depend on the accuracy of information received about the incident.

Communications

Most public transportation systems have two primary ways to communicate an emergency situation to the operations control center, two-way radio sets and telephones. Additionally, public transportation stations and vehicles are usually equipped with public address systems. In an incident, an operator or the operations control center may use the public address system to give passengers specific emergency instructions. Incident response personnel may also use the system to give instructions to passengers. Variable message signs are used in some rail systems to communicate emergency instructions to passengers. Typical procedures for conveying this information include the following activities:

TABLE 3-2 Elements of preparedness for public transportation incident response

Command and Control	• Clear leadership and chain of command • Strategic direction for emergency operations • Tactical effectiveness for specific functions and objectives • Effective EOC activation and coordination with local jurisdictions • Organized and controlled command post operations and staging areas
Personnel	• Appropriate mobilization levels • Pre-designated mobilization points • Off-duty mobilization and personnel management systems • Accountability and tracking during operations
Communications	• Adequate radio infrastructure and usage protocols • Redundant landlines and cellular equipment • Beepers, pagers, and web-based communications to automate notification and status updates
Logistics/Equipment	• Procurement and distribution procedures in place before emergency • Equipment inventory up-to-date and integrated across system
Intelligence	• Information sharing protocols with local law enforcement • Effective information dissemination throughout system

- When an incident occurs, the first person to have knowledge of it generally reports the facts to the operations control center by the most expedient method available.
- During the early stages of an incident, the initial reporting person is the operations control center's only communication link with the incident scene. That person is usually responsible for updating information to operations control until relieved by a public transportation supervisor or other recognized authority.
- Communicating and updating the facts of an incident to all public transportation personnel who have incident task-related responsibilities is typically a requirement of the emergency operations plan. When an incident occurs, the Dispatcher generally notifies the appropriate incident response agency and appropriate public transportation personnel that an incident is in progress. Notification most often is made in accordance with the incident notification checklists (INCs).
- The operations control center, through the use of checklists, acts as a prompt to the incident commander in order to facilitate implementation of the plan—particularly in view of the activities surrounding the incident commander and the site.
- If the incident causes suspension of bus or rail service, the planning unit of the IMO generally arranges alternate service. Customer service usually assists customers in accessing alternate service and informing the media of the disruption, respectively.
- All public transportation personnel and incident response agencies probably should share responsibility for communicating and coordinating their ongoing efforts with each other to ensure that all incident support requirements are satisfied in a safe, timely, and efficient manner.

Special Response Considerations

Most public transportation system emergency operations plans identify special conditions that should be taken into account when devising response activities. Typical conditions include the following:

General

Most public transportation operational problems do not become emergencies and are resolved without the evacuation of passengers. If circumstances permit, the evacuation of customers from buses and trains should be delayed until first responders arrive on the scene or, in the case of a rail vehicle, the affected vehicle reaches the safest evacuation point. To avoid additional safety hazards created by evacuating passengers into unfamiliar surroundings, the affected bus/train operator and the operations control center should carefully analyze the vehicle's location, movement capability, and passenger load when determining the evacuation location. Decisions about evacuations should be based primarily on safety considerations and this must be done promptly because passengers tend to have a low tolerance for remaining in vehicles. This is especially true when power is removed and customers do not have heat or air conditioning. Communication is crucial and the situation must be managed or customers will make decisions on their own, complicating the incident.

Train Evacuation

For train emergencies, public transportation rail personnel should consider attempting to move an affected train to the next station. Passengers are usually more familiar with the stations than any other location, because this is where they enter and leave the system and where station platforms and vehicle accessibility devices may be used to exit the system. Also, stations provide the easiest access for emergency response personnel and rapid evacuation capability. If the train cannot move, or if the train cannot proceed because of hazardous conditions, a rescue train may be sent to the incident site and positioned at one end of the affected train. This procedure generally allows passengers to leave the affected train and be transported directly to a station. This alternative is preferable to having passengers leave the train and walk along the track structure (because of obstructions or other possible hazards). Passengers probably should not be evacuated in a tunnel unless prescribed attempts to move the affected train to a more desirable evacuation location have failed. If an affected train stops while in a tunnel and evacuation is not imminent, the first priority probably should be to get the train moving again in the safest mode possible, toward a more desirable evacuation site (a passenger station or an area clear of the tunnel).

Characteristics of People of Age and Persons with Disabilities

People of age and persons with disabilities vary considerably in the extent of their mobility, communications ability, and other medical, physical, or cognitive capabilities. People of age and persons with disabilities may be able to walk without assistance; be able to walk with the use of a cane, walker or crutches; use wheelchairs or scooters; be visually impaired or blind; be hearing impaired or deaf; be speech impaired; be cognitively impaired; or may have some combination of the above attributes. If it becomes necessary to evacuate a bus, train, or facility, uninjured passengers are usually the easiest to evacuate because they generally require minimal assistance. People of age and persons with disabilities, even if uninjured, may require medical care or physical assistance to evacuate from the incident scene. Moreover, the evacuation of people of age and persons with disabilities may be difficult if incident response personnel cannot reach them or are unable to transport emergency equipment to the scene.

Establishing Incident Scene Limits

Incident scene boundaries are established to ensure the safety of incident response personnel and others at or near an incident site, by

- Designating an incident commander over the area within these boundaries as directed by the Emergency Plan and the type of incident in progress; and
- Requiring approval from the incident commander for
  - The movement of buses, trains, vehicles or personnel into, out of, on, or within the area;
  - Changing power status in that area; and/or
  - Changing the tunnel ventilation status in that area.
- Generally, the following apply:
  - Incident scene boundaries will be established for all incidents that require the presence of public transportation or emergency response personnel;
  - The boundaries of incident scenes will be the involved facility or all rights-of-way, between stations if on the rail main line, or some other geographic designation as appropriate;
  - Incident scene boundaries may be increased or decreased by the incident commander, as appropriate;
  - As conditions change at the incident site, the IC will evaluate existing boundaries to determine their appropriateness, make necessary changes, and advise operations control or Control, as needed; and
  - Operations control personnel are responsible for ensuring that movement instructions within incident scene boundaries are coordinated through the incident commander.

Public Transportation System's Role As Incident Commander

When an incident occurs that does not require outside agency assistance, the first public transportation employee on the scene will generally assume the role of incident commander and establish a command post. The operations control center probably should then be made aware of the location of the command post. Typically, the command post is at or near the incident scene. Subsequently, other response personnel may assume the incident commander role as circumstances dictate. Any change in the incident commander or location of the command post should be communicated to the operations control center. All public transportation personnel instructed to report to the incident scene probably should report first to the incident commander or designee so that their actions may be coordinated with other ongoing efforts.

Operational Periods

The transit system must be prepared for extended operations to support emergency response, including the development, in advance, of staff shifting schedules for extended operational periods (which may include 12-hour shifts for employees and the ability to access specific types of contractors, equipment and services on a round-the-clock basis). Figure 3-7 illustrates this concept.

Use of the Incident Response Objectives Forms

Use of these forms is essential to ensure a complete and coordinated plan for an emergency. The Planning Section usually will facilitate this activity when the incident requires activation of the public transportation emergency operations center. Otherwise the incident is managed in the field and coordinated with bus, rail, and paratransit dispatch as needed.

Multiple Events

Under some circumstances, there may be more than one incident occurring at the same time. In this case, there will be a field incident commander (FIC) designated by operations control for each bus- and rail-related incident, respectively. In the event of (1) a large-scale Level II incident or (2) a Level III incident where multiple incidents may be occurring simultaneously and an emergency operations center has been established, the joint bus-rail operations center (JOC) will assume the responsibility of incident command for overall management of all the incidents. Field incident commanders will provide field reports to the public transportation emergency operations center, as well as maintain contact with operations control, to ensure that a coordinated response/recovery effort is maintained.

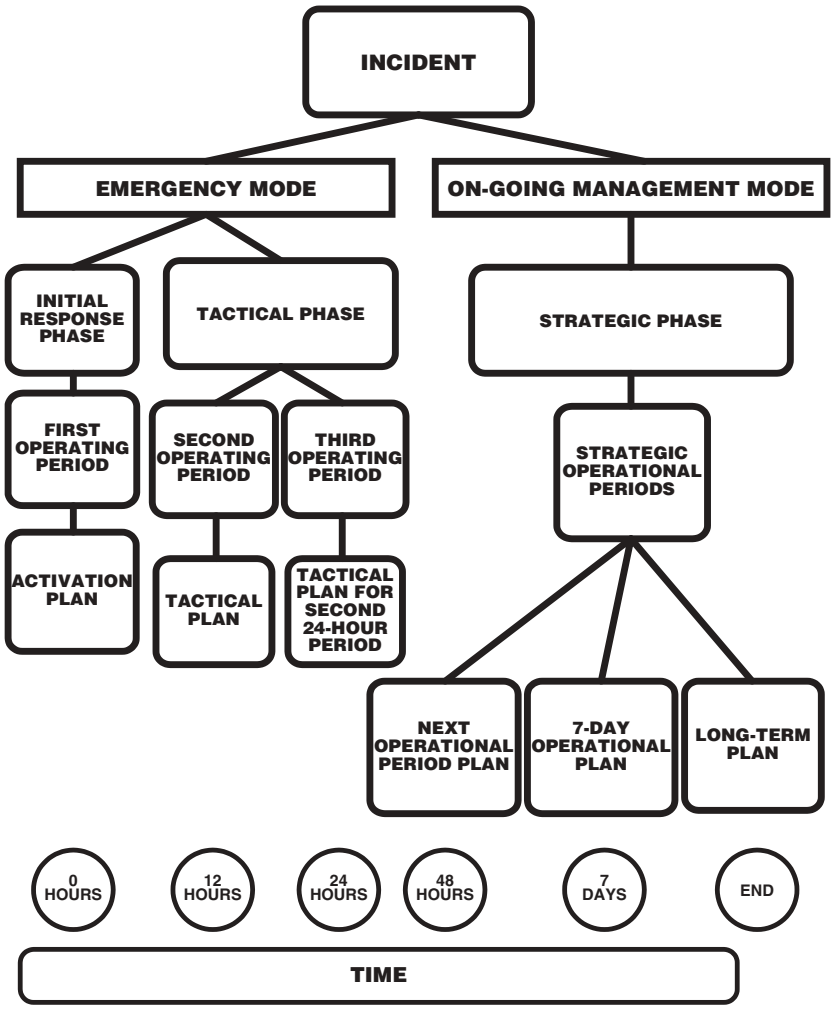


Figure 3-7. Categories of operational periods for major events.

SECTION **4**

DEVELOPING AN EMERGENCY OPERATIONS PLAN

An effective public transportation emergency operations plan defines, in a straightforward manner, who does what, when, where, and how to mitigate, prepare for, respond to, and recover from major occurrences with the potential to result in harm, destruction, and disruption. Typically, emergency operations plans in the public transportation environment address a range of incidents, including the following:

- Standard calls for assistance handled entirely by transit employees (e.g., a minor accident with no injuries, disorderly passenger, or lost child);
- Minor incidents that require local responders (e.g., an injured employee or passenger or a traffic accident with injuries);
- More serious or specialized incidents that require dedicated personnel and equipment (e.g., a leak in an alternative fueling facility);
- Incidents that will require multiple responders and perhaps the initiation of regional support (e.g., a major traffic accident, a major industrial accident involving hazardous materials and/or fire, a collision with school bus or freight train, or a mass shooting);
- Major emergency calls for events that will overwhelm local, regional, and mutual aid resources and will require state and perhaps federal resources (e.g., natural disaster), and finally;
- Incidents resulting from terrorism and/or extreme violence that require federal authority and assistance and may involve weapons of mass destruction (WMD), including chemical, biological, radiological, or nuclear (CBRN) agents.

Community events also can require the assistance of transit agencies to support evacuation (including the evacuation of mobility-impaired citizens), transportation of supplies and equipment, traffic control and routing, crowd management, plowing and towing, public information, the provision of specialized services (e.g., machine tooling, welding, metal sawing, and dispatching) and equipment (e.g., metal saws, backhoes, front-loaders, and cranes), and general public assistance.

Effective emergency operations plans usually are supplemented with emergency procedures. These procedures (developed jointly by transit operations, safety, and transit police/security) guide activities during response to and recovery from an emergency and include specific actions to be administered by train/bus operators, dispatchers, maintenance personnel, track/signal/engineering personnel, media staff, police/security officers, and safety personnel.

The length of the emergency operations plan can vary. Some transit agencies create a basic emergency operations plan to document the IMO and other activities to be performed in the event of an emergency, supplemented with incident-specific annexes describing specific activities relevant to distinct hazards (e.g., fire, flood, explosion, or earthquake). Other transit agencies prepare shorter basic emergency operations plans that reference related policies and procedures. FTA offers a set of sample transit emergency plans (see http://transit-safety.volpe.dot.gov/security/SecurityInitiatives/Top20/default.asp.)

As described in Section 3, the planning process for developing the transit emergency operations plan should be inclusive and incorporate the

- System's definition of emergency levels and specific requirements for activation and implementation;
- System's IMO and supporting organizational charts and contact/call-out/call-in procedures;
- General sequence of actions before, during, and after the emergency situation;
- System's plan for who will coordinate directly with local and state responders and how the coordination will take place; and
- Pre-established mutual aid and other support agreements with appropriate local and state agencies.

Creating an emergency operations plan formalizes top management's commitment. Without clear management authority and written policies and procedures, the system's activities for emergency operations will remain vulnerable to misunderstandings and confusion in the field. Heightened public accountability also encourages prudent transportation management to commit its program in writing. Documented programs

- Are more credible to employees, local law enforcement, emergency planning agencies, ridership associations, and the media. A written plan issued under executive management signature conveys a level of professionalism

and commitment appropriate to a system dedicated to the safe and secure transportation of passengers.
- Encourage identification of opportunities for preparedness enhancements; technology acquisition; operations improvements; and greater coordination within the system, with local law enforcement, with fire and emergency medical services, and/or with other response agencies.
- Can reveal weaknesses in current practices, provides a management tool to support revision of procedures, and enhances enforcement and implementation of the program.
- Can be used to train and simulate events with personnel, ensuring that employees understand what is required in various situations.
- Can be shared with local response agencies to increase their understanding of transportation operations and security priorities.
- Support brainstorming and proactive identification of what could happen and how the system ideally would like to respond.
- Can be an effective resource in an actual emergency, particularly if they include referenced checklists and facility-specific materials (e.g., blueprints and communications networks, radio procedures and pre-designated staging areas).

EMERGENCY OPERATIONS PLAN ELEMENTS

The emergency operations plan also establishes a formal process for the development, review, revision, and re-issuance of documents, in whole or in part, relating to emergency planning and procedures. The scope of a public transportation system's emergency operations plan typically addresses the following:.

- Goals and Objectives. Describes the purposes of the plan.
- Authority. Identifies the owner of the plan and covers jurisdictional and legal issues.
- Interfaces. Describes the relationship among the emergency operations plan and other safety documentation, operating procedures, and other relevant materials; and discusses the system's written documentation in relation to plans of other external organizations.
- Participating Agencies. Identifies outside participating agencies, key personnel, notification procedures, agreements, functions, and responsibilities.
- Communication and Coordination. Describes the means, protocols, and coordination required among the system and other organizations (e.g., responding agencies and regulatory and oversight organizations) and includes procedures for handling the incident.
- Disaster Planning. Describes the system's role in planning for regional disasters.
- Incident Management. Describes the steps required to manage an incident properly.
- Incident Evaluation. Details the post-incident evaluation process.
- Public/Media Information. Describes the proactive and reactive aspects of public relations.
- Americans with Disabilities Act (ADA) Considerations. Addresses ADA requirements and accommodation of people with disabilities during emergency situations.
- Training and Emergency Preparedness Drills. Addresses employee requirements needed to respond effectively to emergency incidents.
- Plan Management. Describes the responsibilities for managing an emergency operations plan and updating and controlling the document.
- References. Lists references needed to resolve emergencies.

In addressing these issues, many public transportation emergency operations plans focus on managing activities in three main areas:

- Planning and preparing for emergencies,
- Providing a management structure for responding to emergencies/incidents, and
- Identifying lessons learned from preparedness planning and actual emergency experiences and incorporating them into the emergency operations plan.

Each of these is briefly described below.

Planning and Preparation Phase

Careful, thorough advance planning is suggested in order to respond to an emergency in a timely and effective manner. The public transportation system's written emergency procedures and agreements with other organizations (which specify jurisdictional boundaries, chain of command, coordinated communications, and training) provide management with the tools necessary for effective response. The system's preparedness directly affects its ability to respond in an emergency. Ideally, include

- Emergency response policies and procedures consistent with the system and local jurisdictions;
- Clearly defined roles and responsibilities for all parties involved in an emergency;
- Knowledge of the location and proper use of emergency equipment;
- Incorporation of emergency features in systems and vehicle design;
- Drills, exercises, and simulations of emergencies; and
- Training of public transportation system employees and employees from participating agencies.

Incident Management Phase

Effective incident management depends on the organizational structure and procedures implemented at the time of an emergency. Details of managing an incident include the following:

- Reporting the incident;
- Evaluating and establishing incident parameters;
- Notifying emergency response personnel;
- Dispatching necessary personnel and equipment to the scene;
- Coordinating the activities of emergency response personnel;
- Assessing the incident scene;
- Protecting passengers, personnel, and equipment at the incident site;
- Determining emergency care needs and establishing priorities for evacuation/repair/restoration of service;
- Maintaining the maximum possible service level;
- Determining resources (of the system and other participating agencies) to satisfy emergency priorities;
- Dispatching necessary resources;
- Evacuating passengers;
- Restoring normal operations;
- Debriefing personnel and participating agencies;
- Documenting lessons learned; and
- Incorporating lessons learned into the emergency operations plan and other elements of the public transportation system's operation and safety programs.

Organizational Learning Phase

Organizational learning is the means by which improvements are made in the response to future emergencies. Improved emergency management is realized by incorporating lessons learned from emergency exercises and actual incidents into the emergency operations plan. A significant part of this effort is the reassessment and adjustment of emergency response procedures.

DEVELOPING THE EMERGENCY OPERATIONS PLAN

Emergency operations planning involves a step-by-step analysis of how major events and disruptions affect transportation operations. Whatever the size of the transportation system, the issues remain the same: ideally, operations and communications should be readily and continuously available to passengers, employees, emergency responders, and vendors. If this capability is not satisfied, the effects on revenue, passengers, reputations, and opportunities can be devastating.

Each emergency operations plan is unique because it is devised specifically to meet the needs of an individual transportation system, based on objectives expected to be met in a time of disruption. It is a true, solutions-oriented approach to system protection and operational integrity. The result is an executable plan that details how to maintain public transportation operations when faced with heightened awareness levels, emergency events, or other situations that result in crisis and disruption.

Emergency operations planning typically consists of a four-step process:

- Step 1. Establish the planning team;
- Step 2. Analyze capabilities and hazards;
- Step 3. Develop the plan; and
- Step 4. Implement the plan.

This process is presented in Figure 4-1. Although the needs of each transportation system may vary, this process can be expanded or contracted based on the system's level of service and existing integration into the local emergency planning and management process.

Step 1: Establish the Planning Team

In most public transportation systems, the executive director (or system head) assigns responsibility for emergency planning and preparedness. When assigning this function, it is most effective to identify one person, typically called the emergency manager (EM), as having ultimate responsibility for planning. This person may or may not be designated full-time to this function. A team of supporting personnel can then be assigned, reflecting the range of transportation departments and services.

When managing the emergency planning function, the person assuming the role of EM can coordinate important activities, such as

- Developing, revising, and updating emergency plans and policies;
- Coordinating emergency operations plan development with other transportation programs and plans;
- Managing hazard, threat, vulnerability, and criticality assessments;
- Establishing relationships with law enforcement agencies, fire and emergency medical services, and other responders, and ensuring familiarization with transportation operations;
- Coordinating emergency training and exercising programs; and
- Assessing the effectiveness of the system's emergency program.

In establishing the planning team, the executive director (or system head) probably should determine who can be an active member and who will serve in an advisory capacity. Ideally, these members are appointed in writing and their job descriptions are modified to reflect their additional responsibilities.

In determining the appropriate designation of responsibility for emergency planning, the transportation system may wish to consider which functions can best

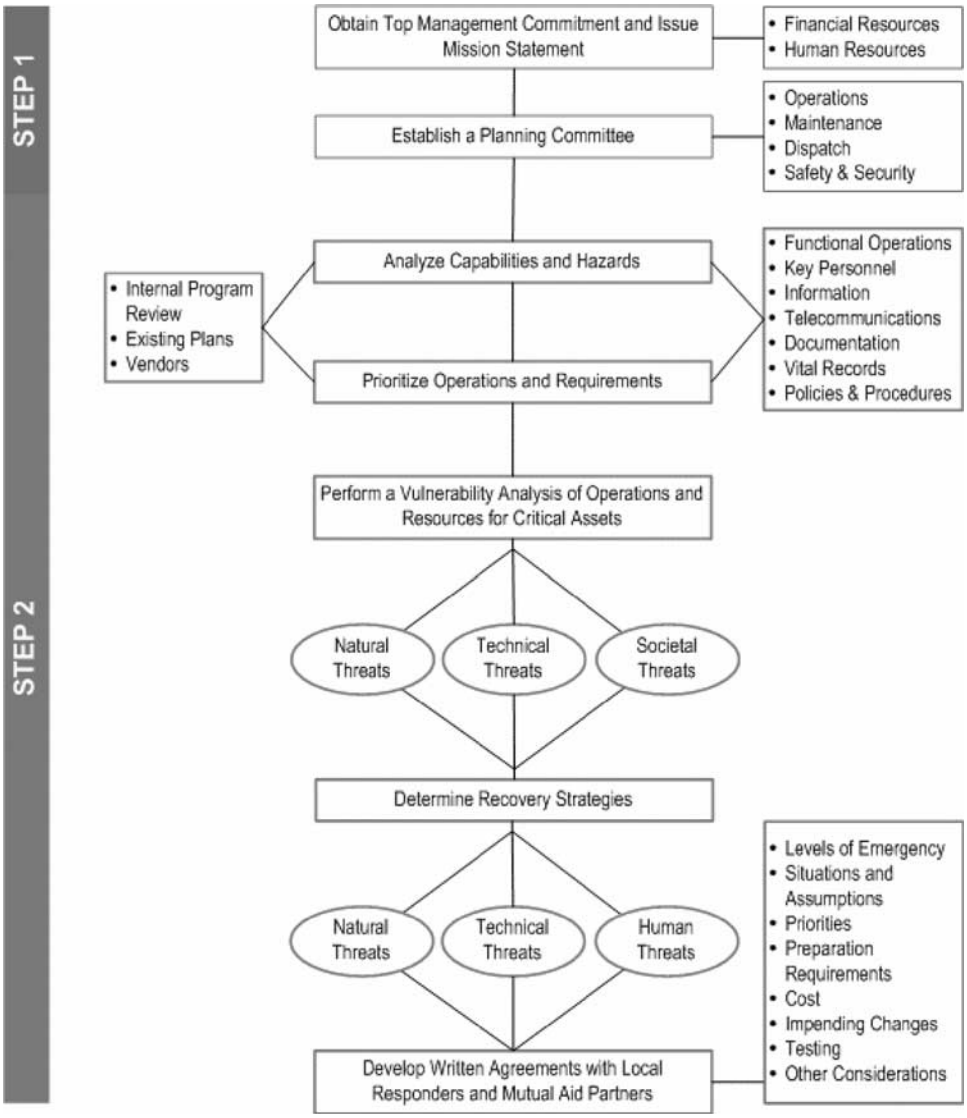


Figure 4-1. EOP process.

- Validate routine practices already in place for managing emergencies, accidents, and medical situations; working with hazardous materials; preparing for spills; and managing incidents in facilities and vehicles;
- Expand existing employee management and supervision practices to address emergency planning more fully; and
- Consolidate these practices to develop an integrated program, coordinated with local response and planning agencies, and fully reflected in system training and exercising programs.

As indicated in Figure 4-1, to complete Step 1 of the process, ideally, the executive director (or system head) should issue a mission statement to the organization that

- Defines the purpose of the plan and how it will involve the entire system;
- Establishes a high priority for the project;
- Details the authority and structure of the team;
- Enables the team to take the steps necessary to develop a plan; and
- Establishes a work schedule, planning documents/deadlines, and budget parameters.

Step 2: Analyze Capabilities and Hazards

This step entails analyzing the system's vulnerability to possible hazards, emergencies, and disruptions. This step requires the following activities:

- Identifying hazards that could result in emergencies. As indicated in Table 4-1, hazards typically addressed in emergency operations plans can be classified as natural, technological, and societal.
- Natural hazards often include sudden events (e.g., earthquakes and tornadoes) and "creeping disasters" (e.g., slow

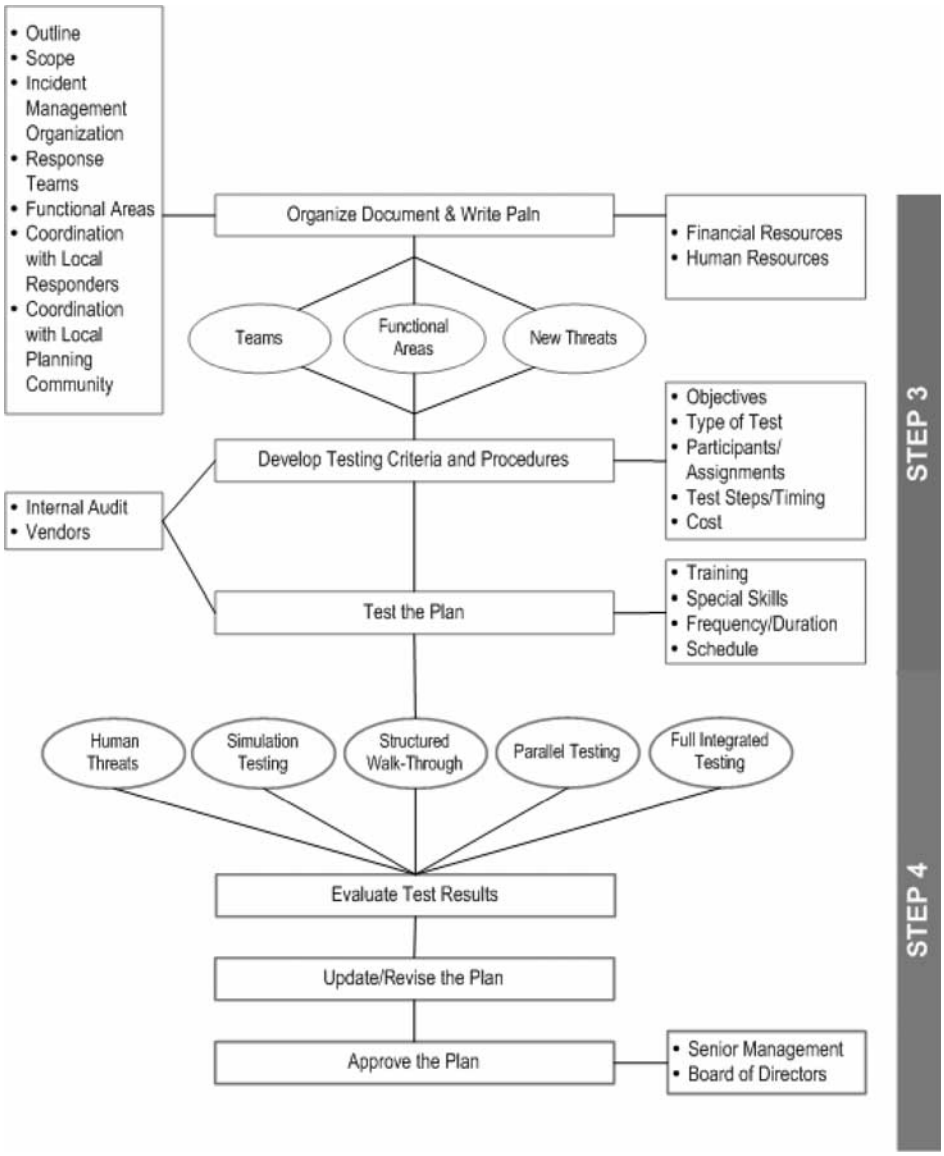


Figure 4-1. (*Continued*).

landslides) which may take years to develop. Between these extremes are various durations (e.g., floods that rise over several days or volcanic eruptions that go on intermittently for months). Technological disasters include explosions, toxic spills, emission of radioisotopes, and transportation accidents that may occur suddenly and without warning. Riots, terrorist incidents, and acts of extreme violence are examples of societal hazards. These events may occur with or without warning. Ideally, these hazards should be prioritized by location, likely severity, and probability of affecting critical assets.

- Review internal plans and policies established for the transportation system. Understand the current policies and procedures, and identify those that do not have a process to handle disruptions. Ideally, personnel should look for existing system documents related, but not limited, to
  - Rulebook, SOPs and emergency procedures;
  - Facility evacuation plans;
  - Safety and health programs and environmental policies;
  - Security procedures;
  - Insurance programs;
  - System shut-down and start-up policies; and
  - HAZMAT plans.
- Meet with government agencies, community organizations, and local utility commissions to determine their disaster recovery plans and resources available to respond. Local EMA/LEPC and local law enforcement are the primary agencies that coordinate with the transportation system.
- Identify applicable federal, state, and local codes and regulations.
- Identify the critical products, services, and operations within the public transportation system's business and network. Areas to review include

  - Transportation services and the facilities and equipment needed to provide them;
  - Products/services provided by suppliers, especially sole-source vendors, central to these services;
  - Lifeline services, such as electrical power, water, telecommunications, data transmission facilities, and fuel; and
  - Vital operations, equipment, and personnel for the continued functioning of the system.
- Identify internal resources and capabilities that may be needed in an emergency or disruption requiring contingencies. These could include
  - Personnel assigned as a fire brigade, hazardous materials response team, security, evacuation team, or the public information officer;
  - Equipment used in fire protection and suppression, communication devices, first aid supplies, warning systems, emergency power, and decontamination supplies;
  - Facilities designated as emergency operating centers, media briefing areas, shelters, and first-aid stations; and
  - Backup systems available to provide payroll, communications, passenger services, fare collection, and recovery support.
- Identify challenges and prioritize activities; then determine how the system will address the problem areas and resource shortfalls identified in the risk analysis.
- Identify external resources, such as the following, that may be needed, and determine if formal agreements may be required to define the relationships:
  - Local emergency management office;
  - Fire department;
  - Hazardous materials response organization;
  - Hospitals;
  - Local and state law enforcement;
  - Utilities;
  - Contractors/suppliers; and
  - Insurance carrier(s).
- Review all insurance policies and identify the costs and benefits of coverage.
- Develop a prioritized listing of identified vulnerabilities based on the capabilities and hazard assessments, and prepare preliminary recommendations for how vulnerabilities can be reduced through improved emergency planning.

Step 3: Develop the Plan

In preparing the emergency operations plan, the transportation system may want to

- Include an executive summary that provides an overview to senior management and employees, and addresses the following:
  - The purpose of the plan;

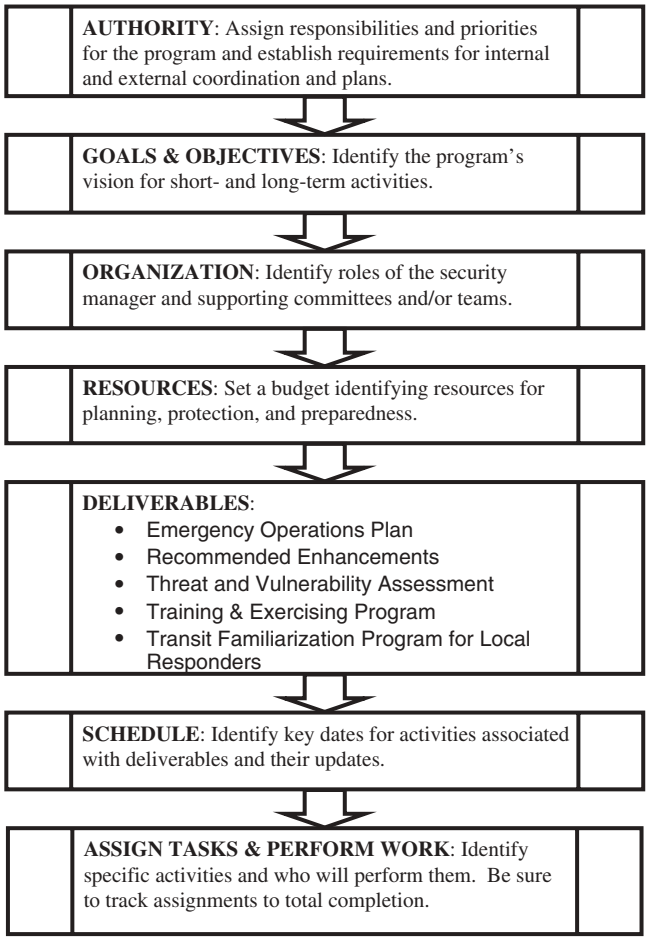


Figure 4-2. Authorized activities to develop the EOP.

  - Transportation system emergency management policy;
  - Roles, responsibilities, and authorization for emergency action;
  - Potential emergencies addressed in the emergency operations plan; and
  - Emergency management priorities and requirements.
- Identify emergency operations plan management elements, which define how the transportation system will deal with specific operational issues under various emergency situations. These elements often include
  - IMO;
  - Communications;
  - Life safety;
  - Property protection;
  - Integration with local responders;
  - Incident field response activities;
  - EOC activities;
  - Incident demobilization;
  - Restoration of service; and
  - Emergency operations plan administration.
- Include documents and checklists required for reference and to support and document implementation of the emergency operations plan.

TABLE 4-1 Hazards affecting U.S. communities

CLASS OF HAZARD	EXAMPLES
Natural	
Geological	• Earthquake, volcanic eruption, landslide (including rock fall, debris avalanche, mudflow), episode of accelerated erosion, subsidence
Meteorological	• Hurricane, tornado, ice storm, blizzard, lightning, intense rainstorm, hailstorm, fog, drought, snow avalanche
Oceanographic	• Tsunami (geological origins), sea storm (meteorological origins)
Hydrological	• Flood, flashflood
Biological	• Wildfire (forest or range fire), crop blight, insect infestation, epizootic, disease outbreaks
• **Technological**	
Hazardous Materials and Processes	• Carcinogens, mutagens, heavy metals, other toxins
Dangerous Processes	• Structural failure, radiation emissions, refining and transporting hazardous materials
Devices and Machines	• Explosives, unexploded ordnance, vehicles, trains, aircraft
Installations and Plant	• Bridges, dams, mines, refineries, power plants, oil and gas terminals and storage plants, power lines, pipelines, high-rise buildings
• **Societal**	
Terrorist Incidents	• Bombings, shootings, hostage taking, hijacking
Crowd Incidents	• Riots, crowd crushes, and stampedes
Source: Adapted from Hewitt, K., *Regions of Risk: A Geographical Introduction to Disasters*, Addison-Wesley-Longman, Harlow, England, 1997.	

A sample emergency operations plan table of contents is provided in Table 4-2.

Once the planning team has developed and approved an outline, the team probably should

- Write the plan. Ideally, this activity should be shared among cross-functional members of the team. Establish goals along with a timeline/schedule for preliminary drafts, review, final draft, printing, and distribution.
- Develop, schedule, and conduct training on the emergency operations plan. This is critical to the success of the planning effort.
- Gain final approval for the plan from senior management. Ideally, the plan should be distributed in both electronic and printed form. The final distribution list probably should include the Chief Executive Officer, all other officers of the system, senior management, emergency management team (EMT) members, alternate members, and emergency management supporting personnel.

Step 4: Implement the Plan

This step is more than simply exercising the plan during an emergency or business disruption; it means acting on recommendations made during the vulnerability analysis, integrating the plan into public transportation operations, training employees, and evaluating the plan. Conduct periodic training for all employees. The training probably should include review of the procedures for the system and the individual employee, technical use of equipment, and evacuation drills and other full-scale exercises and simulations. In developing, approving, implementing, and testing plans, the checklist in Table 4-3 may be useful for public transportation personnel.

EMERGENCY PLANNING PRINCIPLES APPLIED TO PUBLIC TRANSPORTATION

In developing emergency operations plans and supporting procedures, incident-specific response plans and IMOs, public transportation agencies are encouraged to consider the following 12 objectives:

- Objective 1: Partition the incident response into easily identified and managed steps.
- Objective 2: Organize for managing an emergency on the transportation system.
- Objective 3: Develop a process for ensuring the role of public transportation executive leadership in emergency response and community decision-making during crises.
- Objective 4: Use the incident command system as a resource for organizing emergency response.
- Objective 5: Document system preparedness activity in an IRP and emergency operations plan.

TABLE 4-2 Sample EOP table of contents

CHAPTER 1 - GENERAL
- 1.01 Policy Statement
- 1.02 Introduction
- 1.03 Plan Objectives
- 1.04 Authority
- 1.05 Plan Maintenance
- 1.06 Types and Levels of Emergencies
  - 1.06.1 Level I Emergency (Minor)
  - 1.06.2 Level II Emergency (Major)
  - 1.06.3 Level III Emergency (Catastrophic)
- 1.07 Types and Levels of Anticipated Events

CHAPTER 2 - COMMAND AND CONTROL
- 2.01 Public Transportation IMO
  - 2.01.1 IMO Organization Chart for Incidents
    - 2.01.1.1 Level I Emergencies
    - 2.01.1.2 Level II Emergencies
    - 2.01.1.3 Level III Emergencies
  - 2.01.2 IMO Organization Chart for Winter Operations
  - 2.01.3 IMO Organization Chart for Special Events
- 2.02 Level III Incident Management Team
  - 2.02.1 Bus and Rail Administration Joint Command
  - 2.02.2 Planning Section
  - 2.02.3 Operations Section
  - 2.02.4 Security Section
  - 2.02.5 Safety Section
  - 2.02.6 Finance Section
  - 2.02.7 Public Information Section
  - 2.02.8 Customer Service Section
  - 2.02.9 Logistics Section
- 2.03 External Support Services
- 2.04 Emergency Operations
- 2.05 Event Operations

- Objective 6: Slow the onset of an emergency by planning for natural disasters and special events and early recognition of potential terrorism indicators.
- Objective 7: Institute a system of command and control as early as possible.
- Objective 8: Integrate intelligence into the initial response.
- Objective 9: Coordinate the support of rescue activity and management of fatalities.
- Objective 10: Coordinate participation in local traffic control decision-making.
- Objective 11: Support site safety/security and damage assessment.
- Objective 12: Support system-wide safety and security.

Each of these objectives is discussed below.

Objective 1: Partition the Incident Response Into Easily Identified and Managed Steps

Build emergency operating procedures and checklists around the steps typically used in handling any emergency incident in the public transportation environment, including

- Reporting the incident;
- Evaluating and establishing the boundaries for the incident;
- Notifying emergency response personnel;
- Dispatching necessary personnel and equipment to the scene;
- Coordinating activities of public transportation response personnel;
- Assessing the incident scene;
- Protecting passengers, personnel, and equipment at the incident site;
- Determining emergency care needs and establishing priorities for evacuation/repair/restoration of service;
- Maintaining the maximum possible service level;
- Determining the resources available to satisfy emergency priorities;
- Dispatching necessary resources;
- Coordinating emergency activities at the incident site;
- Clearing the incident site;
- Restoring normal operations;
- Debriefing personnel from all departments and participating agencies; and
- Documenting lessons learned from the emergency.

Objective 2: Organize for Managing an Emergency on the Transportation System

Develop an IMO for emergency response by

TABLE 4-2 (Continued)

CHAPTER 3- COMMUNICATIONS
- 3.01 Incident Management Communications
  - 3.01.1 Response Objective
  - 3.01.2 Communications Plan: Joint Bus/Rail and Paratransit
    - 3.01.2.1 Radio Plan
    - 3.01.2.2 Communication Layout Example
    - 3.01.2.3 Incident Management Organization Phone List
  - 3.01.3 Security Operations Post
  - 3.01.4 Customer Service Incident Response Team
  - 3.01.5 Facility Incident Response Team
  - 3.01.6 Beeper Call Groups
  - 3.01.7 Network Plan
  - 3.01.8 CCTV
  - 3.01.9 Bus/Rail Annual Calendar on Communications Network
  - 3.01.10 Schedule for Incident Management Plan Maintenance

CHAPTER 4 - EMERGENCIES
- 4.01 Preparation for Emergencies
  - 4.01.1 Bomb Threat Summary
    - 4.01.1.1 Response Objectives
      - 4.01.1.1.1 Within a Facility
      - 4.01.1.1.2 On a Vehicle
    - 4.01.1.2 Bus Operators
    - 4.01.1.3 Bus Dispatch
    - 4.01.1.4 Road Supervisors
    - 4.01.1.5 Operators
    - 4.01.1.6 Controllers
    - 4.01.1.7 Supervisors
    - 4.01.1.8 Public Transportation Police/Security
  - 4.01.2 Earthquakes Summary
    - 4.01.2.1 Response Objectives – Within a Facility
    - 4.01.2.2 Bus Operators
    - 4.01.2.3 Dispatch
    - 4.01.2.4 Train Operators
    - 4.01.2.5 Rail Control
    - 4.01.2.6 Road Supervisors
  - 4.01.3 Fires Summary
    - 4.01.3.1 Response Objectives – In a Facility
    - 4.01.3.2 On a Bus
    - 4.01.3.3 On a Train

(*continued on next page*)

- Designating specific supervisory personnel as on-scene transit incident commanders to direct field operations at an incident site;
- Ensuring on-scene transit incident commanders are trained and evaluated for their proficiency to assume responsibility for the coordination of response to the incident (including activities such as liaison with representatives from local response agencies, receiving and assigning public transportation personnel who report to the scene, mobilizing and staging resources, and coordinating with the public transportation EOC);
- Ensuring that if multiple incidents are occurring simultaneously, the system has a process for designating additional on-scene incident commanders at these sites;
- Designating pre-assigned incident response teams (IRTs), or equivalent units, to assist with response at specific facilities or in designated geographic areas or to manage specific types of events;
- Establishing an organizational structure for the incident response teams (or equivalent units) to ensure designation of leaders who will report directly to the on-scene transit incident commander for assignments; and
- Providing supporting members of the system's incident response team (or equivalent unit) with training on ICS operations, search and rescue, first aid and triage, and scene safety.

Objective 3: Develop a Process for Ensuring the Role of Public Transportation Executive Leadership in Emergency Response and Community Decision-Making During Crises

Develop an EOC to serve as the designated facility where incident activities are directed and coordinated by public transportation executive leadership. Complete following activities:

- Ensuring that notification and activation procedures for the EOC are clearly understood by dispatchers and executive leadership;

TABLE 4-2 (Continued)

4.01.4 Volcanic Eruption Summary
- 4.01.4.1 Response Objectives - Operator
- 4.01.4.2 Dispatch/Control
- 4.01.4.3 Emergency Coordinator

4.01.5 Winter Storms Summary
- 4.01.5.1 Response Objectives – Communications and Pre-Staging of Transportation Resources
- 4.01.5.2 Response Objectives – Winter Storm IMO
- 4.01.5.2.1 Paratransit Services
- 4.01 .5.2.2 Bus Transportation
- 4.01 .5.2.3 Bus Maintenance
- 4.01 .5.2.4 Customer Service
- 4.01.5.2.5 Public Information
- 4.01 .5.2.6 Rail Operations
- 4.01 .5.2.7 Fare Inspection
- 4.01.5.2.8 Security
- 4.01.5.2.9 Logistics

4.01.6 Floods/High Wind/Tornado Summary
- 4.01.6.1 Response Objectives - Isolated Area
- 4.01.6.2 Widespread Area

4.01.7 Medical Emergencies Summary
- 4.01.7.1 Response Objectives – In a Facility (Single Injury)
- 4.01.7.2 In a Facility (Multiple Injuries)
- 4.01.7.3 On the Road (Catastrophic)

4.01.8 Hazardous Material Incident/Spill Summary
- 4.01.8.1 Response Objectives – Vapor Cloud in Facility
- 4.01.8.2 On the Road

4.01.9 Transportation Accident Summary
- 4.01.9.1 Response Objectives – On the Road
- 4.01.9.2 During Transport

4.01.10 Power Failure Summary
- 4.01.10.1 Response Objectives

4.01.11 Telecommunications Failure Summary
- 4.01.11.1 Response Objectives

4.01.12 Civil Disturbance Summary
- 4.01.12.1 Response Objectives

4.01.13 Hostage Situation Summary
- 4.01.13.1 Response Objectives

- Coordinating activation and staffing of the EOC with the local community EOC (in a community emergency);
- Designating, if possible, a representative of the public transportation system to be co-located at the community EOC upon its activation;
- Making provisions to ensure that the public transportation EOC, once activated, will be staffed at all times with personnel authorized to make decisions, both within the system's organizational structure, and in coordination with local, regional, and state government agencies and businesses;
- Ensuring, for multimodal systems, that the EOC supports joint coordination between bus and rail activities, with immediate access to both bus and rail dispatch and field supervisors;
- Ensuring that the public transportation EOC includes all emergency documentation for the affected area, as well as information on mutual aid agreements and local jurisdictional capabilities; and
- Designating a back-up facility/location in case the initial EOC site is destroyed, contaminated, or otherwise rendered unusable.

Objective 4: Use the Incident Command System as a Resource for Organizing Emergency Response

Use the incident command system to provide a strategic management process for

- Analyzing the incident situation;
- Protecting the health and safety of passengers, employees, and responders;
- Protecting the system's property and assets;
- Establishing priorities for use of available public transportation resources;
- Emphasizing the system's need for self-sufficiency for up to 72 hours following a regional emergency or disaster;
- Fulfilling the system's responsibilities under the mutual aid agreements with local and/or regional agencies and jurisdictions;
- Ensuring the system's ability to provide buses and other equipment and services to local agencies on a priority basis;
- Providing re-configured emergency transportation services for the communities served by the system; and

TABLE 4-2 (Continued)

CHAPTER 5- PLANNED EVENTS
- 5.01 Preparation for Events
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CHAPTER 9- GLOSSARY OF TERMS

(*continued on next page*)

- Evaluating the system's capabilities as part of an ongoing program of emergency exercises and drills.

Objective 5: Document System Preparedness Activity in an IRP and EOP

Develop an incident response plan and emergency operations plan to ensure the continuity of public transportation service under a range of threats and conditions. Ideally, the plan

- Defines, in a straightforward manner, who does what, when, where, and how to mitigate, prepare for, respond to, and recover from special events, emergencies, or disasters;
- Provides for updated contact and on-call systems ensuring round-the-clock access to transportation decision-makers, at the strategic (management) and tactical (field) levels;
- Identifies processes for developing procedures to ensure a reasonable state of incident preparedness at the system;
- References the incident command system and uses its concepts to organize public transportation incident management and ensure coordination with emergency response and service agencies;
- Includes mutual aid and other support agreements with appropriate local and state agencies;
- Includes (or addresses) system activity to establish an EOC;
- Includes (or addresses) critical roles and responsibilities of dispatchers during emergency situations;
- Provides for identification, training, exercising, and evaluating supervisory personnel to serve as incident commanders;
- Describes the system's procedure for establishing an incident command post (ICP) and for requesting, staging, and tracking resources and personnel, including the use of staging areas;
- Describes the system's organization of personnel into IRTs, facility response teams (FRTS), or some other

TABLE 4-3 EOP checklist

EOP CHECKLIST QUESTIONS	Yes	No
GENERAL		
Have a mission statement?		
Have goals and/or objectives?		
POLICIES		
Specify process for designating an IC?		
Specify a process for designating a deputy (back-up) IC?		
Specify whom has final authority over decisions made during field response to an emergency scene?		
Specify a chain of command for public transportation leadership?		
Place limitations on the authority of the IC?		
Specify a method to change command during an emergency?		
NOTIFICATIONS		
Specify a procedure for notifications of key personnel?		
Establish a priority for who is notified?		
Require notification to central dispatch?		
Specify role of central dispatch in notification process?		
Identify the role of beeper/pager systems in notification?		
EMERGENCY NOTIFICATIONS		
Include home phone, cell phone, and pager numbers of key staff and how they are distributed?		
Identify key staff and general staff recall procedures organized by geographic proximity to public transportation locations?		
Identify specific communications systems and protocols for use only in emergencies?		
MEDIA		
Specify a PIO and a PIO alternate?		
Specify those authorized to release information other than the PIO?		
Specify process to coordinate media operations with EOC and field response?		
Specify a person or people to address rumor control?		
Address process of communicating with local community, citizens, and organizations?		
Provide training for PIO(s)?		
Specify location for media, escorting them through a security area and procedures for information flow?		

designation to ensure that the capable public transportation personnel with the right equipment arrive on the scene; and
- Provides appendixes that detail the system's response to specific types of incidents (e.g., fires, accidents, flooding, and bomb threats).

Objective 6: Slow the Onset of an Emergency by Planning for Natural Disasters and Special Events and Early Recognition of Potential Terrorism Indicators

Work with the local community to make planning count by

- Ensuring coordinated planning for all events with warning (e.g., natural disasters and emergencies at special events), including evacuation routes, mobilization sites, and pre-deployed resources staged throughout potentially affected areas;
- Heightening employee awareness to support recognition of potential security/terrorism event indicators (e.g., vibration, leaks and cracks in tunnels, smoke, strange odors, strange clouds or mists, out-of-place items, and unusual activity);
- Ensuring effective communication of indicators to dispatchers and supervisors and rapid implementation of agency procedures for investigation, options analysis, and decision-making;
- Mitigating consequences to passengers, system, and community through clear-headed decision-making by line and supervisory personnel; and
- Establishing the role of transportation in enforcing evacuation and quarantine orders.

TABLE 4-3 (Continued)

EOP CHECKLIST QUESTIONS	Yes	No
EVACUATION		
Provide details for evacuation, per public transportation facility?		
Provide details for evacuation, on-site, out of, and away from each public transportation facility?		
PROCESS AND AUTHORITY		
Encompass a single, comprehensive format that includes all emergencies/disasters?		
Go through the official approval process?		
Have a numbering system and identifying marker, and is there an inventory system for copies?		
Incorporate a system or procedure for documenting changes and updates?		
Provide for the operation of food services/rest facilities for staff, citizens and rescue workers?		
Address scene management considerations for security systems and perimeter barricades?		
Include regularly updated staff emergency-notification lists?		
Include a list of special medical conditions of the staff?		
Include a list of blood types available?		
Address procedures on how to handle family members who arrive at the location?		
RISK ASSESSMENT		
Provide process for identifying specific threats and vulnerabilities for the transportation system?		
Identify hot spots and evaluate equipment, including supplies, generators, fire extinguishers, first-aid procedures that are on-site?		
Provide for written recommendations to reduce risks and follow-up procedures for compliance?		
SCHEMATICS AND DIAGRAMS		
Provide copies of blueprints for public transportation facilities at a location and in a format accessible to system personnel and local responders?		
Require the identification of fire escapes, secondary fire escape doors, fire hoses, hydrants and extinguishers on these documents?		
Provide for public transportation facilities to be easily marked and identifiable to outside responders?		
Provide for quick location of keys/access cards to public transportation facilities?		
Provide for the emergency equipment to be tested on a regular basis?		
Provide staff training to operate emergency equipment?		
LOCATIONS		

(*continued on next page*)

Objective 7: Institute A System of Command and Control as Early as Possible

Clearly identify public transportation roles and responsibilities for incident identification and management by

- Developing and implementing protective measures at times of heightened threat or natural disaster (such measures would include early notification of transportation decision-makers, early activation of the EOC, staging of pre-deployed resources throughout the area, and assigning transportation supervisors and others with authority to make decisions at strategic locations);
- Updating contact and on-call systems ensuring round-the-clock access to transportation decision-makers, at the strategic (management) and tactical (field) levels;
- Developing and initiating the incident command system to be used by line and supervisory personnel in minor events (e.g., traffic accident, small fire, and vehicle break-down);
- Using hoaxes and surprise drills and tabletop simulations to heighten capabilities that can be applied during actual emergency response;
- Clearly delineating the roles and responsibilities of key transportation personnel and how to best integrate these personnel into the community incident management system;
- Pre-assigning roles for transportation resources and personnel in response to different types of emergencies and disasters;
- Providing a balance at the incident site between planning and flexibility with plans for initial baselines for

TABLE 4-3 (Continued)

EOP CHECKLIST QUESTIONS	Yes	No
For each major public transportation facility, does the EOP:		
• Identify a CP?		
• Identify an alternate CP?		
• Identify a media room or staging area?		
• Identify a family support area?		
• Identify a staff staging area?		
• Identify a mutual aid staging area?		
• Identify traffic control points?		
• Identify a triage area?		
• Identify area hospitals?		
• Identify equipment supplies area?		
PROCEDURES		
Specify record-keeping procedures and responsibilities?		
Specify relieving staff from non-critical functions?		
Specify procedures to account for staff, citizens, volunteers, rescue workers, etc.?		
Specify procedures for staffing in an extended emergency?		
Address coordination with local police, fire and emergency responders to identify barricade locations, traffic control for access in and out of the area by fire trucks and ambulances, crowd control, and security access?		
Identify procedures for expenditure of funds, signing of contracts, purchasing of supplies, etc.?		
Identify back-up systems for communications, including portable radios, cell phones, and pagers?		
Identify procedures to address removal of hazardous materials, stabilization of structures and buildings?		
Identify procedures for removal of EDP equipment, phones and important paper documents?		
Identify procedures for alternate storage sites of supplies, equipment, furniture, and materials retrieved?		
Provide for security at storage sites?		
Provide for procedures to review insurance policies, coverages, and notification?		
Include signing, dating and scheduling of periodic review?		
Identify employee assistance programs (EAPs) available for traumatized staff?		

everyone, including responders, and which recognize that actual responses may dictate deviations and improvisations from previously established plans; and
- Distributing strategic transportation leadership across the incident site, operations control center, EOC, and mobilization and staging locations.

Objective 8: Integrate Intelligence into Initial Response

Transit systems can participate in local information and intelligence by

- Supporting the rapid prioritization and dissemination of critical information to transportation responders;
- Supporting the rapid and coordinated identification of mobilization sites, staging areas, and traffic control plans, integrated with threat assessment and scene security requirements;
- Supporting the rapid and coordinated consideration of traffic routing alternatives and region wide coordination about traffic management and the movement of passengers;
- Supporting the rapid evaluation of options for system shut-down, reverse routing, and evacuation versus in-place sheltering of passengers in public transportation vehicles and stations; and
- Participating in regular briefings on the situation, the incident action plan (IAP), the response objectives, and strategy, with full opportunity for transportation contributions and identification of resources and capabilities to support the response effort and the action plan.

Objective 9: Coordinate the Support of Rescue Activity and Management of Fatalities

Know, in advance, how the system will handle a mass casualty event by

- Implementing (whenever possible) pre-incident/initial incident emergency evacuation plans or in-place sheltering plans, in the community or on transportation property;
- Supporting clear identification of how transportation resources and personnel can contribute to the post-

incident search for, and rescue of, survivors and the management and creation of temporary morgues;
- Recognizing the role of transportation resources in establishing and maintaining inner and outer perimeters at the incident site;
- Recognizing the role of transportation personnel, including engineers and inspectors, in assessing and managing risks at the incident site and transportation facilities affected by the incident; and
- Establishing the ability of transportation personnel to access critical transportation locations near the incident site to perform assessments and stage equipment.

Objective 10: Coordinate Participation in Local Traffic Control Decision-Making

Facilitate local decision-making for traffic control by

- Clearly defining the public transportation system's role in supporting on-site traffic access for emergency vehicles, including public transportation vehicles, as appropriate;
- Supporting early and authoritative identification and clearance of off-site routes for emergency vehicles, including public transportation vehicles;
- Supporting integrated management of area-wide traffic flow, coordinated with all operational authorities and traffic management centers;
- Providing immediate access to incident decision-makers about any issues affecting the safety or security of the public transportation system;
- Providing clear understanding of how decisions are made on community evacuation of all non-emergency personnel from affected locations, and assurances that decisions are integrated across the entire transportation network, i.e., transportation agencies are taking passengers to locations where they can be picked up or transferred to shuttle services, and using roads, bridges and routes that are open and clear.

Objective 11: Support Site Safety/Security and Damage Assessment

Have a plan for assessing damage while ensuring site security and the safety of all personnel by ensuring that

- Sufficient qualified personnel are available to perform damage assessments and emergency inspections on emergency notice and for extended periods;
- Previous inspection records are readily available to the inspection team and equipment is pre-deployed to facilitate rapid initiation of inspections;
- Authorities and allowable actions are clearly defined for public transportation supervisors, engineers, and inspectors to access the incident scene and/or adjoining locations to perform inspections;
- System credentialing for scene access is understood, and site safety considerations and security escorts are addressed in planning;
- Appropriate personal protective equipment (PPE), including respirators and protective clothing, is assigned to and available for inspectors to address poor air quality/debris hazards;
- Agency procedures are available to support rapid decision-making in the event of station/segment loss, closure, major degradation, or emerging life safety issues;
- Accurate estimates of the time required for visual, physical, and technical inspections of tunnels and structures will be available for the EOC or operations control center (OCC);
- Supervisors are available and located in the field to support resolution of questionable and/or emergency conditions;
- Public health, other city officials, and the occupational safety and health administration (OSHA) are notified and coordinated with (as appropriate), based on internal procedures; and
- The agency has identified priorities for emergency assessments and has a method for determining the appropriate level of inspection, with activities ranging from hammer sounding and detailed visual inspection to non-destructive testing to detailed engineering assessment.

Objective 12: Support System-Wide Safety and Security

Determine how the system will choose whether or not to suspend or re-activate service, by adopting

- Clear procedures and plans for system shut-down, evaluation, and re-activation, including rapid evaluation of air quality, structural integrity, track, and vehicles;
- Coordinated response plans are in place for protecting and evacuating sensitive locations around the city;
- A coordinated public information and media campaign that provides clear directions to citizens about evacuation routes and transportation service; and
- Plans are available for system startup protocols, this may require complete visual inspection of all track infrastructure, power distribution system, signal and communication systems, and ancillary right-of-way facilities as well as non-revenue facilities and passenger stations before starting revenue service.

SECTION **5**

SUPPORTING COMMUNITY EVACUATION

Evacuation planning in the United States has been the responsibility of local and state emergency management and law enforcement agencies. Relatively little attention has been paid to full-scale evacuations that require the maximized and coordinated use of the entire transportation infrastructure available in a community or region. In response to recent events, however, this situation is changing. State and local DOTs and public transportation systems are becoming more involved in evacuation planning, warning, response, and recovery.

This section describes activities that transportation systems may take to improve their capabilities to support community evacuations. Building on the information provided in the previous sections, this section begins with a brief overview of the evacuation process used by emergency planning agencies and then provides specific recommendations for transportation systems. The section concludes with a recommended checklist for evacuation planning.

This section only deals with those community events where the public transportation system is not directly affected (by a natural disaster or as a target of terrorist attack). Additional information on response measures for situations where the public transportation is directly affected by the emergency event is provided in a later section of this Guide.

RECENT EXPERIENCE

In the two most recent large-scale evacuations, Hurricanes George in 1998 and Floyd in 1999, emergency planning agencies learned that they may not have been as prepared for such scenarios as they had assumed. Hurricane Floyd, almost 600 miles wide and swirling with 130-mph winds and relentless rain, forced nearly four million people to participate in the largest evacuation in U.S. history. This evacuation also created the nation's largest traffic gridlock, which spanned hundreds of miles of the eastern seaboard from Florida through North Carolina.

Floyd blew ashore near Cape Fear, North Carolina, with 110-mph winds bringing 15 inches of rain in 12 hours, thereby causing post-evacuation flooding on a scale never before seen in the region. Although Floyd's size and movement made it an atypical hurricane, the probability that another hurricane will affect a populous area has increased tremendously over the last decade.[1]

The growing vulnerability of the nation's urban centers to human threats resulting from terrorism has become readily apparent. The September 11, 2001, evacuations occurring in New York and Washington, D.C., resulted in hundreds of thousands of people fleeing, many on foot. The influence of real-time rumors and fear on public behavior, combined with lost telecommunication capabilities and the inability of local transportation agencies to closely coordinate closures of major bridges, tunnels, and other critical facilities, resulted in multiple bottlenecks in both cities that left thousands of people unprotected and stranded on roadways, potentially exposed to secondary and even tertiary attacks, had they occurred.

The September 11 experiences highlight the need for well-planned and coordinated evacuations to safe and specific areas of a city in as short a time as possible. These events have also caused emergency planning agencies to investigate non-evacuation solutions to threats, such as sheltering-in-place and phased clearing and release of prioritized facilities combined with sheltering-in-place for lower risk buildings.

Other areas of concern for evacuation planners include hazardous materials shippers, chemical processing facilities, and nuclear power plants. Although these industries maintain their positive safety records, the possibility of a major event, which would require evacuation of thousands and which could strand evacuees in the path of a plume or contaminated release, has grown. Whether intentional or accidental, release of contaminated material over an urban center may require a rapid-moving evacuation, which must be much more effectively administered than those implemented for Hurricanes George and Floyd, and the evacuations on September 11, 2001.

In response, emergency planners have identified the need for increased evacuation route capacity; development of systems for better, faster, more reliable exchange of traffic flow and traveler information; and better planning and coordination of regional and cross-state evacuations.

[1] According to Brian Wolshon and Brandy Hicks Meehan, in their article "Emergency Evacuation: Ensuring Safe and Efficient Transportation of Endangered Areas," which appeared in *TR News*, Number 224, January-February 2003, pages 3 to 9, coastal populations in the southeast are expected to reach 76 million by 2010, almost double the 1993 total of 36 million, but the amount of new roadway construction to accommodate this population expansion will only increase by 1 percent over the same period.

EVACUATION PLANNING

Evacuation is one means of protecting the public from the effects of an emergency event. Protection is achieved by moving people away from the hazard. Evacuation, therefore, is perhaps best considered as a process by which citizens in an affected area are

- Moved from immediate anticipated danger to a place of safety;
- Offered appropriate temporary shelter (if they are not being returned to their homes from a workplace evacuation); and
- Enabled to return to their normal activities, or to make suitable alternative arrangements, when the threat to their safety is over.

In planning for evacuation, the characteristics of the hazard (e.g., its magnitude, intensity, speed of onset, and anticipated duration) are all significant. These factors will determine how many people should be evacuated, how far to move people to ensure their safety, what sorts of reception facilities are needed, and the extent of traffic control and security required.

Communities require evacuations in a range of circumstances as follows:

- Potential damage to property and threat to life as a result of severe weather, such as storms and tornados;
- Serious flooding or the threat of flooding;
- Threat of environmental contamination which could harm health (e.g., following an accident or fire involving chemicals);
- Danger from spreading fire, either in residential or commercial buildings or forest fires;
- Threat or actual incident of explosion, either from terrorism or a criminal-related bombing;
- Threat or actual incident of explosion, from gas pipelines or installations, or from chemicals involved in an accident or fire;
- Threat or actual incident of the release of chemical, biological, radiological, or nuclear weapons or agents; and
- Loss of essential services (e.g., power or safe water supplies).

Although some emergency situations are slow to develop, others occur without warning. There may be time for deliberate evacuation planning or an evacuation may have to occur with minimal preparation time. For evacuations with minimal notice, there may be little time to obtain personnel and equipment from external sources to support evacuation operations. Communities also recognize that the need to evacuate may become evident during any time of the day or night, offering little control over the evacuation start time.

In most communities, the primary means of evacuation probably will be personal automobiles. During an evacuation, citizens of an affected area are encouraged to coordinate with their neighbors and families to ensure that those they know are without transportation are given rides to shelters or hotels or the homes of family and friends in safe areas. It is assumed that residents of specific geographic areas will take assigned evacuation routes, predetermined by local emergency planning officials, to leave the area. Evacuation information will be broadcast by local radio and television stations and available on community web pages. Local law enforcement, stationed along the evacuation routes, will reinforce the community evacuation plan and assist those evacuees who encounter problems (e.g., vehicle breakdown, accident, and illness).

Through this process, most communities estimate that approximately 80 percent of those who need to evacuate will do so upon recommendation from appropriate local officials. Planning estimates also typically specify that, depending on the reason for evacuation and the time available to prepare, 10 to 30 percent of evacuating citizens will use community-provided shelters. The remaining evacuees will stay at commercial establishments or with family and friends until it is safe to return.

One approach to evacuation planning assumes that citizens are in their residences when evacuation warnings are issued. This approach also assumes that citizens can be reached through a coordinated public warning system whose aim is to bring about an appropriate response to avoid or minimize exposure to danger. Warning messages delivered by this system typically are designed to do the following:

- Provide timely information about the hazard;
- State what to do to reduce loss of life, injury, and property damage;
- State the consequences of not heeding the warning;
- Provide feedback to operational decision-makers on the extent of public compliance;
- Cite a credible authority;
- Be short, simple, and precise;
- Have a personal context;
- Use active verbs; and
- Repeat important information regularly.

As indicated in Figure 5-1, warning methods may include messages on radios and television, public safety siren and loudspeaker broadcasts, door knocks by law enforcement and volunteer groups, automated calling systems, the emergency alert system (EAS), and specialized audible and/or visual signals for citizens of age or with disabilities.

An evacuation can become more complicated if citizens residing in affected areas must first return home to these areas from work, school children must be returned from school, and paratransit patrons who have already been delivered to a destination of their choice have to be picked up. Under these circumstances, local communities typically pro-

Weather alert radio sounding a tone followed by a message.

The loud, steady tone of the town siren, lasting 3 to 5 minutes.

Sirens and broadcasts from loudspeakers on emergency vehicles.

Special announcements on local Emergency Alert System radio stations.

A message on a Telecommunication Device for the Deaf (TDD) for those who have registered.

Figure 5-1. Notification systems.

vide clear advice on how and when parents are to meet their children before the evacuation, and how evacuees can pick-up older or sick relatives from designated care facilities. With respect to paratransit passengers, the local system probably should have in place an emergency plan for immediately contacting those passengers who have been delivered to initial destinations and determining what time they will be picked up. Such a plan should address whether these passengers are to be taken to their homes or to an assembly site. If they are to be taken to an assembly site, the plan should address the need for their loved ones or caretakers to be notified of where they are being taken and when they are expected to arrive. This can get very complicated during an emergency event so it is recommended that it be thoroughly thought out and prepared for in advance.

If the event triggering the evacuation affects the downtown commercial or central business district (CBD) of a major city during typical office hours, then the objective of the evacuation becomes to remove people from the CBD as quickly and effectively as possible, returning them to their homes, while, at the same time, evacuating citizens who live in or near the affected downtown area. Citizens who work and live in the CBD or its environs become special cases given hat the building in which they work may have been evacuated and their home in a high rise may also have been evacuated. This situation puts such citizens out of touch with loved ones, pets, clothing, and other items, to which it may be necessary for them to have access.

THE DECISION TO EVACUATE

The decision to evacuate

- Has varying legal requirements;
- Is largely the responsibility of non-transportation professionals (i.e., primarily local and state emergency management agencies, local and state law enforcement, and elected officials); and
- Requires the availability of timely and relevant information, often generated through models and simulations maintained by the local or state EMA, in cooperation with transportation officials.

If the decision to evacuate is made too early and the hazard recedes, the evacuated community may have been exposed to unnecessary risk, inconvenience, and cost. Included is the potential for their homes, businesses, and other properties to become vandalized or burglarized because of insufficient local law enforcement. The law enforcement community will become extremely busy during such an event and generally not enough officers will be available to provide appropriate security for these structures and their contents. If the decision is made too late, the affected community may be forced either to evacuate under high-risk conditions or to shelter-in-place, accepting the effects of the hazard.

Many states and local jurisdictions have no mandatory evacuation law. Hence, the state or local official, charged with initiating the evacuation, may only recommend this course of action for an area perceived as threatened. However, typically, once the designated local official has issued a local disaster declaration, he or she may take action to control re-entry into a stricken area, the movement of people, and the occupancy of buildings within a disaster area.

As indicated in Figure 5-2, evacuations can be required for events with a range of warning times and potential impact areas.

- No-notice evacuation. In response to an imminent or existing threat, these evacuations require the immediate movement of all non-essential personnel from an affected area. Little or no pre-planning is possible under these conditions. These evacuations, although potentially smaller in scale than evacuations resulting from official warnings, such as those for hurricanes or wildfires, can be a worst-case scenario for densely populated urban centers. Local planners often have only minutes to make decisions that affect thousands of people. Under these circumstances, existing plans and procedures take on great significance. The effectiveness of the evacuation will depend largely on the quality of the established notification and mobilization process.
- Limited-warning evacuations. These are evacuations with very limited warnings, perhaps hours at the most, either in response to an imminent threat, such as a fire

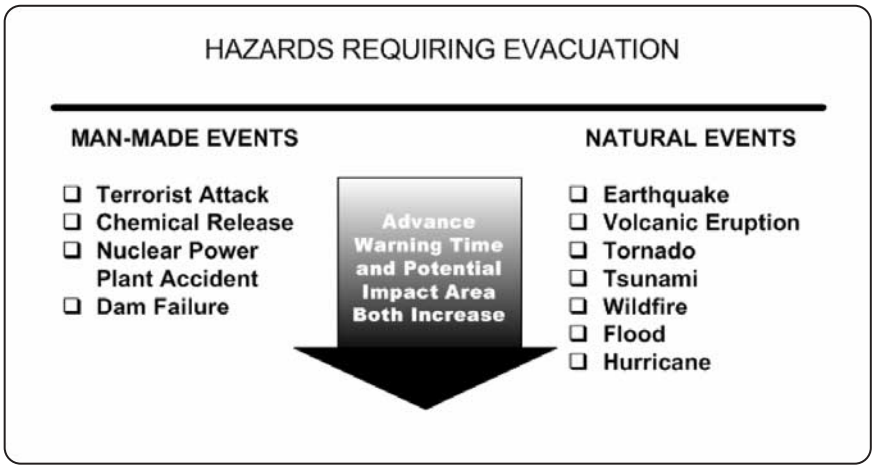


Figure 5-2. Evacuation warning times and impact areas.[2]

or a tornado, or as a precaution against escalation of an existing situation, such as flooding or heightened security threat levels. Some basic planning will be possible for these evacuations, which typically will focus on obtaining transportation to support people of age and people with disabilities and arranging for temporary shelters to be opened.

- Evacuation with warning. Under these circumstances, evacuation is required but the timing is negotiable within a period of days or weeks. Detailed and effective planning is possible. These evacuations typically are related to natural disasters, such as hurricanes or winter storms.

NEED FOR ADDITIONAL TRANSPORTATION

Given that some individuals do not own vehicles and others will need assistance in evacuating, plans should be made to provide transportation for these individuals. Local government transportation (provided primarily via school buses and other city- or county-owned vehicles), public transportation systems, mutual aid transportation resources, and contracted private transportation companies typically are called upon by their communities to satisfy this role.

In providing this support, public transportation systems typically coordinate with special facilities and registered paratransit riders to support evacuation response. Special facilities typically include the following:

- Schools and youth daycare centers, where students require supervision to ensure their safety;
- Sheltered workshops and adult daycare centers, where inhabitants may need carefully conceived instructions and support;
- Hospitals and nursing homes, where patients need specialized health care personnel and equipment to maintain their health; and
- Correctional facilities, where offenders require security to keep them in custody.

If sufficient time is available before an evacuation, public transportation systems typically may initiate special evacuation routes with designated pick-up points and destinations to safe areas, including shelters and other transportation transfer points. In addition, a telephone bank may be established to receive and process requests for transportation.

In response to the need for downtown evacuations during office hours, public transportation systems have initiated partnerships with their local EMAs and public safety agencies (e.g., law enforcement, fire and emergency medical services, and specialized response units) to coordinate fast activation of rush-hour service levels to return commuters to the suburbs.

Public transportation systems have also worked with Downtown Improvement Districts, the Federal Protective Services, local chapters of the Building Owners and Manager's Association (BOMA), associations of security directors and property managers, and hotel/motel associations to ensure that facility evacuation plans incorporate access routes and information about public transportation service. In providing this service, public transportation systems have developed special route configurations, staffing call-out plans, and dispatch configurations to ensure that resources are quickly placed. Figure 5-3 includes a description of this service provided by Dallas Area Rapid Transit (DART) for the CBD in Dallas, Texas.

RECOMMENDATIONS FOR PUBLIC TRANSPORTATION

In most communities, public transportation systems are not leading planning for and organizing evacuations. Transportation systems are designated by local emergency plan-

[2] Wolshon, Brian and Meehan, Brandy Hicks, "Emergency Evacuation: Ensuring Safe and Efficient Transportation of Endangered Areas," *TR News,* Number 224, January–February 2003, pp. 3–9.

DART recognizes that a key to the success and rapid deployment of mass transportation resources for the Downtown Dallas CBD is a good emergency preparedness plan. It means having in place an operational response that co-exists in a support capacity with both the private sector and City of Dallas' emergency support units.

DART also places a high priority on the dissemination of information via the DART media department. This department consistently liaisons with the local print, television and radio news outlets as a routine priority. Having a good flow of communication with the citizenry is of critical importance to DART, especially during a crisis.

In the event of a natural or manmade emergency incident, DART remains poised to respond at a moment's notice. In place is a 24-hour emergency telephone contact number that serves as a direct link to the DART Police Department as well as to DART's Rail and Bus Operations. Part of the community's management of safety and security is a result of a conscious design by DART to create West and East Bus Transfer Centers within the CBD.

These bus transfer centers or stations play an integral role in the emergency response plan. In addition, there exists several Rail Stations within the Dallas CBD that facilitate egress from the Downtown Dallas area. The plan also gives direction to DART personnel to process requests for assistance within the Dallas CBD.

DART believes there will be two distinct situations in which it will be asked to provide assistance: minor emergencies that have little or no affect on DART's normal level of service, and major situations of a greater magnitude that result in service interruptions. Both situations have vastly different implications on DART's internal priorities.

Certainly, the continued safety and operation of DART's system would take precedence in most situations. Because of the differences, these two areas are divided and addressed as Minor Occurrences and Major Events.

(*continued on next page*)

Figure 5-3. DART's downtown evacuation support.

ning agencies to provide specific support functions during these events. To this end, public transportation systems make a valuable contribution to the community evacuation capability, but often are not permitted to make evacuation-related decisions or to direct evacuation operations.

In supporting their communities, public transportation systems should be prepared for distinct categories of evacuation, as shown in Table 5-1. These categories are as follows:

- Evacuation, with some warning, for natural disasters only;
- Evacuation for security threat only;
- Evacuation after no-notice event, not security-related; and
- Evacuation after no-notice event, security-related.

In planning for these events, many public transportation systems coordinate closely with local emergency planners and public safety agencies in their communities to ensure that

- Transportation resources and capabilities are recognized and incorporated appropriately into local evacuation plans and protocols;
- Specific procedures are developed for initiating, evaluating, and prioritizing emergency transportation requests so that, in the event of multiple demands on the public transportation system (i.e., supporting evacuation and transporting emergency workers and supplies to the scene of the incident), procedures exist for coordinating requests for support;
- Transportation systems support and maintain general awareness about roadway conditions along evacuation routes, particularly involving construction work zone activities; and
- Local transportation resources used to support emergency response are integrated effectively into community procedures and policies on emergency funding,

- For Minor Occurrences, DART's potential response could include evacuations, command post operations, transportation of the sick or injured, Transit Police assistance and the emergency use of the High Occupancy Vehicle (HOV) Lanes.

- For Major Occurrences, DART's potential actions could include providing a safety response to the public, evacuations, and organizing for a mass casualty response.

In the event of an emergency response, Rail and Bus Operations operate at rush hour service levels. DART has a fleet of service protection buses that can be deployed to the Downtown Dallas CBD's West and East bus transfer centers. The bus operation includes initiation of bus bridges that can expedite the evacuation of large numbers of people from the Downtown Dallas area. These buses are equipped with Light Emitting Diode (LED) message boards that can display customized emergency messages for DART patrons. These evacuation resources are supported by the existing LRT system.

The DART Police Department has emergency plans in place that facilitate the deployment of uniformed State of Texas commissioned police officers to specific areas of need. Working hand-in-hand with other law enforcement agencies, the DART police force focuses on its jurisdictional priorities thus freeing outside police officers to respond to emergencies outside of DART's jurisdiction. The DART police force offers specialized services and knowledge that help create a professional and user-friendly transit system. Tactics include securing Rail Stations and Bus Transit Centers in the CBD by providing a uniformed presence at these high pedestrian traffic areas. In a time of critical need, this becomes an invaluable asset.

Additional information is available on DART's coordinated response in the Downtown Dallas Emergency Response Resource Manual at http://www.dallasalert.com.

Figure 5-3. (*Continued*).

reimbursement, and mutual aid, as well as disaster assistance from state and federal sources.

Over the last few years, public transportation systems have developed procedures for coordinating with local emergency planning agencies about the impacts of evacuation on transportation operations. This is to ensure consistent decision-making, route planning coordinated with the public transportation's existing infrastructure and capabilities to handle large numbers of people, and effective communication during evacuation. This is particularly important for situations where transportation systems choose to eliminate or re-configure normal operating service to address other demands for support.

In many cases, this coordination is managed through a formal system for requesting transportation support. Requests may be generated by an incident commander or by departments and agencies that require additional transportation support to implement emergency responsibilities. Requests for transportation support typically are made using forms such as the ones illustrated in Figures 5-4 and 5-5. Coordination between the public transportation system and the incident response or evacuation planning team occurs through a predetermined process, and requests are identified, tracked, and completed.

Systems also coordinate with local emergency planners on their integration into special plans or agreements for traffic management during evacuation conditions with the following agencies:

- State and local transportation agencies, including state DOTs and highway agencies that operate and maintain the road network in the region;
- State and local law enforcement agencies, including state, county, and city police departments responsible for public safety and traffic enforcement;
- Fire services and rescue agencies, including county, city, volunteer, and private fire, ambulance, and support response agencies that respond to events occurring on roadways;
- Towing and recovery companies that provide towing and recovery services for highway incidents; and
- Public and private traveler information providers that collect, process, and disseminate traffic and transportation-related information to benefit travelers using methods such as commercial and cable television, radio, Internet, and changeable message signs.

To ensure reimbursement for evacuation-related support, the form provided in Figure 5-6 and the Use Log in Figure 5-7 typically are completed by transportation personnel at the public transportation system.

If private carriers are part of the delivery system within the service area of the public transportation agency, appropriate

TABLE 5-1 Types of community evacuations requiring public transportation support

CATEGORY OF EVACUATION	EXAMPLES	AFFECTED GEOGRAPHIC LOCATION	PUBLIC TRANSPORTATION FOCUS
Evacuation, with Some Warning, for Natural Disasters ONLY	Hurricane, flooding, wildfires	Potentially very large, perhaps, thousands of square miles	Those segments of the community who rely on public transportation for mobility; special needs populations; and emergency response personnel who need to reach particular locations or require specialized equipment or support.
Evacuation for Security Threat ONLY	Credible threat leads community to evacuate downtown commercial district or special event	Potentially smaller geographic area, but perhaps highly populated	Using existing transportation infrastructure to quickly and effectively initiate rush hour levels of service away from threatened area. This service returns commuters to their cars and homes, and will also deliver those users, who opt to leave their cars in the city, to a designated area for pick-up, or to a shelter to wait until such time as the threat passes.
Evacuation after No-Notice Event, NOT Security-Related	Hazardous materials accident, gas leak/explosion, winter storm that disrupts electricity	Depends on the event, could range from a single accident site to a densely populated urban center	Supporting the immediate transportation needs of the affected victims and emergency responders; supporting wide scale and rapid implementation of a major urban evacuation (if necessary).
Evacuation after No-Notice Event - Security-Related	On-going threat/adverse conditions force evacuation of urban center after bombing or chemical agent release	Depends on the event, could range from a single building to a city block, to a densely populated urban center	Coordinating with local, state and federal security assessments and intelligence, transportation systems will attempt to provide rush hour service levels to return commuters. In addition, transportation operators, vehicles, and resources will support emergency responders, providing transportation to and from the event scene, and supporting immediate responder needs for specialized equipment and personnel.

provisions must be included in their contracts for the payment of extraordinary transportation services such as evacuations. If a mass evacuation is required, private providers under contract with the public transportation system often are asked to provide extraordinary services, to which, as public-spirited companies, they immediately comply. In the past this has often occurred without preparation or the support of contractual language providing for the reimbursement of costs along with a typical profit.

After the service has been delivered, it has sometimes been discovered that there are no provisions in the base contract to make the private providers whole and that the forms required by FEMA or other agencies that are necessary for them to get reimbursed have not been completed and the necessary data cannot be documented. In such cases, FEMA may choose not to reimburse the public transportation system, and, consequently, the private providers who acted in good faith during a time of crisis are left exposed. This can be avoided with appropriate language in the base agreement and the requirement for the private providers to track their delivered services according to an appropriate protocol. Having the cost per trip or the cost per vehicle hour, including deadhead time, established and agreed to before an event occurs will prevent problems. Ideally, no one should be in a position of being denied payment for real and reasonable services rendered during a critical event such as an evacuation.

CHECKLIST

Information, provided in the FTA's Rural Technical Assistance Program, Technical Assistance Brief No. 23, is highly

Passenger Transportation Request

Date:	Time:	Priority: 1 2 3
Requested by:		Organization:

Number of people needing transportation: # of Adults _____ # of Children _____

Ambulatory: ☐ Yes ☐ No If No, list any special vehicles or equipment needed:

_____
_____
_____
_____
_____

Pick up from:
Date/Time_____
Place/Address:_____
_____
_____

People available to assist non-ambulatory passengers? ☐ Yes ☐ No
If no, how many people are needed to assist? _____

Contact at pick-up:
Name: Phone #:

Drop off:
Date/Time: _____
Place/Address: _____
_____
_____

Contact at drop off:
Name: Phone #:

Resources committed:

Figure 5-4. Passenger transportation request form.

useful for transportation systems evaluating their capabilities to support community evacuation.[3] Relevant sections of that Brief are highlighted below.

PLANNING AND PREPARATION

- Will the agency participate in emergency responses? The answer is not as obvious as it may seem. Weigh the potential risks to drivers, equipment, community service, and goodwill. When the phone rings, it is too late to decide.
- Is there some type of emergency response plan already in place in the community in which service is provided? In many emergency situations, people (sometimes large numbers of people) need to be moved. No one knows how to do this better than public transportation. Unfortunately, public transportation providers are not always at the top of the list of necessary partners in creating an emergency response plan. Ideally, the following entities are involved in such planning: (1) law enforcement, (2) fire services, (3) rescue operations (which may or

[3] FTA, RTAP, Technical Assistance Brief No. 23, research and content provided by John Sorrell, CCTM, Wiregrass Transportation Authority. Written by Alan Goforth. Posted on CTAA website at http://www.ctaa.org.

Cargo
Transportation Request

Date:	Time:	Priority: 1 2 3
Requested by:		Organization:

Request transport of (describe the cargo):

☐ Loose ☐ Boxed #_____ ☐ Pallets # _____ Total weight: _____ lbs.

Receive from:
Date/Time_____
Place/Address:_____
_____
_____

People available to load the truck? ☐ Yes ☐ No If no, how many people are needed? _____

Equipment available to load the truck? ☐ Yes ☐ No Type: _____

Contact at pick-up
Name: Phone #:

Deliver to:
Date/Time: _____
Place/Address: _____
_____
_____

People available to unload truck? ☐ Yes ☐ No

Equipment available to unload the truck? ☐ Yes ☐ No Type: _____

Contact at delivery
Name: Phone #:

Resources committed:

Figure 5-5. Cargo transportation request form.

may not be separate from fire services), (4) 911 operations (which, again, may or may not be separate), (5) public works, (6) select public officials (e.g., the mayor), and (7) public transportation. The public transportation system may need to be proactive in coordinating with these community partners. Establishing contact with each agency and develop an ongoing, working relationship to share knowledge, ideas, needs, and training is desirable. Ideally, the public transportation system's own emergency response plan should be developed in cooperation with local emergency management partners.

- Has the public transportation system been invited to participate in local fire services, law enforcement, and emergency management drills and exercises? The emergency response systems in many communities periodically conduct training and exercises for disaster and even mass casualties. The public transportation system benefits from participation. Public transportation professionals learn the needs of law enforcement and rescue operations, while firefighters and police officers become familiar with public transportation vehicles and capabilities.

VEHICLE/EQUIPMENT RECORD & USE LOG

Vehicle/Equipment Type:_____

Identification or License #:_____ Odometer/hour meter reading: _____

Date Received: _____ Time Received: _____

☐ City/County Asset ☐ School District Asset

☐ Leased/Rented ☐ Borrowed/Loaned

☐ Other:

Owner: _____

Address:_____

_____

Operational Status: ☐ Good ☐ Fair ☐ Poor

Operator Provided: ☐ Yes ☐ No

Maintenance performed (if any): _____

_____

_____

_____

_____

_____

_____

Vehicle/Equipment Returned:

Date: _____ Time: _____ Odometer/hour meter reading: _____

Remarks:

Figure 5-6. Transportation equipment use record.

- Is a mutual-support agreement in place with community partners? Have the following issues been addressed:
  - The conditions under which the agreement is activated;
  - Who is authorized to activate the agreement;
  - Who controls deployed assets;
  - Who is responsible for support of deployed vehicles;
  - The terms of reimbursement;
  - Who is authorized to direct deployment of public transportation resources; and
  - Under what conditions and by whom are public transportation resources released at the end of the incident.
- Who at the public transportation system is authorized to respond and commit resources? Whether it is the manager in smaller public transportation agencies or a senior operations staff member in larger ones, someone should be enabled to make decisions on the spot.
- Do employees understand their roles in an emergency? The time to inform employees is long before they receive an unexpected call at 3 a.m. Ideally, a policy should be in place to deal with employees who decline to participate because of fear or other reasons. In some cases, drivers or their family members may themselves be victims of the emergency event.
- Is union leadership participating? Make the union an ally by working together from planning through execution.
- Is a manager available to respond around the clock? Provide local 911 units with a primary contact and one or more backups.

USE LOG

Date	Mileage Start	Mileage End	Operator	Mission Description

Figure 5-7. Transportation equipment use log.

- Can vehicle operators and other potential drivers be easily contacted? Employee phone numbers and addresses can change daily. Ideally, drivers should notify the agency of any changes, including changes to cell phone numbers, promptly.
- Have human service agencies that contract with public transportation systems been contacted to establish a coordination plan to be implemented in an emergency? In an emergency, everything changes. Do the people who depend on the public transportation system for service understand this? Make human service agencies aware of the role of the public transportation system in an emergency, and notify them as soon as possible after disaster strikes so they can adjust their schedules. Many people plan their lives around the service provided by the public transportation system.
- Is maintenance support ready? Emergency response strains equipment as well as personnel. Plan for maintenance needs, including tires, fuel, wrecker service, and maintenance support, well before they are needed. The agency's insurance carrier should be consulted about coverage limits in an emergency.
- Does the public transportation system rely on part-time vehicle operators? Some operators may also be first responders or have other commitments during an emergency. Know in advance who will be available, and when.
- Where does public transportation management report in an emergency? Ideally, system managers should be in place to coordinate activities with response teams and vehicle operators. Ideally, they should know where to go when disaster strikes. Identify an alternate location

in case the disaster prevents access to the primary reporting site.

- Where will public transportation vehicle operators report? Select a convenient initial meeting place where operators can report and be debriefed on the emergency. This also provides an opportunity to assess the availability of buses, other public transportation and paratransit vehicles, and operators before their deployment. Ideally, establish an alternate location.
- Is the communications infrastructure in place? Because emergency evacuations and disaster responses are complex and dynamic, constant communication is critical. Locate a member of the public transportation agency on site to coordinate communications with police, fire, and public works officials. Ensure that managers can communicate with operators and that drivers can communicate among themselves. If communications units are battery-powered, make replacement batteries or rechargers available.
- Is dedicated transportation available for the on-site public transportation manager? Make an official vehicle available to provide access into restricted or controlled areas. The vehicle can also be equipped to serve as a communications platform or a command post.
- Have the resources necessary to augment the agency been identified as those required in an emergency? Know what resources may be available from surrounding communities, counties, and jurisdictions. These may include school buses, local senior center transportation vehicles, church buses, and vehicles from other public transportation systems, the military, and local charter companies. However, just because resources have been identified, do not assume that the owners will cooperate. Meet with them and establish a plan that is agreeable to all parties.
- Who is in charge of the vehicles? A well-defined chain of command is essential to smooth operation.
- Who provides operator and vehicle support for augmentation vehicles? Vehicles can be provided with their own support resources, or they can be integrated into the existing support structure. Integration of communication systems is especially important.
- What procedures are in place to guarantee that the content of the system's emergency response plan remains current and viable? Over time, the emergency response plan will evolve and change. Ensure that any changes are reviewed and finalized in conjunction with local emergency management partners. Provide updated copies to make partners aware of changes.

NOTIFICATION AND DEPLOYMENT

Even with the best of preparation, the onset of an emergency is always chaotic. The best approach is to adapt and improvise as needed. Answering these questions helps prepare for notification:

1. Was needed information such as the following received?
   - Verification (usually by E-911 personnel),
   - The nature of the emergency,
   - Vehicle requirements,
   - Location of disaster,
   - Bus assembly area,
   - Report time for first resources,
   - Marshalling area, and
   - Recall procedure.
2. Have the following steps been accomplished?
   - Notifying operators,
   - Initiating driver recall procedure,
   - Notifying management team (including labor leadership),
   - Providing current information to operators, and
   - Identifying the assembly point for operators.
3. Has on-site management accomplished tasks such as the following?
   - Requesting an immediate update;
   - Assessing where public transportation and paratransit vehicles are needed, the risk to operators and vehicles, where to transport passengers, the existence of extraordinary conditions, and the location of dangerous or off-limits areas;
   - Establishing communications with vehicle operators on vehicles and the public transportation base station;
   - Double-checking communications with all relevant parties;
   - Locating shelters and evacuation points;
   - Determining the special needs of people to be evacuated;
   - Staying aware of changes in command as the situation develops; and
   - Referring all media requests to the staff member identified as the system's spokesperson or public information officer (PIO).
4. Has public transportation operations/base accomplished tasks such as the following?
   - Notifying support agencies that regular service will be eliminated or delayed;
   - Informing recipients of contract service;
   - Activating maintenance and support agreements for fuel, tires, wrecker support, and maintenance;
   - Retaining as much routine local service as is feasible;
   - Retaining all critical service delivery such as trips to dialysis sites; and
   - Determining if special equipment is required, such as filters, safety clothing, special eye protection, safety boots, fire-retardant clothing, or vehicle decontamination.

RESPONSE AND EVACUATION

When an evacuation plan is activated, implement all of the prior planning, but remain flexible enough to respond to new situations as they arise. Attend to the following details:

- Have drivers maintain separate evacuation logs, which will help with reimbursement and quantify the level of support provided.
- Have the system keep track of those passengers of age and passengers with disabilities who have already been transported to initial destinations so that such passengers can be picked up and delivered home, to an assembly site, or another approved location. Keep a list of the names, addresses, shelters, and disability of each passenger to ensure that passengers are returned or delivered to the proper locations. This list also helps healthcare providers find their patients.
- Bring healthcare providers along when evacuating a healthcare facility or nursing home to serve as vehicle aides or personal care attendants. Operators must remain focused on driving, so ideally these attendants should be from an outside agency. Avoid using paramedics for this purpose, because they will be needed for emergency response. Ensure that the system is aware of potential liability when working with volunteers. Seek advice from an attorney and consider developing and implementing a release form to be signed by volunteers.
- Determine refueling points. Vehicles stranded for want of fuel are of no help in evacuation efforts. Operators and managers need to be aware of the remaining fuel capacity, especially of vehicles removed from regular service delivery to accomplish evacuation duties. Ideally, readings from the last refueling should be quickly accessible in such circumstances so as to determine the remaining services distances possible. When evacuation can be planned, it is preferable to use only vehicles that have recently been fueled, if this can be determined. Alternative-fuel vehicles may have significant limitations in refueling options.
- Determine the locations of first-aid facilities. Operators may need this information for themselves or for passengers.
- Determine the locations of rest areas for operators. Evacuation work is mentally and physically draining. Operators need regular breaks if the work lasts more than a few hours. Enact a rest-and-rotation schedule if the evacuation continues beyond a normal shift.
- Establish a feeding schedule for public transportation operators. The Red Cross often handles such arrangements—be aware of Red Cross locations, and convey that information to drivers. Be aware of danger zones and off-limits areas and update information on such areas constantly, especially if there is a biohazard, chemical spill, or nuclear material release.
- Identify buses and paratransit vehicles that may be used as rest areas and to provide shelter from heat, cold, or rain. Let the IC know which ones are available and where they are located.

RECOVERY AND RESTORATION OF SERVICE

The job is not over when the emergency is under control—what occurs after the emergency is under control often is the most difficult and complex phase of evacuation. Vehicle operators and passengers often are exhausted physically and emotionally, so staying focused on bringing the operation to a successful close is important. Accomplish the following actions:

- Transport individuals home. Start only after the IC gives an approval. This usually involves taking people from central assembly sites to their homes. It may work best to consolidate transit and paratransit vehicles going to support facilities other than residences (for people who lost their homes).
- Account for all passengers who are of age or who have disabilities. Use a list to make sure each individual is accounted for and returned home. Ensure that they physically enter the building or that someone is there to assist them.
- Make the system available to transport first responders and support personnel. These people probably will have moved repeatedly as the emergency developed and will need to be returned to their cars or homes.
- Remain on site until the last transit and paratransit vehicles are released. Have the on-site manager remain until the last vehicle is off the road and the last evacuee is accounted for. This also is a good time for operators to collect their thoughts, gather information, and exchange impressions with emergency staff.
- Release public transportation and paratransit vehicles as they become free. A suggested rule of thumb is to release augmentation resources first, then internal assets on a first-in, first-out basis.
- Collect log sheets and compile usage data. Have a designated representative at the depot, garage, or yard collect and review all log sheets before operators are released. Ensure that buses are refueled and after-operations are performed.
- As soon as possible after the incident, begin the reimbursement process. Coordinate with the responsible agency to determine accounting codes and procedures for submitting invoices for incurred costs, as well as interfacing with any contracted service providers used during the emergency.
- Cycle all public transportation and paratransit vehicles through a maintenance check.

- As soon as possible, resume normal operations. Re-establishing a familiar routine is one of the best ways to calm operators and passengers after a crisis.
- Begin preparing an after-action report, as soon as possible after the emergency, seeking comments from everyone involved. Vehicle operators are excellent sources for establishing what worked well, in addition to the identification of areas for improvement. The tone of the written report may very well be critical but should also remain fair.
- Generate a post-incident critique. Use this opportunity to build relationships and learn what others thought of the system's participation.

SECTION **6**

TERRORISM AND PUBLIC TRANSPORTATION

The first five sections of this Guide address all-hazards emergency planning to enhance general transportation mobilization capabilities. Sections 6 and 7 deal with special considerations associated with heightened threats from terrorism. This section provides the results of analysis performed to identify trends in available historical data on acts of terrorism that have targeted surface-based transportation. Section 7 provides general recommendations for emergency mobilization under a range of potential terrorism scenarios. Sections 6 and 7 are provided to familiarize transit operators with background on terrorism, because of its infrequent incidence in U.S. transit systems.

DEFINING TERRORISM

The U.S. Department of Justice classifies terrorism as a violent act or an act dangerous to human life, in violation of the criminal laws of the United States or any segment thereof to intimidate or coerce a government, the civilian population of or any segment thereof, in furtherance of political or social objectives.

The FBI further divides terrorism into two categories, domestic and international.

- Domestic terrorism involves groups or individuals whose terrorist activities are directed at elements of the U.S. government or population but are not supported, sponsored, or guided by foreign governments or groups.
- International terrorism involves groups or individuals whose terrorist activities are foreign-based and/or directed by countries or groups outside the United States or whose activities transcend national boundaries.

Given that all federal terrorism assistance programs derive from congressional acts and laws, a common definition is helpful. Under U.S. law, 18 USC Sections 2332a and 921(a)(4)(A), terrorism acts are defined by the weapons used, including the following:

- Bombs, grenades, or propellant charges of more than four ounces;
- Missiles having an explosive or incendiary charge of more than one-quarter ounce;
- Mines or other similar devices;
- Any weapon designed or intended to cause death or bodily injury through the release, dissemination, or impact of toxic or poisonous level chemicals, or their precursors;
- Devices involving a disease organism; and
- Devices designed to release radiation or radioactivity at a level dangerous to human life

The last three, commonly termed weapons of mass destruction (WMD), include Chemical, Biological, Radiological, and Nuclear (CBRN) agents, as well as explosives, incendiary devices, and accelerants with the potential to produce mass casualties.

HISTORICAL RECORD OF INCIDENTS

The Terrorism and Violent Crime Chronology Database is a compilation of all documented global terrorist incidents/acts of extreme violence from January 1, 1901, through December 31, 2002. This comprehensive database is most useful for establishing occurrences of public transportation terrorism as a segment of the larger universe of global terroristic events.

DATABASE

Data for this chronology was compiled from databases maintained by the Departments of Defense and State, academic and non-profit organizations, and an extensive search of academic journals, domestic and international newspapers, and reports from industry associations. Source data was listed in textual form, cross-checked for accuracy, and compiled into database format for easy manipulation. Data characteristics captured for each event in the database include the following:

- Date the incident occurred;
- Description of the incident;
- Method of terrorism
  - Bombing,
  - Car bombing,
  - Hijack/hostage,
  - Assault, ambush and/or assassination,
  - Standoff/shots fired,

  - Mechanical sabotage,
  - Bomb threat,
  - Grenades/bombs thrown,
  - Arson,
  - Chemical, biological, or radiological attack,
  - Other methods, and
  - Failed attempts;
- Number of fatalities and injuries;
- Target of the terrorism
  - Subways and trains,
  - Subway and train stations,
  - Rail systems,
  - School buses,
  - Tour buses,
  - Other buses,
  - Bus terminals/stops,
  - Vehicles,
  - Bridges,
  - Tunnels,
  - Aircraft,
  - Airports,
  - Other (ships, ferries, etc.), and
  - Non-transportation (buildings, people, etc.); and
- Source(s) of the data.

Specific data sources used in the Terrorism and Violent Crime Chronology Database include chronologies and incident lists compiled by the following organizations.

- Office of Counter-Terrorism, U.S. State Department, http://www.state.gov/s/ct/. It publishes *Patterns of Global Terrorism*, an annual summary of global terror incidents, which includes a detailed chronology of worldwide terrorism events occurring between 1995 and 2000.
- Office of the Historian, Bureau of Public Affairs, U.S. State Department, http://www.state.gov/r/pa/ho/pubs/fs/5902.htm. It published *Significant Terrorist Incidents, 1961-2001: A Chronology* on October 31, 2001, which catalogs major terrorist events since 1960.
- Mineta Transportation Institute (MTI), San Jose State University, transweb.sjsu.edu/pubs.htm. *Protecting Surface Transportation Systems and Patrons from Terrorist Activities* contains a detailed chronology of over 600 global terror incidents against surface transportation targets.
- International Policy Institute for Counter-Terrorism (ICT), http://www.ict.org.il/. It is a non-profit research institute and think tank dedicated to developing innovative public policy solutions to international terrorism. The website provides a substantial database of global terrorist activity.
- Center for the Study of Hate and Extremism, California State University, http://www.hatemonitor.org/index.html. The Center specializes in the analysis of hate crime, terrorism, and legal issues and has compiled a chronology of over 140 terrorism incidents.
- Centre for Defense and International Security Studies (CDISS), http://www.cdiss.org/. CDISS is an interdisciplinary research center based in the Department of Politics and International Relations at Lancaster University in the United Kingdom. The website provides access to The CDISS Database: Terrorist Incidents 1945 to 1998, a database organizing 53 years of terror strikes following World War II.
- MILNET, http://www.milnet.com/. This website lists a history of acts of terrorism, starting in 1968 and ending in 1986. The site also provides a brief list of events occurring since 1986.

NEWS SOURCES

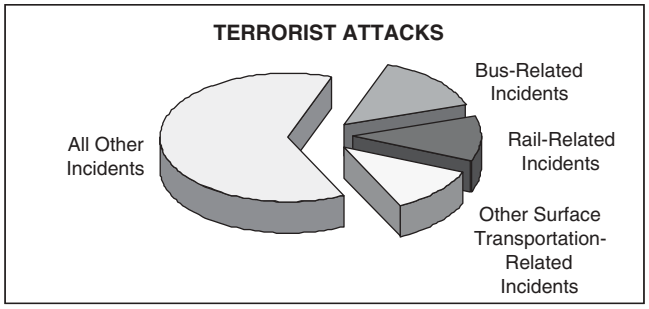
To identify recent events, the following news sources were used and are cited in the database:

- Africa News;
- Agence France Presse;
- Associated Press;
- British Broadcasting Corporation;
- *The Belfast Newsletter;*
- *Calgary Herald;*
- Cable News Network;
- *The Chicago Tribune;*
- *The Daily Telegraph* (Sydney);
- Deutsche Presse-Agentur;
- *Edmonton Journal;*
- *Evening Times* (Glasgow);
- *The Gold Coast Bulletin* (Queensland);
- *The Independent* (London);
- *The Jerusalem Post;*
- *Daily Mirror* (UK);
- *The Nation* (Thailand);
- *The New York Times;*
- The Press Trust of India;
- *Scottish Daily Record;*
- *The Statesman* (India);
- *Toronto Star;*
- United News of Bangladesh; and
- *The Washington Post.*

The Terrorism and Violent Crime Chronology Database contains fields for source designation. Every entry in the database is attributed to its source. For some incidents, the database used more than one source to gather information. In instances of multiple sources, a second field is provided to ensure that all sources used were recorded.

RESULTS

Between January 1, 1901, and December 31, 2002, the Database includes 3,853 total global terrorist incidents and acts of violence. As indicated in Figure 6-1:



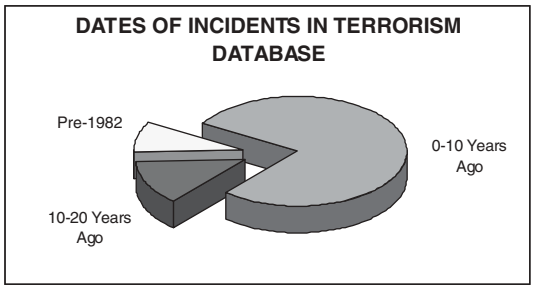
Total Attacks

Total Incidents	Bus-Related Incidents	Rail-Related Incidents	Other Surface Transportation-Related Incidents	All Other Incidents
3856	554	438	442	2422

Figure 6-1. Total attacks in database by target, 1901 to 2002.

- 1,434 (37 percent) relate to surface transportation;
- 554 (14 percent) relate to bus transportation (including public and private commuter, school, and tour vehicles, and bus terminals, shelters and stops);
- 438 incidents (11 percent) relate to rail transportation (including subways, commuter rail, rail terminals and yards); and
- 442 incidents (11 percent) relate to other surface transportation targets (including roads, roadblocks, tunnels, bridges, and vehicles such as automobiles, trucks, and motorcycles).

Incidents included in the database reflect better methods for reporting and cataloguing events over the last two decades, and the increasing numbers of attacks, particularly in the mid-1990s. As indicated in Figure 6-2, 91 percent of events occurred in the last 20 years, with only 9 percent of events (or 347 incidents) occurring before 1982.



Dates of Incidents

0-10 Years Ago	10-20 Years Ago	Pre-1982
78%	13%	9%

Figure 6-2. Dates of reported incidents.

Bus-Related Targets

The Database partitions bus-related incidents into four target categories: Bus Terminal/Bus Stop, School Bus, Tour Bus, and Other Bus (see Figure 6-3). Other Bus includes both private and public commuter bus service, as well as bus shuttles operated for various purposes (e.g., airports, companies and attractions).

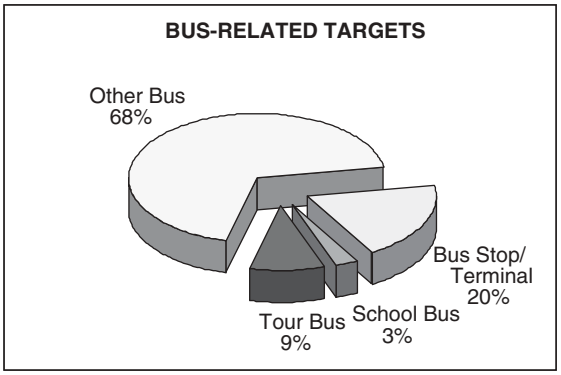
Because of events with multiple targets, the Database contains 554 bus-related incidents but establishes 563 bus-related targets. This discrepancy is the result of terrorist attacks in which two or more types of assets were targeted (e.g., a bus and the station at which it was parked). This analysis, derived from target totals, not incident totals, indicates the following:

- Approximately 80 percent of events targeting bus transportation attack bus vehicles;
- 20 percent of incidents target bus terminals and stops; and
- Private and public commuter bus vehicles are by far the most common targets of bus-related terrorism.

Methods Used Against Bus-Related Targets

The Database uses 12 terrorist methods to organize data. All 12 have been used against bus-related targets (see Figure 6-4). The 554 incidents against bus transportation involved 584 distinct methods of attack. Twenty-four incidents involved multiple bus-related targets (4 percent of attacks on bus-related targets). Armed assault coupled with grenades/bombs thrown is the most common mixed method form of attack. Additional analysis indicates the following:

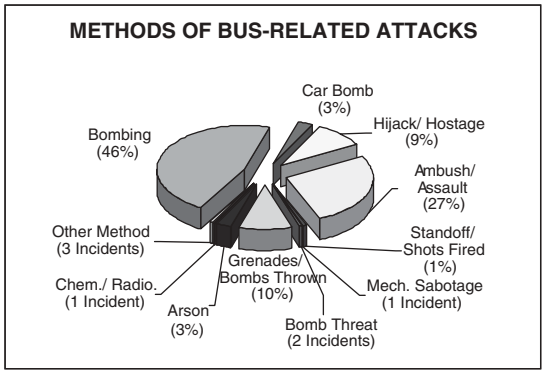
- Bombings (including car bombs against facilities and vehicles) account for 52 percent of attacks against bus transportation;



Bus-Related Targets

School Bus	Tour Bus	Other Bus	Bus Terminal/ Bus Stop
3%	10%	69%	20%

Figure 6-3. Bus transportation targets, 1901 to 2002.



Bus-Related Methods

Bombing	Car Bomb	Hijack/ Hostage	Ambush/ Assault	Rocket/ Mortar	Standoff/ Shots Fired
46%	3%	9%	27%	1%	1%
Mech. Sabotage	Bomb Threat	Bombs Thrown	Arson	CBRN	Other Method
< 1%	< 1%	10%	3%	< 1%	< 1%

Figure 6-4. Methods of bus attacks, 1901 to 2002.

- Armed assaults account for 28 percent of incidents against bus transportation;
- The use of grenades/Molotov cocktails accounts for 10 percent of incidents against bus transportation;
- Hijackings accounted for 9 percent of incidents against bus transportation;
- Arson accounted for 3 percent of incidents against bus transportation;
- Shots fired/standoff accounted for 1 percent of incidents against bus transportation;
- Rocket/mortar attacks accounted for 1 percent of incidents against bus transportation;
- Bomb threats resulting in major disruptions accounted for 0.4 percent of incidents against bus transportation;
- Sabotage of operations accounted for 0.2 percent of incidents against bus transportation; and
- Chemical and radiological attacks (including mace, tear gas, and hospital waste) accounted for 0.2 percent of incidents against bus transportation.

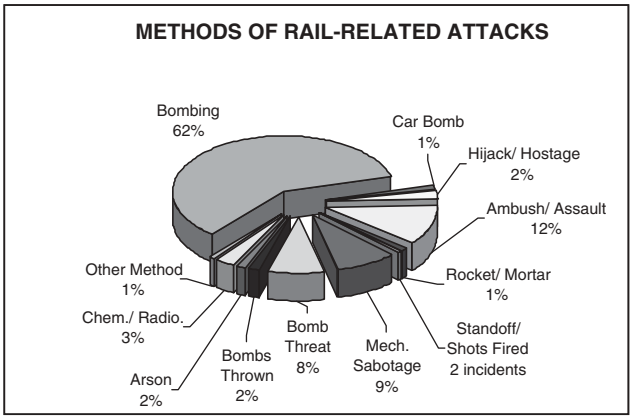
The most common tactics employed against bus transportation included

- Explosives introduced onto a vehicle or station in abandoned backpacks, briefcases, or suitcases;
- Weapons fired on buses or into stations;
- Suicide bombers wearing or carrying explosives;
- Cars or trucks loaded with explosives that were crashed into bus stations and facilities or bus vehicles; and
- Mines/grenades placed in the roadway or thrown at buses.

Methods Used Against Rail Surface Transportation Targets

The Database also categorizes surface transportation targets relating to rail transportation, including Subway/Train, Subway/Train Station, and Rails/Track. Figure 6-5 depicts the methods used against these targets.

- The 438 incidents against rail surface transportation targets used 457 distinct methods of attack. Seventeen attacks on rail surface transportation involved multiple methods (4 percent of attacks on rail-related targets). Sabotage, followed by armed assault, was the most common mixed-method form of attack against rail-related targets.
- As with bus transportation, bombings and armed assault composed the majority of attack methods:
  - Bombings (including car bombs against facilities and vehicles) accounted for 62 percent of attacks against rail transportation; and
  - Armed assaults and mechanical sabotage accounted for 21 percent of incidents against rail transportation.
- Sabotage of operations accounted for 9 percent of incidents against rail transportation, a major difference from bus-related attacks, where less than 1 percent of attacks involved sabotage.
- Hijackings accounted for 2 percent of incidents against rail surface transportation.
- Bomb threats resulting in major disruptions were involved in 8 percent of incidents against rail transportation. This was a significant difference from bus transportation (<1%), and largely reflected the sustained Irish



Rail Surface Methods

Bombing	Car Bomb	Hijack/ Hostage	Ambush/ Assault	Rocket/ Mortar	Standoff/ Shots Fired
62%	1%	2%	12%	1%	< 1%
Mech. Sabotage	Bomb Threat	Bombs Thrown	Arson	CBRN	Other Method
9%	8%	2%	2%	3%	1%

Figure 6-5. Methods of rail attacks, 1901 to 2002.

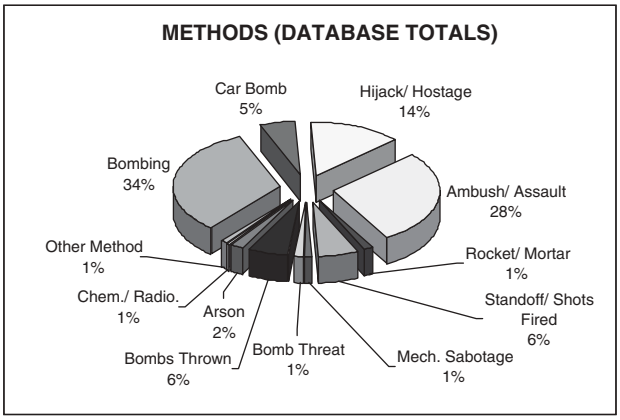
Republican Army (IRA) campaign against the London Underground.
- The use of grenades/Molotov cocktails accounted for 2 percent of incidents against rail transportation. These events were more common against bus transportation.
- As with bus transportation, attacks involving arson, CBRN materials, and supporting infrastructure accounted for less than or about 5 percent of incidents. The Sarin attack on the Tokyo subway system in 1995 remained the most significant use of CBRN agents against public transportation. Other incidents in this category included the use of irritants such as mace, capsicum pepper spray, and tear gas.

As indicated in Figure 6-6, over the period covered by the database, when compared to the total attack methods recorded in the Database, bus and rail transportation targets were

- More likely to experience bombings than the combined results for all other targets;
- Slightly less likely to experience armed assaults/ambushes/assassinations;
- Significantly less likely to experience hijack/hostage situations; and
- Comparable on the remaining methods of attack.

EMERGING THREATS

Since 1900, worldwide, there have been fewer than 100 confirmed attacks using chemical and biological agents that produced casualties. These attacks have generated approximately 130 fatalities and less than 4,000 injuries. The 1995 Aum Shinrikyo Sarin gas release on the Tokyo subway was perhaps the most serious. The incident resulted in 14 total fatalities (12 shortly after the incident and 2 more in the following 16 months); more than 100 cases of chemical poisoning; 1,000 cases of mild contamination; and approximately 4,500 worried well who required decontamination for psychological, rather than physical, reasons.



Bombing	Car Bomb	Hijack/ Hostage	Ambush/ Assault	Rocket/ Mortar	Standoff/ Shots Fired
34%	5%	14%	28%	1%	6%
Mech. Sabotage	Bomb Threat	Bombs Thrown	Arson	CBRN	Other Method
1%	1%	6%	2%	1%	1%

Figure 6-6. Total methods in database, 1901 to 2002.

Since the mid-1990s, however, the threatened use of chemical and biological agents has increased, tripling in number.[1] As indicated in Table 6-1, the number of incidents related to chemical and biological weapons for 2001 increased rapidly in comparison to 2000, but this is largely the result of an astonishing number of anthrax hoaxes following the anthrax-laden letter attacks in fall of 2001. On the other hand, the number of uses, possessions, attempted acquisitions, plots, and threats with possession actually decreased. Table 6-2 provides the break-down of these incidents by type.

According to analysts at the Center for Nonproliferation Studies and from the perspective of WMD terrorism studies, the year 2001 was unprecedented. The mass-casualty terrorist attacks of September 11, 2001, demonstrated a willingness of some terrorists to kill large numbers of people indiscriminately to achieve their objectives.[2] The subsequent attacks that used letters filled with *Bacillus anthracis* spores marked the first time a classical biological warfare agent was successfully used, although crudely disseminated, against a civilian population, possibly by a non-state entity.

However, empirical data for the year 2001 does not suggest that a mass-casualty CBRN terrorist attack is more likely in the near future than in the past. In fact, the overall number of uses, possessions, attempted acquisitions, plots, and threats with possession of an agent remained very low in 2001.

In the United States, a mass-casualty attack with a chemical weapon has never occurred and, until the recent anthrax mailings, only one successful incident of biological terrorism has been reported. In 1984, members of the Oregon-based Rajneeshee cult deliberately contaminated restaurant salad bars in the town of The Dalles with salmonella bacteria, affecting 751 people temporarily with a diarrhea illness. Their objective was not to kill people but to sicken voters and keep them at home so as to affect the outcome of a local election in the cult's favor. Other major U.S. chemical incidents involving casualties include the 1989 delivery by racial extremists of a package containing a tear-gas bomb to the Atlanta office of the National Association for the Advancement of Colored People (NAACP), which injured eight; and attacks with butyric acid at abortion clinics in Houston and Florida in 1998, which injured 14 people.

[1] Adam Dolnik and Jason Pate, *2001 WMD Terrorism Chronology*, Chemical and Biological Weapons Nonproliferation Program (CBWNP), Monterey Institute of International Studies Center for Nonproliferation Studies (CNS). Available at http://cns.miis.edu/pubs/reports/cbrn2k1.htm.

[2] Ibid.

TABLE 6-1 Incidents involving chemical and biological weapons, materials and agents, 2000 and 2001[3]

	Uses, Possessions, Attempted Acquisitions, Plots, and Threats with Possession (by Region)		Hoaxes (by Region)	
Region	**2000**	**2001**	**2000**	**2001**
United States / Canada	7	7	22	566
Asia	16	5	0	7
Europe	3	5	0	11
Middle East & North Africa	11	1	0	4
Latin America	0	2	0	5
Russia & NIS	7	3	3	3
Sub-Saharan Africa	2	0	0	1
Australia & Oceania	1	2	0	6
Worldwide	1	0	0	0
TOTAL:	**48**	**25**	**25**	**603**

TABLE 6-2 Incident by type of event[3]

Event	2000	2001
Use of Agent	35	14
Possession	6	2
Attempted Acquisition	2	1
Plot Only	4	6
Threat with Possession	1	1
Hoax / Prank / Threat	**25 (22 United States)**	**603 (561 United States)**

Chemical agents most commonly employed by terrorist groups in actual and planned attacks include cyanide (by far the most popular), rat poison, VX nerve agent, Sarin nerve agent, butyric acid, mercury, and insecticides. Biological agents include anthrax, botulinum toxin, salmonella bacteria, and HIV virus.

Many terrorists implicated in actual attacks were not members of traditional terrorist organizations, but rather groups motivated by religion or nationalist-separatist philosophies or single-issue groups such as anti-abortion or animal-rights advocates. The rest of the attacks were committed by lone terrorists, right wing or left wing groups, and unknown actors.

Since 1997, the FBI has opened approximately 800 investigations involving chemical, biological or nuclear materials. About 80 percent of these cases turned out to be hoaxes, and most of the remaining cases consisted of threats, small-scale attacks, and failed attempts at delivery.

[3] Adam Dolnik and Jason Pate, *2001 WMD Terrorism Chronology,* Chemical and Biological Weapons Nonproliferation Program (CBWNP), Monterey Institute of International Studies Center for Nonproliferation Studies (CNS). Available at http://cns.miis.edu/pubs/reports/cbrn2k1.htm.

SECTION 7

TERRORISM RESPONSE—CAPABILITIES ASSESSMENT, PREVENTION, AND AWARENESS

Transportation systems should prepare to prevent, identify, mitigate (if possible), and respond to emergencies resulting from terrorism. Section 3 of this Guide discussed in detail the use of incident management organizations to support emergency response. This section identifies specific recommendations for addressing terrorism.

The public transportation industry, working cooperatively with local, state, and federal agencies, is building a consensus about how to enhance emergency preparedness capabilities for terrorism. As shown in Figure 7-1, this approach requires the following:

- Identifying critical awareness and preparedness functions and defining critical facilities, equipment, systems, and structures to be protected;
- Incorporating these functions and protection requirements into daily operations to ensure their continued relevance under heightened threat conditions;
- Assessing effectiveness through new procedures and evaluations (e.g., proficiency testing, facility breach assessments and penetration testing, drills, simulations, and exercises);
- Revising functions and methods, based on the results of implementation and lessons learned; and
- Sharing best practices throughout the industry and with partners at the local, state and federal levels of government.

The approach shown in Figure 7-1 begins with an identification of transportation system priorities about response to a threatened or actual act of terrorism. Typical priorities within the public transportation industry are presented in Table 7-1.

In addressing these priorities, transportation systems have developed programs that emphasize the following:

- Assessment of existing capabilities,
- Prevention,
- Awareness, and
- Incident response protocols.

Through these programs, transportation systems are working to ensure well-prepared employees, assigned roles and responsibilities, clear chains of command, and effective communication and coordination with local responders. Each emphasis area is discussed below.

ASSESSMENT OF EXISTING CAPABILITIES

When beginning to plan for terrorism preparedness, many transportation agencies establish a list of assumptions reflecting the capabilities of the system to respond to specific types of circumstances and clarify when and how the system would need assistance from local, state, and federal responders. These assumptions are an important starting point for conversations with local responders and emergency planning agencies about transportation capabilities to support response to an incident on its vehicles or within its facilities, as well as response to a community-wide incident. Typical assumptions identified by transportation systems are as follows:

- The system and its service area are vulnerable to terrorist incidents. Incidents may be directed against the system, its employees, passengers, and infrastructure, or against other locations within the agency's service area.
- Terrorist incidents may involve biological, nuclear, incendiary, chemical, and explosive (B-NICE) materials and may include arson, shootings, kidnapping or hostage taking, sabotage, and similar activities.
- Generally, the system's resources and authority for combating terrorist attacks may be very limited; therefore, the system should work with the local community to establish and maintain a program to prepare for and manage the effects of terrorist events.
- An effective assessment program will provide the local community with continuing assessment of the system's vulnerability to terrorism, planning and training to prepare for and respond to such events, and cooperative development of operational concepts and plans to be used to manage an actual or suspected event in the transportation environment. Such a program will also identify the resources and capabilities of the transportation agency to support community response to terrorist events.
- First responders in an actual or suspected terrorist event occurring at or near the transportation system are likely to

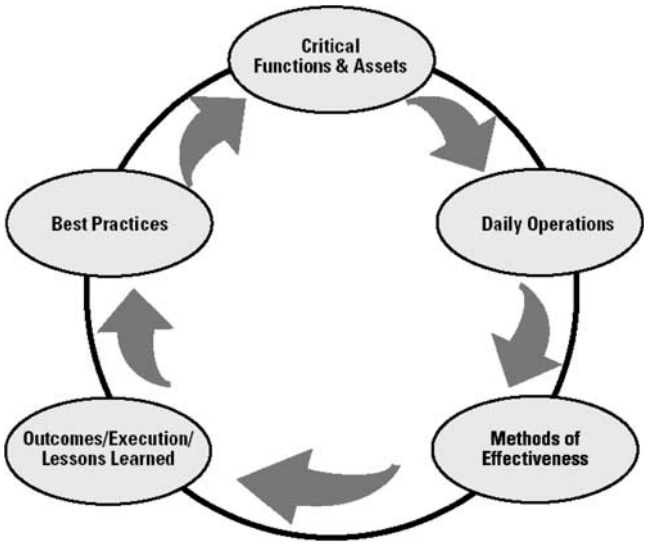


Figure 7-1. Approach to integrating terrorism planning.

be drawn from employees and local emergency responders, including fire services, law enforcement, hazardous materials, emergency medical services, and/or other public safety departments.

- The transportation system, if targeted in the terrorist event, is likely to have personnel on the scene. Transportation personnel should be trained to recognize the event, report specific information to the transportation operations control center, isolate the event, evacuate the scene if appropriate because of the local conditions, and wait at the scene or evacuation site for local first responders. Transportation personnel should be trained to recognize the potential for secondary devices and security issues at the event and evacuation sites.
- If a devastating event destroys part of the transportation system and/or incapacitates transportation personnel on the scene, transportation supervisors should be dispatched to assess the scene from a safe vantage point and provide information to first responders.
- Effective response to chemical and biological weapons may require specialized equipment to detect and identify chemical or biological agents, mass decontamination

TABLE 7-1 Public transportation system priorities

- Improving capabilities to preserve life in all threatened/actual terrorism events, particularly those involving explosives and the potential release of CBRN agents.
- Improving capability to implement and support the incident command system and to work with incident commanders established by local responders.
- Improving technical and procedural communication links with local response agencies.
- Developing a coordinated program of planning, training, and exercises with local responders.
- Integrating into local responder automated threat warning systems and local responder automated emergency response and incident management systems.
- Enhancing information sharing regarding threats, training, community resources, and major events planning.
- Enhancing existing or developing mutual aid agreements.
- Developing capabilities to prevent a threatened act and/or expansion of an actual incident, including ability to locate, access, render safe, control, contain, recover, and dispose of a terrorist device that has not yet functioned.
- Developing coordinated plans for evacuating, rescuing, decontaminating, transporting, and treating victims in a major terrorism event.
- Enhancing capabilities to prevent secondary casualties as a result of contamination, collateral threats, or secondary devices.
- Managing emergency public information to ensure adequate and accurate communications with the public from all involved response agencies.
- Improving capabilities to restore essential services and mitigate suffering and loss.

capabilities, the means to treat mass casualties (including conducting triage and using specialized pharmaceuticals that have a narrow window of effect) and the capability to deal with mass fatalities. Because the system probably will not be able to provide these special and specific capabilities, the system should rely on local, state, and federal responders.
- Recovery from a terrorist attack can be complicated by the presence of persistent agents, additional threats, extensive physical damages, and mass casualties.
- All security and emergency response planning will be coordinated with local responders and will follow the basic guidelines established in the community emergency plan and/or terrorism incident annex. The transportation system will integrate its activities into the ICS established by local responders.

Transportation System Activities To Consider In Developing Plans And Procedures

Depending on the size of the system and the service levels provided, transportation personnel may assume various roles in supporting response to a terrorist event, a precursor event, or a suspected event. When developing plans and procedures for these activities, based on the above-identified assumptions, transportation systems should commit to preparedness programs that consider the following elements:

- Clear identification of roles and responsibilities of transportation operators, dispatchers, supervisors, and facilities/station managers;
- Recognition of passenger communications and public information requirements and preparation of advance materials, such as station announcements and press releases, as well as specific messages to be relayed to affected passengers at the scene;
- Training of employees to recognize potential terrorism events and their precursors and to report these events accurately and in a manner useful for internal review and investigation; and
- Ensuring transportation supervisors will coordinate closely with the transportation operations control center. If the report is a legitimate event or suspicious occurrence for which there is no readily identifiable explanation, local responders will be notified according to protocols established between the transportation system and the responders.

Transportation personnel at an incident scene will act to isolate the scene, evacuate potentially affected persons when appropriate and necessary, deny entry to the scene, and reroute service to address the scene location and specific characteristics of the incident. Addressing the scene location and specific characteristics of the incident may include the following response measures for suspected agent release

- On a vehicle (e.g., immediate stop and evacuation, movement to nearest station/safe location then evacuation, movement to sparsely populated station/safe location then evacuation, and ventilation issues);
- In a station (e.g., evacuation/station closure, vehicle movement through station, notification of transportation personnel in station, public address announcements, scene control at station, and ventilation issues); and
- In multiple affected vehicles and/or stations (e.g., evacuation, vehicle movement, scene control, public communications, and ventilation issues)
  - Notification procedures (e.g., internal transportation, local law enforcement, fire services, hazardous materials unit, local hospital(s), FBI and other mutual aid partners, and other state and regional specialized units); and
  - Security considerations for evacuation site(s) (e.g., secondary devices/attacks).

In addition, transportation personnel will

- Have a process in place for mobilizing supervisors and other transportation personnel to the scene(s) of the suspected/actual incident(s);
- Be able to provide arriving responders with a resource inventory of transportation materials and equipment available to support response at and near the scene and will support the identification of staging areas;
- Understand how to integrate their response into the local responder ICS and will support first-responder field operations with the use of transportation vehicles, equipment, and personnel;
- Support local responders in performing on-site searches of transportation stations, vehicles, and facilities;
- At the scene, attempt to contain affected and potentially affected persons, discourage self-evacuation, and identify all persons present at the incident;
- Have clear procedures for station/facility closure and system suspension of service, as well as for the re-opening of stations/facilities and the restoration of suspended service;
- Support HAZMAT management and cleanup after an incident.

For information, see FTA's *Guidelines for Managing Biological and Chemical Releases in Rail Tunnel Systems*.

PREVENTION

To address the range of credible threat scenarios, agencies have established baseline security and preparedness levels

for passenger facilities and non-revenue facilities. Passenger baselines emphasize procedures and technologies to identify, report, investigate, and resolve objects, actions, substances, or people that do not belong in the open and accessible areas of the system. Infrastructure baselines focus on preventing access to unauthorized areas and critical system components by ensuring that those personnel who access these locations have legitimate need to be there and are sufficiently credentialed by the system. The objective of these baselines is to make it easier to identify those occurrences and activities that could portend a terrorist event, including the release of CBRN agents or the detonation of a planted device.

Passenger Prevention Baseline

To support the prevention of terrorist incidents in passenger service, transportation systems should consider the following.

Coordinate with Employees To Solicit Their Support and Involvement

Protecting passengers and revenue service is a critical function for employees. Since the September 11 terrorist attacks, transit executive leadership around the country has forged new partnerships with public transportation employees. Employees have contributed to system programs by sharing ideas; modifying equipment, technology, and procedures to enhance access control and intrusion detection; and developing recommendations for new policies and protocols. Other activities performed to improve the capabilities of employees to respond include

- Management meetings with operating and other employees to discuss security issues, solicit suggestions, and review proposals for technology and procedures being considered for implementation;
- Formal and informal management meetings with employee security committees, working groups, and union representatives to discuss threats and contingency planning and to address employee concerns about their safety and level of training to manage specific situations;
- Addressing security/preparedness performance as part of employee performance evaluation criteria;
- Providing paid time off or other benefits as rewards to employees who make security/preparedness suggestions that are implemented;
- Supporting employee participation in training courses offered by the National Transit Institute (NTI) and the Transportation Safety Institute (TSI); and
- Attending FTA's Emergency Preparedness and Security Forums.

Enhance Uniform Personnel Presence

Uniform personnel presence can be enhanced by

- Providing brightly colored safety vests to all transportation employees;
- Increasing police/security patrols on public transportation facilities and assigning 24-hour fixed posts to major stations under heightened threat conditions;
- Using extended shifts (12 hours), overlapping shifts, employee overtime, and expanded extraboard procedures to provide more personnel during special events and heightened threat levels;
- Using additional hires and contracts with local law enforcement to supplement existing programs or provide specific functions such as K9 units, employee training, security technology planning, and threat and vulnerability assessment;
- Using light-duty personnel to staff fixed posts in passenger stations; and
- Increasing coordination with vendors in transit stations, neighborhood watch and school security programs, and the media to promote awareness and vigilance.

Incorporate Security into Daily Inspection Procedures

This should include revision of vehicle pre-trip inspection procedures and forms to include security. During daily work routines, check garages, stations, depots, and terminals for suspicious activity, packages, or devices. Typical issues addressed during inspections are presented below for bus, light rail, and heavy rail service. These general recommendations were developed as a cooperative venture with industry, FTA, and NTI. Pages from the NTI Training Guide are included in Figures 7-2, 7-3, and 7-4. Additional information is available at http://www.ntionline.com.

Emphasize Good Housekeeping

Keep a clean and organized environment where materials and items are stored appropriately. This enhances the overall security and safety of a system by

- Making it easier to identify unusual objects or items that are out of place;
- Making it more difficult for a terrorist to hide something;
- Aiding first responders by making it easier to search for suspected devices;
- Enabling quicker rescue efforts; and
- Facilitating recovery from an incident.

(text continues on page 7-8)

BUS SYSTEMS

BUS OPERATIONS

Be alert to things that are suspicious or out of place at garages, depots, transfer stations and shelters. Also be observant of activity, people and vehicles along bus routes.

BUS OPERATORS

Make quick and efficient vehicle inspections part of your normal routine. The few minutes you spend doing it may save lives. During pre-trip inspections, layovers or when your bus has been unattended, look for suspicious packages, devices, wires, substances and signs of tampering.

BUS MAINTENANCE

When receiving or releasing vehicles look for suspicious packages, devices, wires, substances and signs of tampering. Quite often, if something is intentionally "planted" on a vehicle or in a facility, the mechanic or maintenance person will be the first to notice. If something seems out of the ordinary during an inspection, report it to your supervisor. In particular, check the engine compartment for foreign objects or a false compartment in the air filter area, additional wires from the battery and unusually clean components and devices. Inspect the fuel and air tanks for inconsistent and missing connections.

SIGNS OF VEHICLE TAMPERING

- Scratches or marks made by tools
- Unusually clean or dirty compartments
- Items attached to vehicles or objects with magnets or duct tape
- Open or disturbed compartments and cabinets

SECURITY SWEEP CHECK LIST

INTERIOR

- Floors
- Above, on and below seats
- Operator's area
- Steps
- Internal lift mechanism
- Compartments
- Lights

EXTERIOR

- Wheel wells
- Engine compartments
- Bus frame and underbody
- Exhaust system
- External lift mechanism
- Fuel and air tanks
- Rooftop area of CNG buses

On commuter buses, also check interior and exterior luggage compartments and lavatories.

Figure 7-2. Bus security information.[1]

[1] National Transit Institute. *System Security Awareness for Transit Employees,* Training Guide, 2002, p. 8.

LIGHT RAIL SYSTEMS

LIGHT RAIL OPERATIONS

Be alert and proactive in looking for suspicious people, vehicles, activities, packages, devices and conditions along the right-of-way, in stations and facilities, and on the trains. Check around and in open and idle spaces and along walls.

STATIONS

- Light posts and fixtures
- Trash containers
- Benches
- Stairs/escalators
- Information booths
- Electrical cabinets
- Lights

RIGHT-OF-WAY

- Between and under rails and switches
- Fences and retaining walls
- Electrical system components
- Signal cabinets, poles and lines
- Communication lines and equipment
- Bridge supports and beam
- Tunnels

MAINTENANCE YARDS/SHOPS

- Perimeter fences and walls
- Light fixtures
- Service platforms and bays
- Storage areas and sheds
- Electrical cabinets
- Between and under rails
- Around cars and vehicles

LIGHT RAIL VEHICLES

Make quick and efficient vehicle inspections part of your normal routine. Check rail cars for suspicious packages, devices, wires, substances, and signs of tampering. If something seems out of the ordinary during an inspection, report it to your supervisor.

INTERIOR

- Floors and seats
- Operator's area
- Stairs and wheelchair ramps
- Above, on and below seats
- Articulation shroud/baffle
- Compartments and lights

EXTERIOR

- Undercar equipment area
- Truck and truck frame
- All equipment around the coupler area
- Articulation joint
- Electrical and other compartments
- Pantograph and rooftop cabling[b]

[b]Note: The roof of a LRV is a High Voltage area. Do not contact roof components.

Figure 7-3. Light rail security information.[2]

[2] National Transit Institute. *System Security Awareness for Transit Employees,* Training Guide, 2002, p. 9.

HEAVY RAIL OPERATIONS

Be alert and proactive in looking for suspicious people, vehicles, activities, packages, devices and conditions along the right-of-way, in stations and facilities and on the trains. Check around and in open and idle spaces and along walls.

STATIONS

- Vending machines
- Trash containers
- Turnstiles
- Kiosks/information booths
- Stairs/escalators
- Phone booths
- Benches
- Lights and signs

RIGHT-OF-WAY

- Between and under rails and switches
- Fences and retaining walls
- Electrical system components
- Signal cabinets, poles and lines
- Communication lines and equipment
- Perimeter fences and retaining walls
- Culverts/overpasses

RAIL CAR

- Floors and floor compartments
- Space between cars
- Operator's area
- Undercar equipment area
- Above, on and below seats
- Truck and truck frame
- Interior compartments and lights

TUNNELS

- Cable and pipe chases and ductwork
- Exits stairs and shafts
- Behind and beneath cables and pipes
- Signal cabinets and lines
- Electrical system components
- Communication lines and equipment
- Passage ways and services rooms
- Between and under rails

MAINTENANCE YARDS/SHOPS

- Perimeter fences and walls
- Light fixtures
- Service platforms and bays
- Storage areas and sheds
- Electrical cabinets
- Between and under rails
- Around cars and locomotives

ELEVATED STRUCTURES/BRIDGES

- Footings, piers and abutments
- Hidden areas of supports and beams
- Stairwells and walkways
- Service rooms and cabinets
- Between and under rails
- Decking and railings

Figure 7-4. Heavy rail security information.[3]

[3] National Transit Institute. *System Security Awareness for Transit Employees,* Training Guide, 2002, p. 10.

Enhance Connections to Passengers

This can be done through

- Regular public address announcements to remind passengers and employees to keep control of their belongings and to report anything out of the ordinary;
- Rider communications and posters in stations and vehicles;
- Installation of communication devices/emergency phones that provide a direct link between riders and transportation personnel;
- Improvements in off-hours waiting areas by locating them closer to token booths or by stationing light-duty personnel nearby;
- Establishment of direct 1-800 numbers or cell phone star numbers to report suspicious activity and other concerns;
- Distribution of flyers and newsletters on security upgrades and programs and of posters emphasizing recommendations for passengers to report suspicious activity;
- Revised/upgraded websites to more quickly convey information such as service disruptions to riders, employees, the news media, and others; and
- Creation of public education and awareness campaigns to communicate agency rules on left behind/unattended packages and to encourage everyone to be the eyes and ears of the agency and report suspicious activity.

Enhance Coordination on Maintenance and Construction Performed Within Sight of Passengers

This can be accomplished by

- Promoting improved coordination on (1) work to be performed by employees, contractors, and vendors in stations or facilities and (2) the likely equipment and materials that may be used for this work as well as its location; and
- Including, where necessary, vendor credentialing and express authorization from transportation operations control to access the work site, use of escorts for contractors and vendors, and fixed post security to protect the work site.

Improve Surveillance in Passenger Facilities and Vehicles

This can be accomplished through

- Installation of CCTV cameras with digital recording capabilities in stations and transfer centers with feeds to station manager booths and/or the operations control center;
- Installation of surveillance cameras on vehicles with digital recording capabilities;
- Installation of monitors on station platforms with system travel and safety information and security messages on suspicious activity and left behind/unattended items;
- Re-design/installation of passenger kiosks with safety and security features, such as blue lights or emergency phones, as well as distribution racks for agency materials;
- Closing off or limiting access to remote staircases, passageways, and corridors, and closing off restrooms;
- Removing obstacles to clear lines-of-sight on station platforms, and painting station platforms and walls white to enhance visibility and safety;
- Sealing off spaces that permit concealment (such as under the stairs in stairwells), including structural nooks and crannies and overhead ducting;
- Reinforcing natural surveillance through station announcements supporting public safety and security and revised policies on left behind/unattended objects;
- Installing fencing and CCTV in station parking lots;
- Using reinforced concrete barriers or portable steel barriers to block access to sensitive areas within stations and/or direct pedestrian traffic;
- Removing trash containers and recycling bins from revenue areas or replacing them with explosive containment models; and
- Moving or removing bicycle lockers and newspaper/food vending machines from station areas and underpasses.

Coordinate Enhanced Physical Inspection of the System in Response to Heightened Threat Levels

This can be achieved by

- Additional vehicle sweeps at the end of each vehicle run or tour;
- Daily and/or hourly track walks in critical areas, or the posting of fixed personnel at key locations;
- Daily (or even more frequent) track walks or patrols in track areas with easy public access and additional patrols of stations and facilities;
- Hourly walk-throughs of stations by station managers;
- Immediately removing, inspecting, and destroying any unattended or left behind items from stations and vehicles; and
- Station closures/service modifications for highly vulnerable locations served by the agency.

Infrastructure Prevention Baseline

To support infrastructure protection, preventing unauthorized access to exclusive areas in the public transportation environment has been emphasized. Key areas of concern include critical operating facilities (e.g., tunnels, bridges, and

elevated track and structures); non-revenue facilities (e.g., rail yards and bus garages); points of entry (e.g., access grates and cross-passages); and key utility and telecommunications substations and nodes. To support terrorism prevention, systems have created programs to control access to critical assets and to verify the intentions of those personnel who routinely work in, near, or around these assets. The following activities have been taken and are suggested for consideration

1. Systems have developed policies on background checks for employees to ensure that personnel with access to critical facilities do not have affiliations with groups that may wish to harm the system. The following activities have been performed:
   - Hiring practices have been modified to include criminal background checks of new employees. This requirement is often carried out through submission, with the employment application, of a signed authorization for criminal records investigation and a fingerprint card.
   - For existing employees, systems have remained sensitive to concerns about privacy and perceptions about lack of trust, particularly given that the employees are being asked to serve as the system's eyes and ears and to perform additional tasks.
   - Other approaches include
     – Awaiting further guidance from FTA/TSA/DHS;
     – Fingerprinting employees and filing fingerprint cards for later use and/or reference;
     – Asking employees to complete a general social security number/credit history/criminal background check authorization form and initiating the investigations or filing the forms for later use; and
     – Submitting lists, including the names of all employees and contractors/vendors, to the FBI and/or local law enforcement.
2. Public transportation systems have developed policies for employee identification and access control by the following:
   - Requiring employees to display official photograph identification cards, issued by the agency;
   - Providing lanyards and clips to support standardized display of identification;
   - Sending emails and reminders, attached to paychecks, about the employee identification display policy;
   - Restricting access to sensitive areas (e.g., public transportation operations control centers and bus storage facilities); and
   - Integrating employee identification systems into electronic access control systems for proximity card readers or magnetic strip card readers at critical locations (e.g., operations control centers and vehicular gates at facility entrance posts).
3. Systems have developed policies on background checks for contractors and vendors. Many transportation agencies remain most concerned about contractors, vendors, and other friendly uniform service personnel, such as package delivery and utilities workmen, who currently access their facilities with little or no credentialing. To address this situation, transportation agencies have done as follows:
   - Required contractors and vendors to develop policies and procedures on the screening of employees who may access the transportation system, including policies for social security checks and criminal records checks;
   - Required contractors and vendors with employees on site to provide official documentation to the system on the completion of these checks and the results;
   - Required escorts and/or authorization from transportation dispatch before granting any non-employee access to critical areas within the transportation system;
   - Developed special badging systems/photograph identification for contractors, vendors, and others who may access the system; and
   - Revised procedures for managing deliveries and coordinating with local vendors and suppliers on access procedures.
4. Many public transportation systems have taken steps and adopted new policies for controlling agency information, employee uniforms, and keys, including the following:
   - Requiring requests for drawings and plans to be delivered in writing or in person if they relate to sensitive agency materials;
   - Removing material from transportation agency websites, including schematics and plans;
   - Requesting vendors to remove references to specific system information from their websites; and
   - Conducting monthly inventories of uniforms and keys, with active investigation if discrepancies are found.
5. Systems have improved mailroom procedures for handling packages through the following:
   - Developing specific guidelines for receiving packages;
   - Developing written guidelines for managing suspicious packages and letters;
   - Providing training sessions for mailroom employees;
   - Providing direct contact numbers for transportation police and security personnel; and
   - Issuing personal protective gloves to all mail handlers.
6. Public transportation systems have enhanced the security of administrative headquarters and other major facilities through the following:

- Locking doors and limiting access points to a single entry;
- Developing visitor sign-in protocols and temporary badges;
- Relocating visitor parking (except for persons with disabilities) further from the facility;
- Providing CCTV coverage of the visitor sign-in area;
- Stationing administrative or light-duty personnel at entry points with radios provided for direct communication with transportation police or security personnel;
- Upgrading security at employee parking facilities by using gates and CCTV systems, and improving enforcement of sticker policies and the towing of unauthorized vehicles;
- Installing concrete planters, bicycle lockers, and other items to restrain forced vehicular intrusion into sensitive areas; and
- At sensitive field locations, installing electronic locks that can only be opened using a proximity or a magnetic swipe card.

7. Some systems are addressing the need for backup emergency operations facilities through the following:
   - Constructing or identifying secondary and tertiary EOCs to be used if a major disaster renders the system's main EOC inoperable;
   - Establishing a Mobile Command Center (bus equipped with radio gear and the ability to serve as an EOC headquarters if the system's building is damaged or destroyed); and
   - Providing satellite phones to senior managers to use if conventional telecommunications systems such as cellular telephones fail.
8. Systems have made it harder to attack areas surrounding stations and elevated trackways, by
   - Reinforcing concrete barriers and signs to restrict access and parking under or near infrastructure;
   - Coordinating with state department of health officials on airborne contamination issues and initiation of a program of baseline measures under normal conditions for later comparisons; and
   - Coordinating with land owners next to critical infrastructure, urging them to report suspicious activity.
9. Many systems are securing perimeters for non-revenue areas through the following:
   - Enhanced investment in fencing and electric gates;
   - CCTV and motion detection alarms for yard perimeter fencing and shop facilities;
   - Cameras on rooftops and adjacent buildings to monitor remote locations and hard-to-see areas;
   - Electronic access control systems and/or posting of security or light-duty personnel near access locations to tunnel passages and critical utilities and equipment rooms;
   - Added surveillance cameras to monitor key access points to non-revenue facilities; and
   - Additional cameras at unsupervised building egresses and loading areas.
10. Some systems are securing tunnels and elevated structures through the following:
    - Increasing police/personnel patrols and assigned 24-hour fixed posts for major tunnel shaft/portal locations and other critical areas;
    - Installing programmable intrusion detection equipment to alert police to the exact location of any unauthorized intrusion into critical structures and facilities;
    - Installing CCTV and motion and entry alarms at certain entrances to underground tunnels and some maintenance access points;
    - Developing monitoring protocols, including contracts with 24-hour monitoring companies off site of system property (for intrusion detection, alarms, and sensors); and
    - Testing intrusion detection systems engineered to distinguish between trains and people entering underground/underwater tunnels.

AWARENESS

Unlike airlines, where security checkpoints screen passengers and luggage, public transportation is designed to be universally accessible. In this open environment, protection relies largely on awareness or the recognition of suspicious, out-of-place, or unusual activities or behavior, packages, devices, and substances.

To plant an explosive device or release a hazardous agent into a system successfully, the perpetrator is very likely to perform certain actions that will make him or her stand out from the larger crowd of passengers, employees, contractors, vendors, and others. He or she may be

- In an unauthorized or restricted area;
- On agency property without proper identification, uniform, or safety gear;
- In the wrong place or appear lost;
- Pacing, nervous, or jumpy;
- Inappropriately dressed for the weather (e.g., wearing a long bulky coat on a warm day);
- Acting in a disorderly manner and alarming or disturbing others;
- Quickly exiting an area after abandoning a package;
- Taking photos of equipment and secure areas;
- Carrying a weapon or suspected weapon; or
- Expressing an unusual level of interest in operations, equipment, and personnel.

Unfamiliar couriers, repair personnel, utility crews, or other trusted employees or trusted uniforms may be in the wrong

place or behaving in a manner inconsistent with their function at the system. Cars, trucks, motorcycles, and bicycles may be parked or standing in out-of-place or strange locations; overloaded or sagging vehicles may be parked in passenger loading zones or directly across from station entrances or exits.

These circumstances are not always easy to identify. However, through training and exercising, front-line employees and supervisors, who have direct contact with the public or the vehicles and facilities used by the public, are developing the skills necessary for observing, determining, and reporting people acting suspiciously and activities that are suspicious or out of place.

In all such activities, transportation systems should be careful to emphasize that suspicion is never based on race, color, ethnicity, creed, or gender, and is always based on

- Where someone is;
- When they are there; and
- What they are doing.

A similar set of awareness criteria have been developed for suspicious packages, devices, and substances, based on the reality that a device or substance left behind by a perpetrator with the intention to harm the system can be identified and rendered safe.

For packages and devices, suspicion is based on the type and location of the package. Transportation employees are urged to remember, particularly during heightened threat conditions, that not all lost-and-found items are suspicious packages. Often, those items left in conspicuous areas, such as on seats, in a restroom, next to a phone booth or vending machine, or on a station platform are simply forgotten items. However, it is suggested that extra care be used even when evaluating what appear to be items clearly forgotten by passengers.

However, when an empty briefcase is found, such an item may have been placed by a potential terrorist who is testing the procedures of the transportation system pertaining to this type of item. Information may be collected on how long it took the system to identify it as an unattended item, if it was picked up before any type of scan was completed, whether people were moved away from the location before the item was approached, whether the bomb squad was called, and, if so, how long it took them to arrive, among myriad other items. This becomes important planning information to terrorists. For example, if an empty briefcase in a rail station causes all of the trains approaching the station to be queued at the station on either side of the test station, the terrorist has learned that the most effective target (maximum passengers and trains) is the station on either side of the station containing the hoax item. Therefore, what may seem to be an innocuous event may instead be designed to collect information that can be used to inflict serious damage, injury, and death.

For substances, suspicion is based on the presence of a fine powder, residue, fog, mist, oily liquid, or odor with no identifiable or explainable source. It is also based on two or more people showing similar signs of distress or physical reaction. Again, particularly during heightened threat conditions, transportation personnel are encouraged to remember that not all powders or liquids are suspicious substances and not every sick person is a victim of an attack or release.

Signs of suspicious packages and devices include an object, parcel, bag, or other item that

- Is left or intentionally placed in an out-of-the-way location that is not easily visible;
- Matches something described in a threat received by the system or has a threatening note attached;
- Is an abandoned item or container, such as a thermos, propane canister, fire extinguisher, or piece of pipe;
- Has visible wires, batteries, a clock or timer, or has bottles, tanks or bags attached;
- Is abandoned by someone quickly leaving the area;
- Includes a bag, box, or package emitting an odor, mist, or oily liquid; or
- Is a bottle filled with unusually colored liquid or has strange objects inside.

Transportation employees observing any of the following conditions should be aware that they may be encountering a suspicious substance and proceed cautiously:

- An unexplainable or pungent odor;
- A suspicious package emitting a vapor or odor;
- Abandoned or out-of-place aerosol or manual spray devices;
- A broken bag, envelope, bottle, light bulb, or other potential dissemination device that has residue or a threatening tag attached;
- A cloud, mist, fog, fine powder, dust, liquid, or oily residue with no explainable source;
- Two or more people experiencing difficulty breathing, uncontrollable coughing, collapse, seizure, nausea, blurred vision, or disorientation; or
- Small animals such as birds appearing to be dead or dying in the area.

Using this industry-based consensus[4] on the primary characteristics of people acting suspiciously and suspicious packages, devices, and substances, transportation systems have developed SOPs to direct how employees report (and supervisors investigate and manage) these events. Where possible, these SOPs attempt to answer the following questions, providing information essential for effective response:

- Specifically, what employees are looking for under heightened threat conditions, including the defining

[4] Federal Transit Administration and National Transit Institute, *Employee Guide to System Security*, March 2003. Additional information available at http://www.ntion-line.com.

characteristics of suspicious/unusual/out-of-place activity or behavior, items, and substances;
- How employees can identify and report suspicious/unusual/out-of-place activity, items, and substances to supervisors and operations control, including the completion of forms documenting suspicious incidents;
- Recommended actions for employees and supervisors investigating, evaluating, and resolving these reports.
- How response to an investigated report, that results in something that cannot be explained, can be coordinated with local law enforcement and public safety/public health agencies to resolve the situation safely and prevent a potentially catastrophic incident while minimizing effects on service and local emergency resources and avoiding scaring public.

In implementing these SOPs, transportation systems emphasize strategies for heightening employee awareness to support recognition of potential security/terrorism event indicators before actual incidents. Other critical elements include protocols for effective communication of indicators to operations control and supervisors; rapid implementation of agency procedures for investigation, options analysis, and decision-making; and close coordination with local responders.

INCIDENT RESPONSE PROTOCOLS

Building on the transportation system's awareness program, the following material provides guidelines to assist transportation systems in developing protocols for managing threats, hoaxes, and reports of suspicious substances, packages, and activity. The following topics are addressed:

- Initial Considerations. This identifies topics that all transportation personnel responsible for receiving, evaluating, and responding to threats received by or reported to the system should consider.
- Telephone Threats. This details ways to manage threats received by phone.
- Written Threats/Letter and Package Threats. This provides procedures for handling threats to detonate explosive or release agents delivered to the system and for managing suspicious packages or letters received.
- Managing Passenger and Employee Reports of Suspicious Substances, Packages, and Activities. This discusses procedures for managing reports by passengers and employees based on the suspicious behavior of persons or suspicious packages or activities. These reports are critical to ensuring ongoing vigilance during heightened threat conditions and offer the system the best opportunity to address a threat before it results in an incident.

Initial Considerations

During response to threats and suspicious reports, it is strongly suggested that the system be prepared to make the following decisions:

- If and when to notify local law enforcement;
- If it will react to the threat/report or conduct business as usual;
- If it will cordon off and evacuate part of a station/pull a vehicle or consist from service;
- If a search will be conducted without evacuation using employee volunteers or in conjunction with local law enforcement;
- Under which conditions, if present, to initiate an evacuation of an administrative, passenger, or non-revenue facility;
- Under which conditions, if present, to initiate lockdown or shelter-in-place strategies in response to specific types of threats or conditions at specific facilities;
- How the system will provide passenger information and direct passenger activities for safe evacuation or sheltering;
- Under what conditions the system will request special-response resources (e.g., bomb squad, K9 unit, or hazardous materials unit);
- How the system will determine whether or not an evacuated facility is safe for re-entry; and
- How system personnel will coordinate with the media during both hoaxes and actual events.

When faced with a threat, it is strongly suggested that the primary concern always be the safety of passengers, employees, and emergency responders. Many transportation systems already have a disaster or emergency procedure for responding to smoke, fire, or medical emergencies in stations, administrative facilities, and shops/yards. Several elements of these procedures remain viable for managing threats and suspicious reports for explosives and suspected CBRN devices.

However, it is strongly suggested that other issues also be addressed. For example, in a fire, effort is directed at evacuating the occupants in a quick and orderly manner. For a bomb threat or suspected CBRN agent release, is it advisable for the exit routes and assembly areas to be searched before starting the evacuation? Terrorists may be trying to lure personnel into a location (e.g., stairwell or exit doorway) that is particularly vulnerable to collateral damage. On the other hand, delays may result in additional CBRN exposure and possible stampede-induced injuries and casualties.

Decisions made on whether a search should be performed, if the facility should be evacuated, or if lockdown or shelter-in-place procedures should be implemented are not easy. Transportation personnel volunteering to search the facility to determine if a device is present should recognize that they could be entering a dangerous situation and take appropriate

precautions. Decisions to evacuate vehicles and stations may bring unwelcome media attention and public scrutiny as well as affect transportation operations.

Only those with specific training in threat evaluation should make these decisions. Whenever possible, these decisions should be made in conjunction with local law enforcement. Each transportation system should determine where authority rests for these types of decisions and how these decisions will be communicated to employees and passengers. In fulfilling this obligation, systems have developed different approaches, relying on transit police, station managers, and senior operations personnel to evaluate the threat information and make decisions. It is likely that no single plan or procedure can be applied in all circumstances.

Evacuation plans typically are developed on the basis of a range of scenarios and needs. Many transportation organizations have adopted a color-coded evacuation system, whereby different evacuation plans, each with different exits and assembly points, are referenced by color. For example, the blue plan may indicate use of only one side exit, and assembly at four different sites no less than 300 feet from the facility. The red plan may be the standard fire evacuation plan, calling for use of all exits and assembly sites closer to the facility. Whatever approach is ultimately selected, it is desirable that evacuation plans and procedures

- Be flexible for different threats received by the facility;
- Be able to make evacuation decisions quickly;
- Have an effective communication system to relay the evacuation decision to all personnel within, approaching, or stationed near the exterior of the facility;
- Use evacuation distances suitable to the threat;
- Be well-rehearsed, effective, and responsive to requests from local responders;
- Ensure that sufficient attention is paid to employees and passengers who may require assistance during evacuation; and
- Ensure a buddy or other type of monitoring system, so that all evacuated personnel are identified at the assembly sites.

In some instances, depending on the threat received, evacuating a facility can place employees and passengers in greater danger than if they remained inside. The sniper attacks in the Washington, D.C., and northern Virginia area provided an example of a situation in which school districts, apparent sniper targets, chose to lock down their facilities in an attempt to control access to their students. In other situations, such as a threatened chemical agent release from a crop duster in an urban area, the most dangerous place to be is out on the street, where open exposure to agent release is assured. In this kind of situation, transportation personnel might choose to instruct their employees and passengers to remain inside facilities, stations, and vehicles.

- Shelter-in-place is generally used when there is danger from contaminants such as CBRN and other hazardous materials, or if an explosive device has detonated nearby and there is danger from falling debris. For example, if a transportation administrative facility receives a threat of chemical attack that is evaluated as serious, then it may be appropriate for decision-makers to initiate the system's shelter-in-place plan, calling for all employees to leave and secure their workstations, lock all windows and doors, and report to a designated location (cafeteria, break room, corridor, or other interior room). Transportation personnel would then initiate appropriate actions on the facility's heating, ventilating, and air conditioning system, and might shut and seal all windows and doors, using pre-cut plastic sheets and duct tape, and follow up to ensure that all employees had reported to the designated assembly site or have been accounted for (some employees may refuse to report to the shelter-in-place site, opting to disregard protocol and evacuate the facility instead). Whenever possible, it is desirable that the decision to shelter-in-place be closely coordinated with local responders, and a means be provided to remain in constant communication with them in the sheltering location.
- Lockdown is most likely to be used when there is an armed attacker outside a facility or some threat involving a perpetrator's desire to get into a facility. Lockdown involves the closing of all exits and entrances, ensuring that no one may enter or leave the facility. Depending on the situation, personnel and/or customers inside the facility may be asked to report to an interior room for an additional measure of protection. Similar protocols to sheltering-in-place are followed to ensure that every employee for whom reporting to the interior room is desired is actually there and that constant communication capability is maintained with local responders.

There is growing support in some sectors of the emergency response community for the use of sheltering-in-place as an appropriate response to certain types of bomb threats. Situations where this may be appropriate include

- Threats or actual explosions occurring at facilities near a transportation facility whose destruction may produce considerable fragmentation and debris in or near assembly areas;
- Threats resulting from small suspicious packages when conditions indicate that employee assembly areas may not be safe; and
- Threats where there may not be time for facility evacuation.

Sheltering-in-place is never recommended for situations in which a suspected device has been identified with massive destructive power and is directly targeted at the transportation facility.

Transportation structures, in many instances, may be ideally suited to fulfill sheltering functions. If a system is considering this procedure, it is critical that a structural engineer with appropriate experience in blast damage assessment be consulted to identify shelter-in-place locations. For explosive threats, typical recommendations include an interior room on the lowest floor with no windows. Ideally, at least two solid walls should be between the sheltering location and the suspected device or nearby facility with the potential to produce collateral damage. Personnel should be instructed to remain away from doorways, windows, mirrors, glass, and corners of rooms. Reflected blast pressure and fragmentation are most likely to occur near these locations. Typical procedures on employee and passenger monitoring and open communications with local responders also apply to sheltering-in-place. CBRN releases typically are heavier than air, so sheltering-in-place at higher floors is preferable.

Threats

Threats are transmitted to a transportation system in several ways:

- Telephone;
- Written letters and packages; and
- Reports from passengers or employees.

Procedures for managing each of these are discussed below.

Telephone Threats

When a telephone threat is received, various situations are possible. The caller may

- Know that a device has been planted (he/she could be the perpetrator, an acquaintance, or someone who has come by the information from the perpetrator or another source);
- Be a prankster wanting to disrupt public transportation and/or paratransit operations;
- Be considering planting a device or acting out a fantasy;
- Be conducting a test to evaluate response measures; or
- Be a passenger, employee, or former employee attempting to disrupt operations and/or get revenge for an actual or perceived slight.

Noting what is said and how it is said during a threat call can help management assess the severity of the threat and guide an appropriate reaction from the system. The person receiving the call may be the only person to ever have contact with the potential bomber/terrorist.

Ideally, trained transportation dispatchers who may have the capability to record them and to identify the number from which the call was made should manage these calls. However, often, the caller will not dial the operations control center, but may attempt to reach the system's Executive Director or General Manager, board members, or operating management personnel. Ideally, executive assistants and others who may take calls for these professionals should be trained on what to do and how to do it, so that valuable information will not be lost. Proper training provides each potential receiver of such calls with the skills to identify and document key facts.

When it is not possible to transfer the caller to the operations control center, signaling another employee to listen in on the call can be a useful backup and ideally should be worked out in advance. The second person concentrates on the characteristics of the caller and any background noises. The receiver of the call concentrates on the exact words of the caller. Ideally, the person receiving the call should be prepared to obtain precise information, including the following:

- The time the call was received and on which telephone number or extension;
- The exact words of the person making the threat;
- Whether the caller was male or female and an approximate age;
- Any accent or speech impediment or slurring of speech, which could indicate intoxication or an unbalanced condition;
- Background noises (e.g., traffic, music, or other voices); and
- Familiar voice or use of expressions commonly used by employees (rather than the general public).

Ideally, persons receiving threatening calls should be prepared to ask callers certain questions if the information has not been volunteered. The caller may provide specific information by answering these questions. Sometimes, the person making a threat becomes so involved in the conversation that he or she will answer questions impulsively, including questions on his or her identity, address, or phone number. Any information obtained will be helpful to police and explosive technicians. To assist the person receiving the call, it is suggested that a printed form be readily available.

A sample form, developed by the U.S. Bureau of Alcohol, Tobacco, and Firearms (ATF), is provided in Table 7-2.[5] Typically, this checklist is modified as appropriate for the transportation system and kept readily available for the dispatcher(s) or other personnel most likely to receive such a threat.

If a threat is serious, notification of law enforcement should be prompt and include as much detail as possible. Ideally, the person who received the threatening call should be available for immediate interviewing, and copies of the completed

[5] This checklist is no longer available online. Persons wishing to receive the checklist must send in a written request to: Bureau of Alcohol, Tobacco and Firearms, Arson and Explosives Programs Division, 800 K Street, NW, Tech World Suite 710, Washington, DC 20001.

TABLE 7-2 Telephone threat evaluation worksheet

1. EXACT TIME AND DATE OF CALL: _____

2. EXACT WORDS OF CALLER:

3. CALLER TRAITS AND BACKGROUND NOISES:

Voice	Accent	Manner	Background Noise
❑ Loud	❑ Local	❑ Calm	❑ Factory Machines
❑ High Pitched	❑ Foreign	❑ Rational	❑ Bedlam
❑ Raspy	❑ Race	❑ Coherent	❑ Music
❑ Intoxicated	❑ Not Local	❑ Deliberate	❑ Office Machines
❑ Soft	❑ Region	❑ Righteous	❑ Mixed
❑ Deep		❑ Angry	❑ Street Traffic
❑ Pleasant		❑ Irrational	❑ Trains
❑ Other	**Speech**	❑ Incoherent	❑ Animals
	❑ Fast	❑ Emotional	❑ Quiet
Language	❑ Distinct	❑ Laughing	❑ Voices
❑ Excellent	❑ Stutter		❑ Airplanes
❑ Fair	❑ Slurred	**Familiarity With Threatened Facility**	❑ Party Atmosphere
❑ Foul	❑ Slow		❑ Other:_____
❑ Good	❑ Distorted	❑ Much	❑ Other:_____
❑ Poor	❑ Nasal	❑ Some	❑ Other:_____
❑ Other	❑ Lisp	❑ None	❑ Other:_____
	❑ Other		❑ Other:_____

QUESTIONS TO ASK THE CALLER

1. When is the device going off?
2. Where is the device?
3. What does it look like?
4. What kind of device is it?
5. What will cause it to go off?
6. Did you place the device?
7. Why did you place the device?
8. Where are you calling from?
9. What is your address?
10. How can I reach you?
11. What is your name?

OBSERVATIONS

1. If voice is familiar, whom did it sound like?
2. Were there any background noises?
3. Were words and phrases used that would only be known by employees or others familiar with the operation?
4. Telephone number call received at:_____
5. Person receiving call: _____
6. Was call recorded? _____
7. Any additional remarks:

threat checklist should be readily available to all who may need it.

If operations control was unable to receive, trace, or record the call, use of caller identification functions (such as *69) can provide the number from which the call was made; however, this feature is not available on certain phone systems used in large administrative facilities.

Training provided by the ATF, local law enforcement, NTI, and the TSI can support preparation of procedures for managing telephone threats and subsequent actions. These organizations can be reached respectively at

- http://www.atf.treas.gov/;
- http://www.ntionline.gov; and
- http://www.tsi.dot.gov/.

Evaluating Telephone Threats

All threatening calls can be categorized as either non-specific or specific. Non-specific threat calls are the most common—usually little information is given other than that there is a bomb in the facility. In the case of specific threat calls, the threat is more detailed, and reference is often made to the exact location of the device or the time at which it will detonate.

Specific threats should be considered more serious and require a more concerted effort in the response than non-specific threats. Non-specific threats, however, cannot be ignored. As indicated in Table 7-3, ideally, a policy should be developed to respond to both specific and non-specific threats.

Depending on the results of the evaluation, the appropriate search procedure should be initiated. Searches in the transportation environment, as in many other environments, have two major constraints:

- Radio communication cannot be used (it may detonate the device); and
- The environment is often specialized, therefore, it cannot be searched effectively by outsiders.

In order to address these constraints, personnel who work in a particular area or are responsible for an area should be used. Generally, these personnel can execute a more thorough search than outside responders, know about station or facility emergency communication systems, and can access landline telephones to manage communications more effectively during the search. It is strongly suggested that, if evacuations have been ordered and systems use employees for searches, such systems should always use only volunteers.

Factors favoring a search before the movement of personnel (occupant search) include the following:

- There is/has been a high incidence of hoax telephone threats;
- Effective security arrangements have been established;
- Information in the warning is imprecise or incorrect;
- The caller sounded intoxicated, amused, or very young; or
- The prevailing threat of terrorist activity is low.

Factors favoring the movement of personnel before searching (volunteer search) include the following:

TABLE 7-3 Evaluating telephone threats

After the caller hangs up, it is suggested that the receiver
- Notify transportation dispatch (if call was not answered/transferred there);
- Notify transportation police, security personnel, and supervisory personnel in the affected station/area (if possible);
- Deliver a completed threat worksheet to the supervisor; and
- Remain available to transportation management/police/supervisors to answer questions.

After being notified, it is suggested that public transportation management, police, security, or supervisory personnel
- Evaluate the threat worksheet; and
- Make a decision regarding if the threat is specific enough to warrant further action.

If threat warrants additional action, it is desirable for the transportation system to
- Notify local law enforcement;
- Consider options for searching;
- Consider options for evacuation, lock-down, or shelter-in-place; and
- Execute one of the following options --
  - Search before evacuation of personnel (employee search),
  - Search after evacuation of personnel (volunteer search),
  - Search prior to lock-down or shelter-in-place, or

  concurrent searches by volunteer teams while remaining employees initiate lock-down or shelter-in-place procedures.

- The area is comparatively open;
- Information in the warning is precise as to the matters of location, a description of the device, the timing, and the motive for the attack; and
- A prevailing threat of terrorist activity is high.

Telephone Threat Response, Search Procedure

Pre-planning and coordination of employees are essential in implementing an effective search of transportation premises, particularly for large stations and facilities. A central control mechanism is necessary to ensure a thorough and complete response. Ideally, a printed station and/or facility schematic should be identified for each major transportation facility. Wherever possible, divide stations into zones or sections (before the actual conduct of the search), and identify volunteer personnel familiar with that zone or section to support the search. Identify backups and supporting volunteers for each zone or segment. Make a compendium of station/facility schematics available to those responsible for managing bomb threats and searches. These schematics will support identification and assembly of the volunteer search team and, as the search is conducted, each completed area can be crossed off the plan.

Areas accessible to the public require special attention during a search and may be vitally important if an evacuation is to be conducted. Ideally, the intensity of the search should be appropriate for the perceived threat level. For example

- An occupant search is used when the credibility of a specific threat is low. Occupants quickly search their own areas because they are most likely to notice anything unusual.
- A volunteer team search is used when the credibility of a specific threat is high. The search is very thorough and places the minimum number of personnel at risk. Evacuate the area completely, and ensure that it remains evacuated until the search is completed. Search teams will make a slow, thorough, systematic search, crossing off completed areas on designated schematics as they go.

Historically, the following areas have been used to conceal explosive or hoax devices in the transportation environment as depicted in Table 7-4.

Depending on the threat, searches may expand to include transportation vehicles. Dispatchers have instructed operators on certain bus routes or rail lines to immediately bring their vehicles/consists to a safe location, evacuate passengers, and walk through the vehicle while looking for unidentified packages. In other instances, law enforcement officers, who actually conduct the search, including the vehicle undercarriage and rooftop areas, have met evacuated vehicles.

Telephone Threat Response, Locating A Suspicious Package

If an unidentified or suspicious object is found, personnel should be instructed not to move it and to report it to the operations control center or the search team immediately. The following information is essential:

- Location;
- Reason(s) suspected;
- Description; and
- Any other useful information, e.g., how difficult is it to secure the area or to evacuate, the distance to the nearest emergency exits, etc.

Based on this information, decisions will be made about the following:

- Removal of persons at risk;
- Establishment of perimeter control of the area to ensure that no one approaches or attempts to move the object;

TABLE 7-4 Locations for concealed devices

Outside Station Areas	Inside Stations
• Trash receptacles • Dumpsters • Mailboxes • Bushes or shrubbery • Street drainage systems • Storage areas • Parked cars • Parked transportation vehicles • Other vehicles • Newspaper Stands • Temporary structures • Behind, under and around sculptures	• Ceilings with removable panels • Overhead nooks • Areas behind artwork and benches • Recently repaired/patched segments of walls, floors, or ceilings • Elevator shafts • Restrooms • Behind access doors • In crawl spaces • Behind electrical fixtures • In storage areas and utility rooms • Mail rooms • Fire hose racks

- Activities to establish ownership of the object (if legitimate property has been left behind in error before the bomb threat being received);
- Assignment of someone familiar with the building and the area where the object is located to meet the explosives disposal unit (EDU) personnel on their arrival (if they have been called); and
- Continuing implementation of the search procedure until all areas have reported to the operations control center, because there may be more than one unidentified object.

At this time, the seriousness of the incident has significantly increased. Transportation personnel should

- Treat the area as a crime scene and disturb nothing;
- Ensure law enforcement/EDU has been notified and is arriving;
- Consider whether or not, depending on the telephone threat, PPE or decontamination is needed and whether fire services and/or hazmat response is needed; and
- Consider whether or not to notify the local medical health officer/public health department.

While volunteers and public safety personnel are conducting the search, and particularly while they are managing response to a suspicious package, they should keep in mind the following information.

The four general rules to follow to avoid injury from a suspected improvised explosive device (IED) or WMD dispersal device are

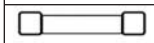
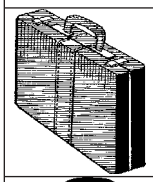
1. Move as far from a suspicious object as possible without being in further danger from other hazards (such as traffic or a live third rail);
2. Stay out of the object's line-of-sight, thereby reducing the hazard of injury because of direct fragmentation;
3. Keep away from glass windows or other materials that could become flying debris; and
4. Remain alert for leakage, spray, mist, or other indications that the device is active.

Historically, perpetrators of bombings in the transportation environment (in foreign countries such as Israel, France, India, and England) have used two tactics that intensify the magnitude of casualties inflicted by detonation of an IED:

- Perpetrators have detonated a small device to bring public safety personnel to the site, and a larger, more deadly device is detonated some time after the first, thereby inflicting heavy casualties on the first-responder community and seriously weakening its ability to respond appropriately to additional events.
- Perpetrators have used a real or simulated device to force evacuation of a facility only to detonate a much more substantial device in identified bomb-threat evacuation assembly areas. These attacks are especially harmful because the evacuation assembly areas often concentrate transportation personnel and passengers more densely than would otherwise be the case.

Bomb threat standoff distances are provided in Table 7-5 and are discussed below.

TABLE 7-5 Terrorist bomb threat standoff distances

THREAT	THREAT DESCRIPTION	EXPLOSIVE CAPACITY	LETHAL AIRBLAST RANGE	MANDATORY EVACUATION DISTANCE	DESIRED EVACUATION DISTANCE
	Pipe Bomb	5 LBS / 2.3 KG	25 FT / 8 M	70 FT / 21 M	850 FT / 259 M
	Briefcase or Suitcase Bomb	50 LBS / 23 KG	40 FT / 12 M	150 FT / 46 M	1,850 FT / 564 M
	Compact Sedan	220 LBS / 100 KG	60 FT / 18 M	240 FT / 73 M	915 FT / 279 M
	Sedan	500 LBS / 227 KG	100 FT / 30 M	320 FT / 98 M	1,050 FT / 320 M
	Van	1,000 LBS / 454 KG	125 FT / 38 M	400 FT / 122 M	1,200 FT / 366 M
	Moving Van or Delivery Truck	4,000LBS / 1,814KG	200 FT / 61 M	640 FT / 195 M	1,750 FT / 534 M
	Semi-Trailer	40,000 LBS / 18,144 KG	450FT / 137M	1,400FT / 427M	3,500FT / 1,607M

- Explosive Capacity is based on the maximum volume or weight of explosives (TNT equivalent) that could reasonably fit or be hidden in a suitcase or vehicle.
- Lethal Airblast Range is the minimum distance personnel in the open are expected to survive blast effects. This minimum range is based on anticipation of avoiding severe lung damage or fatal impact injury from body translation.
- Mandatory Evacuation Distance is the range within which it is strongly suggested that all buildings be evacuated. From this range out to the Desired Evacuation Distance, personnel may remain inside buildings but away from windows and exterior walls. Whenever possible, evacuated personnel should move at least the desired evacuation distance.

Telephone Threat Response, Evacuation Procedure

If an unidentified object is found, it is advisable to conduct a quiet and systematic evacuation from the area. Before evacuation, if possible, all areas used in the evacuation route should be searched: stairwells, corridors, elevators, and doorways. When these areas have been checked and determined to be safe, assign volunteer personnel to direct others along the searched exit routes.

Generally, evacuation should be conducted, at a minimum, for a distance of 300 feet in all directions from the suspicious package, including the area above and below the site, giving regard to the type of building construction (e.g., thin walls or glass) and the size of the suspicious package. Do not use elevators to evacuate people under normal circumstances, because a power failure could leave them trapped in a hazardous area. Pay attention to the need for special transportation for persons with disabilities and people of age.

The goal of evacuation is to direct people to leave the premises quietly, using tact and power of suggestion, to maintain control and avoid alarm. Once a complete or partial evacuation has taken place, account for all personnel and passengers. This may be difficult or tedious, but necessary to ensure the safety of everyone. Ideally, persons familiar with personnel should be assigned to ensuring that all have been accounted for.

Ideally, assembly areas should be pre-selected and well known to personnel who work in a given transportation facility. Establish a clearly defined procedure for controlling, marshalling, and checking personnel within the assembly area. If possible, for major transportation stations, assembly areas should be coordinated with local police in advance. Ideally, assembly areas should

- Be at least 300 feet from the likely target or building (if possible).
- Offer little chance of a secondary device being hidden. Open spaces are best. Avoid parking areas because devices can be hidden easily in vehicles.
- Reduce the likelihood of ambush with a second device or small arms fire. Always search the assembly area before personnel occupy the space.
- Be away from expanses of plate glass or windows. Blast effects can cause windows to be sucked out rather than blown in.

If possible, select multiple assembly areas to reduce the concentration of key personnel. Drill and exercise personnel to go to various assembly areas to avoid developing an evacuation and emergency pattern that can be used by perpetrators to attack key, identifiable personnel.

Telephone Threat Response, Final Steps

The decision to re-occupy a building should be made by an appropriate transportation system or law enforcement official. If the evacuation was made without a search, it is strongly advisable that the premises be searched before re-occupation.

The last step is completion of an after-action report and debriefing session. This activity enables involved parties to determine what exactly happened, assess what went well and what did not, and identify possible improvements in procedures.

Written Threats/Letter and Package Threats

Written threats or suspicious packages delivered to the system may

- Be more serious than phoned-in threats;
- Be more difficult to trace than phoned-in threats;
- Serve various purposes, but, generally, are directed at specific personnel rather than at the system as a whole; and
- Rely more on the personal motivations of the perpetrator.

The likelihood of receiving a package or letter containing suspicious substances is remote. However, transportation employees should be made aware of characteristics common to suspicious packages. Some indicators, identified by the U.S. Postal Service, include, but are not limited to, the following:[6]

- Unusual balance or shape;
- Excessive weight for its size;
- Excessive or unusual wrapping or sealing;
- A lopsided/protruding item, or suspicious parts showing through the wrapping;

[6] More information is available at: http://www.usps.com/news/2001/press/pr01_1010tips.htm.

- Oil stains on the wrapping;
- Excessive postage;
- A strange odor emanating from the package;
- Unusual or overly suspicious instructions, such as open only on this end or instructions that only a specific individual should open;
- No return address; and/or
- Similarity to other packages recently reported in the media or law enforcement threat briefings.

Suspect Envelopes or Packages

- Do not open, smell, or taste.
- Do not shake or empty the contents.
- Set the package or envelope aside for review.
- Promptly notify a supervisor.

Packages with Identified Threats, Powder, or Suspicious Content

- Do not panic.
- Do not touch, move or cover the substance or object.
- If the package or envelope has been opened or partially opened, stop handling it, and gently put it down on the top of a desk or in another open area. Do not place in a trashcan or in a cupboard, but leave it accessible for emergency responders.
- Remain calm and evacuate everyone from the affected area.
- Close off the affected area, if possible, by shutting doors and windows.
- Avoid further contamination by isolating and securing the area. It is strongly suggested that no one be allowed into the room until responders arrive.
- Notify a supervisor, who will route requests through the operations control center to immediately contact the Postal Inspection Service, local police, public health, or a pre-determined designated contact.
- Do not brush off clothes.
- Remove clothing carefully and place it in a plastic bag, as soon as possible. Close the bag and place the bag in a second plastic bag. Clearly label and identify the contents, and retain the bag for law enforcement, as it may be evidence.
- Shower with soap and water as soon as possible. Do not use bleach or other disinfectant. Do not break the skin.
- Put on fresh clothing.
- Make a list of all people (including names, addresses, and phone numbers) who had contact with the powder, oil, or substance, and give the list to local public health authorities. Potentially affected individuals may be instructed to watch for fever or other symptoms over the next couple of days.
- Ensure that all persons who have touched the mail item wash their hands with soap and water.
- Postal inspectors will collect the mail, assess the threat situation, and coordinate with the FBI. Designated officials will notify local, county, and state health departments. Designated officials will also notify the state emergency manager, if appropriate.
- Initiate the transportation system's procedures on Heating, Ventilation and Air Conditioning (HVAC) systems to avoid spreading contamination throughout the facility.
- Call the Centers for Disease Control and Prevention (CDC) Emergency Response at 770-488-7100 for answers to any questions on suspicious substances.

Managing Passenger and Employee Reports of Suspicious Substances, Packages and Activities

Unlike telephone threats and threats involving mail or delivered packages, passenger and employee reports can be delivered to anyone at the agency: station managers, vehicle operators, maintenance personnel, and even contractors. How the agency manages these reports is critical to its activities to support enhanced awareness under changing threat conditions.

If a passenger reports a suspicious substance, package, or activity, the employee receiving the threat should notify his or her supervisor immediately. The supervisor would then contact transportation operations control. After receiving a complete report from the passenger or employee, the supervisor should investigate the report.

Situational awareness is critical to effective investigation of these reports. Transportation personnel should remain vigilant. There may be times, in response to external events, when the system receives an elevated number of threats/hoaxes and false reports arising from heightened public sensitivity and suspicion. During these periods, transportation personnel should be cautious not to become desensitized to the possibility of an actual event.

A central feature of these procedures is identification of the suspicious material or activity. Although this may seem obvious, it is often overlooked. Initiating a public safety response for every suspicious substance or package depletes limited community resources. These calls also bring public health officials to the scene, which may result in unnecessary station closures or evacuations. These events may bring increased media attention and create public fear and concern.

On the other hand, blanket procedures involving immediate removal of any spilled or out-of-place item may put maintenance personnel, passengers, and other employees in danger. Early recognition of harmless substances and items is essential in limiting disruptions and protecting passengers and employees.

Adopt the following general rules and observations as needed to minimize the number of incidents that require responses from external agencies.

1. Prepare a list of typical non-hazardous substances that may be found in the public transportation environment that resemble chemical and biological substances.

Such substances include cleaning residue, food residue (e.g., powdered sugar), concrete dust, oils and lubricants, and spilled soda or other liquids. Attention stemming from the anthrax mailings in the fall of 2001 spurred increased numbers of passenger reports on white powder in stations, on vehicles, and in facilities. Other external events may bring increased attention to other types of substances. Update this list as necessary.

2. For situations where suspicious activity or behavior has been identified, provide a clear policy for how to manage them.

For example, transportation personnel and supervisors may be urged to take the following steps when encountering persons who are unfamiliar and in areas where they should not be or acting in ways that are disturbing to those around them:

- When deciding on how to respond, ONLY approach someone if it feels comfortable and safe.
- Offer assistance and calmly ask
  - For an identification card or badge;
  - If they need help;
  - Who they are there to see; and/or
  - If you can escort them to an appropriate area for waiting.
- Avoid
  - Approaching threatening or dangerous persons;
  - Being aggressive, confrontational, abusive, or offensive; and
  - Detaining or holding a person by any means.
- Stay alert and observe their location, activity, behavior, and physical characteristics. Try to keep them within sight at all times.
- Report any incidents of suspicious behavior or activity through appropriate channels. Include the location in which you found such persons, particularly if it is a secure area that may have been compromised. If they do leave, note their description, direction of travel, and description of vehicle and license plate number (if available).
- When observing suspicious activity, report the person's following characteristics:
  - Head. Eyes, ears, hair, and facial hair, mouth, nose, forehead, cheeks and chin, complexion, jewelry, glasses, or hat.
  - Body. Neck, arms, chest, stomach, tattoos, shirt/blouse/dress, coat, accessories.
  - Legs. Pants, skirt, belt, feet, socks, shoes.
  - Overall appearance. Height, weight, build, gender, neat or sloppy, packages, bags or accessories.
  - Unique characteristics. Scars, birthmarks, or other identifying attributes.

3. Remember that passengers and employees observe many activities in the transportation environment.

They are the eyes and ears of the system. Passengers will assess how seriously their concerns are taken by the system and will report perceived laxness to their friends, co-workers, family, and potentially the media. Unfavorable remarks can negatively affect ridership as well as future reporting. Employees will make similar assessments on their perceptions of management commitment to safety and security. To ensure that security and awareness remain priorities, transportation management should consider regular briefings, bulletins, or training sessions for front line employees, supervisors, and station managers on the system's protocol for receiving and investigating reports of suspicious activities, behavior, substances, devices, and packages. Transportation personnel need to understand what is expected of them, and just as important, in what actions they probably should not engage. For example, employees encountering a report of a suspicious package or device should:

- NOT use a radio or cell phone if they suspect an explosive device.
- Make notification through appropriate channels and give a description of the package or device and its exact location.
- NOT touch, move, or cover the object.
- If there appears to be immediate danger, remain calm and evacuate the area.
- Attempt to isolate and secure the area.
- NOT re-enter once the area has been evacuated.
- Await direction from a transportation supervisor, the operations control center, or emergency responders.

These simple steps can save lives and reinforce the system's commitment to the safety and security of passengers and employees.

4. Develop a report form specifically for people acting suspiciously and for suspicious behaviors, packages, devices, and substances that may be related to security.

An example, suspicious condition reporting form is provided in Table 7-6.

Responses to incidents involving suspicion should be managed carefully. To avoid public alarm and disruptive response calls to local fire services, HAZMAT teams, and explosive ordnance disposal units (bomb squads), the system should develop procedures to guide response to and investigation of these situations.

Recommendations for procedures that can be used for addressing suspicious conditions reports potentially related to terrorism are provided in the sample report form in Figure

TABLE 7-6 Suspicious condition report

SUSPICIOUS CONDITION REPORT

Reported by: _____
Date and Time of Incident: _____
Incident Location: _____
Incident Description: _____

Reported Condition (Circle all that apply)

Unusual liquid or droplets, mist or oily film	Unusual debris from unidentified source	Unusual sickness affecting two or more persons
Unusual odors	Abandoned spray devices	Unusual animal/insect patterns
Unusual cloud or vapor	Unexplained munitions	Unusual activity observed
Other (describe):		

Weather

Clear	Cloudy	Snow
Misty	Rain	Temperature: _____
Relative humidity:_____	Other: _____	

Wind

Direction (to/from):
Speed (none, mild, gusts, high winds):
Other (describe):

Odor (Circle all that apply)

None	Sweet	Flower	Fresh hay
Unfamiliar	Pepper	Forest	Rotten eggs
Garlic/horseradish	Fruity	Almond/peach	Swimming pool
Other (describe):			

Visible Emission (Circle all that apply)

Cloud	Mist	Liquid	Unexplained fog
Vapor	Smoke	Oil	
Other (describe):			

Signs and Symptoms (Circle all that apply)

None	Stinging of skin	Dizziness	Welts/blisters
Tightness in chest	Reddening of skin	Blurred vision	Nausea/vomiting
Fever	Runny nose	Choking	Diarrhea
Dry mouth	Excessive saliva	Collapse	Seizures
Other (describe):			

Date and Time of Onset: _____

7-5. These recommendations were developed as a reflection of a series of situations typically encountered in a rail transit station, but could be readily applied to any type of public transportation vehicle or bus or ferry terminal.

Suspicious Condition Report, Readily Resolved

Suspicious condition reports typically are about trespassers, loiterers, lost children or adults, passenger medical emergencies, equipment malfunctions in service; and housekeeping issues in stations and facilities. When responding to these reports, transportation supervisors, law enforcement/security personnel, station managers, and other transportation personnel may be called on to investigate any of the following sample circumstances:

- An individual was overheard making a specific threat to contaminate a facility, vehicle or other location;
- An individual was observed with what appeared to be a gas mask or protective equipment walking through the station or on the vehicle;
- An individual was observed with a device appearing to be dispersing something in the air or appearing to be capable of dispersing something;
- A discarded spray device, gas mask, or item of PPE was observed;
- A trash can, sculpture, bench, or plant appears to be steaming and releasing mist or smoke into the air;
- A briefcase, suitcase, box, or other item appears to have been abandoned (it may or may not be leaking suspicious material or be strangely wrapped as described by the U.S. Postal service);
- A suspicious powdered or liquid substance is on turnstiles, seats, the station floor, in a bathroom, or by an entryway/exit;
- A strange odor has been detected on a vehicle or in a station; and/or

TABLE 7-6 (Continued)

Duration of Symptom(s): _____
Number of Casualties: _____

Explosion/Fires (Circle all that apply)

None	Structure
Air	Underground
On-ground	Other:_____

Describe device: _____
Describe container/condition/size: _____
Describe location where device was found: _____
Describe structures involved/estimated damage: _____
_____

WHEN FILING THIS REPORT, USE THE FOLLOWING GUIDELINES

- Protect by using a safe approach.
- Identify and recognize hazards.
- Isolate the area / secure the scene.
- Set up command / request additional help (if necessary or when in doubt).
- Remember that unsubstantiated rumors or opinions can generate panic.
- Be aware of people arriving or departing the scene.
- Advise witnesses and bystanders to remain at the scene in a safe location until the situation has been resolved/law enforcement has arrived.
- Note physical evidence, such as footprints, wrappers, or matches, and notify authorities of such findings but do not touch them.
- State if additional investigation is required by law enforcement/public safety, including sketching, photographing, or videotaping the scene.

Remember the Rule: Do not touch, disturb, or remove anything until it has been established that the material is not hazardous.

EMERGENCY DECONTAMINATION PROCEDURES

- Blot off the agent, using dirt, rags, paper, or other available material. Be careful not to break the skin.
- Strip off all clothing.
- Flush affected area with large amounts of water.
- Cover affected area and remain warm until first responders arrive.

FEDERAL CHEMICAL/BIOLOGICAL HOTLINE: (800) 424-8802

- Several people on a vehicle or in one part of a station are beginning to complain about similar symptoms that have visited them suddenly.

Each of these reports could have a logical explanation not related to the dispersal of WMD agents. Each of these events, however, and particularly the last four, could also be precursors to a more serious incident.

Typically, transportation personnel assigned to investigate these reports will already be stationed near the event. These personnel will often be expected to assess the situation and make decisions on its likely severity. They may be called on to recommend appropriate action. In this capacity, these personnel may initiate a station evacuation; decommission a vehicle from service; or activate the system's emergency alert and notification system. These personnel may also be called on to (1) provide critical information for situation reports (i.e., incident size-ups) and preliminary recommendations for staging areas for arriving local responders, and (2) engage and brief arriving units.

Generally, unusual and non-routine event reports will involve an unknown substance, a suspicious or out-of-place package, or suspicious activity that can be investigated safely and resolved quickly. However, until the report is confirmed as a minor occurrence, misunderstanding, or hoax, many dangers could exist for those transportation personnel who investigate.

Often, the supervisor may be able, from a safe vantage point, to determine that suspicious powder reported for investigation is actually sawdust from a recent construction project at that location or residue from a recent station cleaning or that the discarded spray device is actually a lubricant dropped by maintenance personnel. A group of fourth graders, on a field trip, may have spilled soda on the turnstile or station floor, and the local high school may be having its annual science fair, flooding the system with strange-looking apparatus.

If the supervisor can identify the suspicious substance, item, or activity, he or she should

- Notify operations control the report has been resolved and no hazardous materials are involved;

- Ensure the area is cleaned or that the suspicious package or device is removed; and
- If the notifying passenger is still available, thank him or her for the attention and concern and describe the situation.

Suspicious Condition Report, Not Resolved (With No Symptoms)

In other cases, a more serious response may be required. When the supervisor has identified a substance or package that cannot be explained, the supervisor should

- Notify the operations control center that an unidentified substance or package has been confirmed and request that law enforcement or specially trained transportation agency resources be dispatched;
- Cordon off and evacuate the area (to at least 25 feet);
- Question additional transportation personnel to ascertain if anything out of the ordinary occurred in the location;
- Request a status update on the station ventilation system;
- Monitor persons closest to the substance/package for the onset of symptoms; and
- Await the response of law enforcement or transportation personnel.

If the dispatched responders cannot identify the substance/package, then a public safety response should be initiated, including fire services; EMS; hazardous materials unit; EDU; local and state health departments, and the FBI field office. At this point, probably a series of response actions should occur that would probably require evacuation of the station and suspension of transportation service to and through the station. Depending on the location of the package or substance, slowed vehicle traffic (5 mph or less) may still be allowed through the station. Evacuation protocols should include securing perimeter control, establishing passenger communication, and maintaining a keen lookout for secondary devices. A thorough search of the station or facility may also be required in order to rule out the presence of other devices.

If responders believe a suspicious package is a potential WMD device, they will evaluate the device for explosives and for potential CBRN materials. If it is confirmed that the device contains potential WMD materials or supplements, then, ideally, local responders will

- Follow protocols for documentation of the crime scene;
- Contain the package following recommendations from the HAZMAT unit (options include double bagging, steel cans, poly containment vessels, or use of a HAZMAT over-pack);
- Control the material as evidence and ensure rapid laboratory analysis; and
- Work with the transportation agency to develop plans for
  - Identifying and notifying those passengers and employees who may have been in the station before and shortly after identification of the device,
  - Communicating with the media about the event, and
  - Cleaning the site and restoring the station or facility to service, or keeping the station/facility closed and secure pending the results of the analysis.

Follow-up with passengers potentially exposed to the device, material, or agent will be crucial, as will be ongoing coordination with local responders and communication with the media.

Suspicious Condition Report, Not Resolved (With Symptoms or Strong Indicators)

If passengers or employees are exhibiting symptoms, a suspicious package is leaking liquid, or an unusual and unexpected odor is in the air, even more serious initial response measures should be considered such as

- Immediate notification of law enforcement, fire services, EMS, HAZMAT unit, and the EDU;
- Full public health notification (based on local operations plans and procedures);
- Station evacuation (to a safe location, away from air vents, pre-screened for secondary devices, and secured through appropriate perimeter control);
- Identification of persons in the at-risk area, not releasing them until they are appropriately evaluated by medical/public health professionals;
- Vehicle re-routing or slowing (to a speed of 5 mph or less) through the station/facility area until responders arrive;
- Suspension of service to and from the station or facility once responders arrive and until the incident is resolved;
- Notification to passengers that, because of police action, a particular station or facility will be bypassed and is no longer in service; and
- Provision of alternate transportation for passengers (as necessary).

In assessing response to an unexpected and potentially catastrophic situation, transportation personnel should consider the following:

- Weather conditions, wind direction, atmospheric conditions, and time of day are elements that will be vitally important to first responders in planning their emergency operations and are critical in selecting an appropriate evacuation site.
- Evacuation to a safe location (upwind, uphill of station, and air vents/vehicle) and then waiting for arriving responders is likely to minimize potential exposure and avoid casualties.

- To ensure that cross-contamination does not occur at the evacuation site, separate those who may have been exposed to the suspected release or material from those that were not (by at least 50 feet, with potentially exposed victims located downhill and downwind of other evacuated persons). Such separation also ensures priority medical treatment for those who were exposed.
- Ideally, evacuated persons should be reassured. This is necessary to avoid potentially affected victims from leaving the scene, panicking, and creating chaos for the arriving responders, as well as unnecessary secondary contamination. Reinforce to evacuees that no one who is able to walk and talk is in immediate danger of loss of life and that trained responders and medical personnel will be arriving shortly.
- Maintaining perimeter control so that no one unwittingly enters a hazardous situation or crime scene and that potentially affected victims do not leave the evacuation site. Depending on transportation procedures and the presence of transportation police, the initial transportation CP can be established.
- Situational assessment helps establish the required resources. Emergency responders will need to know the number of apparent victims, the types of injuries and symptoms presented (potentially none if it is a biological incident), and the type of exposure.
- An event description is necessary to provide responders with information from witnesses (what they saw and heard) and to support assessments on the presence of secondary devices.
- Staging information is important to provide safe access routes and staging areas for arriving responders.
- An inventory of available resources is necessary to identify nearby sources of water or facilities that could support decontamination (this is particularly important in cold weather).
- The site is a crime scene. Secure evidence. If possible, identify the names and contact information of all evacuated persons, using the system's standard procedures and forms (e.g., accident courtesy cards), because these individuals may have valuable information for responders.

Important elements of this checklist are shown in Figures 7-5 and 7-6. Table 7-7 provides suggestions for transportation personnel investigating the scene of a probable WMD incident. To support the capabilities of transportation personnel to perform these activities, the transportation system should consider building on planning activities previously performed to ensure that the right resources will be delivered to the correct location in an orderly and controlled manner. These activities may include

- Identification of pre-determined staging areas and creation of plans of major stations and sites served by the public transportation agency, including street addresses and directions for controllers/dispatchers to convey to responders.
- Development of playbooks or notebooks for stations and major facilities to direct emergency response and coordination with location responders. Such notebooks should include
  - Location or address and nearby businesses and resources;
  - Type of facility and typical uses by employees and passengers;
  - Daytime and nighttime populations;
  - 24-hour points of contact;
  - Voice, pager, beeper, and email information for facility;
  - Unique hazards in facility (e.g., traction power third rail, HAZMAT storage);
  - Threat history;
  - Floor plans and lay-out;
  - Photos (e.g., ground level, aerial, key exits and entrances, staging areas);
  - HVAC system characteristics;
  - Procedures for controlling ventilation in response to toxic material release;
  - Location of vents to street level and air out-take locations;
  - Communications capabilities, accounting for radio dead spots and emergency phones; and
  - Location of equipment rooms and available power, water, and lighting (both primary and backup).
- Implementation of pre-determined mobilization plans, coordinated with local law enforcement and community planning agencies, on the delivery of equipment and personnel to sites away from the incident scene for coordinated deployment.
- The use of quick-reference wallet guides for reporting and managing emergencies occurring on the system can be helpful.
- The use of equipment pre-staged throughout the system, including reinforced concrete barriers and portable fencing to support effective perimeter control on-scene, is advisable.
- Implementation of revised procedures to direct the ways in which public transportation personnel report to an incident scene, are tracked at the scene, and are appropriately credentialed and protected to enter potentially hazardous areas.

Table 7-8 lists reminders on terrorism response and preparedness.

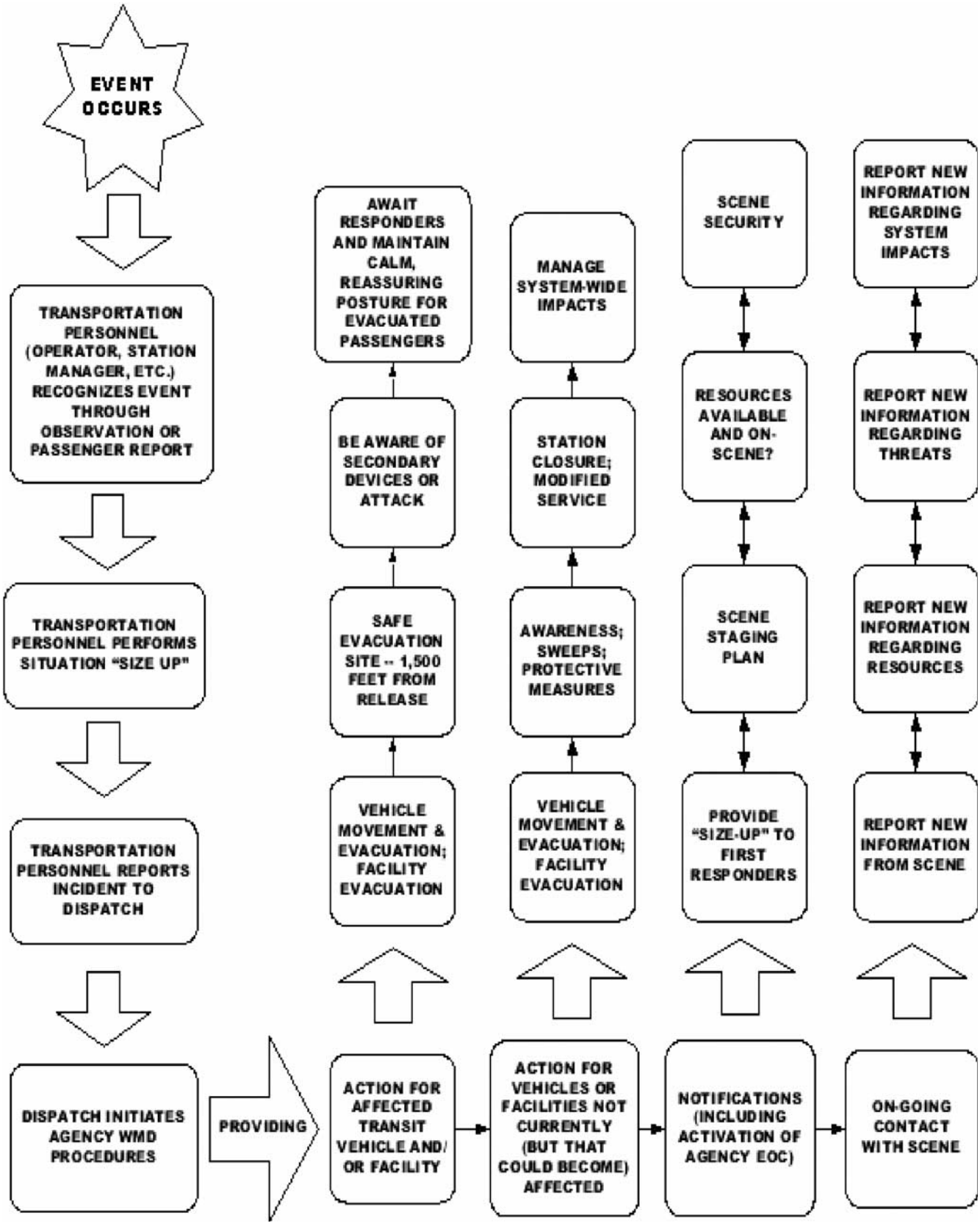


Figure 7-5. Response protocol for suspected terrorist incident.

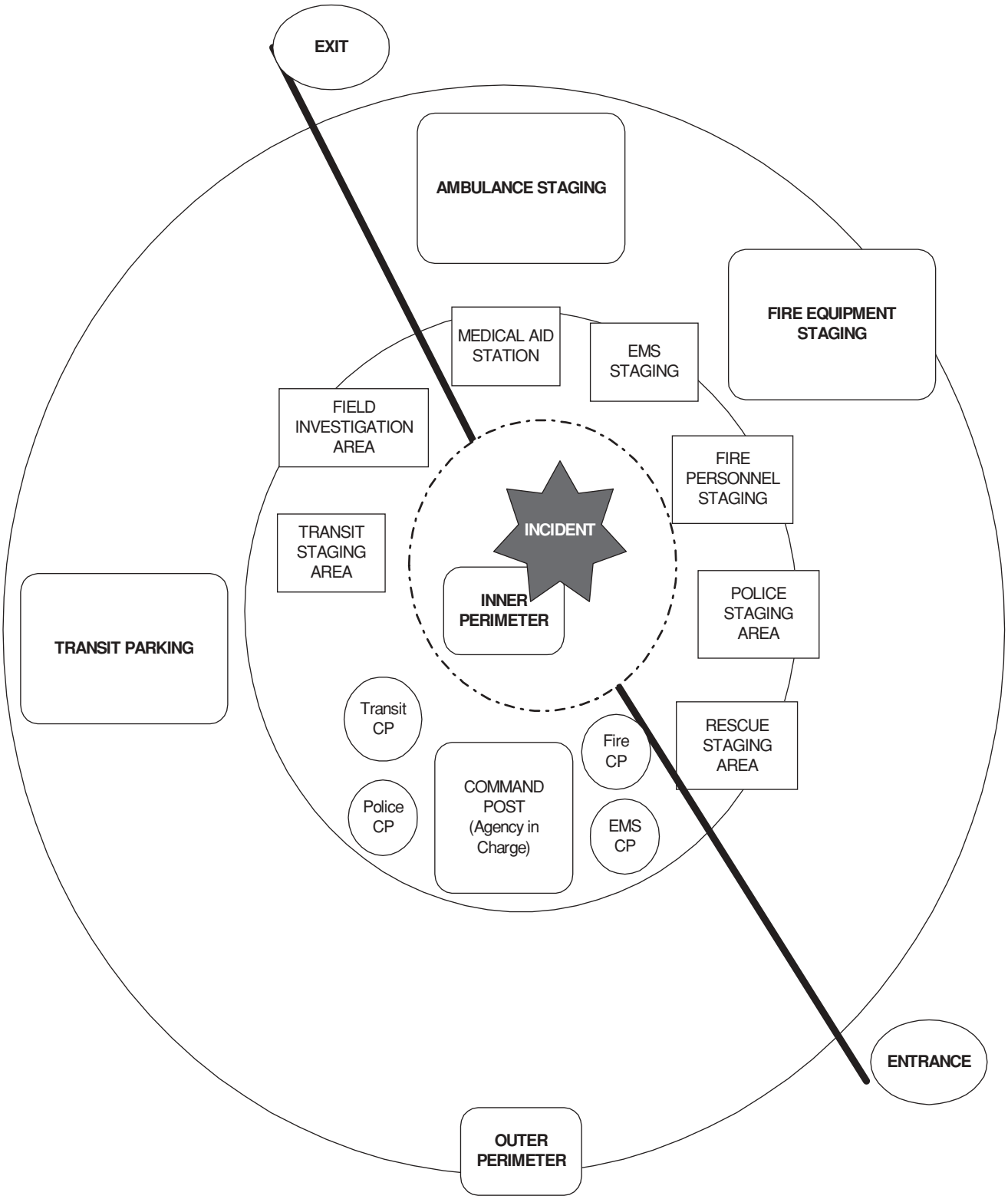


Figure 7-6. Schematic for response in transportation environment.

TABLE 7-7 Checklist for response to events indicating WMD agent release

CHECKLIST FOR RESPONSE TO UNUSUAL / NON-ROUTINE EVENTS THAT COULD INDICATE WMD AGENT RELEASE
Remain Aware of the Possibilities -- Look for Indicators.
Based on the report(s) received, is there ONE indicator of a potential CBRN incident?
o There are two or more people displaying the same unexplained symptoms.
o There is an unexplained substance, low-lying cloud, residue, smell, or oily coating.
o There is an unusual/out-of-place package or item
o There are discarded aerosol spray devices, medical masks and/or equipment.
o There are unexplained/out-of-place actions of persons wearing personal protective equipment or appearing shielded or covered.
o There are an unusual number of dead or dying insects or animals.
o There is an unusual abundance of insects or animals entering the system.
Based on reports received from the scene, is there MORE THAN ONE indicator of a potential incident?
o Multiple indicators from above list OR
o Any of the indicators from the above list PLUS
▪ Location of the report is a populated area or event was previously identified by vulnerability assessments as a possible target.
▪ There is a known threat against this location.
▪ There also has been an explosion or fire at this location.
▪ There are transportation and/or public safety responders injured, incapacitated or unaccounted for at the location.
▪ There are multiple victims at the incident location
▪ The unusual event is occurring on a symbolic date.
▪ The unusual event is occurring when reports from local law enforcement indicate heightened threat levels.
If There Is One Indicator, Approach the Scene with Heightened Awareness.
Be alert for additional indicators when nearing the scene.
Double-check the proper functioning of communications equipment, though the use of mobile phones or hand-held radios is not recommended if secondary devices may be present.
Be prepared to change the approach if additional indicators are identified.
If There Is More Than One Indicator, Scene May Be a Terrorist Incident. Consider Additional Response Measures, Prior to Reaching Incident Location.
Initiate notifications according to transportation system internal procedures and local emergency response plan.
Consider a law enforcement escort.
Initiate approach with EXTREME caution.
Be alert for actions against responders (including secondary devices, secondary

TABLE 7-7 (Continued)

releases, and assaults).
Evaluate available PPE measures.
Identify possible escape routes, and designate rally or regrouping points in the event that the incident site is hazardous.
Identify possible locations for water, sand, dirt, towels, or other materials that could remove contamination.
Coordinate Scene Approach.
Approach scene from upwind and upgrade. Ensure that others do the same. Minimum safe upwind distance for a possible chemical incident is at least 300 feet, and 1,000 feet for an explosives-related incident.
While approaching incident scene, identify and report safe staging location(s) for incoming responders and resources (as appropriate).
If scene indicates a substance, package or other event that can be investigated through standard agency procedures, initiate investigation, maintaining awareness regarding the need for local public safety agencies, even if it means closing the station and disrupting service.
If observation from a safe vantage point indicates an unfolding event, remain calm and observe scene; do not attempt rescue. Immediate and accurate field reports are the best way to help victims and ensure the greatest good for the greatest number.
From a safe vantage point, attempt to determine the exact location(s) of the toxic substance. Observe patterns or clusters in the severity of symptoms demonstrated by victims, and also observe where the ambulatory victims have assembled.
From a safe vantage point, by yelling or with bull horn, station or vehicle public address system, telephone or radio, attempt to establish communication with transportation/public safety personnel on scene. These personnel may be contaminated, incapacitated, or unable to support response action. If possible, ascertain their status and location.
Be aware of the need for protection from possible contamination. Consider the need for maximum respiratory protection. If PPE is available, and if transportation personnel are appropriately trained, don PPE. Otherwise, observe upwind distance parameters.
Establish Command.
Prior to providing dispatch with an assessment, establish command at scene, or join in with the on-going effort at scene. This is particularly important in cases where transportation operations and law enforcement personnel will jointly manage the scene.
Transportation personnel are the on-scene authority figures immediately following the incident and will be integrated into the ICS established by local responders upon their arrival.
Enlist other transportation/law enforcement personnel to control the scene by isolating it from further entry by passengers and personnel. As appropriate, depending on the events at the scene, enlist transportation/law enforcement personnel to direct evacuation of scene (from a safe distance) using voice,

(*continued on next page*)

TABLE 7-7 (Continued)

bullhorns or public address announcements.
Assign other transportation personnel/law enforcement personnel responding to the scene to provide/designate safe staging locations for incoming units and to assess the scene for hazards to responders.
Assign other transportation personnel/law enforcement personnel to assess emergency egress routes (as appropriate) and re-define rally points (if necessary).
Ensure personnel accountability, establishing sign-in and tracking procedures for employees at the scene.
Assess security of the approach; be cognizant regarding the possibility of secondary devices or attacks aimed at responders.
Conduct Incident Size-Up And Assessment.
When observing the scene, look for the following:
O Exact location of incident;
O Nearest upwind street access;
O Estimated number of casualties;
O Signs and symptoms of casualties;
O Presence of oily liquids, vapors, clouds and mists;
O Unusual odors, color of smoke, vapor clouds;
O Weather conditions (if appropriate);
O Status of station/facility ventilation systems (if appropriate);
O Other resources available to support immediate evacuation from the scene and initial decontamination (sprinkler system, nearby swimming pool or lake, dirt or sand, towels or cloth);
O Information available on possible perpetrators, including physical descriptions, clothing, make/model of vehicles, or other identifying characteristics;
O Whether witnesses to the event have been identified (or reported from the affected area by transportation/law enforcement personnel);
O Debris field near the device (if applicable);
O Exact location of transportation/law enforcement/public safety personnel at the scene and the status of these personnel;
O Presence of structural damage without an apparent cause; and
O System disruptions (e.g., power outages, fire alarms, sprinkler systems).
Report incident to transportation Dispatch/Control center, summarizing what is observed.
Consider the need for additional/specialized resources (fire, EMS, HAZMAT unit, law enforcement/EDU [bomb squad], emergency management, public works, public health, environmental agencies, others).
Consider scene as potential crime scene, and report information to dispatch keeping in mind that everything at the scene is potential evidence.
Understand that Dispatch/Control Center will make appropriate notifications (according to system procedures, and based on requests for specialized resources).

TABLE 7-7 (Continued)

Carefully observe and report signs and systems to transportation Dispatch/Control Center; from a safe vantage point monitor the medical condition of those who appear affected, providing assessments of any change in their condition. If possible, identify commonalities in signs and symptoms, using criteria listed below. Odors listed may be identified by victims. Smelling an agent is not suggested.

CHEMICAL AGENT	SYMPTOMS AND ODOR
Nerve Agents **Tabun** **Sarin** **Soman** **VX**	SLUDGE symptoms**:** **S**alivation **L**acrimation (excessive tearing) **U**rination **D**efecation **G**astric - **E**mptying Pinpoint pupils (everything looks dark) Seizures Odor: possible fruity smell
Cyanides **Hydrogen Cyanide** **Cyanogen Chloride**	Symptoms: anxiety, hyperventilation, difficulty breathing. Cherry-red skin is possible, though not often seen. Odor: Bitter almonds
Vesicants **Mustard** **Lewisite**	Symptoms: redness and blistering of the skin. Inhalation injury may result in respiratory distress. Odor: horseradish, onions, garlic or mustard
Pulmonary Intoxicants **Chlorine** **Phosgene**	Symptoms: Delayed onset of non-cardiogenic pulmonary edema; collapse. Odor: Phosgene: Newly mown hay. Chlorine: Swimming pool water. Anhydrous Ammonia: Acrid, sharp scent.
Riot Control Agents **Pepper Spray** **Mace**	Symptoms: Ear, nose, mouth and eye irritation. Odor: pepper or irritating scent.

(*continued on next page*)

TABLE 7-7 (Continued)

	Tear Gas		
Focus On Establishing Perimeter(s) and Organizing Scene for Responders.			
Get incident scene ready for arriving responders.			
Establish control over scene by the following actions.			
O Establishing/re-defining the **outer incident perimeter** to provide safe ingress and egress for arriving responders, and the **inner incident perimeter** to isolate the hazardous area.			
O Ensuring that incident scene has been evacuated by all ambulatory persons and that access to this area is now sealed off.			
O Clearly separating and controlling evacuated persons who appear unaffected at the scene from walking casualties who appear affected by:			
▪ Using voice, bullhorn, or public address system to direct those who appear/or may be contaminated upwind/upgrade from the incident site, but away from the evacuation site; and			
▪ Providing reassurance, discouraging self-evacuation, and communicating (using voice, bullhorn or public address system) that responders are on their way.			
O Continue to watch scene for unusual activity; perpetrators may be nearby or could be among the injured.			
O Maintain awareness, anticipating the potential for multiple hazard locations that may require re-defining outer (and inner) operational perimeters.			
At all times, be aware of site security and check for snipers, secondary devices, suspicious packages, or other threats.			
Continue to monitor weather and wind; remain upwind of scene release.			
Identify water supply or other decontamination materials in vicinity (sprinkler system, pool, pond, dirt, clean fabric, etc.).			
Coordinate staging and arrival of first responders:			
O If practical, position first arriving units and responders upwind and uphill;			
O Direct other units to approach from upwind and uphill if possible;			
O Avoid stacking units where they interfere with each other's evacuation route;			
O Avoid line-of-sight staging with suspected explosive devices;			
O Strictly enforce staging instructions;			
O Consider having units back into position so that they can leave the scene efficiently, and			
O Avoid vapor clouds, mist, and unknown liquids.			
Maintain communications with Dispatch/Control Center, notify of changes in weather conditions, available site resources, and condition of assembled victims.			
Await other transportation personnel and first responders.			
Prepare listing of safety threats/scene hazards for arriving responders. Consider the **TRACEM** mechanisms: **T**hermal, **R**adiological, **A**sphyxiant, **C**hemical, **E**tiological, and **M**echanical.			

TABLE 7-7 (Continued)

Update estimates of victims (ambulatory and non-ambulatory).
Remember that the incident scene is also a crime scene and all precautions need to be taken to preserve evidence.
Begin to identify witnesses and other people at scene.
Prepare to join in UC with local fire service responders and law enforcement.
Assign transportation incident safety and public relations functions to work with arriving responders.
Meet and brief arriving responders. Provide the most up-to-date information available.
Support Arriving Responders.
Work with responders to ensure that appropriate notifications are made to potentially affected organizations that may support response to incident (local hospitals, local public health agencies, local EMA, mutual aid partners, etc.)
Provide responders with maps, schematics, drawings and/or pictures of affected facility, as well as CCTV feeds (if available) and a full briefing regarding operation of emergency communications technology within the station, facility or location.
Support responder needs for special resources, perhaps available within the transportation system or locations served by the transportation system.
Ensure that transportation safety and liaison personnel provide first responders with full briefings regarding any special or developing hazards at the scene.
Ensure that responders and transportation personnel understand incident response layout and containment zones, and where transportation personnel are and are not allowed to go. It is advisable that a credentialing system be established, if possible.
Depending on weather and wind conditions, it is suggested that transportation personnel stand ready to provide vehicles, equipment, water/stand-pipe access, and blankets to support responder efforts to decontaminate and transport victims.
It is advisable that transportation personnel coordinate public information requirements with the UC established by local responders, and consider the impacts of the event on their own service.
It is suggested that transportation personnel work with responders to determine if security conditions are such that a full or partial system shutdown is appropriate.

TABLE 7-8 Reminders

PRACTICE MAKES PERFECT.

- Planning. Participate in joint planning and assessment with local community and responders.
- Documentation. Commit policies and procedures to writing.
- Exercises. Drill each step and the whole program.
- Knowledge. Keep up with new developments.
- Communication. Evaluate technology and procedures.
- Sharing. Exchange plans, procedures and concerns with local responders.

REMEMBER RAPID-T.

- R - Recognition.
- P - Protection.
- D - Decontamination.
- T - Triage, Treatment.

THINK LONG-TERM.

- Be safe, be prepared. Do not become a victim!
- A good first response sets the stage.
- Concentrate on good common sense planning.

STAY AWARE.

- Approach scene from upwind/upgrade.
- Wear at least respiratory protection immediately.
- Alert other responders of potentially dangerous conditions.
- Restrict entry to area.
- Evaluate victims' signs/symptoms and alert others.

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ACRONYMS, ABBREVIATIONS AND INITIALISMS

ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ATC	automatic train control
ATF	Alcohol, Tobacco, and Firearms
B-NICE	biological, nuclear, incendiary, chemical, and explosive
BOMA	Building Owners and Manager's Association
CBD	central business district
CBRN	chemical, biological, radiological, or nuclear
CBWNP	chemical and biological weapons nonproliferation program
CCTV	closed-circuit television
CDC	Centers for Disease Control and Prevention
CDISS	Centre for Defense and International Security Studies
CNS	Center for Nonproliferation Studies
COOP	continuity of operations
CP	command post
CPTED	crime prevention through environmental design
CRC	contamination reduction corridor
CTAA	Community Transportation Association of America
DART	Dallas Area Rapid Transit
DHS	Department of Homeland Security
DOD	Department of Defense
DPS	Department of Public Safety
EAP	employee assistance program
EAS	emergency alert status or emergency alert system
EDCS	emergency decontamination corridor system
EDU	explosives disposal unit
EM	emergency manager
EMA	emergency management agency
EMS	Emergency Management Services or Emergency Medical Services
EMT	emergency management team
EOC	emergency operations center
EOP	emergency operations plan or emergency operating procedure
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-To-Know Act
EPPC	emergency preparedness and prevention council
ERG	U.S. Department of Transportation Emergency Response Guide
ESF	emergency support function
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FERP	facility emergency response plan
FIC	field incident commander
FIRP	facility incidence response plan
FIRT	facility incidence response team
FRP	facility response plan
FRT	facility response team
FTA	Federal Transit Administration
GAO	U.S. General Accounting Office
HAZMAT	hazardous materials
HMRT	hazardous materials response team
HOV	high-occupancy vehicle
HSPD-5	Homeland Security Presidential Directive 5
HVAC	heating, ventilation and air conditioning
IACP	International Association of Chiefs of Police
IAP	incident action plan
IC	incident commander
ICP	incident command post
ICS	incident command system
ICT	International Policy Institute for Counter-Terrorism
IED	improvised explosive device
IID	improvised incendiary device
IMO	incident management organization
IMS	incident management system
INC	incident notification checklist
IOC	incident operations center
IRA	Irish Republican Army
IRP	incidence response plan
IRT	incidence response team
IT	information technology
ITS	intelligent transportation systems
JOC	joint bus-rail operations center
LAW	light antitank weapon
LDS	ladder pipe decontamination system
LED	light emitting diode
LEPC	local emergency planning committee
LESLP	London Emergency Services Liaison Panel
LRV	light rail vehicle
MACS	Multi-Agency Coordination System
MBO	management by objectives
MCI	mass casualty incidents
MOU	memorandum of understanding
MOW	maintenance-of-way
MPO	metropolitan planning organization
MTI	Mineta Transportation Institute

NAACP	National Association for the Advancement of Colored People
NBC	nuclear, biological and chemical
NFPA	National Fire Protection Association
NIMS	National Incident Management System
NIOSH	National Institute for Occupational Safety and Health
NRC	National Response Center or Nuclear Regulatory Commission
NRP	national response plan
NTI	National Transit Institute
NTSB	National Transportation Safety Board
OCC	operations control center
OEM	Office of Emergency Management
OSHA	Occupational Safety and Health Administration
PDA	personal digital assistant
PIO	public information officer
PPE	personal protective equipment
RAPID-T	recognition, protection, decontamination, triage, treatment
ROW	right of way
SAR	search and rescue
SBCCOM	soldier and biological chemical command
SCADA	supervisory control and data acquisition
SCP	situational crime prevention
SEP	state emergency plan
SEPTA	Southeastern Pennsylvania Transportation Authority
SOP	standard operating procedure
SSAPP	system safety program plan
SSPP	system security program plan
START	simple triage and rapid treatment/transport
SVP	safety verification plan
SWAT	special weapons and tactics
TCRP	Transit Cooperative Research Program
TDD	telecommunication device for the deaf
TIC	transit incident commander
TMA	transportation management association
TMC	traffic management center
TNT	trinitrotoluene
TOSIC	transit on-site incident commander
TRACEM	thermal; radiological; asphyxiation; chemical; etiological; and mechanical
Transit EOC	Joint Transit Bus and Rail Emergency Operations Center
TRB	Transportation Research Board
TSA	Transportation Security Administration
TSI	Transportation Safety Institute
UC	unified command
UCS	unified command structure
UK	United Kingdom
USDOT	United States Department of Transportation
WMD	weapon of mass destruction

APPENDIX A

EMERGENCY MOBILIZATION SURVEY COVER LETTER AND RESEARCH INSTRUMENT

APPENDIX A: EMERGENCY MOBILIZATION SURVEY COVER LETTER AND RESEARCH INSTRUMENT

This appendix presents the survey research instrument and accompanying cover letter in their original format, as they were distributed, via e-mail, to 238 public transportation systems (100 large urban systems and 138 small rural, or paratransit systems) across the country.

MTA
McCormick, Taylor & Associates, Inc.
Engineers and Planners

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Sent as email attachment
MOB-JNB-02-009
November 21, 2002

TO: Public Transportation Providers

Re: Survey in Support of TCRP J-10B(01), FY 2002, Emergency Response Mobilization Strategies and Guidelines for Transit

Dear Transportation Colleague:

In the wake of the horrific events of the September 11th attacks of last year, the Transportation Cooperative Research Program (TCRP), an arm of the Transportation Research Board and the National Academies, launched a number of new studies to learn about the best practices being employed by the nation's public transportation providers in the area of transportation security, communication and emergency response.

One of these studies, entitled Emergency Response Mobilization Strategies and Guidelines for Transit, is intended to investigate the emergency response practices being used by public transportation systems. McCormick, Taylor & Associates, Inc., a Philadelphia-based engineering and planning firm was selected to perform this study. To that end, we are gathering information from approximately 250 of the nation's public transportation providers, both large and small, urban and rural and widely geographically dispersed, to better understand public transportation's overall readiness in the face of both natural and man-made emergency incidents. The attached survey will greatly assist our efforts to investigate this question.

This short survey is being sent as an e-mail attachment to this letter. We estimate that it will require approximately 15-20 minutes to complete the survey. Though the survey is fairly general, we appreciate any concerns you may have as to the security of your answers. For this reason, rather than having an e-mail response, we are requesting that you print out the survey, complete it and fax it back to David Chia at Planners Collaborative (617-338-4228), one of our subcontractors for this work. Your answers will be combined and analyzed together with all other respondents so no data will be discernable as related to your system. Despite the questions asking you to identify

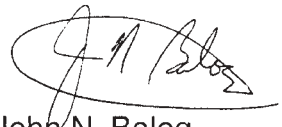
yourself and your transportation system for follow-up, we will not release or publish any individual survey responses.

We very much appreciate your willingness to take part in this very important effort to gauge the nation's public transportation preparedness. Your answers will help to improve practices nationwide.

Please feel free to contact me or TCRP's Senior Program Manager, Stephan Parker at (202) 334-2554, should you have any questions about this request.

Further, as mentioned at the end of the survey, we would be very pleased if you would be willing to speak with us directly and share more details related to this topic. Thank you for your cooperation.

Sincerely,
McCormick, Taylor & Associates, Inc.



John N. Balog
Principal Investigator and
Program Manager, Transportation Research

Attachment: Emergency Mobilization Survey

EMERGENCY MOBILIZATION SURVEY

INSTRUCTIONS

Please complete this survey after printing it out on your computer, filling it out as legibly as possible and faxing it back to David Chia at Planners Collaborative, McCormick, Taylor & Associates' subcontractor at 617-338-4228 by Wednesday, December 4th. Thank you in advance for your cooperation. You may direct any questions you may have to John N. Balog, Principal Investigator, at 215-592-4200.

Survey Completed by: _____ **Title:** _____

Phone Number: _____ **E-Mail Address:** _____

System or Agency Name: _____

Our system operates in revenue service:
(directly or under contract - please check all that apply and note number of vehicles)

Applies (✔)	Vehicle Type	# of vehicles or cars		Applies (✔)	Vehicle Type	# of vehicles or cars
	Buses				Commuter Rail	
	Paratransit Vehicles				Ferries	
	Light Rail				Other (Specify): _____	
	Heavy Rail				Other (Specify): _____	

Our security forces are made up of: (please check all that apply):

(✔)			(✔)	
	Local Police/Sheriff			Contracted Security Services
	Transit Police Force			Contract Police Services

The system directly employs: _____ people (full-time and full-time equivalents).

1. Does your system or agency meet regularly with local agencies, such as Emergency Management Agencies, Offices of Emergency Management, and Local Emergency Planning Committees, in the community emergency planning process?
   ☐ Yes ☐ No ☐ Not Sure

2. Has your system identified the emergency/disaster events most likely to occur in its region?
   ☐ Yes ☐ No ☐ Not Sure

3. Has your transit system developed a Security Plan containing Emergency Plans covering a range of possible natural and man-made emergency events and including strategies for continuing to deliver public transportation service under a range of conditions?
   ☐ Yes ☐ No.

4. Even if your system does not have a overall security plan, do you have procedures in place which:	YES (✔)	NO (✔)
Define who does what, when, where, and how to lessen the effects of, prepare for, respond to, and recover from emergency incidents?		
Provide updated contact and on-call systems ensuring 24/7 access to critical internal decision-makers, both at headquarters and in the field?		
Refer to the incident command system (ICS), and use its concepts to organize transit incident management and ensure coordination with emergency response and service agencies?		
Include reference to mutual aid and other support agreements with appropriate local and state agencies?		
Describe how the Emergency Operations Center is established?		
Include the roles and responsibilities of dispatchers or controllers during emergency situations?		
Describe your system's procedure for establishing an incident command post, and for requesting, staging and tracking resources and personnel?		
Describe the system's organization of personnel into incident response teams, facility response teams, or some other designation to ensure that capable system personnel arrive on the scene with the right equipment?		
Detail the system's response to specific types of incidents (for instance, fires, accidents, flooding, bomb threats, hazardous materials spills, snow/ice conditions, etc.)?		

5. Have all personnel been appropriately trained (according to their responsibilities) on how to respond in an emergency situation?
   ☐ Yes ☐ No

6. Has your system integrated with local, State and Federal Homeland Security programs to develop and coordinate protective measures for times of heightened threat?
   ☐ Yes ☐ No ☐ Not Sure

7. Has your system met with companies/agencies experienced in evacuation planning, such as nuclear power plants and chemical companies, for advice and recommendations regarding evacuation planning?
   ☐ Yes ☐ No ☐ Not Sure

8. Has your system reviewed the understanding of other local or regional emergency response agencies regarding your system's available capabilities and resources in times of emergency?
   ☐ Yes ☐ No ☐ Not Sure

9. In your experience with the local emergency planning process, have you identified any of the following concerns?	Yes, this has been a concern. (✔)	No, this has not been a concern. (✔)	Not sure (✔)
Local planning agencies may not fully understand public transportation, and how it can support community response to an emergency.			
Local planning agencies may fail to place sufficient priority on effective traffic management following emergency incidents.			
Local planning agencies may not have provisions for integrating up-to-date information on construction projects and detours into emergency evacuation plans.			
Local planning agencies may not consider regional and state impacts (and required coordination) resulting from local evacuations and events.			
Local planning agencies may not be able to forecast the impacts of evacuations on local traffic conditions.			
Local planning agencies may not address the full range of hazards facing the community and the different effects on traffic conditions.			
Local planning agencies may view rapid evacuation as the only response available, failing to consider staggered evacuations or in-place sheltering, which assist in traffic management.			
Local planning agencies may not consider the impacts of time-of-day and school closures on traffic patterns in emergencies.			
Local emergency plans may fail to fully address public information requirements during emergencies.			
Local plans may not address the needs of people in hospitals, nursing homes, assisted living centers, and those without cars or access to cars, as well as inhabitants of prisons and correctional facilities.			
Local planning agencies may not appreciate the value of pre-designated evacuation and incident staging plans (including transportation routes) for major facilities within the community.			
Local planning agencies may not appreciate their flexibility in using public transportation to separate			

9. In your experience with the local emergency planning process, have you identified any of the following concerns?	Yes, this has been a concern. (✔)	No, this has not been a concern. (✔)	Not sure (✔)
citizens from their cars for a brief period of time, facilitating immediate, large-scale evacuations of downtown areas and sheltering of evacuated persons until they can be brought back safely to their cars for their journey home.			

10. Has your system conducted an emergency response simulation drill in the last six months?
☐ Yes ☐ No

11. Does your system use "no notice" drills/tabletop simulations to heighten your system's ability to implement the incident command system during an actual emergency response?
☐ Yes ☐ No ☐ Not Sure

12. Does your system evaluate its implementation of the incident command system as part of its on-going program of emergency exercises and drills?
☐ Yes ☐ No ☐ Not Sure

13. According to the scale (at right) consisting of not important, somewhat important, important, very important, and critical, **please rank the importance of each of the following concepts to your system's emergency preparedness and planning program**:	Not Important (✔)	Somewhat Important (✔)	Important (✔)	Very Important (✔)	Critical (✔)
Training and procedures to raise employee awareness and recognition of security or terrorism indicators (for example, vibration, leaks or cracks in tunnels, smoke, strange odors, strange clouds or mists, out-of-place items, unusual activity, etc.).					
Coordination of local and regional threat evaluation regarding decisions to suspend transportation service, to inspect systems prior to resumption of service, and to prioritize service needs upon service re-start.					
Activities to support an incident command system or equivalent that is effectively and consistently used by line and supervisory personnel in minor events (small fire, vehicle break-down) as well as major ones.					

13. According to the scale (at right) consisting of not important, somewhat important, important, very important, and critical, **please rank the importance of each of the following concepts to your system's emergency preparedness and planning program:**	Not Important (✔)	Somewhat Important (✔)	Important (✔)	Very Important (✔)	Critical (✔)
Integration of the public transportation system into the community emergency response process for analysis of traffic routing alternatives, coordinating with all affected agencies and traffic management centers in the area.					
Integration of public transportation into decision-making regarding options for community evacuation, reverse routing, and in-place sheltering of people.					
Procedures ensuring immediate access to local decision-makers regarding any issue affecting the safety of the public transportation system or its employees.					
Procedures clarifying the roles of transportation personnel, including safety directors, engineers and inspectors, in assessing and managing risks at incident site(s) affected by the incident.					
Procedures clarifying the ability of system personnel to access critical locations near an incident site to perform assessments and evaluate the condition of structures.					
Procedures integrating the transportation system facility evacuation plans and incident staging plans into the larger community response effort.					
Coordinated plans for managing chemical, biological, radiological or nuclear releases in public transportation facilities or vehicles, as well as recovery plans outlining local standards for decontamination of these facilities or vehicles.					
Procedures for immediate implementation of a coordinated public information campaign that provides clear directions to people regarding evacuation routes and the status of transportation service.					

14. Has your system identified best practices for emergency planning that you believe could benefit others in industry?
☐ Yes ☐ No ☐ Not Sure

15. **If you answered "Yes" to question #14,** would you be willing to describe these practices to members of the TCRP Research Team?
    ☐ Yes ☐ No ☐ Not Sure

Thank you for your cooperation. Your responses will help improve the security readiness of the transit community.

APPENDIX B

SURVEY OF U.S. PUBLIC TRANSPORTATION SYSTEMS

Appendix B is not provided herein but is available as *TCRP Web-Only Document 25*.

APPENDIX C

UNDERSTANDING THE INCIDENT COMMAND SYSTEM (ICS)

In order to achieve sound decision-making in a chaotic and emotionally charged environment, it is highly advisable to have in place a process for effective emergency management that is achieved through dedicated emergency planning and training. This is particularly true for response to acts of terrorism and violence. Planning for such events encompasses the anticipated need to maintain service to the extent possible, and the reality that the public transportation system may be called upon by other agencies in the region to provide response and recovery assistance.

This appendix section provides a comprehensive discussion of the Incident Command System (ICS) as used by local response agencies. It highlights the ways in which ICS is applied to a variety of emergency response situations. Section 3 of the main portion of the Guide goes further to describe how public transportation systems can use ICS principles to create an Incident Management Organization (IMO) that is uniquely suited to its operations. This facilities an agency's response to emergencies and makes its response to more complex situations compatible with the organizational structures used by fire services, law enforcement and other emergency responders. Section 4 of the Guide elaborates on this subject by describing how IMO can be documented in an EOP.

ICS

Professional responders have developed a method for managing emergencies efficiently: the ICS. It has proven itself successful in a variety of applications from small emergencies to catastrophes. FEMA and all state emergency management agencies have adopted ICS. Most local EOPs also specify ICS as the incident management system for responding agencies.

ICS is a standardized on-scene incident management concept designed specifically to allow responders to adopt an integrated organizational structure equal to the complexity and demands of any single incident or multiple incidents without being hindered by jurisdictional boundaries.

Management of events, incidents, or disasters based on ICS principles allows responding agencies to communicate using common terminology and operating procedures. ICS begins developing from the time an incident is initiated and continues until management of the response and coordination of services no longer exists. ICS can be utilized for any type or size of event or incident. ICS enables integrated communication and planning by establishing a manageable span of control. It divides an emergency response into five manageable functions essential for emergency response operations: Command, Operations, Planning, Logistics, and Finance and Administration. Figure C-1 illustrates a typical ICS structure.

A list of the duties generally associated with each ICS function is as follows.

- The Incident Commander (IC) is responsible for all aspects of the response, including developing incident objectives and managing all incident operations.

  The IC is faced with many responsibilities when he/she arrives on scene. Unless specifically assigned to another member of the Command or General Staffs, these responsibilities remain with the IC. Some of the more complex responsibilities include:
  - establishing immediate priorities for the safety of responders, other emergency workers, bystanders, and people involved in the incident;
  - stabilizing the incident by ensuring life safety and managing resources efficiently and cost effectively;
  - determining incident objectives and strategy to achieve the objectives;
  - establishing and monitoring incident organization;
  - approving implementation of the written or oral Incident Action Plan (IAP); and
  - ensuring adequate health and safety measures are in place.
- The Command Staff is responsible for public affairs, health and safety, and liaison activities within the incident command structure. The IC remains responsible for these activities or may assign individuals to carry out these responsibilities who report directly to the IC.
  - The Information Officer's role is to develop and release information about the incident to the news media, incident personnel, and other appropriate agencies and organizations.
  - The Liaison Officer's role is to serve as the point of contact for assisting and coordinating activities between the IC and various agencies and groups. This may include congressional personnel, local government officials, and criminal investigating organizations, and investigators arriving on the scene.
  - The Safety Officer's role is to develop and recommend measures to the IC for assuring personnel health and safety and to assess and/or anticipate hazardous and unsafe situations. The Safety Officer also develops the Site Safety Plan (SSP), reviews the IAP for safety implications, and provides timely, complete, specific, and accurate assessment of hazards and required controls.

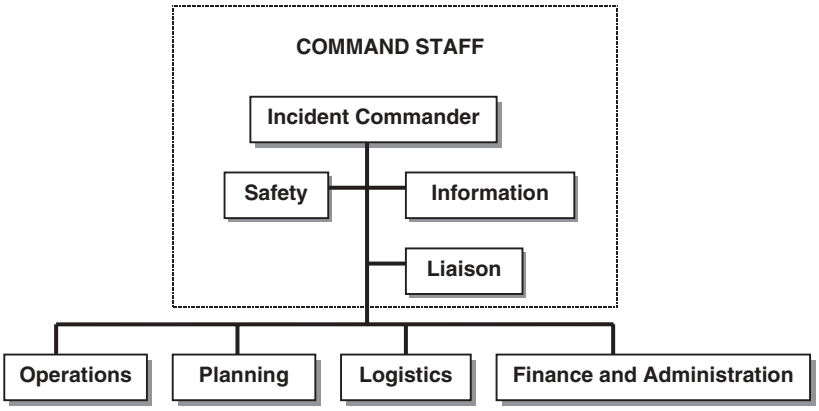


Figure C-1. ICS structure.

- General Staff includes Operations, Planning, Logistics, and Finance/Administrative responsibilities. These remain with the IC until assigned to another individual. When Operations, Planning, Logistics or Finance/Administrative responsibilities are established as separate functions under the IC, they are managed by a section chief and can be supported by other functional units.
  - Operations Staff is responsible for all operations directly applicable to the primary response mission.
  - Planning Staff is responsible for collecting, evaluating, and disseminating tactical information related to the incident, and for preparing and documenting IAPs.
  - Logistics Staff is responsible for providing facilities, services, and materials for incident response.
  - Finance and Administrative Staff is responsible for financial, administrative, and cost analysis aspects of the incident.

It is suggested that the ICS be organized to provide for the following kinds of operation and as depicted in Figure C-2.

- Single Command, which typically includes single jurisdiction responsibility with single agency involvement, and, depending on the type of incident, may include single jurisdiction responsibility with multi-agency involvement, where supporting agencies provide representatives to coordinate with the agency in command.
- Unified Command, which typically includes multi-jurisdictional responsibility with multi-agency involvement, and depending on the type of incident and the responders involved, may also include single jurisdiction responsibility with multi-agency involvement.

EXPANDING RESPONSE USING ICS

Initially, the IC will be the senior first-responder to arrive at the scene. As additional responders arrive, command will transfer based on who has primary authority for overall control of the incident. As incidents grow in size or become more complex, the responsible jurisdiction or agency may assign

Figure C-2. Types of ICS command.

a more highly qualified IC. At transfer of command, it is strongly advisable that the outgoing IC provides the incoming IC a full briefing and notifies all staff of the command change. The ICS organizational structure builds from the top down, expanding through the following organizational levels.

- Section. This is the ICS organizational level having functional responsibility for primary segments of incident operations, including Operations, Planning/Intelligence, Logistics, and Finance/Administration.
- Branch. This is the ICS organizational level having functional responsibility for major segments of incident operation. The Branch level is organizationally situated between Section and Groups in Operations and between Section and Units in Logistics.
- Group. This is the level established to divide the incident into functional areas of operations. Groups are composed of resources assembled to perform a special function not necessarily within a single geographic division.
- Division. This ICS organizational level is responsible for operations within a defined geographic area or with functional responsibility. The Division level is organizationally situated below the Branch.
- Unit. This ICS organizational level has functional responsibility. Units are commonly used in incident Planning, Logistics, or Finance/Administration sections and can be used in operations for some applications. Units are also found in Emergency Operations Center (EOC) organizations.
- Single Resource. These are teams comprised of individual items of equipment, the personnel required to properly utilize them, and communications.
- Task Force. A task force is any combination of resources with common communications and a leader. Task Forces can be pre-designated to satisfy local needs.
- Strike Team. This includes a set number of resources of the same kind and type, which have an established minimum number of personnel. Strike Teams always have a leader and have common communications among resource elements. Strike Teams can be constructed from fire engine companies, or rescue units or HAZMAT units, or any kind of resource where a combination of similar elements becomes a useful tactical resource.

A graphic illustrating the ICS organizational structure is shown in Figure C-3.

As incidents grow, the IC will establish the other positions. The first designation typically made by the IC is the Operations Section Chief, who may then designate Branch Supervisors with management responsibility for various functions within the section. Branch Supervisors may then designate Team Leaders with responsibility for specific tasks. The type and number of management levels is always based on the needs of the incident. The IC may delegate functional authority, but always retains ultimate responsibility for the incident.

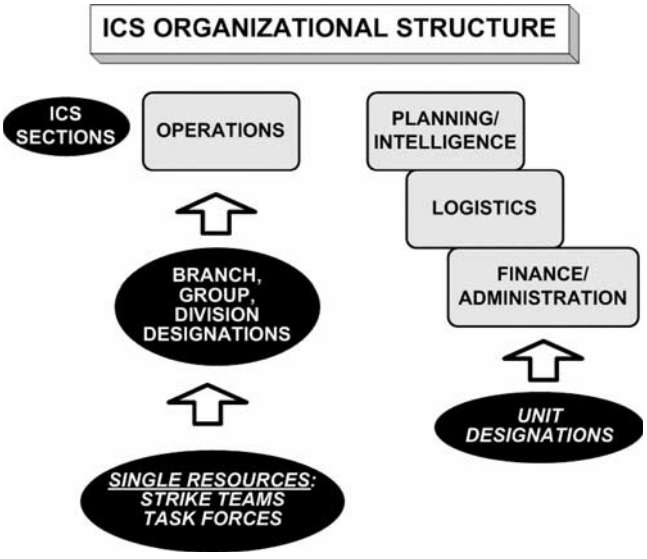


Figure C-3. ICS organizational structure.

Throughout expansion of the organization, it is suggested that incident management under ICS satisfy the following objectives:

- establishing and maintaining command;
- ensuring responder safety;
- assessing incident priorities and determining operational objectives;
- developing and implementing the Incident Action Plan (IAP);
- maintaining a manageable span of control;
- managing incident resources and coordinating overall emergency activities;
- coordinating the activities of outside agencies;
- authorizing the release of information to the media; and
- keeping track of costs.

In fulfilling these objectives, it is essential that all cooperating agencies understand and utilize a standard terminology for organizational functions, resource elements, and facilities. Such standardization facilitates effective communications among all agencies involved at an emergency scene, and enhances the organization of the response. Central features of ICS are as follows.

- Command Post (CP). The CP is the location from which incident operations are directed and there is only one. In a Unified Command Structure (UCS) where several agencies or jurisdictions are involved, responsible individuals designated by their respective agencies are co-located at the CP. The planning function is also performed at the CP, and normally the field communications center would be established at this location. The CP may be co-located with the incident base if communications requirements can be achieved.

- Incident Base. The Incident Base is the location at which primary support personnel activities are assigned. The Base houses all equipment and personnel support operations. The Logistics Section may be located at the Base and normally the Base will not be relocated. If possible, it is desirable that Incident Base locations be included in the pre-incident plans.
- Staging Areas. A Staging Area is a temporary location at an incident where personnel and equipment are kept while awaiting tactical assignment. In all cases, equipment and people resources are always in the staging area or on available status. They are ready to pursue an assignment within three minutes. There may be multiple staging areas assigned for specific needs. Examples include medical, fire, police, etc. It is desirable that each staging area has different access routes for incoming and outgoing resources. It is suggested that each staging area be located out of any possible line of direct hazard effects, to minimize risk to resources. It is advisable that staging areas be large enough to accommodate anticipated resources and have room for growth.
- Resource Status. All tactical resources at an incident will be in one of three status conditions.
  - Assigned, resources working on a tactical assignment under the direction of a supervisor.
  - Available, resources ready for deployment.
  - Out-of-Service, resources that are not ready for available or assigned status (everyone else). Reasons for being out-of-service can include:
    - equipment service required;
    - rest (personnel),
    - staffing (insufficient personnel to operate equipment), and/or
    - environmental (darkness or weather).

The IC shall determine the initial need for groups and divisions. As the operation increases in size and complexity, it becomes the responsibility of the section officers to recommend to the IC the need for additional divisions/groups. The safety of personnel and maintaining the span of control is the primary reason for using divisions and groups. Divisions are assigned to specific geographical areas. Structural situations, such as are commonly involved in fires, are designated by the letter system for the sides of the building with Division "A" being the front of the building (or legal street address side of the building), and numbers shall be used for floors, i.e., Division 5 for the fifth floor. Functional units (groups) are identified by the function they perform (Salvage Group, Triage Group, etc.). Unit officers report to the Division/Group Supervisor and receive orders prior to deploying their company to task work. This configuration is summarized in Figure C-4. Other configurations for organizing an ICS response are illustrated in Figure C-5.

The IC will base the decision to expand (or contract) the ICS organization on three major incident priorities.

- Life safety. The IC's first priority is always the life safety of the emergency responders and the public.
- Incident stability. The IC is responsible for determining the strategy that will minimize the affect the incident may have on the surrounding area and maximize the response effort while using resources efficiently.
- Property conservation. The IC is responsible for minimizing damage to property while achieving the incident objectives. As incidents become more involved, the IC can activate additional general staff sections (planning, operations, logistics, and/or finance/administration), as necessary.

There are 36 basic positions in the complete ICS organization. The Command Staff, Branch Director, Division Supervisor, Task Force Leader, Team Leader, and some other positions may be duplicated (following span-of-control guidelines) if necessary to expand the organization for each of its functions. With all positions filled, ICS can manage up to 5,200 people. It is extremely rare that they all would be activated; only a major and very complex incident would require the full organization.

A basic organizational rule is that the duties of any unfilled position will be assumed by the next higher position. Thus, for moderately complex incidents where only perhaps one-third of the positions are activated, the complete range of duties and responsibilities would still be assigned to a specific person. For instance, if Command decides not to activate the finance or logistics sections, they would still be responsible for these functions. Another example might be if the Logistics Section Chief (or OIC) has only a moderate workload, a decision not to activate the Service and Support Branch Director positions would be made. In such a case, the Logistics Section Chief/OIC would assume the duties of the positions not filled.

This basic rule of delegation increases accountability and tends to encourage a stronger managerial perspective from Command and Section Chiefs. Figure C-6 illustrates the organizational components of a fully expanded ICS.

In staffing the ICS organization, supervisory positions are designed to provide ratios that satisfy modern management practice.

- The general rule is five subordinate units per supervisory position, although allowance is made to vary this ratio under special circumstances.
- If tasks are relatively simple or routine, taking place in a small area, communications are good, and the incident character is reasonably stable, then one supervisor may oversee up to eight subordinate units.
- Conversely, if the tasks are demanding, taking place over a large area, and incident character is changing, then the span of control might be reduced to one supervisor per two or three subordinates.

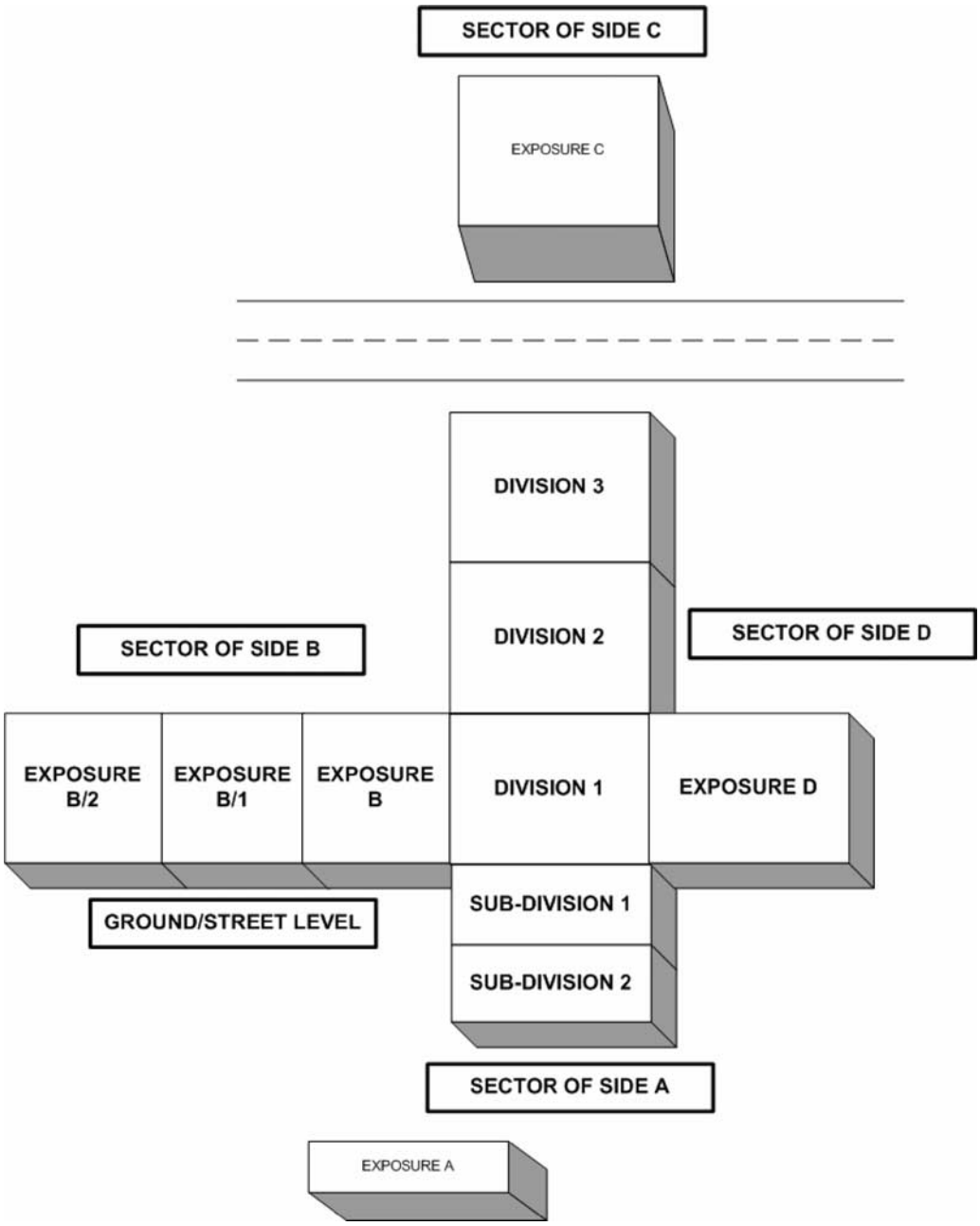


Figure C-4. ICS scene management convention for structure/building.

ICS is designed to provide the most efficient leadership possible under crisis conditions.

At each incident, command is assured through formal articulation of jurisdictional responsibilities, incident objectives, strategy development and selection, and tactics definition appropriate to the strategy to direct available resources. The IC's strategy is documented in an IAP, which may be communicated to command staff in a verbal briefing or as a written plan. The IAP is intended to provide supervisory personnel with a common understanding of the situation and direction for future action. The IAP typically includes a statement of objectives, organizational description, assignments, and support material such as maps and lists of available resources. An incident briefing form may be used on smaller incidents. Written plans are desirable when two or more jurisdictions are involved, when state and/or federal agencies are assisting local response personnel, or there has been significant turnover in the incident staff.

UNIFIED COMMAND (UC)

More than 90% of emergencies that occur daily in the U.S. are readily managed by local agencies using only their own

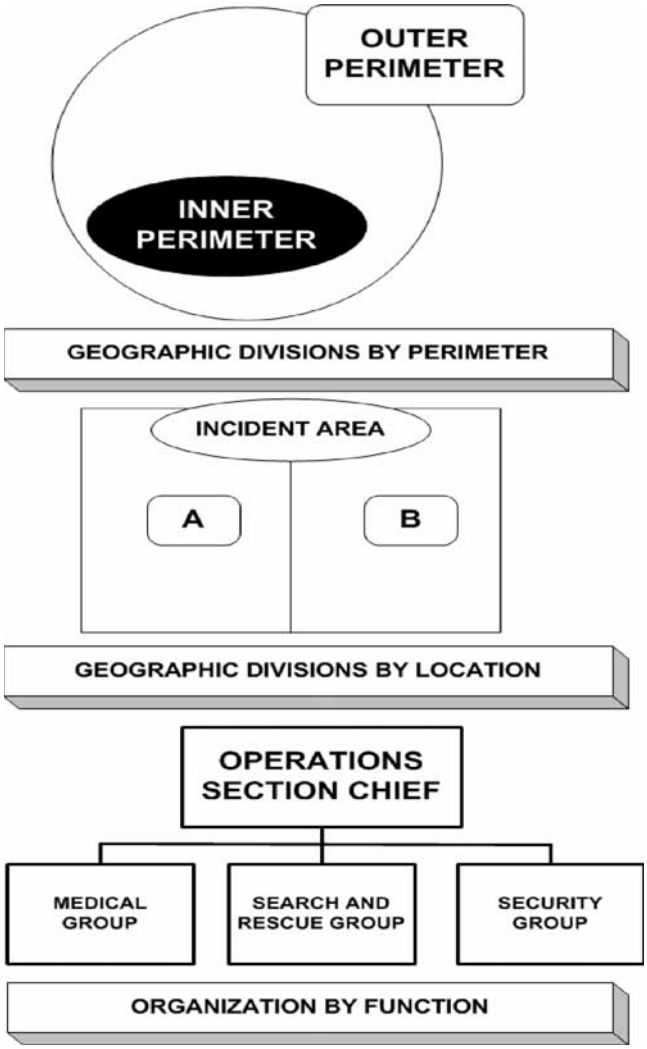


Figure C-5. Other configurations used for organizing ICS response.

resources. With the remaining emergencies, the responsible agency may exhaust its own resources and request assistance from neighboring jurisdictions. Many agencies are experienced with these automatic aid responses and assist each other on a routine and problem-free basis. These incidents do not call for Unified Command (UC) and are best handled under a single command structure. However, about five percent of all emergencies become serious enough to require the response of several agencies, each with its own legal obligation to perform some type of action, not just assist their neighbor. It is in these critical, multiple involvement emergencies that UC is appropriate. Examples of UC applications include the following.

- Incidents affecting more than one geographical jurisdiction. The classic example is of a wildfire starting in one jurisdiction and burning into one or more others as shown in Figure C-7. Floods and hazardous-materials incidents could be similar. The incident is essentially the same challenge in each jurisdiction, but the political and geographic boundaries mandate multi-agency involvement.
- Incidents affecting more than one functional jurisdiction. Major commercial airplane crashes are an example. The crash occurs in one geographical jurisdiction, but involves fire suppression, law enforcement, medical response, Federal Aviation Administration (FAA), National Transportation Safety Board (NTSB), and perhaps other agency response. All of these entities have different missions to perform, all at the same time, and all in the same place. The different functional roles, or statutory obligations, bring about their multiple involvements.
- Incidents affecting geographical and functional jurisdictions. These are typified by the Mt. St. Helens volcanic eruption and the Three Mile Island nuclear power plant accident in Pennsylvania. In these incidents, large numbers of federal, state, and local agencies become involved. The emergencies cross jurisdictional boundaries and overlay multiple functional authorities.

In today's world, the public, private, and political values at risk in major emergencies demand the most efficient methods of response and management. Meeting this demand when multiple and diverse agencies are involved becomes a very difficult task. The UC concept of ICS offers a process that participating agencies can use to improve overall management, whether their jurisdiction is geographic or functional.

Goals of the UC concept are to:

- improve information flow among involved agencies;
- develop a single collective approach to incident management;
- reduce or eliminate functional and jurisdictional complexities;
- optimize efforts of all agencies; and
- reduce or eliminate duplications of effort.

These are practical goals. They have been achieved with relative ease on actual incidents involving multiple fire agencies, incidents requiring fire and law enforcement coordination, and emergencies that included fire, law, and medical disciplines. As ICS becomes completely implemented by agencies across the country, the goals will be met with greater regularity and greater effectiveness.

ICS CHARACTERISTICS PERTINENT TO UC

Above all, ICS is based on commonality. Commonality is a major departure from the traditional ways agencies have operated, and creates significant opportunities for improvement over old methods. When agencies involved in a major emergency use ICS (the same organizational structure, the same ter-

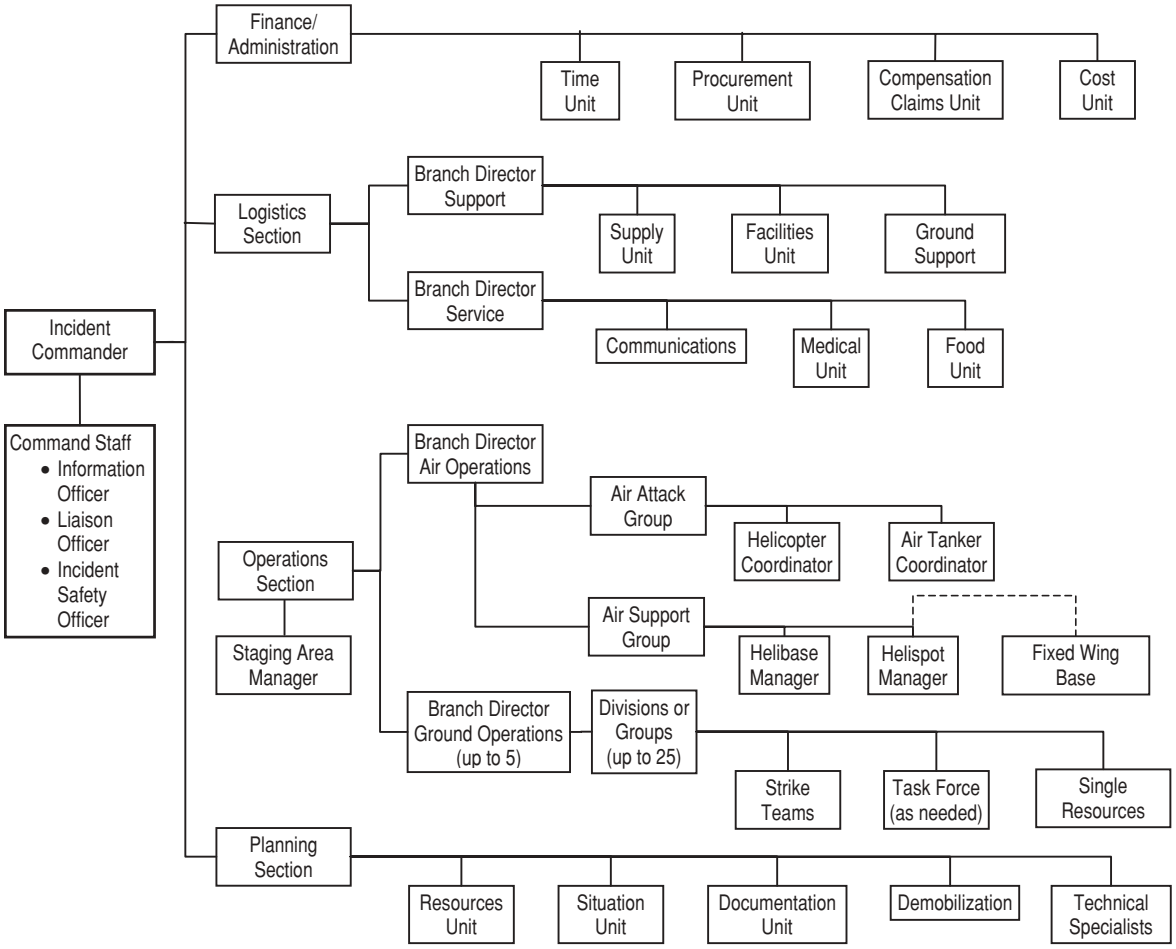


Figure C-6. Fully expanded ICS structure.

minology, and the same management procedures), there are few, if any, differences in operations. In essence, they are one organization, and can be managed as such. Instead of several command posts operating independently, the total operation can be directed from only one location. Instead of preparing several sets of plans (with no guarantee of coordination among them), only one set need be prepared to inform all participants. In place of several logistical and communications processes, only one system of collective and integrated procedures is used.

These five ICS characteristics (one organizational structure, one ICP, one planning process, one logistics center, and one communications framework) create a strong synergy. By meeting and working together at one location, preparing a single plan of action, and using other common procedures, the senior officers (Unified Commanders) from many agencies bring their collective powers to bear on the incident. They are able to share information, coordinate actions, improve resource utilization, greatly improve communications, and rapidly cope with changing incident conditions. This unified effort is supported and reinforced by the ICS planning process.

THE PLANNING PROCESS FOR UC

The planning process for UC is the same as for single Command, except that more people are involved. The process follows the Management-by-Objectives (MBO) sequence, uses the same worksheets and forms, and allows for both functional and geographic response authorities to combine objectives and actions.

The process starts with documentation of each Commander's objectives, just as though it were a single-agency incident. These objectives may be widely different depending on incident character, agency roles, and other factors. It is extremely important to understand that these separate, and perhaps diverse, objectives do not have to be forced into a consensus package. Unified planning is not a committee process that somehow resolves all differences in agency objectives before any action can take place. It is, however, a team process, that promotes open sharing of objectives and priorities. Through the process, the team formulates collective (which is significantly different than common) directions to address the needs of the entire incident.

Figure C-7. Wildfire involving multiple jurisdictions.

Once collective objectives and priorities are documented, the process continues as it would for single-agency involvement, except that all agencies are included.

- The organization is designed to utilize multi-agency resources according to all span-of-control, unit integrity, and functional clarity guidelines.
- Support, services, and communications requirements are obtained and assigned.
- Branch, division, and unit assignments are detailed.
- Financial considerations are defined and agreements are documented.
- Reality checking is accomplished by the staff of all agencies.
- The developed multi-agency plan is returned to the Unified Commanders for approval.

Again, it is important to understand that the individual Commanders in the group only approve those portions of the plan that affect their agencies.

UC CONFIGURATION

In addition to all of its other attributes, ICS is a common-sense system. It is designed with a great deal of inherent flexibility. This allows modification of the on-scene organization to meet specific conditions, complexities, and workloads for different incidents. There are also various ways that a UC group may be formed. The guidelines for deciding who will be in command are simple and apply at any level of incident complexity.

- Agency Role. Responding agencies will be filling one of two roles. They will be either jurisdictional, with direct statutory responsibility and authority, or they will be supporting agencies who have been called for help. Only jurisdictional agencies with statutory responsibility on some part of the incident can assign one of the Unified Commanders.
- Agency Authority. It is desirable that the agencies that assign Commanders have the authority to order, transport, and maintain the resources necessary to satisfy Command objectives. This authority is not dependent on size or budget level since even very small agencies may participate in a UC. It is dependent upon legitimate capability to pay the bills. (In the case of small agencies, this capability may come from state and federal assistance, but is nevertheless the required capability.) Only agencies with fiscal authority may assign one of the Unified Commanders.
- Applicability. These guidelines apply equally to multi-geographical, multi-functional, and multi-geographical-functional incidents. It is desirable that the guidelines can be and are modified to meet exceptional conditions. An incident with the proportions of a disaster will involve state and/or federal agencies, and officials from those government levels may be appropriate members of the Unified Command Group.
- Alternatives to Command Participation. There is a practical limitation on UC participation. Once a group exceeds about eight persons, the effectiveness of that group begins to deteriorate. ICS concepts recognize this and recommend that no more than eight people fill the Unified Command Group. During incidents where more than eight agencies have legitimate legal and fiscal authority, there are alternative ways to encourage total participation without having all in command. These and other alternatives have been used successfully on multi-agency and multi-disciplinary incidents. It requires training and experience to make the process work effectively. Pre-incident meetings, planning, and agreements facilitate the process.

THE INCIDENT ACTION PLANNING PROCESS

It is important that all incidents have some form of an IAP. It contains objectives reflecting the overall incident strategy, specific tactical actions, and supporting information for the next operational period. It is developed around a specified duration of time called an operational period, and will state the objectives to be achieved and describe the strategy, tactics, resources, and support required to achieve the objectives within the time frame. Generally, the length of the operational period is determined by the length of time needed to achieve objectives.

The IAP may be oral or written. Small incidents with only a few assigned resources may have a very simple plan, which may not be written. It is desirable that as incidents become larger, or require multi-agency involvement, the action plan be written. IAPs will vary in content and form depending upon the kind and size of the incident. ICS provides for the

use of a systematic planning process, and provides forms and formats for developing the IAP. The general guideline for using a written, instead of a verbal, action plan is when:

- two or more jurisdictions are involved;
- a number of organizational elements have been activated;
- the incident continues into another planning or operational period;
- it is required by agency policy.

For multi-agency incidents being run under a UC, it is suggested that the IAPs be written. This provides all agencies with a clear set of objectives, actions, and assignments. It also provides the organizational structure and the communications plan required to manage the incident effectively under UC. It is desirable that written IAPs include the following elements.

- Statement of Objectives. This establishes what is expected to be achieved. It is desirable that objectives be measurable.
- Organization. This describes what elements of the ICS organization will be in place for the next operational period.
- Tactics and Assignments. This describes the tactics and control operations, including what resources will be assigned. Resource assignments are often established by a division or group.
- Supporting Material. The examples could include a map of the incident, a communications plan, medical plan, a traffic plan, weather data, special precautions, and a safety message.

Whether verbal or written, the IAP process relies on the MBO framework and the use of forms to aid response.

- MBO Framework. The core organizational functions are assured.
  - Policy objectives and priorities are set by Command (the executive function). The organization required to satisfy the objectives is designed by Operations and Planning.
  - Support and service needs, including communications requirements, are clearly identified from the beginning of the incident, typically by Logistics.
  - Financial abilities and constraints are considered. This may be done by an activated Finance position, or reserved by Command.
  - A reality-checking review of the initial work is carried out. All participants in the process examine the tentative plan for completeness, feasibility, and capability to satisfy objectives. Results of the review are used to revise or strengthen the plan.
- Forms Aid the Process. The experienced emergency responders who developed ICS spent over a year designing the forms used in the planning process. Their work focused on preparing documents that would:
  - follow the MBO concept;
  - answer questions as to what information is needed and what actions are required on complex incidents;
  - be relatively easy to complete; and
  - be of real assistance, not just an paperwork exercise, for incident personnel working under crisis conditions.

After more than 20 years of experience with these tools, the general consensus is that these requirements have been satisfied. There are two types or categories of forms used in the incident action planning process.

- Action forms are those necessary to set objectives, assign the organization, and outline the tasks to be accomplished. These are combined into the written Action Plan and provided to the personnel who will do the work.
- Support and recording forms are the remainder. They assist incident management by providing worksheets for systematic plan development, assuring that data and records are available and that resources are accounted for, integrating communications capabilities, and documenting decisions.

SUPPORT FOR THE ICS: EMERGENCY OPERATIONS CENTERS

Response to major emergencies requires a field response and a policy component to oversee and coordinate all off-site activities, and to make decisions that relate to the jurisdiction's authority and legal position. ICS, which is a jurisdiction's field response system, is closely coordinated with a sister policy organization, typically managed through an EOC.

EOCs are normally activated at the request of the IC or based on the occurrence of incidents that meet specific thresholds required for activation. EOCs provide overall system direction and control, coordination and resource support for the CP.

The EOC will focus on such issues as staff scheduling, and obtaining, coordinating and directing highly specialized resources for the agency to fulfill its mission. The agency executive (Chief of Police, etc.) may be located at the EOC. When an EOC is activated, local authorities may establish a policy group comprised of the head of the local authority (e.g., Mayor) and other elected officials and senior executive officers in order to provide the EOC Director with policy direction. An example of this level of policy direction is the declaration of a state of local emergency.

Five EOC functions are typically performed.

- Management. This function is responsible for overall emergency policy and coordination, public information and media relations, agency liaison, and proper risk

management procedures, through the joint efforts of local government agencies and private organizations. These activities support the ICS Command staff.

- Operations. Operations is responsible for coordinating all jurisdictional operations in support of the emergency response through implementation of the jurisdiction's Action Plan.
- Planning. Planning is responsible for collecting, evaluating, and disseminating information, developing the jurisdiction's Action Plan and situational status in coordination with other functions, and maintaining all EOC documentation.
- Logistics. Logistics is responsible for providing facilities, services, personnel, equipment and materials.
- Finance/Administration. This function is responsible for financial activities and other administrative aspects.

Through these activities, EOCs ensure the activation and implementation of the locality's EOP and mutual aid agreements.

APPENDIX D
USEFUL MOBILIZATION RESOURCES

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Abbreviations used without definitions in TRB publications:

AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEEE	Institute of Electrical and Electronics Engineers
ITE	Institute of Transportation Engineers
NCHRP	National Cooperative Highway Research Program
NCTRP	National Cooperative Transit Research and Development Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
SAE	Society of Automotive Engineers
TCRP	Transit Cooperative Research Program
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation