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ACRP REPORT 12

An Airport Guide for Regional Emergency Planning for CBRNE Events

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Aviation • Security

TRANSPORTATION RESEARCH BOARD

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AIRPORT COOPERATIVE RESEARCH PROGRAM

Airports are vital national resources. They serve a key role in transportation of people and goods and in regional, national, and international commerce. They are where the nation's aviation system connects with other modes of transportation and where federal responsibility for managing and regulating air traffic operations intersects with the role of state and local governments that own and operate most airports. Research is necessary to solve common operating problems, to adapt appropriate new technologies from other industries, and to introduce innovations into the airport industry. The Airport Cooperative Research Program (ACRP) serves as one of the principal means by which the airport industry can develop innovative near-term solutions to meet demands placed on it.

The need for ACRP was identified in *TRB Special Report 272: Airport Research Needs: Cooperative Solutions* in 2003, based on a study sponsored by the Federal Aviation Administration (FAA). The ACRP carries out applied research on problems that are shared by airport operating agencies and are not being adequately addressed by existing federal research programs. It is modeled after the successful National Cooperative Highway Research Program and Transit Cooperative Research Program. The ACRP undertakes research and other technical activities in a variety of airport subject areas, including design, construction, maintenance, operations, safety, security, policy, planning, human resources, and administration. The ACRP provides a forum where airport operators can cooperatively address common operational problems.

The ACRP was authorized in December 2003 as part of the Vision 100-Century of Aviation Reauthorization Act. The primary participants in the ACRP are (1) an independent governing board, the ACRP Oversight Committee (AOC), appointed by the Secretary of the U.S. Department of Transportation with representation from airport operating agencies, other stakeholders, and relevant industry organizations such as the Airports Council International-North America (ACI-NA), the American Association of Airport Executives (AAAE), the National Association of State Aviation Officials (NASAO), and the Air Transport Association (ATA) as vital links to the airport community; (2) the TRB as program manager and secretariat for the governing board; and (3) the FAA as program sponsor. In October 2005, the FAA executed a contract with the National Academies formally initiating the program.

The ACRP benefits from the cooperation and participation of airport professionals, air carriers, shippers, state and local government officials, equipment and service suppliers, other airport users, and research organizations. Each of these participants has different interests and responsibilities, and each is an integral part of this cooperative research effort.

Research problem statements for the ACRP are solicited periodically but may be submitted to the TRB by anyone at any time. It is the responsibility of the AOC to formulate the research program by identifying the highest priority projects and defining funding levels and expected products.

Once selected, each ACRP project is assigned to an expert panel, appointed by the TRB. Panels include experienced practitioners and research specialists; heavy emphasis is placed on including airport professionals, the intended users of the research products. 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, ACRP project panels serve voluntarily without compensation.

Primary emphasis is placed on disseminating ACRP results to the intended end-users of the research: airport operating agencies, service providers, and suppliers. The ACRP produces a series of research reports for use by airport operators, local agencies, the FAA, and other interested parties, and industry associations may arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by airport-industry practitioners.

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COOPERATIVE RESEARCH PROGRAMS

FOREWORD

By S. A. Parker
    Staff Officer
    Transportation Research Board

ACRP Report 12: An Airport Guide for Regional Emergency Planning for CBRNE Events addresses the details airports should cover in their hazard and threat assessments and in their Airport Emergency Plans (AEPs) and Annexes so that response to significant incidents can be more thoroughly and accurately planned. It also discusses special issues involving terrorist use of chemical, biological, radiological, nuclear, or explosive (CBRNE) materials targeted to airports, and the mutual aid that would be drawn from beyond the immediate locale. The results of an airport survey on preparedness and the highlights from selected AEPs are presented for consideration by other airports. Also, federal emergency preparedness standards are compared to the provisions of AEPs in general, with suggestions on priorities for upgrading AEPs to meet those standards.

This report documents and presents the results of a study on airport emergency preparedness, why AEPs need to be coordinated with the strategic and tactical disaster plans of surrounding jurisdictions, and how those regional mutual aid partners can contribute to airport preparedness for major incidents. The report also addresses making AEPs compliant with the National Response Framework and the National Incident Management System. Eighteen AEPs were analyzed. Responses to a questionnaire on airport capabilities for emergency response informed the research, along with a collection of after-action reports and industry standards. The findings of the study suggest that while airports currently coordinate with local first responders at some level, wider connections with other regional partners, and more varied joint training exercises and assets are needed to maximize the protection of people and property at airports and to streamline mutual aid in the event of a major incident. Moreover, AEPs, in general, need a more detailed plan for addressing a wider range of threats and hazards, to better define an emergency operations center, and to provide assistance to families in the event of casualties at the airport.

The Tri-Data division of System Planning Corporation prepared this report for TRB under ACRP Project 5-01. ACRP has the following related works:

- ACRP Project 4-04, "Exercising Command-Level Decision Making for Critical Incidents at Airports."
- *ACRP Report 5: Quarantine Facilities for Arriving Air Travelers: Identification of Planning Needs and Costs.*

Readers are advised to access capsule descriptions and links to a variety of emergency management, infrastructure protection, and security-related items published by TRB at www.TRB.org/SecurityPubs.

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SUMMARY

An Airport Guide for Regional Emergency Planning for CBRNE Events

Airport planning for emergencies has evolved from a focus on air crashes to the inclusion of all hazards and threats to which airports are vulnerable. Though exercises are still based mostly on aircraft crashes, airport emergency plans (AEPs) have expanded their coverage to address more elements of disaster response and some aspects of chemical, biological, radiological, nuclear, and explosive incidents, including criminal attacks.

A major trend nationally over the past 10 years has been a move toward better coordination and emergency resource sharing at the state and regional level. Local mutual aid agreements and intra- and inter-state emergency assistance compacts are being replicated at the regional level, and airports need to be involved in this improved regional coordination.

Federal guidelines such as the National Incident Management System (NIMS), the National Response Framework (NRF) and supporting planning tools are followed by cities and counties which provide much of the mutual aid assistance to airports. Logically, airport plans should reflect the structure for response and recovery that surrounding jurisdictions have identified. The Federal Aviation Administration (FAA) has produced a draft circular stipulating how NIMS should become the basis for AEPs. This Airport Cooperative Research Report serves as a companion to those guidelines which are expected to become final at the end of 2008.

The research team from the TriData division of System Planning Corporation collected information about airport preparedness via an airport questionnaire and from reviewing 18 AEPs. The team compared that information to the forthcoming FAA guidelines; to NIMS requirements; to the NRF; and to industry standards, regulations, and relevant laws. The results comprise the basis for this primer which delves into the following areas and provides airport managers information they can use to strengthen emergency response and recovery planning.

This report addresses the details airports should cover in their hazard and threat assessments so that response to those incidents can be more thoroughly and accurately planned. It also discusses special issues involving terrorist use of chemical, biological, radiological, nuclear or explosive materials targeted at airports, and the mutual aid that would be drawn upon beyond the immediate locale. The results of an airport survey on preparedness and the highlights from selected AEPs are presented for consideration by other airports. Also, federal emergency preparedness standards are compared to the provisions of AEPs in general, with suggestions on priorities for upgrading AEPs to meet those standards.

Key Findings

There were many key findings from this research. Generally speaking, AEPs address many of the elements necessary for efficient and regionally coordinated response to the range of hazards and threats they face. However, there are important provisions that tend be lacking and levels of detail that are missing. Typically, airport plans do a good job of identifying the key airport personnel

who are responsible for disaster planning and management, and the first responder agency command structure is well detailed. Other results are as follows:

Communications

Tactical communications channels and procedures are sufficiently described though back-up systems are sometimes not identified, and they should be.

Planning with Regional Partners

Airports are working with many, but not all local stakeholders and airports need to broaden their scope to include regional resources because a disaster may make it impossible for close-in jurisdictions to provide help because they will be needed for their own service area. By the same token, airports should consider forming airport assistance pacts which designate those resources specific to airport operations that could be made available to help another airport during a major disaster. Airports are also advised to establish a regional advisory committee for response and recovery and to include private sector partners on the committee. Local government emergency plans should be obtained and studied to help ensure better communication and coordination.

Hazardous Materials and CBRNE

An airport's response to hazardous materials and communicable disease threats tends to be covered in AEPs; however radiological incidents, "dirty bombs," terrorist actions using weapons of mass destruction, and other threats are under-represented in the planning details.

Personnel Protective Equipment

More information on personal protective equipment (PPE) for emergency responders and managers at the airport needs to be provided. It is critical that airports explain what PPE is available, where it is stored, and who will use it.

Quarantine

Also connected to Chemical, Biological, Radiological, Nuclear, and (high yield) Explosives (CBRNE) and to natural disease outbreaks is the subject of quarantine. AEPs typically identify a small area where a passenger would be held for diagnosis and observation; however, if an entire planeload of passengers and the crew have to be socially isolated for a period of time, plans should discuss the particulars of those arrangements, which are substantial.

Under the International Health Regulations[1] and ICAO standards and recommended practices, potential quarantine facilities (i.e., space to receive and hold individuals who have been exposed to contagious disease) should be identified as part of an airport plan. It is important to note that these facilities need not be located at the airport.

Emergency Public Information

Some airports do not designate a dedicated public information officer (PIO), require training for those responsibilities, or provide for a joint information center. Rather, this critical func-

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[1] IHR Annex 1B.2(d) states that one of the core capacities of an airport designated by a country ("State Party") as a point of entry is "to provide for the assessment and, if required, quarantine of suspect travelers, *preferably in facilities away from the point of entry I*." (emphasis added).

tion often is described as being part of the airport manager's duties or the duty of another individual with collateral responsibilities, and this is not wise. The airport will have to handle a huge surge of media inquiries and will have to communicate the status of the disaster to the airport population at the time, along with the protective actions they should take. This is not a part-time job.

Family Assistance Center

The mechanics of setting up and operating a family assistance center is another area where plans need to be expanded. For major incidents, other than an airliner crash, it may well be the airport, not the airlines, that will have to arrange for family assistance services. Outside agencies supplying food, grief support, child care, and other services must be identified, and the site must be adequately equipped to enable protected communications, areas for meditation, interview rooms, and so forth.

Airport Emergency Operations Centers

More thought needs to go into setting up an Emergency Operations Center (EOC) and the equipment, capacity, and logistics of that important nerve center.

Evacuation/Protect-in-Place at an Airport

While the conditions that could require an evacuation are identified in plans, details on how the evacuation will proceed, where the collection points will be, and how the process will be supervised generally are very thin. Shelters and supplies for shelters need to be identified.

Mass Casualty Planning

A mass casualty incident would significantly stress airport resources and would require fatality management capabilities and a surge in EMS and hospital response. If injured or deceased individuals are victims of contamination, special arrangements and PPE would be necessary and should be covered in an AEP.

Formal Input from Regional Stakeholders

Emergency response partners in the region should be brought into the airport's emergency planning and training process. This can be accomplished through a formal advisory committee or other means, as long as key stakeholders have an opportunity to gauge their own plans and resources against hazards and threats to the response envisioned by the airport.

Private Sector Assistance

Private sector resources should be inventoried in detail and merged into the AEP along with specific information on how those resources could be quickly tapped for support.

Better Assessment of Disaster Impact

AEPs identify what hazards and threats could affect the airport and surrounding area. However, many do not analyze those threats in terms of their specific impact on airport operations, tenants, employees, and the public at large.

NIMS and Joint Exercises

As airports continue bringing their plans into compliance with NIMS, joint exercises—even if those are just table-top training sessions—should be organized for participation by a wide range of regional assets. That training should then be critiqued so that the lessons learned can inform changes to procedures and plans.

This report provides a host of good ideas drawn from airport AEPs that other airports can consider for their own plans. A list of priorities for bringing AEPs into compliance with NIMS and the upcoming FAA's guidance for strengthening AEPs is also provided. Future research on best practices and on the lessons learned from disasters, exercises, and training involving airports will continue the progress underway for greater public safety at airports.

CHAPTER 1

Background

In many ways, airports are like small cities or towns. Though there are few permanent residences at airports, many have hotels. Inside the terminal are restaurants, shops, and financial services. Airports have their own fire stations, security force, and operations that handle utilities and engineering services. They provide trash collection, emergency medical services, and communications. Airports also are multimodal transportation centers where taxis, planes, cars, buses, trucks, and sometimes underground or surface rail combine to move people and goods to various locations on site and away from the "jurisdiction."

All of this infrastructure and the constituents at an airport—employees, contractors, tenants, and the general public—are vulnerable to a host of hazards and potential disasters that can and do occur.

During the Cold War era, threat was defined primarily in terms of nuclear attack from enemies abroad. Civil defense shelters, "duck and cover" drills, and radiation detectors were well-known to Americans. Today, disaster preparedness is more far-reaching and inclusive of all hazards: extreme weather, hazardous materials accidents, natural disaster events, and acts of terrorism. The public and private sectors have invested heavily in improving threat assessments, plans, training, resource-sharing, communications, and stockpiles of critical supplies. The lessons learned from the major events of the last decade have triggered new laws and regulations that expand prevention strategies and augment response capabilities.

The same disaster preparedness and response planning standards that govern cities, counties, states, and federal agencies are now being viewed for their applicability to airports. And as government planning moved beyond a focus on surviving a nuclear weapon attack to comprehensive disaster planning, so, too, are airport managers expanding contingency plans from those based primarily on aircraft crashes to all potential emergencies. A goal of this project is to examine the special types of demands that a CBRNE event would place on the airport's emergency response structure and how the immediate region would be affected, as well as what critical resources might be available from within the region to manage the emergency.

The Federal Aviation Administration (FAA) sets standards for airport emergency plans (AEPs), reviews those plans, and certifies airports, in part, on the basis of an acceptable AEP. Political jurisdictions are guided by Department of Homeland Security (DHS) and Federal Emergency Management Agency (FEMA) regulations for emergency preparedness and homeland security. The National Response Framework (NRF) and the National Incident Management System (NIMS) are the primary tools that governments are expected to use. NIMS was "developed by the Secretary of Homeland Security at the request of the President, the National Incident Management System (NIMS) integrates effective practices in emergency response into a comprehensive national framework for incident management. The NIMS will enable responders at all levels to work together more effectively and efficiently to manage domestic incidents no matter what the cause, size or complexity, including catastrophic acts of terrorism and disasters. Federal agencies also are required to use the NIMS framework in domestic incident management and in support of state and local incident response and recovery activities."[2]

In early 2008, the FAA issued a draft of new guidelines and standards for the development of AEPs. The new guidelines draw from NIMS and are based on FEMA's Comprehensive Preparedness Guide (CPG) 101, "Producing Emergency Plans," among other related standards. Once the FAA guidelines are final (expected by the end of 2008) and then applied, they will set the stage for growing standardization on emergency response and will help airports coordinate their plans with emergency partners in the area. The new FAA standards will have to be followed by any airport that receives federal aid for projects as airports construct more comprehensive AEPs. Re-casting AEPs along the lines of the NRF and NIMS is a sensible step to take. Why is this so?

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[2]http://www.nimsonline.com/nims_faq.htm#0

The answer lies in the reality of what happens when a major disaster occurs. Almost by definition, significant emergencies generally overwhelm the capabilities of a given jurisdiction to respond with their own resources, or those available to them. Airports rely upon outside resources for most emergencies. Emergency medical services (including transport) for a mass casualty incident are a good example. Hazardous materials response teams, bomb squads, hostage negotiation units, decontamination units, volunteer organizations, and public information specialists typically are not located at airports. Those assets and others exist within government structures—cities, counties, states, or federal agencies—and they follow NIMS and the NRF, if not by the book then very close to it. The benefits of airports and their regional disaster response partners sharing a similar preparedness platform are apparent—a smoother coordination of response to a disaster.

In order to facilitate coordinated response among the critical stakeholders and to minimize disruptions of neighboring communities and health care facilities, airports have an interest in connecting their tactical response plans with the plans that surrounding, mutual aid organizations have in place.

The purpose of this publication is to help airport managers develop or improve their strategic relationships and written emergency plans with surrounding jurisdictions so that in the event of a major disaster, especially one involving chemical, biological, or radiological substances, an airport will be in a stronger position to manage a better and more effective response. The authors have tried to avoid duplicating material that is already well-covered in various FAA and DHS standards and regulations, including those which are identified in Chapter 5. Rather, this document is intended as a tool to complement other guidelines.

CHAPTER 2

Research Approach

The original research approach for this study relied strongly on obtaining copies of AEPs and airport disaster exercise evaluations. Unfortunately, multiple efforts to obtain this information directly from airports resulted in limited success—the reasons for which were documented in periodic reports to ACRP. Essentially, many airports were either concerned about sharing even their basic plan, indicated they did not have the time to provide that information, or did not respond to calls and emails. Other strategies had to be employed to obtain copies of AEPs and to gather information about how airports were organized to respond to all hazards and the extent to which they did emergency planning with surrounding jurisdictions and followed the principles of the incident command system on which NIMS is based.

Since obtaining AEPs was problematic, the team attempted to derive some basic information via a questionnaire (shown in Appendix A), at least to get a sense of what resources airports had identified for disaster response and how they were organized. The questionnaire was designed to capture background information on airport emergency preparedness and the internal structure for responding to disasters, while also requesting a copy of the airport AEP and any exercise critiques from recent drills.

We also held meetings with representatives from the Association of American Airport Executives, the International Association of Airport and Seaport Police, the Port Security Council, and the Airports Council International. These organizations suggested 32 airports in the various categories that were known to have strong elements in their emergency plans that could be documented for the project. The organizations also agreed to distribute information about the project with links to the questionnaire so that *all* airports could have an opportunity to participate. Despite these efforts, only 13 airports became involved in the questionnaire. They are identified in Table 1, while the responses are summarized in the third chapter.

Through the efforts of FAA Project Panel liaison, Paul Freidman, the research team did eventually obtain 18 AEPs.

FAA's cooperation was instrumental in acquiring this important component of information. The team developed a tool to evaluate AEPs in terms of NIMS criteria (*minus* those aspects of NIMS that were assessed to be irrelevant to airports and that environment) and per the incident command structure. A copy of the tool is found in Appendix B. The results of the AEP evaluations are discussed in Chapter 3.

While the AEP sample was limited, it did reflect a range of airport sizes and locations as well as different types of management and ownership. The review provided a window on what AEPs cover in general; the level of detail they provide; the gaps; and the extent to which they reflect many, some, or only a few of the NIMS standards. The AEPs yielded clues as to where airports are the best prepared and where preparedness planning should be more fully developed and documented.

The researchers met with top officials from the Washington Metropolitan Airport Authority (which includes Reagan National Airport and Dulles International Airport); spoke with a representative from the Minneapolis/Saint Paul airport; and received comprehensive plans from Mike Mandella, Port of Seattle Fire Department, and a member of the ACRP Panel for this project. A thorough literature search was undertaken. The most relevant of the publications and other sources that were found are listed in the References section.

With regard to learning how well AEPs worked when applied during airport disaster drills (and therefore what aspects of regional planning needed a fresh focus), the research team again encountered roadblocks. There is a dearth of available airport critiques for exercises or after-action reports about the response to actual events. The research team searched the literature and checked the DHS Lessons Learned Information System website. No documents were found that were specific to airport emergencies or exercises of airport-based scenarios. Given these roadblocks, the team again approached the task from a different perspective.

The team reviewed the lessons learned and best practices from *non*-airport emergencies for their applicability to the

Table 1. Airports that responded to the research questions.

Airport	Index	City/State	FAA Region
1. Boise Air Terminal/Gowen Field	B	Boise, ID	Northwest Mountains
2. Boston/Logan	E	Boston, MA	New England
3. Midway Airport	D	Chicago, IL	Great Lakes
4. Denver IAP Airport	E	Denver, CO	Northwest Mountains
5. Hartsfield-Jackson International Airport	E	Atlanta, GA	Southern
6. Jackson Municipal Airport Authority	C	Jackson, MS	Southern
7. Chattanooga Lovell Field Airport	C	Chattanooga, TN	Southern
8. MacCarran International Airport	E	Las Vegas, NV	Western Pacific
9. Minneapolis/Saint Paul	E	Minneapolis/Saint Paul, MN	Great Lakes
10. Reagan National Airport and Washington Dulles Airport	C and E	Arlington County and Loudon County, VA	Eastern
11. Sacramento Airport	C	Sacramento, CA	Western Pacific
12. Seattle/Tacoma Airport	E	Seattle, WA	Northwest Mountains
13. Tulsa Airport	D	Tulsa, OK	Southwest

airport environment. The problems and solutions encountered by other entities when faced with a major incident are relevant to any organization in which public protection and disaster response are vested. A major source of this information was the *Technical Report Series* of the U.S. Fire Administration (now part of DHS), which has been an essential part of their mission for almost three decades and contains over 75 post-disaster analyses.

Finally, as writing of the draft final report proceeded in winter of 2008, it was discovered that the FAA was about to release for comment new guidelines and a template for airport regional emergency planning based on NIMS and Incident Command System (ICS), *Advisory Circular 150/5200-31B.* The Circular directs airport operators to produce AEPs that are "functionally oriented, comprehensive in the assignment of responsibilities, and coordinated at all levels."

The Circular addresses the format of AEPs and gives provisions for systematically determining the threats and hazards to which an airport may be vulnerable. It also calls for the involvement of local communities and State and Federal agencies in airport emergency management and preparedness. In short, the Circular covers many of the same elements as this ACRP-sponsored research. Thus, the ACRP project underwent another major change as the research team had to shift the focus to making this report supportive of and compatible with the government's pending publication, without duplicating their information or causing confusion.

This report is now structured to complement the FAA's pending ruling, with an emphasis on the areas of airport emergency planning which the research indicated should be first in line for further development and which identifies accepted practices that can help airport managers augment their AEPs.

CHAPTER 3

Findings

Some airports have a strong working relationship with surrounding political jurisdictions. These airports have emergency plans which follow the construct of NIMS and the NRP and which have been prepared with input from first responders and emergency management agencies in the area. These airports have practiced their plans with stakeholders from throughout the region on a variety of scenarios possibly including mass decontamination, dirty bombs, tornadoes, quarantine operations, and acts of terrorism. Response managers at the airport can talk on the same radio frequencies using the same equipment as the local emergency response personnel, and when an incident occurs, pre-planned procedures are instantly set in motion among players who know and understand each others' roles. All concerned have identified the jurisdictions closest to them that have special response expertise in explosive ordnance, search and rescue, logistics management, damage assessment, and other areas requiring special skills and training. They are linked with private sector resources and tied in to human service and health and medical treatment providers such that should a mass casualty incident occur, victims would be rapidly triaged, treated, and transported to the right trauma centers. For this group of airports, future steps mostly will involve fine-tuning and updating established plans and practicing new scenarios.

Airports which are not in the position just described need to take additional measures to become current with national standards for emergency preparedness—and to ensure they are ready to handle all types of disasters. For these airports, it may be helpful to outline airport emergency planning from a regional perspective and how to engage in that process.

The closest partners are those jurisdictions contiguous to the airport whose emergency response personnel would be able to arrive immediately with critical assets to buttress the airport's emergency personnel. Typically, these are the fire, police, and emergency medical services responders, though in some cases, industrial fire or security brigades may be among the core partners as well. Many airports routinely work with nearby first responders but may not have established liaisons with other resources in the region.

Other primary partners are local hospitals, the public health service, the Medical Examiner's office (or Coroner's Office), the Red Cross (or Salvation Army and other volunteer groups), and the utility companies. Local government public works departments can be an enormous asset, and bring a wide range of skills and equipment, and supplier networks to a disaster situation. Other organizations available to assist include:

- Cities and counties,
- Other airports,
- State Police,
- State's regional emergency operations center,
- Private industry (major employers, heavy construction companies, large home improvement stores, trucking companies, etc.),
- Schools, and
- FEMA regional headquarters.
- State partners:
  –National Guard—regular forces and Civil Support Teams,
  –Environmental protection/environmental quality agency,
  –Department of Transportation,
  –Department of Emergency Management, and
  –Department of Public Works.
- Federal partners:
  –Federal Emergency Management Agency,
  –Department of Health and Human Services/Centers for Disease Control and Prevention,
  –Immigration and Customs Enforcement,
  –The Bureau of Alcohol, Tobacco, Firearms and Explosives,
  –Department of Transportation/Federal Aviation Administration,
  –Transportation Security Administration,
  –Corps of Engineers,
  –Coast Guard,
  –Military Reserve Units,

–Disaster Medical Assistance Team, and

–Disaster Mortuary Operational Response Team.

Special Considerations for CBRNE

This section of the report examines airport preparedness for CBRNE, including suggestions on areas to be covered within the AEP.

Command and Control

Command and control is one of the single most important aspects of a coordinated response. CBRNE events will rapidly overwhelm the airport operations staff if their plans, facilities, and exercises do not test the features of managing a CBRNE incident. Command and Control must be tactical (immediate on-scene) and strategic (centralized, forward-looking, coordinated interagency response). The complexities of a CBRNE event include the number and nature of casualties, the multilayered responses of local, state, and federal agencies, the extreme media attention and the large-scale logistical issues that could include a mass fatality response or the isolation and quarantine of dozens of passengers and the flight crew.

The airport operations manager and staff are typically the best suited to be the lead agency for an airport's response to a CBRNE event. If there are indicators that the event was intentionally caused, the FBI will arrive and will become the lead federal agency. Until their arrival, the airport's operations staff, with their first-responders and mutual aid partners will be in charge. There will be many federal and state agencies all with a legal mandate to participate in the resolution of the incident. This could easily include, in addition to the Federal Bureau of Investigation, the DHS, the Environmental Protection Agency (EPA), FAA, the National Transportation Safety Board (NTSB), and Customs and Border Protection just to name a few. State-level agencies would likely include state police, environmental response, health departments, and the National Guard. The operations staff should use the incident command system (ICS) to coordinate a multidiscipline, multi-agency, multi-jurisdictional federal crime scene. As a CBRNE incident will likely last for days, a single Incident Command structure would have to evolve to Unified Command.

For effective command and control to occur, airports will need several basic elements:

- Training in NIMS and the ICS with a focus on Unified Command;
- Facilities, such as mobile command posts and a designated Emergency Operations Center (EOC);
- A realistic, tested AEP that covers circumstances related to CBRNE; and
- Robust and redundant communications.

Training in ICS and NIMS is available from a variety of sources. ICS has been in use for many years and originated with the group of Federal agencies that responds to wildland fires. They recognized the need for a standard command system they all could follow. For example, the system is required by the Occupational Safety and Health Administration (OSHA) and the EPA for responses to hazardous materials releases. Federal agencies, arriving in the hours and days after a CBRNE event, will be operating under the direction of Homeland Security Presidential Directive #5 (HSPD-5), and the NRF requires that federal agencies comply with NIMS when providing disaster assistance.

The command center must be set up at a location with secure and redundant communications so that all involved parties can meet. It can be a mobile command post or a fixed facility. The Emergency Operations Center (EOC) should be at a separate location at the airport or in a contiguous jurisdiction. The EOC should be properly equipped for communications. The larger indexed airports often have both types of facilities. The challenge for the smaller airports is to designate space or a mobile unit on site that could be used as a command post. A CBRNE event has the potential to continue for several days or even weeks. This is especially true with a biological outbreak that may require quarantine or the closure of the airport by federal authorities.

The airport's emergency plan should be structured to be NIMS compliant. One of the major reasons for this measure is so the airport's plan will mirror the structure and provisions set forth in their mutual aid partner's plans, whose assets will be essential during a full-scale response. Plans must be tested and exercised beyond completing a checklist. The requirements for certified airports include annual table-top and triennial, and full scale exercises.

While the FAA requirements in Title 14 CFR Part 139.325 mandate "instructions for response to"[3] a variety of threats and hazards, CBRNE incidents are not mentioned by name. In actuality, airport exercises typically are driven by the mission to practice responding to an airplane crash. Few airports have addressed threats that are not based on that theme as a starting point. To be effective, airport emergency plans should address the challenges of a CBRNE event. Pre-scripted messages covering a host of potential situations save time when an emergency occurs. These can be prepared and approved in advance so they are ready to be used.

With the complexities of a CBRNE event, the airport operations staff and the public safety agencies that respond to the airport must be able to demonstrate unified command and the impacts of a change from a local response to federal involve-

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[3] Code of Federal Regulations Title 14: Aeronautics and Space, Part 139 Certification of Airports Subpart D-Operations section 139.325 Airport Emergency Plan.

ment. The evaluation criteria should be NIMS-compliant in conjunction with the Target Capabilities List published by DHS in September 2006.

Responder Communications

Interagency and intra-agency communications, the ability to warn and notify the internal and external customers of the airport of threats and hazards, and the means for keeping the public informed of events at the airport are all part of emergency public information tasks of the communications function.

Airport operations likely will be the lead agency to manage the communications hardware, software, and the communications systems of the airport. Communications hardware includes radio systems, video feeds, telephones, internet, and intranet systems. The airport also should have a designated public information officer with training in media relations. The airport must have the capability to communicate with other agencies or groups that might be involved with a CBRNE event at the airport.

At a minimum, the airport must be able to communicate internally (e.g., the operations staff must be able to communicate with the public safety forces and with the service and support elements at the airport). Additionally, the on-site employees, visitors, vendors, travelers, and others must be part of the communications loop. They will need to be told what to do and where to go. The communities surrounding the airport will rapidly become part of the response group so interoperability of equipment and communications protocols with them is essential. These communities will be providing mutual aid and may be at risk themselves, depending on the emergency (e.g., they may be down-wind of a chemical release or in the blast area of an explosion). The hospitals and EMS services in the area also are vital members of the communication group.

Cellular telephone systems should be scaled to absorb the spike. The communication hardware must be robust, functionally redundant, and interoperable with the mutual aid agencies and units that may respond with the airport. The EOC should have inter-operable radio equipment and multiple channels for the different disciplines to utilize. A multi-channel or "trunked" system is harder to overload and reduces the possibility that important traffic is missed or delayed. Cellular telephone systems should be able to absorb the spike in usage that occurs when an incident takes place. If the event includes a disruption of electrical power, battery and backup generator systems must be in place to ensure continued operations.

The operators of the hardware need to have effective, efficient protocols to guide the usage of the hardware. Code of Federal Regulations (CFR) 139.325 requires, "procedures for prompt response to all emergencies listed in paragraph (b) of this section, including a communications network."[4] The CFR further requires the plans to have contact lists that identify the name, location, and capacity of each hospital in the area as well as the name, location, and telephone number for each rescue squad, ambulance service, or military installation that agrees to provide medical assistance or transportation.[5] These lists must be maintained for accuracy. Notification drills and exercises are vital so that personnel are proficient in the use of the equipment and procedures for conducting notifications and establishing ongoing communications links.

Table-top exercises should be used to detect any flaws in the communications systems while a functional exercise can test and measure the capabilities of the hardware and the personnel that operate it.

Emergency Public Information

Providing the public with timely accurate information is a challenge for all agencies that deal with emergency responses. A CBRNE incident at an airport is certainly no exception. One of the first matters to handle during an emergency is activating a designated PIO and instructing all personnel to refer questions to that individual. Policies and procedures for the accurate and timely dissemination of information within the airport and to off-site stakeholders are essential.

The PIO should have a backup to ensure 24/7 coverage, and both individuals should be trained in disaster communications.

The NIMS documentation describes the use of a Joint Information Center (JIC) and a Joint Information System (JIS). The JIC is where all incident-related public information activities are coordinated. The concept is that all participating agencies would work from the same location. A JIC can be adjacent or nearby the EOC but should not be in the EOC since the commotion of EOC operations makes disseminating public information and answering media inquiries problematic. The physical layout of the JIC should enable press conferences and live television and radio broadcasts. It may be appropriate to locate the JIC in a separate facility from EOC, depending upon space availability.

A JIS is the process of bringing all of the stakeholder agencies together to deliver coordinated interagency messaging and executing public information plans, including rumor control. Developing this process with the stakeholder agencies takes time and practice. The practice can come in the annual table-top drills and the tri-annual exercises.

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[4] Code of Federal Regulations Title 14: Aeronautics and Space, Part 139 Certification of Airports Subpart D—Operations section 139.325 Airport Emergency Plan.
[5] Ibid

Firefighting and Hazmat Response

The airport fire department, often with support from off site resources, is the agency charged with extinguishing aircraft fires on airport property. The size and nature of the fire protection organization will vary depending upon the class and index of the airport and the size of the community near the airport. In some cases, there is a distinction between fire protection for the terminal and other buildings and fire protection for the airfield. In those situations, the local fire department will respond to reports of fire, smoke, or other hazardous conditions in the structures while another entity (often a vendor) provides fire protection for the aircraft on the runways and taxiways.

If the nearby community is large enough, the airport fire department may be part of the larger municipal fire department as in the case in Chicago and Philadelphia. In many other cases, the airport fire department is a stand-alone department that relies on extra resources from outside the airport. In some airports, Emergency Medical Service (EMS) is provided by the airport fire departments (EMS will be covered in more detail under the Health and Medical function).

A response to the release of hazardous materials (including fuels) is typically a fire department responsibility. Depending on the size and organization of the airport fire department, responses for levels higher than first-responder operations may require the assistance of an offsite hazmat team trained to the technician level as defined in the CFR 1910.120 and National Fire Prevention Association Standard 472. Most airport departments can handle the typical hazmat response generated by either fuel spills or damage to the packages of the small amounts of regulated hazardous materials that are shipped on commercial or cargo aircraft.

Decontamination

The airport fire department should be able to provide mass decontamination if a group of people is exposed to either a Toxic Industrial Chemical (TIC) or Chemical Warfare Agent (CWA). Mass decontamination plans and protocols have been established by and for fire departments. One of the first such protocols was developed in 1999 in conjunction with the U.S. Army's Soldier and Biological Chemical Command (SBCCOM) now the Research, Development, and Engineering Command and other units. SBCCOM's "Guidelines for Mass Casualty Decontamination during a Terrorist Chemical Agent Incident" applies the use of a minimum of two pumpers and, in some configurations, an elevated stream from an aerial device or articulating nozzle to provide a corridor where large quantities of water at low-pressure flush chemical contaminants from the patients. The presumption, of course, is that the exposed individuals are only mildly symptomatic, are ambulatory, and can move through the decontamination corridor on their own or with minimal assistance. (Privacy for disrobing often is an issue. The airport needs to designate in advance where decontamination operations would be carried out and to obtain the supplies and equipment necessary for this operation.)

For those individuals who are not ambulatory, decontamination prior to transport is required for both the safety of the ambulance crew and to prevent the ambulance from becoming cross-contaminated. Also, controlling the crowd before, during, and after the decontamination will require a robust law enforcement presence.

The airport fire department may have to use mutual aid resources to provide additional personnel and apparatuses to establish a mass decontamination process as described in the SBCCOM literature. In that case, the airport fire department and the mutual aid companies must train and drill on setting up the process. This is no different than any other multi-company drill.

Following the decontamination, the airport's EMS providers will take over to complete the triage, treatment, and transportation of the patients. Most decontamination operations use water, and subjects will be wet. Their outer garments will have been removed and separated from them. There must be provisions for both the privacy and comfort of the patients. In cold weather, hypothermia could become a secondary injury to the patients.

If a CBRNE incident in the form of an explosion causes a fire, the airport fire department should have the structural firefighting capabilities to extinguish that fire. Offsite assistance in the form of mutual aid should be available from the surrounding community. If the event is an explosion and there is a structural collapse(s), technical rescue units, such as regional, state, or federally mobilized, Urban Search and Rescue (USAR) would be called. If the airport fire department does not provide more than first responder operations-level hazmat response, technician-specialist level hazmat teams must be available through mutual aid. It is vital that the airport have effective mutual aid agreements with the offsite agencies as a CBRNE event will require assistance from the outside. The fire department must also be trained in NIMS beyond the traditional ICS roles.

Beyond the criteria established for the application of extinguishment agent on runways, the airport fire department must provide leadership and support in the recognition and identification of the threats and indications of a CBRNE event. At a minimum, the fire department should be well-enough versed in CBRNE threats that their members and the other public safety first responders will not be among the initial victims.

Exercises and drills should be held to test and measure the skills in recognizing and identifying CBRNE agents. Mass de-

contamination of affected people and the care for them after the decontamination is also a skill that can be tested and measured through training, drills, and exercises.

Law Enforcement (including Bomb Squads, Hostage Negotiation, and Special Weapons and Tactics)

Law enforcement and security will have extraordinary challenges in the event of a CBRNE incident at an airport. Airport security and law enforcement vary with size and ownership of the airport. Some airports have their own police departments while others are protected by the local law enforcement agency. These resources provide sworn police officers who have arrest powers and are armed. There often are state police agencies that have jurisdiction at an airport, and there is federal law enforcement per the Transportation Security Administration (TSA).

The lead law enforcement agency will be the airport police department, followed by the FBI. If the CBRNE incident is an intentional act, the airport will be considered a federal crime scene. The FBI will have jurisdiction and become the lead agency. Airport law enforcement officials should be able to move from a single command to unified command for law enforcement activities. This move may occur before the FBI arrives if a state police agency arrives and has jurisdiction.

Title 49 of the Code of Federal Regulations parts 1542 and 1544 lists the minimal security standards for airport operators to follow. Subpart D—Contingency Measures requires airport operators to have a security program and adopt a contingency plan that is approved by the TSA. The incident management section of Part 1542, 1542.307 requires that "each airport operator must establish procedures to evaluate bomb threats, threats of sabotage, aircraft piracy, and other unlawful interference to civil aviation operations."[6] Section (b) (2) further requires the airport operator to "initiate appropriate action as specified in the Airport Emergency Plan."[7] If the airport does not have specialized resources such as bomb squads, hostage negotiators and Special Weapons and Tactics units (SWAT), they must have mutual aid agreements in place to summon these resources.

Health and Medical (includes EMS, Quarantine, and Fatality Management)

EMS is the immediate treatment of injuries and illness that occur on the airport property. Quarantine is the holding apart and restriction of movement of persons that have or may have been exposed to a communicable disease and may become ill themselves and further spread the disease. Fatality management is the legal determination of the cause of death, proper identification of the deceased, the notification of next of kin, and the release of the remains to the next of kin. These three functions are listed as health and medical functions, and they have diverse needs and requirements.

The major challenge of a CBRNE event will be the nature of injuries and the number of patients. There could be patients who are contaminated with a chemical: either a toxic industrial chemical or a chemical warfare agent. An incident of biological nature may necessitate a group of people to be quarantined or isolated on the airport property. During outbreaks of Sudden Acquired Respiratory Syndrome (SARS) in Toronto, Singapore, and Hong Kong, social distancing measures were implemented to help limit the spread of the disease. The problems and the successes that were experienced provided important information for public health agencies and emergency planners worldwide that made adjustments to their plans accordingly.

A CBRNE event could kill a substantial number of people. The determination of cause and manner of death could become an issue. Moreover, the accurate and timely legal identification of the deceased and the notification and release of remains to next-of-kin is a time consuming process. Airport emergency planners must recognize the intricacies and legalities of these health and medical functions in order to prepare an appropriate response that links to the local public health agency and the medical examiner's office. The medical examiner (or coroner), is the person charged with determining the cause of death and with providing legal identification of the deceased. The office is a function of either state or local government.

In many cases, the airport fire department is responsible for providing basic EMS service to people at the airport. There are some situations where EMS is either a third public service along with police and fire, or it may be provided by a vendor. In any case, EMS for response to aircraft accidents is under the requirements of CFR 14 Part 139.319: Aircraft Rescue and Firefighting: Operational Requirements. Specifically 139.319 (i) (4) Personnel, requires that "at least one individual, who has been trained and is current in basic emergency medical services is available during air carrier operations. Training must be at a minimum of 40 hours and cover the following topics; bleeding, cardiopulmonary resuscitation, shock, primary patient survey, injuries to the skull, spine and extremities, internal injuries, movement of patients, burns and triage."[8]

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[6] Title 49 CFR Chapter XII Part 1542 section 307.
[7] Ibid

[8] Code of Federal Regulations Title 14: Aeronautics and Space, Part 139 Certification of Airports Subpart D—Operations section 139.319 *Aircraft Rescue and Firefighting:* Operational requirements.

The requirements for the airport emergency plan do little more than require the certificate holder (airport) to have "provisions for medical services, including transportation and medical assistance for the maximum number of persons that can be carried on the largest air carrier aircraft that the airport reasonably can be expected to serve;"[9] Sections (2) and (3) call for the plan to identify the name, location, and telephone numbers of hospitals and rescue squads.[10]

Airport Plans should include a description of what steps will be taken if any emergency involves individuals who are contaminated or suspected of being contaminated. Whether contaminated by jet fuel or carrying a communicable disease, individuals so affected will require special handling in terms of treatment, transport, and so forth.

Most states have a Health Department with local offices. Local governments also may have a bureau of health and the federal government's Centers for Disease Control has jurisdictional interest in airports as well. The roles of these entities should be understood and reflected in AEPs.

The U.S. Department of Transportation in conjunction with the Department of Health and Human Services has prepared the "National Aviation Resource Manual for Quarantinable Diseases." This manual considers the problem of sick travelers; however, the manual only considers natural outbreaks of illness in a non-bioterrorism event, and is not intended to provide minimal standards for airports to use, and most airports do not have a manual that details the total effort necessary for establishing quarantine and isolation capabilities.[11]

There is limited guidance from the FAA or in federal laws regarding the establishment of isolation or quarantine at an airport in the event of a bioterrorism incident. The CDC has designated certain airports as quarantine stations to receive and hold individuals who have been exposed to contagious diseases, but the threat is a potential problem for **all** airports. The impact of quarantine on airports can be significant, and was addressed by *ACRP Report 5: Quarantine Facilities for Arriving Air Travelers: Identification of Planning Needs and Costs.*

The challenges a state or local medical examiner would face in a CBRNE event at an airport would be two-fold. First, a CBRNE event has the potential to overwhelm the system with a caseload surge. There may be issues with proper storage and disposition of the deceased individuals, especially on a large scale. Surviving family members will be clamoring for information and for the release of the remains to the next-of-kin. Second, the local system may not have the expertise or equip-

ment to safely perform autopsies and medical-legal identification on contaminated remains.

The medical examiner or coroner must either have the in-house capacity or have plans for quickly obtaining the capabilities to deal with the surge in cases and to be prepared for the possibility of chemically contaminated or infectious remains. If local and state resources are not available, a regional approach is needed. This may include requesting federal assistance via the National Disaster Medical System (NDMS). NDMS has specialized teams that can provide assistance in fatality management. The medical examiner, as with any other responder, must have some form of mutual aid program to provide assistance.

Resource Management (Logistics)

A CBRNE incident at an airport will require support from elements besides the first responders. There may be needs for sheltering and quarantine. As previously mentioned, there may be large numbers of injuries or deceased persons. The activities of response, stabilization, investigation, and recovery may take days or even weeks. The first responder agencies will need support after the first 24 hours of the incident. This support will include, but not be limited to:

- Fuel for vehicles;
- Vehicle support, such as shuttle bus service, cranes and trucks;
- Rehabilitation and/or break areas;
- Sanitary facilities, e.g., restrooms, and showers;
- Mass care supplies, e.g., cots and blankets;
- Lighting for 24-hour operations;
- Bulk supplies, such as sandbags or barricades;
- Lodging; and
- Food.

The airport should have in place the equipment, supplies, and facilities to support the activities listed above or have vendor contracts in place to have the supplies brought to the airport within 24 hours of the event. With the maintenance equipment present at most airports, the airport operations staff typically is the best suited to coordinate support for the first responders. The first responder community (police, fire, and EMS) is relatively self-supporting for the initial hours of an incident. After that point, support will be needed to maintain the operation.

The requirements in the federal regulations for airport emergency plans requires the certificate holder (the airport) to provide "An inventory of surface vehicles that the facilities, agencies, and personnel included in the plan under paragraphs (c) (2) and (3) of this section will provide to transport injured and deceased persons to locations on the airport and in the

[9] Code of Federal Regulations Title 14: Aeronautics and Space, Part 139 Certification of Airports Subpart D—Operations section 139.325 (c) (1) Airport Emergency Plans.

[10] Ibid

[11] Department of Transportation, National Aviation Resource Manual for *Quarantinable Diseases,* page 2.

communities it serves."[12] The airport plan review checklist does not go into detail beyond brief mention of equipment inventory for surface vehicles and the buildings to accommodate the injured, uninjured, and deceased.[13] Likewise, it does not have a specific section for logistical support. What is needed in an exercise is that numerous logistical tasks are addressed. For example, how would the airport provide for a request from the Incident Commander for the acquisition of and service for 30 portable toilets for a period of two weeks or provide portable lighting for an area designated for the same amount of time? These two considerations are some of the logistical challenges that will arise in the course of any major incident at an airport.

Continuity of Operations

As part of the critical infrastructure, it is essential that airports have continuity of operations plans (COOPs) that identify the essential functions of the airport and provide for how those will continue operating, if only on a limited basis, during the first 72 hours of a major emergency and beyond. Personnel safety and public safety; utilities; communications; site security; and security of vital records, data, and information systems are some of the primary functions that will need to continue functioning at some level. Plans for protecting these functions, carrying them out at alternative locations, and for bringing them back to normal levels of service are part of a COOP plan.

The core piece of an airport COOP plan is identifying the essential services, determining who are the essential staff (and assigning those roles at least three deep), and spelling out the plan for leadership succession should primary personnel be away at the time of the incident, not able to get to the airport, or directly impacted (injured, killed, or held hostage) by the incident. The Department of Homeland Security maintains guidance documents for assessing COOP and other aspects of emergency preparedness. Plans for how to triage emergency priorities should clarify who, where, and how. Public protection and protection of assets requires pre-arranged mutual-aid pacts, and back up systems for priority records. There should be alternative communications systems in the event power is disrupted or radio towers are compromised.

Family and Customer Assistance (Evacuation, Shelter)

In the event of a CBRNE incident, the traffic flow of travelers to, from, and within the airport will be disrupted. If the

airport is closed for flight operations for several hours, and it is hard to imagine that this would not be the case, there will be an accumulation of travelers stranded at the airport. The airports and the air carriers should have contingency plans to deal with service interruptions that strand passengers. Many airports do. The broadcast media is fond of displaying images of travelers sleeping in air terminals awaiting improved weather conditions.

A CBRNE attack at an airport is different from most weather events in several ways. First, the events are no-notice. A storm system would be monitored for several days giving the air carriers some time to adjust flight schedules. This may minimize the effect of the shutdown. Second, weather events such as snow are usually cleared within 24 hours of the storm allowing the air traffic to resume, even if on a limited basis. A CBRNE event differs in that it has the potential to contaminate runways and taxiways, and decontamination of those areas may take weeks. Third, the attack may render portions of the airport structures unsafe and force an evacuation of the facility. The airports must consider among many other things, what to do with hundreds of people who may be separated from their belongings (baggage) that have to be moved out of harm's way.

Airport operations should likely take the lead in movement (evacuation) and protection (sheltering) of the passengers stranded at the airport in the event of a CBRNE attack. The airport must be prepared to work with offsite agencies such as the state and local emergency management agencies. If the attack causes an aircraft to crash, the NTSB has the authority under the Aviation Disaster Family Assistance Act (ADFAA) to provide assistance to families of the deceased and injured.

If evacuation of the airport is considered, some people will require transportation. The airport must have either the means on-site or have the ability to acquire adequate transportation to move people to safe locations in a timely fashion. This will require pre-arrangements with the local authorities and designated locations of shelters where adequate parking will be essential. After arrival at the shelter(s), considerations for support such as food and communications must also come into play. Reuniting travelers with their luggage is important, as many travelers may need medications that could not be placed in carry-on bags.

Special attention should be given to how individuals with special needs, especially individuals with visual and mobility impairments, will be evacuated from the airport. Local human service organizations that represent the interests of persons with disabilities are ideal sources of information and advice on what should be considered and what solutions would be the most effective.

If the decision is made to shelter in place, the airport has several other considerations. Is the location safe and secure? Will there be sanitary services (adequate restrooms)? Is food

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[12] Ibid
[13] Ibid, Appendix 3 I.A.g. (1) & (2)

service available? The same issue regarding reuniting travelers with their luggage applies here, as well.

Through table top and functional exercises the airport can work with offsite agencies at the problems of completely evacuating the airport or supporting a shelter on site.

Upgrading AEPs and Coordinating with Other Jurisdictions

One of the challenges in regional disaster planning rests with the fact that each jurisdiction—indeed, often different departments within the same jurisdiction—has its own plans and standard operating procedures. As long as the impact of an emergency is limited and can be handled within the resource base of a given community (or a given airport in this case), outside coordination matters less. However, if a major disaster occurs and help is needed, problems will arise if officials are unfamiliar with the protocols of their disaster response partners or if the incident affects a large area and mutual aid is not available because those agencies are committed to needs in their own communities.

If they have not already done so, the airport managers and their emergency preparedness teams should read and review the basic plans of adjacent communities with an eye toward particular areas where synchronicity is especially important. It might be advantageous to develop an advisory team to support the airport emergency preparedness teams. The following steps are one way to approach this task.

Airport Emergency Preparedness Team Composition and Responsibilities

The airport emergency preparedness team or task force is the core group of decision-makers and managers who are responsible for incident command and management of supporting functions during an emergency. The team generally includes the airport manager, operations manager, fire chief, the head of security and law enforcement, the director of communications, and the emergency management director (if other than the aforementioned positions). The chief engineer should be part of the team as well. Others may be appropriate to include ensuring adequate representation of key airport functions. The group should be neither too large nor too exclusive.

If they have not already done so, airports should identify the emergency team members; Part 139 requires as much. However, some AEPs do not go much further than that. They do not describe what each position is responsible for and how they are organized in terms of the overall emergency structure. An organization chart of positions helps to clarify chain of command, communications, and coordination, and the Basic Plan should detail the roles and responsibilities. Small

airports may rely on outside organizations for almost all of the response actions and the functions of disaster response. Even so, those roles and responsibilities still should be identified and reflected on the organization chart. If not already provided for in the airport's emergency plan, the specific actions of the emergency team should be documented and aligned to each response function. Table 2 offers an example.

Another important job of the airport emergency team is to update their risk assessment and vulnerability analysis. Historically, plans revolved around air-side emergencies involving aircraft and hazardous materials: crashes, emergency landings, fires on aircraft, hostage situations, and fuel spills. AEPs evolved to include better coverage of other potential emergencies. With the arrival of FAA's new standards, AEPs will need to ensure sufficient coverage of severe weather emergencies, technological hazards, natural disasters, pandemics, and intentional acts of terror. This is an important part of the planning where input from other agencies in the airport's region can contribute significantly.

Some airports already have linked the emergency team members to the appropriate incident command positions upon which NIMS is based. These individuals become the functional managers at the airport EOC during emergencies and will be aligning with their counterparts at local government and state EOCs as resource coordination and status reporting are underway. For smaller airports where a major portion of incident management will be done by individuals other than airport personnel, the AEP would identify which individuals and agencies will fill those positions and where they are located. All mutual aid partners need to be oriented to airport-specific issues, cleared by TSA, and involved in drills and exercises.

Airport Emergency Advisory Committee

One of the most efficient ways to engender regional information sharing and to coordinate changes and improvements to an AEP is to organize an advisory committee that can serve as both a source of information and an objective party for airport security and preparedness planning. The committee could contribute in major ways to the content of an AEP and to the efficiency of disaster response when the AEP is put to use. The idea is to establish a vehicle through which other emergency plans and key stakeholders in the region can be accessed.

If a regional emergency planning group already exists in the community and it appears to be functioning successfully, then airports simply need to make sure they are represented on that group. Creating extra layers of bureaucracy where they are not needed is counterproductive and dilutes the impact that is otherwise possible with one key structure in place.

The airport emergency preparedness team could find that an advisory committee is especially valuable when it comes to

Table 2. Suggested alignment of airport emergency preparedness team with emergency response functions.

Response Action	Possible Lead(s)	Immediate Duties	Related Emergency Function
Emergency Responder Communications	Dispatch Manager	Rapid dispatch of airport emergency preparedness team and appropriate support agencies	Communications
Public Alert and Notification of Emergency	Public Information Officer	Alert with instructions to all individuals on the airport premises, including airline managers, tenants, employees, and the traveling public.	Warning and Emergency Public Information
Size-up and Assessment of Emergency	Relevant first responder incident commander, Chief Engineer, and Airport Manager	Initial evaluation of disaster's impact and risks and establishment of response priorities with immediate actions necessary to protect life, health, and safety.	Damage Assessment
Incident Command (also Unified Command)	Relevant first responder incident commander(s) (Fire, Police, EMS)	Commit and command resources to mitigate the impact of the disaster and control the course of the incident or emergency situation. Includes firefighting, hazardous materials and biological detection and response, decontamination, crime control, perimeter control, emergency medical services, search and rescue, and others. Develop and update Emergency Action Plan and Monitor safety of response personnel.	Tactical and Strategic Response Operations (for all hazards) Emergency Medical Services Personnel Safety Population Protection Intelligence
Emergency Responder Communications	Dispatch Manager	Rapid dispatch of airport emergency preparedness team and appropriate support agencies	Communications
Management of Emergency Support Operations and EOC 1. Command staff – Safety Officer, Public Information Officer, and Liaison Officer 2. Operations 3. Finance/ Administration 4. Planning 5. Logistics	Emergency management director and team	Activate, staff, and manage the EOC in support of incident command. Maintain communications with ICs to identify support requirements and coordinate mutual aid with outside agencies. Oversee and coordinate activities associated with the emergency functions itemized in the next column.	Population Protection Public Information and External Affairs Personnel Protection Intelligence Resource Management Sheltering and Mass Care Public Health and Medical Services Transportation Infrastructure/Public Works (including damage assessment and debris management) Volunteer and Donations Management

enhancing preparedness for CBRNE incidents. Because these types of events will almost assuredly require assistance from neighboring communities and will automatically signal involvement from federal agencies, it behooves airports to be knowledgeable about how neighboring jurisdictions' plans are set up to handle CBRNE threats and incidents. Depending on the scale and area impacted, a CBRNE incident may tie up resources that the airport otherwise could count on, so it is crucial to expand the concept of mutual aid to a wider area, and to have a plan for stabilizing the situation until help can arrive. Where that help would come from and how long it would take to arrive are questions that must be answered.

There is another reason why an advisory committee should be considered. Communities are vulnerable to a myriad of potential threats and unexpected disasters. Airports can be

the supplier of mutual aid, not just the receiver of regional resources. When relevant parties become familiar with each other's operations, facilities, and services, each participant gains insight into how a regional consortium could benefit them. The prospect of a symbiotic relationship generates a greater willingness to sincerely invest in developing partnerships and contributing to emergency planning.

The members of an advisory committee will vary to some degree with the types of hazards to which the airport and surrounding area are vulnerable and with the available mutual aid resources. Two points are particularly important: (1) members should be experienced individuals who have the authority to make decisions and commit resources, and (2) all jurisdictions with current or potential mutual aid agreements should be invited to send their relevant representatives.

Suggested members of an airport emergency advisory committee might include the following:

- Representative(s) of airport tenants,
- Senior law enforcement officials,
- Senior fire officials,
- Senior emergency medical services officials,
- Traffic engineer,
- Public health department,
- State and local highway and transportation managers,
- Regional hospital/medical consortium,
- Public works department,
- City and county emergency (911) dispatch center,
- Utility companies,
- Military official (if dual-use airport or installation is proximate to the airport),
- Other nearby airport(s),
- Port authority and U.S. Coast Guard (if airport is next to a port or other waterway),
- Neighboring school district and nearby university emergency managers,
- Local media,
- Public relations company,
- Volunteer agencies,
- Heavy equipment suppliers/construction company, and
- Neighboring transit authority.

The rationale for the each suggested member is self evident, except perhaps for a public relations company. That is included because there have been good examples of how public relations and communications volunteers from the private sector have provided much needed assistance to airports during major events when the airport's PIO was overwhelmed. Several airports were grateful for this assistance after the September 11th attacks forced closure of all U.S. airports. A note on the university and school district as advisory committee members: schools have fleets of buses, technology, and facilities that might be needed, and some universities have medical centers attached.

As presented, the advisory committee will end up being a large group. The advantage is that airports would achieve wide input into airport emergency preparedness; the disadvantage is that it is unwieldy to work with big groups and accomplish time-sensitive goals. Efficiency can be gained by organizing the advisory committee into sections that match the AEP functional groups. Doing so will allow each member to work on issues directly related to their areas of expertise and will streamline coordination. Table 3 depicts one way the groups could be configured.

Mission of the Advisory Committee

The airport emergency preparedness team will determine the mission of the advisory committee. The mission will de-pend on many factors including how detailed the airport's current AEP is, and what level of effort will be necessary to bring it into compliance with FAA's new requirements. Airports can consider using the committee to accomplish the following:

- Provide examples of their own emergency plans, which airports may be able to use for their own AEPs, especially for the sections on threat assessment; operational communications; certain first responder SOPs; resource lists; and public information management.
- Establish or update mutual aid agreements with regional resources, and clarify procedures and conditions under which mutual aid will function, including shared equipment and cost recovery issues.
- Obtain objective input into plans and procedures from experts operating in the same geographic area.
- Map a strategy for how to handle a widespread disaster that negates the possibility of sharing personnel, equipment, systems, and supplies within the immediate area.
- Identify and discuss the challenges of priority setting in the event several mutual aid partners affected by an emergency are relying on the same outside resources.
- Uncover potential conflicts or contradictions in plans and resolve differences BEFORE a major event occurs.
- Discover the full range of potential assets available and provide information to other jurisdictions on the airport's resources that could help others during a disaster.
- Identify areas of planning and coordination that should be tested through interagency training opportunities, e.g., table top or functional exercises.
- Specify how a required quarantine of passengers would be managed, including the location of the quarantine site, who would manage it and which agencies would be responsible for providing all related services.
- Detail the procedures for any evacuation from the airport with area agencies so that the procedures, direction, available transport, and destinations are consistent with the evacuation instructions and support of neighboring jurisdictions.
- Inventory the communications systems and equipment with respect to interoperability and technology solutions for enhancing that capability.

One of the challenges airports are likely to face is concern over the time commitment required to serve on the advisory committee. That potential roadblock can be minimized in several ways. First, plan to accomplish the goals within 12 months. If people know that there is a specific and reasonable time frame in which their involvement will be required, they will be more inclined to make a commitment. Beyond the one year mark, the advisory committee could be used to help the airport maintain the AEP and to organize joint training exercises, perhaps once a year. Second, assign the right airport personnel to each of the functional subcommittees and rely

Table 3. Advisory group members by emergency function.

Emergency Function	Advisory Group Representative
Direction and Control	
• On-site Incident Commander	Fire, police, EMS, and public works senior officials
• Director of EOC and Support Functions	Area Emergency Management Directors; State's regional emergency management director; hospital emergency management director
Operational Communications	Area dispatch centers; operational communications directors from school district, media, military installation, ham radio organization, Radio Amateur Civil Emergency Service (RACES), transit companies, private industry
Alert and Warning	Media; public relations company; area dispatch/ 911 departments
Emergency Public Information	Local media; public relations company; area dispatch/ 911 departments; air carrier public information representative
Protective Actions (Evacuate and Protect in Place)	School district and university emergency managers; Red Cross and other volunteer agencies; Shelter managers from local government; transit and bus companies; State highway patrol
Firefighting, Rescue, and Hazmat	Officials from local fire departments (especially any special operations units available); State or regional EPA office
Law Enforcement	Officials from local police departments (especially any special operations units available); FBI office; military police (joint use airports)
Health and Medical	Officials from EMS providers; CDC Quarantine Station covering the airport; medical transport operators; hospitals; state and local public health service; local government health departments; Medical Examiner's Office; university medical center; pharmacies; regional EPA office; mental health agencies; funeral homes; social service agencies; military (joint use airports)
Operations and Maintenance	Local government public works departments; heavy equipment suppliers; water and food suppliers; communications equipment suppliers; utilities; sanitation service company; utility companies; state department of transportation
Resource Management	Local public works departments; private industry logistics, procurement, and transportation experts; local government planning departments; local government emergency management departments; volunteer organizations; financial and legal expertise

on them to lead. There should be agendas for the meetings so discussions can stay focused and members can see progress against their group's tasks. Meet only as often as necessary and utilize electronic mail to the greatest extent practical. Another useful tool is the web-based conference where members can interact on-line in real time without leaving their office. Find ways to reduce the demand on the member's time and travel; the level of participation will be higher. Third, publicly recognize the participants for their involvement. Everyone likes to feel appreciated, and the goodwill that ensues from acknowledging the individuals and the departments or companies they represent will pay off.

Threat (Hazard) Assessment

AEPs already contain information about hazards and threats, but they may only superficially cover the nature of the threat. Threat assessments should include any local or regional hazards which would directly affect the airport; a nearby nuclear power plant or the potential for volcanic and seismic activity are obvious examples. Any situations that would be unique to the airport have to be identified as well. Airplane crashes lead that list and is one type of threat where airports have the expertise that contiguous communities need to ensure that local plans are adequate.

The current task is to review how hazards and threats are described in the AEP and to augment that information where necessary to ensure that they are adequately covered. Since surrounding communities will share a similar hazard and threat profile, it makes sense to obtain and review their profiles and then add or subtract elements in keeping with the airport's specific environment. It often will not be necessary to start from scratch and there is little point in re-inventing the wheel.

The threats identified in the assessment should be quantified per the hazard's potential impact on airport operations and public safety. It is not enough to say that blizzards occur every winter and could force the airport to close temporarily.

The assessment must describe specifically how blizzards affect airport operations and operators, vendors, access to and from the airport, delayed or stranded passengers, possible power loss, among other impacts. Threats need to be evaluated in detail because response preparedness builds on that baseline of information. The AEP describes how the airport will mitigate the consequences of emergencies—those which provide some warning, and those which do not. It is essential that disasters' effects on all facets of airport operations be scrutinized and documented.

For example, what would happen if a terrorist were to synchronize multiple sarin gas releases in several terminals? Widespread panic on the premises (which would create its own consequences) would add to the challenge of a multiple casualty event where identifying, locating, and arresting the attackers would compete with treatment of victims and reducing panic for priority attention among incident commanders and EOC leaders. Likewise, if an individual were to walk into the main terminal and detonate high yield explosives hidden in his garments, how would that impact the immediate area? What would happen within the airport as a whole? What should be the airport's first actions and priorities?

By thinking through the likely consequences of each threat, planners will know what to anticipate in terms of immediate demands and can build the response procedures accordingly. The place in the AEP to describe the disaster situation and assumptions concerning impact are the hazard-specific sections. That is also where the details on anticipated mutual aid requirements and who the mutual aid providers will be should be clearly articulated.

Revising AEPs

AEPs should not sit on the shelf. They must be reviewed and updated at least once a year, as new technology, new concepts, new threats, and changes in local partners take place. Once the airport has determined its new emergency preparedness planning goals, established an emergency advisory committee (or some other means for outside input), and strengthened the threat assessment, revisions to response procedures can be tackled. There are an almost overwhelming number of reports, guidelines, and standards that are in use and are available. Homeland security and emergency preparedness have been studied and sliced in a myriad of ways, the result being an often-confusing mixture of federal and state goals, standardized tasks, typed resources, capability-based guidelines, metrics, frameworks, systems, and the like—all organized around an acronymic language of its own. As suggested previously and to facilitate coordination with other emergency agencies, the AEP should be organized by both functional areas and specific hazards. To help with updating

the AEP, there are several documents that are basic and necessary to the process. Other publications may prove useful for additional fine-tuning once the main requirements are met. The following documents should be included in the airport emergency preparedness library:

1. Federal Aviation Administration Advisory Circular 150/5200-31B, Airport Emergency Plans.
2. Federal Emergency Management Agency, Comprehensive Preparedness Guide (CPG) 101.
3. Title 14, Code of Federal Regulations Part 139, *Certification of Airports.*
4. National Fire Protection Association (NFPA) standards 424, 2500, 1561 and 1600.
5. Any selected diagram of the National Incident Management System depicting the basic structure as well as unified command and area command.
6. Department of Homeland Security Target Capabilities List, Version 2.0.
7. Department of Homeland Security Universal Task List.
8. Airport Security Plan requirements for law enforcement.

The FAA Advisory Circular is a practical guide; its strength lies in the detailed specific actions for primary response elements for each functional section and type of hazard. There is information about unique planning considerations and helpful examples on organization and assignment of responsibilities. The Airport Emergency Plan Review Checklist is structured around the threats referenced only in Part 139. Airports using the "Incident and Action" headings will need to broaden these to include more types of threats or to use the nomenclature more common to NIMS.

FEMA's CPG 101 is the baseline from which the FAA's Circular 150/5200-31B evolved. It is a valuable tool.

Airports are already familiar with Title 14 CFR Part 139, which will continue as the rule that airports must meet for emergency preparedness and certification. The NFPA standards also are not new to airport fire departments and operations managers, and they remain as an important reference for essential safety and disaster readiness. It also is handy to have a stand-alone copy of how NIMS is structured for reference throughout the AEP update deliberations.

The Universal Task List (UTL) developed by the U.S. Department of Homeland Security (DHS) has over 1,500 tasks for all levels of government from nationally managed response to catastrophic or national security incidents, to locally managed responses to small-scale events. Use the UTL as a reference and a tool to plan for the actions necessary to protect, respond, and recover.

The Target Capabilities List (TCL) Version 2.0, also developed by DHS, has valuable information that will help inform decisions about response plans. The document approaches

preparedness by suggesting what the relevant jurisdiction (the airport in this case) should be able to do or cause to have done by mission area. The TCL assumes basic capabilities and operational readiness for normal operations and emergencies of limited impact even if those are provided mostly through mutual aid resources. The TCL describes capabilities that would be necessary to address **major** events, e.g., disasters of significant impact, health emergencies, and terrorism. It will help planners move from status quo operations to surge level by means of a defined process, interagency cooperation, mutual aid pacts, and joint training. Some of the questions to ask about capabilities are:

- Why is the capability needed?
- How will it be used?
- What function will it perform?
- Who will need the capability?
- When will it be available?
- What key performance and other attributes comprise the capability?
- How will it be supported?
- What skills will be required?
- How will responders be trained?
- How much will it cost to have this capability?

By reading through the descriptions one can glean insight into a wide range of resources and actions that should be considered in the AEP, though the TCL does contain levels of detail that are not be germane to airports, so this should be kept in mind.

The TCL is built around what is needed to get the job done. The jurisdiction or airport then decides how best to build the capabilities given available resources, outside assistance, what is affordable, what the threat level is, and so forth. Being able to highlight what task is at risk, or which capability element is deficient provides the means to link resource decisions to specific shortfalls in proficiency or capability. The measures needed to mitigate the gaps can be built on a priority basis that respects fiscal realities. Airports would not need to develop and sustain all the capabilities to the same level—this will vary based on risks and needs.

The process can be compared to hiring an employee. First, one develops a job description—itemizing, qualifying, and quantifying the tasks and outcomes that must be accomplished. Will it be necessary to hire someone full-time, or are the tasks seasonal in nature or only necessary during unanticipated work surges? Where do the tasks fall in order of priority? Can any existing staff do the job, in addition to their other assignments? If not, other candidates (resources) are sought to fill the position, looking for the best match of skills and capabilities to fit the needs of the job. Requirements that call for someone part-time or on an as-needed basis would be

equivalent to the requirements filled though mutual aid partners during an emergency. Those resources need to be made familiar with (trained) how you do business and the structure of the organization. This process can be used to discern all the capabilities needed to prepare for major incidents or severe weather emergencies at the airport.

To the greatest extent possible, the AEP should include maps, color codes, organization charts, and lists to support or in lieu of long narratives. Lengthy AEPs are less valuable than short concise ones that cover details through visual presentations that can be quickly read and understood during crises conditions.

The revised AEP should be distributed as appropriate to the Advisory Committee for review and comment. There may be some necessary fine-tuning to the plan before it becomes final.

Discussion of Airport Survey Results

It was noted in Chapter 2 that about a dozen airports provided information to the research team on what resources the airports have to handle major incidents, and what resources are available from nearby jurisdictions or private companies. The airports also explained the structure of their emergency team.

Five of the responding airports have designated a small group of individuals to handle emergency planning. Those teams varied in membership from ones that include Operations, Fire, and Police; others that assign this responsibility to Operations Security and Public Safety; the Airport Manager or Operations Manager with some fire department input; and last, a Disaster Planning Executive Committee comprised of Fire, Police, Aviation Operations, Public Safety, Information Technology, and Public Affairs. Five of the 13 airports vest primary responsibility with Airport Operations; two do so under Public Safety; and one assigns emergency planning responsibility to Operations Security.

Structural fire protection of airport facilities is provided by the on-site Aircraft Rescue and Firefighting ARFF unit (at least until the local fire department arrives) in most cases. Members of the ARFF unit typically are trained to the basic EMS level and serve as the first responders for initial triage and treatment. Generally, they are supported by the local fire department which has more emergency medical technicians and advanced life support response in EMS provision—certainly in terms of advanced life support. Transport is handled by private contractor, or by city or county EMS service.

Only three of the 13 airports reported having a hazardous materials response team at the airport proper, fully trained to the technician level (per NFPA 72). Some airports have staff that is trained to the awareness or operations level. Most of the responses indicated that hazmat response is provided by a nearby National Guard Civil Support Team, a county or city

fire department, or a regional hazmat team. Many are continuing to train specific personnel to higher levels of hazmat certification and to augment their hazmat response capabilities.

With regard to law enforcement presence and special explosive ordnance disposal teams, the responding airports reported several different configurations. Typically, law enforcement is handled by metropolitan police departments, county sheriff departments, or city police departments. Seattle uses the Port of Seattle Police Department and Massachusetts State Police is the primary law enforcement agency at the airport in Boston. Interestingly, eight airports said they have an on-site Explosive Ordnance Device (EOD) team; others rely on bomb squads from nearby big cities, counties, state police, or military units. Minneapolis/Saint Paul augments their unit with SWAT plus canines trained to detect explosives or narcotics. Chicago has canines trained for explosives and a mobile x-ray truck. Denver's airport has a device containment vehicle and a "render safe" bunker.

On the topic of the degree to which CBRNE threats are covered in current airport AEPs, responses indicate underrepresentation of these risks, with a couple of airports being the exception. Some aspects of CBRNE are covered under the hazmat or fire sections of the AEPs. In other cases, CBRNE is addressed through references to mutual aid. A few respondents were not sure how or if CBRNE plans were part of their airport preparedness. Where biological agents were reported as covered, the emphasis seems to be on the prospect of pandemic flu carried by travelers, but not as a terrorist attack with biological weapons, though one large airport categorizes biological under suspicious materials.

On the question of, "Do you have automatic aid or mutual aid agreements that are specific to CBRNE events?" What can be derived from the 13 airports that responded is that they have mutual aid partnerships with immediately adjacent jurisdictions. In only a few cases does that arrangement capture a wider geographic area, however. Four of the airports have plans that have been field-tested and maintained on a regular basis. These airports commonly work with their response partners in exercises and table top drills. In one case, the airport noted that special CBRNE mutual aid is set up with the local Civil Response Unit. While there is evidence that airports work with adjacent communities in disaster preparedness, it was difficult to determine the extent to which the work to date has included CBRNE scenarios.

Approximately two-thirds of the reporting airports have updated their AEPs to be NIMS-compliant. A few were not sure, and one is currently working on compliance, having recently completed FEMA's IS-700 training.

The final question to airports was open-ended. It asked the respondents to describe any special features of their emergency preparedness activities. A collection of practices and experiences that bear special mention follows:

1. We conduct an emergency incident management discussion class each month. The class is usually 1–2 hours. This is done to get as many people as possible actively involved in incident management. We are in the process of developing an Incident Management Airport Operations Guide. In addition, we are translating our emergency plans into Operating Guidelines, which further clarify the roles and responsibilities of each agency and/or department that operates here at the airport.

2. We have a plan to insulate and quarantine incoming passengers suspected of viral infections. We also have an area to handle this.

3. Our airport has an EOC on the ground floor. We are one of 18 CDC quarantine stations nationwide. The National Guard and Reserves are at the airport and have special hangers. We have a stand-up morgue on site, and one of the airport commissioners is a forensic dentist.
   - Radio communications are interoperable. All radio communications are on 800 MHz. We have two staff in public affairs and we activate a joint information center (JIC) during any incident. We have had three incidents recently.
   - Early in the fall of 2006 we had to evacuate part of a terminal because there was a passenger with mace. Operations went smoothly. In other situations, an international flight from the Dominican Republic arrived with passengers complaining of stomach flu and two passengers on one flight arrived bleeding and required assistance.

4. We are a CDC Quarantine Station and there are eight or nine CDC employees there. Work with CDC is focused on biological planning for communicable disease.
   We coordinate exercises frequently with our nearby cities, especially in hazmat training. A zoned response area is set up, including three fire zones.

5. With both airports under the ownership of the city, the fire department and police department spearhead most contingencies which are supported well by the airport community.

6. Currently we are spending a lot of effort on the CDC quarantine planning. We have identified areas where we need more from CDC, e.g., law enforcement support, should we face a major disease outbreak at the airport.

7. One of the solutions to avoiding panic and streamlining a response to a biological threat is education. We need to educate airport workers, e.g., the shuttle drivers, the baggage handlers, the maintenance folks, vendors, airline personnel, etc., as to what is not to fear. This could pay off in a big way. There should be widespread information disseminated on the range and degree of impact of the most common chemical and biological threats and the differ-

ences between exposed, contaminated, contagious, and infectious. Many workers could safely continue to do their jobs using basic protection, like a mask over their mouths. Airports need instruction on PPE and its effectiveness, plus how to use it.

AEP Evaluation and Gap Analysis Summary

The research team set several goals for reviewing the 18 AEPs assembled by FAA for this project. The team wanted to see how the AEPs' provisions compared against standards set by the NRF and NIMS—standards that mutual aid responders are meeting. The first step was to examine NIMS and eliminate the provisions that are irrelevant to airports. There were 44 NIMS provisions that remained, and these were organized into the following categories, each having sub-elements:

- Emergency Services and Mutual Aid,
- EOC and Support Functions,
- Public Communications and Media,
- Emergency Medical Services, and
- Law Enforcement.

A sample of the evaluation tool is presented in Appendix C. The 18 AEPs submitted for review were analyzed against the 44 NIMS provisions to determine if the plans failed to cover or poorly covered the subject, partially covered the subject, or covered the subject well. Separate summary reports were prepared as well to capture more details about the plans and any elements that contained good practices to document in this report. From this research, it appears that in general AEPs do the best job addressing the provisions described below.

1. The structure of airport first responders command is organized per the Incident Command System.
2. Hazardous materials capabilities and response are described.
3. There are separate provisions for the injured and the deceased.
4. Emergency medical services transport is identified.
5. The location and staffing for a temporary morgue are identified.
6. Law enforcement and fire suppression duties and responsibilities are based on the nature of the emergency.
7. Tactical communications channels and procedures are identified.

Airports may need to do more work on identifying and documenting the essential resources they will need to respond and recover from each type of hazard they anticipate. All resources—those at the airport, those from local government, and those from non-profit and private sector organizations—should be itemized. In particular, information about what private sector resources would need to be tapped and how they would be acquired quickly is lacking. This part of the AEP needs to be closely planned with outside stakeholders so all concerned know who is counting on what resources and what the priorities are for use and distribution.

Plans need to sufficiently cover major incidents involving CBRNE, particularly in the context of intentional releases, activations, and exposures. Intelligence becomes an important function at the airport EOC, and airport plans should identify the personnel who would be responsible and the necessary security clearance for this role. CBRNE threats can be developed further within existing hazard-based appendices, but many will need to be expanded to cover additional contingencies. For example, the section Bombs needs to cover the threat of "dirty" bombs, those used as dispersal agents for biological or radiological material.

Under the section Hazardous Materials Incidents and Dangerous Goods, chemical, biological, radiological, and nuclear attack scenarios should be considered. The AEP should identify the response requirements specific to these threats, with special attention paid to personal protective equipment, detection equipment, and evacuation or protect-in-place procedures. Moreover, since airports often are multi-modal transportation centers connected to or near mass transit and rail, the impact on, or the threat represented by these services, needs to be considered in preparing the threat assessment and the responses to specific hazards. Training and drills with jurisdictions in the region are essential.

All airports may want to check their AEPs to determine whether the areas below are sufficiently addressed. Of the sampled AEPs, the following list identifies AEP areas most in need of enhancement:

1. PPE and responder safety are addressed.
2. Transfer of command is covered.
3. CBRNE is addressed and included in incident-based annexes.
4. Coordination with local/state agencies' emergency plans is adequate.
5. Continuity of Operations (COOP) is covered.
6. Evacuation procedures include and identify assembly areas/meeting locations.
7. EOC location, facilities, and equipment are detailed.
8. On-site sheltering is addressed.
9. Private sector resources are identified by type and methods of acquisition.
10. Power failure (airside and landside) is adequately covered.
11. Airport is conducting training with their area and regional mutual aid partners on the AEP.
12. Quarantine procedures and site (on or off airport) are well described.

13. A post traumatic stress disorder program and other mental health services are identified.
14. There is a logistics position identified.
15. Emergency personnel rehabilitation (food, water, rest) is covered.
16. There are stored supplies, and their locations are identified.
17. Airport recovery from an incident is covered.
18. Back-up and alternative communications are identified.
19. A public information officer position is described and is not a collateral duty to other responsibilities during an emergency.
20. A location for the JIC is identified and coordinated public information is described.
21. The providers of all levels of emergency medical services are identified.
22. Hospitals and patient tracking are addressed.
23. There are separate annexes for bombs, active shooter/hostage, terrorist, and hijacking.

Highlights and Ideas from Selected AEPs

As airport managers update their AEPs, it may be helpful to know how other airports have addressed disaster preparedness and where some good examples of various provisions can be found. This chapter presents a collection of ideas, model protocols, and accepted practices from airports throughout the country. The examples are derived from the AEPs of airports of different sizes and locations, and are but some of potentially other notable examples that could be identified given an opportunity to examine more plans. The highlights were found in the AEPs of these airports:

1. Indianapolis International Airport, Indiana.
2. Springfield Airport, Illinois.
3. Chattanooga Airport, Tennessee.
4. Seattle-Tacoma International Airport, Washington.
5. Minneapolis/Saint Paul Airport, Minnesota.
6. Omaha Airport Authority, Nebraska.
7. Kansas City (Charles B. Wheeler) Airport, Missouri.
8. Los Angeles International Airport, California.
9. Memphis-Shelby County Airport, Tennessee.
10. Hartsfield-Jackson International Airport, Atlanta, Georgia.
11. Chesterfield (Spirit of St. Louis) Airport, Missouri.
12. San Francisco International Airport, California.

Their AEPs were studied to gain insight into what is covered, and what is not. Another purpose for that review was to find novel approaches and good examples that could be transferred to other airports, and, therefore, be of interest to airport managers.

Indianapolis

The AEP contains a checklist that outlines the duties and responsibilities of emergency service personnel if the evacuation of a terminal or aircraft becomes necessary. The plan also addresses sheltering and identifies the airport officials responsible for initiating and coordinating the sheltering plan.

Four staging areas are identified where mutual aid units are to report to receive their assignments. The fire company officer that arrives at the staging area assumes the role of Staging Officer. Each site is equipped with boxes that contain supplies and maps for the Staging Officer to use in tracking the mutual aid resources and their assignments.

The Indianapolis International Airport AEP has excellent coverage of public information protocols. The Airport Public Affairs director liaises with the media, airline media personnel and other impacted organizations. During an emergency, all press releases are coordinated through the Airport Media Center, which serves as the JIC during an airport disaster. It is staffed by the airport Public Affairs Officer. The airport also has designated a staging area where media mobile units and satellite trucks report to and then are escorted to a vantage point near the incident.

This plan includes good, specific information related to mass casualty incidents and emergency medical services. They have coordinated with Marion County and, if necessary, the airport incident commander can implement the Marion County Mass Casualty Incident Plan. That step activates an EMS officer who reports to the incident commander for assignment. The medical sector officer tracks patient transports and the plan identifies area hospitals and specialty centers as well as the ambulance transport routes. Local and State police work together to ensure that all ambulance routes remain open. Security and credentialing of emergency services personnel are handled by airport police.

The AEP identifies the location and staffing for a temporary morgue. Following a major disaster at the airport, the county Coroner's Office will be alerted immediately and will place staff on standby for possible mobilization. The AEP has comprehensive guidelines for handling this situation.

Abraham Airport Authority, Springfield, Illinois

The AEP for this smaller airport has several key provisions worth noting. First, the plan covers coordination with local and State agencies well with ample references back to the specific emergency plans of those mutual aid partners. Reviewing and knowing the provisions of the emergency plans from surrounding jurisdictions is one of the key recommendations in this ACRP report.

Springfield's AEP also provides details about the Airport Crisis Management Center—where is it located, the equipment and resources in the Center and the location of the back-up site in the event the primary location can not be used. They also were careful to address a power failure emergency not just from the air side, but from the land side as well.

Public communications and the media are well covered in this AEP which identifies one official spokesperson for the airport and a media staging area. The media is to broadcast information directing family and friends to the Family Assistance Center at the local Salvation Army.

Finally, the EMS section is well detailed and includes regional mutual aid partners for all EMS levels. Ambulance and air ambulance transport are discussed, the hospitals are all identified with reference to the hospitals' internal disaster preparedness plans for patient tracking, and the location and staffing of a temporary morgue is described in sufficient measure. The airport has designated three separate staging locations for three types of casualty classifications.

Chattanooga Airport, Tennessee

The AEP for this airport is excellent in many areas. The plan is largely NIMS compliant. Most of the emergency response organizations directly involved with emergency operations at the airport will be represented at the incident command post to assist the incident commander in coordinating tactical operations. The support functions will be controlled through the EOC. Each tactical and support agency is responsible for ensuring continuity of operations for their respective organization, including the succession of command personnel. The depth of the command structure during an emergency incident is at least three deep for fire, rescue, and EMS response and two deep for law enforcement incidents. The plan specifies who is in charge during all phases of the emergency operations and outlines the process for the transfer of command and briefings, which ensures continuous leadership throughout the incident.

The AEP does a comprehensive job of covering tactical communications channels and procedures. The airport emergency services and the EOC use an 800 MHz radio system. The system is compatible with the Chattanooga Fire Department, the airport's primary mutual aid support. There are alternative forms of communications (direct telephone lines, Nextel direct connect phone system, pagers, and runners) in case the 800 MHz radios fail. The system has a sufficient number of channels to permit all support functions to operate on separate frequencies. The airport police and fire chiefs are responsible for ensuring that all responding units can communicate with each other and that the communications equipment from different agencies interfaces as expected. The airport

provides airport familiarization training to agencies and personnel supporting the AEP. The City of Chattanooga Radio Shop maintains the airport's 800 MHz system.

Personal protection equipment often receives only a passing glance in AEPs. But Chattanooga's AEP requires that all emergency personnel be provided appropriate PPE and be given training on the proper use and care of this equipment. The use of PPE is mandatory and specified by type in most of the incident-based annexes, including the Contagious Disease and hazmat annexes.

Three of the incident-based annexes address airport evacuations and sheltering: Alert and Warning, Protective Actions, and Natural Disasters. Evacuation procedures vary depending on the type of emergency. Evacuation orders with instructions on where to go and what to do will be made via a general announcement on the public address system. Airport police officers will assist in clearing the area affected and direct the evacuees to another part of the airport or to a designated shelter, and will remain with patrons and employees until conditions permit re-entry.

The AEP provides for mental health and critical incident stress management services for survivors, relatives, eyewitnesses, and emergency service personnel through a regional critical stress management team and occupational health consultants connected to two hospitals.

Seattle-Tacoma International Airport

This is another strong AEP. Referred to as the Airport Comprehensive Emergency Management Plan (CEMP), it is NIMS compliant. All responses to emergency incidents are organized and coordinated using the NIMS/Unified Command System.

The CEMP is thorough. Each of the plan's 15 functional and 10 incident-based annexes addresses in detail the roles and responsibilities of the Port of Seattle's emergency services, other airport departments, and mutual aid jurisdictions. The highly structured plan helps the incident commander maintain control and coordination among all disaster responders at the airport and resources from the region. The CEMP not only identifies the mutual aid assistance for each type of incident, but includes an accounting of their assets (personnel and equipment) that will be committed to the airport incident. All requests for mutual aid assistance to the airport are made through the King County EOC.

All airport operations and departments are linked by the 800 MHz radio system. The Airport Maintenance Department handles the requirements for inter and intra-operable radio communications and maintains the system.

The role of airport tenants is discussed in the CEMP. Their responsibilities are outlined in the functional and incident-based annexes.

There are six access gates that serve as staging areas for mutual aid units. The first-arriving officer at the emergency surveys the scene and determines which of these locations should be used.

Training is emphasized in the plan. They indicate a multifaceted training program that includes requirements for initial training, recurrent training, and specialized training. Training is conducted using classroom instruction, orientation seminars, drills, tabletop exercises, functional exercises, full-scale exercises, evaluations and critiques. Post incident critiques are conducted after all incidents, events, drills, and exercises to discuss successes and areas needing improvement. This information then is used to validate the effectiveness of the CEMP or to make improvements to the plan.

The airport does designate two disaster assistance centers: one for relatives of disaster victims and one for non-injured individuals. It is good practice to maintain separate locations for these two groups as their priority needs and situations are different. The Relative Care Collection Center is organized according to established FAA and airline requirements and must ensure security and privacy for discussing information about victims, their condition, and notifying next of kin. The collection site for individuals affected, but not injured, by the disaster serves as a central registry, which helps account for the individuals involved in the emergency. At that center, individuals' health is monitored, they can communicate with relatives and friends, and they can receive spiritual and psychological support from trained practitioners.

Minneapolis/Saint Paul Airport, Minnesota

The strengths of the Minneapolis/Saint Paul Airport's plan are its compliance with NIMS and ICS, their detailed Responder Safety and Welfare annex, the well-designed evacuation and sheltering plan, Annex 23 (Hazardous Materials/ Dangerous Goods), the Communicable Disease Response Protocol, a well-defined Logistics Chief position, and the involvement of tenants in annual plan reviews.

Since adopting NIMS as the basis for all incident management at the airports, the Metropolitan Airport Commission (MAC) has provided NIMS and ICS training for all MAC and first line first responders.

Special attention has been given to ensuring that emergency services personnel have current, reliable personal protection equipment and other equipment necessary for safe operations, including that which is needed for response to CBRNE incidents. MAC personnel have received special training and information on emergency response practices. A safety officer is assigned at each incident. The officer is responsible for protecting all MAC and mutual aid responders. Rehabilitation sites are established to monitor first responders and provide a location for rest and recovery. Emotional and mental support is also made available to all MAC responders following a major incident through their Critical Incident Stress Management System. A number of personnel are qualified to conduct peer de-briefings, which can be initiated by the police, fire, or risk departments.

MAC's evacuation and sheltering plan is one of the best reviewed in its level of detail and logistics planning. Fire and police officials at the airport have the authority to determine when an evacuation is necessary. When the decision is made, notifications go out using a combination of audible and visual alarms, public addresses, and personnel sweeps. The MAC Emergency Communications Center will make the necessary public safety notifications and inform the MAC airside operations. The Communications Center will make announcements to airport tenants and passengers who will be notified of safe area and routes via telephone calls, fax messages, public address systems, and person-to-person contacts. Tenants will assist MAC and TSA with evacuations of passengers and with their own employees. The public safety and other airport employees will assist in directing airport patrons, tenants and staff to designated evacuation routes.

The plan identifies over 30 safe areas where displaced individuals can be relocated during an emergency, as well as alternative refuge areas should the locations at the terminals be insufficient. Airport military facilities cargo buildings and so forth are among the alternative sites. The plan outlines transportation resources to move evacuees to the safe areas or refuge areas, working in cooperation with TSA and Metro Transit buses.

The threat and response to hazardous materials is covered in Annex 23, a very comprehensive section that describes the following:

- Hazmat response protocols,
- Pre-identification and risk analysis,
- Determination of hazmat release and detection,
- Personnel training and certifications,
- Field maintenance responsibilities during a release,
- Facility Emergency Response Plan activation,
- Hazmat response capabilities and response resources, and
- Federal support.

There is a Communicable Disease Response Protocol which defines the roles, responsibilities, and actions to be taken for a multi-agency response to a potentially quarantinable disease at the airport. If quarantine is required, a two phase approach is used. In Phase I, individuals can be held temporarily and observed for approximately 6–8 hours, pending more information. Phase II of quarantine would function in accordance with the nature of the specific disease. A temporary quarantine area would be mobilized where potentially infected passengers would be detained and suspected

sick aircraft would be directed to the Federal Inspection Services area.

The logistics chief at the airport is responsible for gathering, allocating, and tracking all resources, including personnel, equipment, facilities, and materials. The Chief is also responsible for all volunteer coordination and any debris clearance following a disaster. The head of logistics works with the MAC PIO on news media logistics, including media staging area, incident site tours, and any associated credentialing requirements.

Omaha (Eppley Airfield), Nebraska

The Omaha Airport Authority operates Eppley Airfield and has produced a very good AEP that can be a model for smaller airports. Procedures are very well described for all respondents to an incident, and within a short time one can read the AEP and understand what actions each stakeholder will take and with whom they will coordinate. Especially well described are the incident command post (ICP), the perimeter command post, and the EOC which they call the situation room.

The roles of jurisdictional agencies and mutual aid departments are clearly defined. One of the highlights of this AEP is Section 14—Emergency Resources Lists, one of the best reviewed for including the capability or capacity or each resource and how contact can be made to request it.

Kansas City, Missouri (Charles B. Wheeler) Airport

There are several parts of the Kansas City AEP that stand out as being exceptionally well-developed. For one, the plan includes a detailed discussion of what the airport's tenants are responsible for handling to prevent and to respond to emergencies. Tenants must meet certain requirements for listings in an emergency telephone directory (including sub-tenants), to prevent unauthorized access, and to ensure maximum cooperation if their aircraft is involved in an accident at the airport. The plan is very clear on what actions tenants must take in the event of an aircraft accident. There is information on where tenant personnel must report if they are needed at an emergency scene and two alternative points of contact are given if the preferred actions can not be accommodated.

Two other highlights of this AEP are the Fuel Farm Fire Response Plan and the well-detailed section on Hazardous Materials/Dangerous Goods Incidents, especially the treatment of nuclear weapons which is lacking in many other plans and the manner in which biological threats are defined and initial actions described.

The format and organization of the overall plan, including such basics as the emergency telephone list, make it easy to find information quickly and to use the plan. These are important qualities during times of emergency.

Los Angeles World Airports, California

Only a few brief sections of this AEP were made available. Of the information received, the protocols for bomb incidents contain clear and detailed procedures for incidents involving bombs on aircraft, bombs in buildings, and suspicious baggage or packages. The duties of each emergency component are specified and there is good information to facilitate coordination among airport responders.

Memphis International Airport, Tennessee

The Memphis AEP includes a helpful feature. At the end of each incident-based annex where actions and responsibilities have been presented, there is a checklist of the first critical actions each relevant function (tower, communications, fire, police, operations, airlines, and primary mutual aid responders) should carry out. The checklists are short and direct, meant to ensure rapid confirmation of responsibilities and steps.

The AEP includes some specifics that tend be overlooked, for example, identifying **where** the fuel storage areas are located, and providing the text for the public information alert about an emergency at the airport.

Another desirable feature of this AEP is that the authority to declare an emergency is given to more than one or two airport management officials. Memphis decentralizes the declaration of emergency procedures, allowing pilots, the Federal Security Director, FAA facility personnel on duty, tenant manager, and fire and police representatives to declare that an actual or potential emergency exists.

Atlanta (Hartsfield-Jackson) International Airport

At the beginning of Atlanta's basic plan there is a list of primary agencies that could respond to the airport in an emergency situation. Many plans itemize the primary stakeholders in specific functional and incident-based annexes, but it is helpful for representatives at the EOC to have a compilation of all key response organizations in one list. The list identifies the relevant organizations by these categories:

- Department of Aviation,
- Emergency Management Agencies,
- Federal Agencies,
- Hospitals,
- Mutual Aid Fire Departments,
- Mutual Aid Police Departments,
- State Agencies,
- Support Agencies, and
- Tenants.

Chesterfield (Spirit of St. Louis) Airport, Missouri

There are several good ideas in this plan, beginning with a page that states the assumptions and situations that are included in the AEP. It is valuable to present the framework within which the plan will operate in essence, ensuring that all readers understand the basic, underlying premises.

Chesterfield approaches the organizations and assignment of responsibilities in a comprehensive, yet concise manner. Every possible organization that could be involved in an emergency is identified along with the main mission. There are 44 entries, a few examples of which follow:

- St. Louis County Medical Examiner—(1) responsible for taking charge and care of fatalities, (2) assembles mortalities in a temporary morgue until a more suitable location is found, and (3) begins identification procedures.
- Coast Guard/Harbor Patrol—(1) provides primary rescue and other support services in the event an accident requires operations to take place in or around the Missouri River, and (2) coordinates their services with other mutual aid rescue services.
- National Weather Service—(1) provides related technical support information in support of emergency response and recovery operations, and (2) assists with alert and warning processes.

The Chesterfield airport has created a special Emergency Readiness Team comprised of private sector resources that would provide assistance if needed. This is a great idea. The plan lists the organizations and a page on each that identifies the senior and alternate contacts, multiple contact numbers, and the type of equipment that they can provide, such as forklifts, hoists, jacks, and so forth. Their team is geared to airside requirements, but the concept could be expanded upon to cover all mutual aid assets needed for major incidents.

San Francisco International Airport, California

San Francisco's AEP delineates a novel approach to structuring disaster response. It is a great idea that other airports may want to consider. Essentially mirroring the emergency management structure from the Federal Emergency Management Agency, San Francisco established TOCs where emergency response and recovery actions are managed at the most "local" level of the airport—the terminal. Terminal-specific emergencies are first addressed a this level in much the same way as a local emergency is handled by local government resources. If the TOC determines that a problem exceeds its capabilities and/or resources, the TOC contact the EOC for support or hands off the problem. Remote facilities (e.g., United Express terminal) report to the EOC if they do not have a representative at the TOC. Each TOC is supported by the airlines operating from the terminal area under its jurisdiction and provide employees to support and staff the TOC. One airline is designated as the primary "host" for the TOC and is responsible for set up and operation. A secondary host is identified as back up.

There is a two level (strategic and tactical) coordination plan laid out in the Natural Disaster Annex. The Annex addresses coordination, administration, logistics, medical, food and water, facilities inspections, evacuation and sheltering, sanitation, command, command posts, and communications.

The potential for earthquakes in the San Francisco area means that the AEP includes special provisions for this type of incident. The plan acknowledges that evacuation immediately following initial earthquake shocks is expected to be haphazard and virtually uncontrolled. The plan calls for a police officer with command authority to report to the EOC to assist with response and recovery management. Duties would include helping to control evacuations and passenger containment if evacuation onto the AOA has occurred, as well as managing public re-entry to terminal shelter areas when authorized by the EOC. Shelter areas are activated only after Building Inspection and Code Enforcement (BICE) teams have inspected and determine a building to be safe. There also are off-airport shelter sites.

Patient transport and tracking is well thought out. The logistics associated with management and movement of casualties is based on a two-tier approach. The first level involves moving causalities to Casualty Collection Points, generally located at primary security checkpoints (or a boarding area hub) in the terminal buildings for triage and first aid. The second level applies to patients assessed as needing more than first aid. These casualties are moved to the Mass Casualty Treatment Area where advanced medical procedures are provided and evacuation is coordinated. Non-ambulatory casualties are moved using Emergency Casualty Evacuation Carts which are maintained on the airport's Emergency Medical Recovery buses stationed on the airfield.

CHAPTER 4

Conclusions, Recommendations, and Suggested Research

Our recognition of the types of disasters for which airports must be prepared has grown over time. The jurisdictions in which airports are located and other nearby communities have expanded their disaster plans in accordance with new threats and with Federal requirements. Airports are doing likewise.

As a condition of certification, airports have to have emergency plans, so every airport has a starting point from which to build greater capacity for protecting the airport population, the built environment, and the expensive aircraft and other major equipment on the premises.

Over the last 10 years there has been a trend toward regionalization in the field of disaster preparedness. Airports have, in large or small measure, been participating in that trend. With the development of new FAA guidance on AEPs, it is a good time to consider these with a fresh perspective, and a part of that is strengthening ties with other organizations and other airports in a region. The tools for accomplishing this are available and with the participation of their mutual aid partners, airports are poised to enter a new level of cooperation from which enhanced AEP can be built.

Conclusions

The research results from this study suggest a number of recommendations and policy initiatives. Some of these are specific to airport managers and their emergency planning and operations teams; others speak more to national policy considerations.

1. Requirements related to emergency exercises at airports should include a focus of these mandated drills to other-than-aircraft related disasters, and encompass other emergencies related to severe weather, an active shooter or hostage situation in the terminal, a disease outbreak and quarantine, a terrorist attack using chemical, biological, or radiological substances, and similar events.

2. A technical assistance program should be considered to help airports develop continuity of operations (COOP) plans and plans for their role as a site resource for disasters having a regional impact.

Recommendations

Airports should take steps to address the following actions, as appropriate to their specific emergency planning situation. These steps include:

1. Update the overall emergency plan to correspond with the structure of the National Incident Management System, and to comply with FAA's 2008 Advisory Circular on emergency plans.
2. Ensure that *non*-aviation incidents, emergencies, and disasters are addressed as effectively as are aircraft crashes, firefighting, and rescue.
3. Utilize the Target Capabilities List (TCL) as one way of quantitatively and qualitatively calculating the adequacy of identified resources and procedures.
4. Create a collaborative group such as an Airport Advisory Committee that can offer input into the AEP, provide copies of their written plans, and assist with joint training and exercises.
5. Develop the capability to conduct critiques of all training, exercises, and responses to actual incidents, and use that information to amend AEPs, as needed.
6. Meet with other airports in the region to discuss organizing a mutual assistance compact to enable rapid inter-airport support during major events. An assistance compact would allow for a quick response to disasters using the unique resources and expertise possessed by member airports. Some of the assistance could include damage assessment, disaster recovery, logistics, donations management, security, and communications.

7. Schedule table top or functional training with all neighboring and regional mutual aid responders. Consider mass casualty incidents caused by an active shooter, an attack at the terminal with poisonous chemicals, or a dirty bomb. Practice evacuating the airport, managing a power loss at the terminal, or a major health problem (e.g., hundreds ill with Norovirus).

8. Meet with representatives from the local public health service and the airport representative from the Centers for Disease Control to clarify their responsibilities in handling and preventing the spread of an infectious disease outbreak at the airport.

9. Strengthen the public information portion of the AEP to include a dedicated public information officer, adequate arrangements and procedures for a joint information center, support staff, and pre-scripted messages for different disasters.

10. Ensure that the AEP accommodates the possibility that the airport, not an airline, will be the primary party responsible for activating and operating a Family Assistance Center.

Suggested Research

1. Provide a better template for airports to use in evaluating and critiquing their training, table top, and field exercise programs. The true test of any plan is how well it functions when disaster strikes. Knowing how to systematically critique responses and a plan's effectiveness as a blueprint for operations would be valuable for airports. This type of information is best relayed through a guidebook in concert with training.

2. It is essential that the roles and responsibilities of the public health service, the Centers for Disease Control, the Federal Aviation Administration, the Transportation Security Administration, and other relevant Federal agencies be clearly established and communicated with regard to handling in-flight and on-airport contagious disease outbreaks. Guidelines for how airports and airlines should coordinate with the local and state public health agencies, and who would pay for and be in charge of providing and maintaining quarantine operations, support activities, transportation, communications, food, shelter, and so forth, should be clearly identified.

CHAPTER 5

Literature Review and Bibliography: Applicable Laws, Rules, Regulations, and Standards Related to Emergency Planning and Disaster Response at Airports

Airline and airport operations are governed by a plethora of laws and regulations. The goal for this literature review was to examine and summarize the Code of Federal Regulations statutes, Federal rules and regulations, and standards that are applicable to emergency response planning and disaster management for incidents at airports, specifically, CBRNE events. The bibliography which follows is organized by Federal department and agency.

U.S. Department of Transportation

Advisory Circular 150/5200-31B, Airport Emergency Plans, (expected late 2008)

National Aviation Resource Manual for Quarantinable Diseases, December 2006

Federal Aviation Administration (FAA)—Code of Federal Regulations

Title 49: Transportation

Part 110—Hazardous Material Public Sector Training and Planning Grants

This part sets forth procedures for reimbursable grants for public sector planning & training efforts to deal with hazardous materials emergencies particularly involving transportation. Grants will enhance implementation of the Emergency Planning and Community Right to Know Act of 1986 (42 USC 11001). The grants apply to states and Indian Tribes. Airports could be partners in those grant awards. Sourced from September 17, 1992.

Part 130—Oil Spill Prevention and Response Plans

This part prescribes prevention, containment, and response planning requirements of the Department of Transportation applicable to transportation of oil by motor vehicles and rolling stock. Requirements apply to any liquid petroleum in a packaging having a capacity of 3,500 gal. or more; and any liquid petroleum or non-petroleum oil in a quantity greater than 42,000 gallons per packaging. Sourced from June 17, 1996.

Part 172—Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements

This part lists and classifies those materials which the department has designated as hazardous materials for purposes of transportation and prescribes the requirements for shipping papers, package marking, labeling, and transport vehicle placarding applicable to the shipment and transportation of those hazardous materials. This applies to each person who offers a hazardous material for transportation, and each carrier by air, highway, rail, or water that transports a hazardous material. Sourced from September 9, 1976.

Part 175—Carriage by Aircraft

Document prescribes requirements for the handling, packaging, and transportation of commerce and hazardous materials by aircraft, and refers to the offering, acceptance, and transportation of hazardous materials by aircraft to, from, or within the United States. Sourced from March 22, 2006.

Title 14: Aeronautics and Space

Part 139—Certification of Airports

This document details the requirements for being a certificated airport. The document includes general requirements, required certification elements, index determination for ARFF requirements, and requirements for the development of an emergency plan. Part 139 refers to U.S. (& territory) airports with scheduled operations for aircraft of more than nine seats or unscheduled aircraft with at least 31 seats, and joint/shared use airports.

Part 414—Safety Approvals

This part establishes procedures for obtaining, renewing, or transferring an FAA safety approval. Approvals are used to support the application review for one or more launch or re-entry license requests. This applies to an(y) applicant that wants to obtain a safety approval. Sourced from August 15, 2006.

Part 206—Certificates of Public Convenience and Necessity: Special Authorizations and Exemptions

Part 206 details emergency exemptions for air carriers to carry medical equipment or patients certified by a physician to be in need of immediate air transportation for the protection of life. It applies to all air carriers offering to provide this service. Sourced from August 22, 1995.

U.S. Department of Homeland Security (DHS)

As the lead Federal agency for the prevention of and response to terrorism, the Department of Homeland Security would, in the event of a CBRNE at an airport, lead, manage and coordinate the national response.[14] DHS also has responsibilities for preparing Federal state and local agencies for the response to and recovery from terrorist events. As such, DHS is actively involved with exercise and training efforts. Terrorism has been one of the subjects for training and exercises for many years. An example of this commitment to training is the National Emergency Training Center (NETC) with its main campus in Emmitsburg, MD. The NETC hosts two schools, the National Fire Academy (NFA) and the Emergency Management Institute (EMI). Both schools have commitments to training the Nation's first responders on a variety of topics. Terrorism is a sizable portion of the resident courses as well as the off-site and on-line programs available. For more information check the respective schools' websites at: www.training.fema.gov/EMIWeb/aboutemi.asp for EMI and, for the NFA, www.usfa.dhs.gov/training/nfa.

DHS is responsible for the National Response Framework (NRF).[15] This document is a comprehensive all-hazards approach for the federal government to cooperate with state and local governments to prepare for a variety of domestic incidents. Airports are now advised to develop their AEP's per the guidance in the NRF and in the National Incident Management System (NIMS). Local responders, including airports, must be aware of the basic principles of the plan in order to integrate federal assets into their response.

Homeland Security Presidential Directive 5

HSPD-5 established the National Incident Management System (NIMS) as a means for command, control, planning, and logistical support for various types of events.

Homeland Security Presidential Directive 8

HSPD-8 was issued in December 2003, and was, "intended to establish national policy to strengthen the preparedness of the Untied States to prevent, protect against, respond to, and recover from terrorist attacks." The goal as it is known goes on to provide "a vision for preparedness, establishing national priorities, and identifying target capabilities."[16] The goal uses what is described as a Capabilities-Based Planning Process that uses three separate tools which are listed next. The concept was to have an established core of capabilities that can be used as benchmarks. None of the National Planning Scenarios are airport specific, though the guidance is helpful in the planning process. Any regional approach to CBRNE disaster planning for airports will require familiarity with the guidelines under which contagious jurisdictions have prepared their disaster response and recovery plans.

National Planning Scenarios

Department of Homeland Security Universal Task List

Target Capabilities List, Version 2.0

Transportation Security Administration

Title 49 Code of Federal Regulations: Transportation

Title 49 Chapter 12 Part 1542 sub-parts A–D defines airport security programs, operations, and contingency measures. This Chapter is a result of the passage of the Aviation and Transportation Security Act of 2001. Part 1542 calls for the establishment of an airport security program that includes an "airport security coordinator." This position is to

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[14] www.dhs.gov/xabout/strategicplan

[15] www.dhs/gov/xlibrary/assets/NRPbaseplan.pdf
[16] www.ojp.usdoj.gov/odp/assessments/hspd8.htm

provide a contact point and liaison with the Transportation Security Administration on site at the airport. Subpart "C" defines the requirements for security personnel at airports. In essence, these personnel are required to have the police powers for the state or locality where the airport is located. Contingency Measures are covered in Subpart "D". In this section, the airport operators are further directed to establish procedures to respond to bomb threats, sabotage, air piracy, and "other unlawful interference to civil aviation operations."[17]

Department of Labor

Title 29 Code of Federal Regulations: Labor

The Department of Labor through the Occupational Safety and Healthy Administration (OSHA) regulates worker safety. In Title 29 CFR 1910.120, The Hazardous Waste Operations and Emergency Response (HAZWOPER) set criteria for workers that enter areas where risks from contact with chemicals are possible. In the 26 states where there is an OSHA-approved occupational health and safety plan (an OSHA state),[18] the federal standards apply to state and local government employees. In states that do not have state level agencies (non-OSHA), the EPA rules as indicated above would apply.

Nuclear Regulatory Commission, NUREG-0728

If a radioactive or nuclear material were released at or near an airport, the Nuclear Regulatory Commission (NRC) would be part of the Federal response under the NRP. The NRC focuses on events and incidents that involve those parties that have licenses from the NRC for the use and storage of nuclear materials. However, under NUREG-0728, the NRC would have a support role in a terrorist event.

Environmental Protection Agency

Title 29 and Title 40, *Code of Federal Regulations: Environment*

The Environmental Protection Agency, through Title 40 of the Code of Federal Regulations, has responsibilities for the protection of the environment and protection of workers in the response and recovery (clean-up) modes of the event. An intentional release of a chemical agent at an airport would likely trigger an EPA response. The EPA will also have a role to play should the local or state government want financial reimbursement for clean-up costs. If the state where the incident occurs is not an OSHA state, Title 40 CFR Part 311.2 sets

the safety standards for emergency response by directing the responders to Title 29 CFR Part 1910.120 which is the OSHA standard for worker safety.

National Fire Protection Association Standards

NFPA 403—Standard for Aircraft Rescue and Fire-Fighting Services at Airports

This standard contains the minimum requirements for aircraft rescue and fire-fighting (ARFF) services at airports. Requirements for other airport fire protection services are not covered in this document. Approved as an American National Standard on July 18, 2003.

NFPA 405—Standard for the Recurring Proficiency of Airport Fire Fighters

Standard discusses skills and proficiencies recommended for airport firefighters. Sections include airport/aircraft familiarization, personal protective equipment, airport rescue and firefighting (ARFF) equipment, aircraft evacuation, development of an airport emergency plan, and emergency medical services. This was approved as an American National Standard on August 5, 2004.

NFPA 408—Standard for Aircraft Hand Portable Fire Extinguishers

This standard specifies requirements for the type, capacity, rating, number, location, installation, and maintenance of aircraft hand-portable fire extinguishers to be provided for the use of flight crew members or other occupants of an aircraft for the control of incipient fires in the areas of aircraft that are accessible during flight. This standard does not cover fire detection and fixed fire-extinguishing systems installed in an aircraft or fire detection and fire-extinguishing systems for the protection of ground maintenance operations. This was approved as an American National Standard on August 5, 2004.

NFPA 412—Standard for Evaluating Aircraft Rescue and Fire-Fighting Foam Equipment

This standard establishes test procedures for evaluating the foam fire-fighting equipment installed on rescue and fire-fighting vehicles designed in accordance with the applicable portions of NFPA 414. This was approved as an American National Standard on July 18, 2003.

NFPA 414—Standard for Aircraft Rescue and Fire-Fighting Vehicles

This standard specifies the minimum design, performance, and acceptance criteria for aircraft rescue and fire-fighting

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[17] Code of Federal Regulations Title 49 Chapter 12 Part 1542 Subpart D 1542.307(a) www.osha.gov/dcsp/osp/index.html

[18] www.osha.gov/dcsp/osp/index.html

(ARFF) vehicles intended to transport personnel and equipment to the scene of an aircraft emergency for the purpose of rescuing occupants and conducting rescue and fire-fighting operations. This was approved as an American National Standard on August 17, 2006.

NFPA 422—Guide for Aircraft Accident/Incident Response Assessment

This standard provides a framework for the accumulation of data relative to the effectiveness of aircraft accident/incident emergency response services. This was approved as an American national standard on August 5, 2004.

NFPA 424—Guide for Airport/Community Emergency Planning

This describes the elements of an airport/community emergency plan that require consideration before, during, and after an emergency has occurred. The scope of the airport/community emergency plan should include command, communication, and coordination functions for executing the plan. This was approved as an American national standard on July 19, 2002.

NFPA 430—Code for the Storage of Liquid and Solid Oxidizers

This code shall apply to the storage and handling of oxidizers that are liquid or solid at ambient conditions. This code shall not apply to the storage of solid and liquid oxidizers for normal use on the premises of one- and two-family dwellings. Separate chapters shall specify requirements for storage of oxidizers by class where the quantities stored are greater than the stated minimums. This was approved as an American National Standard on August 5, 2004.

NFPA 432—Code for the Storage of Organic Peroxide Formulations

This code shall apply only to commercially available organic peroxide formulations in U.S. Department of Transportation- or Canadian Ministry of Transport-approved packages. This code shall not apply to the storage of such formulations in process areas where they are manufactured or used. This was approved as an American National Standard on July 19, 2002.

NFPA 471—Recommended Practice for Responding to Hazardous Materials Incidents

This recommended practice applies to all organizations that have responsibilities when responding to hazardous materials incidents and recommends standard operating guidelines for responding to such incidents. Planning procedures, policies, and application of procedures for incident levels, personal protective equipment, decontamination, safety, and communications are specifically covered in this recommended practice. This was approved as an American National Standard on January 31, 2002.

NFPA 472—Standard for Professional Competence of Responders to Hazardous Materials Incidents

This standard shall identify the levels of competence required of responders to hazardous materials incidents. This standard shall cover the competencies for first responders at the awareness level, first responders at the operational level, hazardous materials technicians, incident commanders, hazardous materials branch officers, hazardous materials branch safety officers, and other specialist employees. This was approved as an American National Standard on January 31, 2002.

NFPA 473—Standard for Competencies for EMS Personnel Responding to Hazardous Materials Incidents

This standard identifies the levels of competence required of emergency medical services (EMS) personnel who respond to hazardous materials incidents. It specifically covers the requirements for basic life support and advanced life support personnel in the pre-hospital setting. This was approved as an American National Standard on January 31, 2002.

NFPA 495—Explosive Materials Code

This code shall apply to the manufacture, transportation, storage, sale, and use of explosive materials. This was approved as an American National Standard on August 18, 2005.

NFPA 498—Standard for Safe Havens and Interchange Lots for Vehicles Transporting Explosives

This standard shall apply to safe havens that are used for the parking of vehicles transporting explosives and to explosives interchange lots that are safe areas where less-than-truckload of explosives shall be permitted to be held for transfer from one vehicle to another for continuance in transportation. All vehicles covered by this standard shall be required to be engaged in the transportation of explosives and shall carry shipping papers to show that the explosives being transported are properly described, classified, identified, packaged, and labeled in accordance with regulations of the U.S. Department of Transportation. Additionally, all vehicles shall be required to be marked and placarded in accordance with regulations of the U.S. Department of Transportation. This was approved as an American National Standard on August 18, 2005.

NFPA 801—Standard for Fire Protection for Facilities Handling Radioactive Materials

This standard addresses fire protection requirements intended to reduce the risk of fires and explosions at facilities handling radioactive materials. These requirements are applicable to all locations where radioactive materials are stored, handled, or used in quantities and conditions requiring government oversight and/or license (e.g., U.S. Nuclear Regulatory Commission, U.S. Department of Energy) to possess or use these materials and to all other locations with equal quantities or conditions. This was approved as an American National Standard on January 17, 2003.

NFPA 1003—Standard for Airport Fire Fighter Professional Qualifications

This standard identifies the minimum job performance requirements for the airport fire fighter who is responsible for aircraft rescue and firefighting. This was approved as an American National Standard on February 7, 2005.

NFPA 1600—Standard on Disaster/Emergency Management and Business Continuity Programs

This standard establishes a common set of criteria for disaster management, emergency management, and business continuity programs. This was approved as an American National Standard on January 16, 2004.

Other Publications of Interest

Guidelines for Mass Fatality Management during Terrorist Incidents Involving Chemical Agents, **U.S. Army Soldier and Biological Command (SBCCOM), November 2001.**

Guidelines to Improve Airport Preparedness against Chemical and Biological Terrorism, **Sandia National Laboratories, SAND2005-3237, May 2005.**

Practice Guide for Decontaminating Aircraft, **Federal Aviation Agency (AC 20-48), 1966.**

List of Acronyms

ACM	Airport Certification Manual		HSPDs	Homeland Security Presidential Directives
ACRP	Airport Cooperative Research Program		ICS	Incident Command System
ADFAA	Aviation Disaster Family Assistance Act		JIC/S	Joint Information Center/System
AEP	Airport Emergency Plan		LLIS	Lessons Learned Information Sharing
ARFF	Aircraft Rescue and Firefighting		NDMS	National Disaster Medical System
CBRNE	Chemical, Biological, Radiological, Nuclear, and Explosive		NETC	National Emergency Training Center
			NFA	National Fire Academy
CDC	Centers for Disease Control		NFPA	National Fire Protection Association
COOP	Continuity of Operations		NIMS	National Incident Management System
CWA	Chemical Warfare Agent		NRC	Nuclear Regulatory Commission
DHS	Department of Homeland Security		NRP	National Response Plan
DOT	Department of Transportation		NRF	National Response Framework
EMI	Emergency Management Institute		NTSB	National Transportation Safety Board
EMT/S	Emergency Medical Technician/Services		OSHA	Occupational Safety and Health Administration
EOC	Emergency Operations Center			
EOD	Explosive Ordnance Device		SBCCOM	Soldier and Biological Chemical Command
EPA	Environmental Protection Agency		SSI	Sensitive Security Information
FAA	Federal Aviation Administration		TIC	Toxic Industry Chemical
HAZWOPER	Hazardous Waste Operations and Emergency Response		TSA	Transportation Security Administration
			USAR	Urban Search and Rescue

APPENDIX A

Questionnaire

SYSTEM PLANNING CORPORATION

TriData Division

1000 Wilson Boulevard, Arlington, Virginia 22209 • (703) 351-8300 • (703) 351-8383 fax • www.sysplan.com/TriData

Questions for Airport Managers

Airport _____ City and State_____

Address _____

Contact Person & Title _____

Phone _____ Email _____

1. Where does emergency response planning fall within the structure of your organization and who is in charge? Is that individual also responsible for homeland security? If not, who is?
2. Does your ARFF department provide structural fire protection on airport?
3. Does your Fire Department provide EMS – basic or advanced?
4. Does your airport have a Haz-Mat Response Team on site? What level is the Team? If no, which is the closest Haz-Mat Team?
5. Do you have on-site law enforcement (not just security guards)?
6. Does your airport have an on-site explosive ordnance device (EOD) team? If yes, under what jurisdiction does it operate; local, city, state, federal? If no, where is the closest EOD unit?
7. Which, if any, of the elements of CBRNE threats are not specifically annexed in your AEP?
8. Do you have automatic aid or mutual aid agreements that are specific to CBRNE events? If so, with whom are these agreements?
9. When was your last tri-annual exercise? What was the major focus of that exercise? Are you ever invited to participate by outside agencies in table top or other exercises? Topics that were covered? When and with whom? Any planned over the next 9 months?
10. Have you updated your AEP to be NIMS-compliant?
11. Are there any special features of your emergency preparedness efforts you would like to share for this research?
12. Some information that we would like to have:
    - Copy of your AEP (email or mail)
    - Mutual Aid Agreements per CBRNE events: local, regional and state
    - Contact information for <u>airport</u> Fire Chief; Police Chief/Director of Security; Operations Manager, Others?

APPENDIX B

AEP and NIMS Evaluation Matrix

NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS) IMPLEMENTATION ACTIVITY		FY 2005 to 2007		FAA FAR 139	
		STATE/ TERRITORY	TRIBAL/ LOCAL	COVERAGE	VERBAGE
ADOPTION	1. Support the successful adoption & implementation of the NIMS.	☐	☐		
	2. Adopted NIMS for all government departments & agencies; as well as promote & encourage NIMS adoption by associations, utilities, non-governmental organizations (NGOs) & private sector incident management & response organizations.	☐	☐		
	3. Monitor formal adoption of NIMS by all tribal & local jurisdictions.	☐			
	4. Establish a planning process to ensure the communication & implementation of NIMS requirements, thereby providing a means for measuring progress & facilitate reporting.	☐			
	5. Designate a single point of contact to serve as the principal coordinator for NIMS implementation.	☐	☐		
	6. Designate a singe point of contact within each of the jurisdiction's Departments & Agencies.	☐		☐	
	7. To the extent permissible by law, ensure that Federal preparedness funding, including DHS Homeland Security Grant Program & the Urban Areas Security Initiative (UASI), support NIMS implementation at the State & local levels & incorporate NIMS into existing training programs & exercises.	☐			
	8. To the extent permissible by law, ensure that federal preparedness funding to State & territorial agencies & tribal & local jurisdictions is linked to satisfactory progress in meeting FY2006 NIMS implementation requirements.	☐			
	9. To the extent permissible by State & territorial law & regulations, audit agencies & review organizations routinely include NIMS implementation requirements in all audits associated with federal preparedness grant funds, validating the self-certification process for NIMS compliance.	☐			
	10. Monitor & assess outreach & implementation of NIMS Requirements.	☐			

NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS) IMPLEMENTATION ACTIVITY		FY 2005 to 2007		FAA FAR 139	
		STATE/ TERRITORY	TRIBAL/ LOCAL	COVERAGE	VERBAGE
COMM & MANAGEMENT	11. Coordinate & provide technical assistance to local entities regarding NIMS institutionalized use of ICS.	☐			
	12. Manage all emergency incidents & pre-planned (recurring/special) events in accordance with ICS organizational structures, doctrine & procedures, as defined in NIMS. ICS implementation must include the consistent application of Incident Action Planning & Common Communications Plans.	☐	☐		
	13. Coordinate & support emergency incident & event management through the development & use of integrated multi-agency coordination systems , i.e. develop & maintain connectivity capability between local Incident Command & Posts (ICP), local 911 Centers, local Emergency Operations Centers (EOCs), the state EOC & regional &/ federal EOCs & NRP organizational elements.	☐	☐		
	14. Institutionalize, within the framework of ICS, the Public Information System (PIS), comprising of the Joint Information System (JIS) & a Joint Information Center (JIC).	☐	☐		
	15. Establish public information system to gather, verify, coordinate, & disseminate information during an incident.	☐	☐		
PREPAREDNESS: PLANNING	16. Establish NIMS baseline against the FY 2005 & FY 2006 implementation requirements.	☐	☐		
	17. Develop & implement a system to coordinate & leverage all federal preparedness funding to implement the NIMS.	☐	☐		
	18. Incorporate NIMS into Emergency Operations Plans (EOP).	☐			
	19. Revise & update plans & SOPs to incorporate NIMS & National Response Plan (NRP) components, principles & policies, to include planning, training, response, exercises, equipment, evaluation & corrective actions.	☐	☐		
	20. Promote intrastate mutual aid agreements, to include agreements with private sector & non-governmental organizations.	☐	☐		
	21. Participate in & promote intrastate & interagency mutual aid agreements, to include agreements with the private sector & non-governmental organizations.	☐	☐		

NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS) IMPLEMENTATION ACTIVITY	FY 2005 to 2007		FAA FAR 139	
	STATE/ TERRITORY	TRIBAL/ LOCAL	COVERAGE	VERBAGE
PREPAREDNESS: TRAINING 22. Leverage training facilities to coordinate & deliver NIMS training requirements in conformance with the NIMS National Standard Curriculum.	☐			
23. Complete training—IS-700 NIMS: An Introduction, IS-800 NRP: An Introduction; ICS-100 & ICS-200.	☐	☐		
24. Complete training—ICS-300, ICS-400.	☐	☐		
PREPAREDNESS: EXERCISES 25. Incorporate NIMS/ICS into training & exercises.	☐	☐		
26. Participate in an all-hazard exercise program based on NIMS that involves responders from multiple disciplines & multiple jurisdictions.	☐	☐		
27. Incorporate corrective actions into preparedness & response plans & procedures.	☐	☐		
RESOURCE MANAGEMENT 28. Inventory response assets to conform to FEMA Resource Typing Standards.	☐	☐		
29. Develop state plans for the receipt & distribution of resources as outlined in the National Response Plan (NRP) Catastrophic Incident Annex & Catastrophic Incident Supplement.	☐			
30. To the extent permissible by state & local law, ensure that relevant national standards & guidance to achieve equipment, communication & data interoperability are incorporated into state & local acquisition programs.	☐	☐		
31. Validate that inventory of response assets conforms to FEMA Resource Typing standards.	☐	☐		
32. Utilize response asset inventory for mutual aid requests, exercises, & actual events.	☐	☐		
COMMUNICATION & INFORMATION MANAGEMENT 33. Apply standardized & consistent terminology, including the establishment of plain language communications Standards across public safety sector.	☐	☐		
34. Develop systems & processes to ensure that incident managers at all levels share a common operating picture of an incident.	☐	☐		

In Order for a Plan to be Considered NIMS Compliant, it MUST Cover These Items:		
Define the scope of preparedness and incident management activities necessary for the jurisdiction.		
Describe organizational structures, roles and responsibilities, policies, and protocols for providing emergency support.		
Facilitate response and short-term recovery activities.		
Be flexible enough to use in all emergencies.		
Describe the Emergency Operations Plan (EOP) purpose.		
Describe the EOP situation and assumptions.		
Describe the EOP concept of operations.		
In Order for a Plan to be Considered NIMS Compliant, it MUST Cover These Items:		
Describe the EOP organization and assignment of responsibilities.	☐	
Describe the administration and logistics of the EOP.		
Describe EOP development and maintenance.		
Describe the EOP authorities and references.		
Contain functional annexes.		
Contain hazard-specific appendices.	☐	
Contain a glossary.		
Pre-designate jurisdictional and/or functional area representatives to the Incident Commander (IC) or Unified Command (UC) whenever possible.		
Include pre-incident and post-incident public awareness, education, and communications plans and protocols.		

http://www.fema.gov/pdf/emergency/nims/eop-sop_state_online.pdf

http://www.fema.gov/pdf/emergency/nims/eop-sop_local_online.pdf

Abbreviations and acronyms used without definitions in TRB publications:

AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI–NA	Airports Council International–North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
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	Air Transport Association
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
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
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation