

National Cooperative Highway Research Program

(NCHRP) Report 740/ NCHRP 20-59 (32):
A Transportation Guide for All-Hazards Evacuation

Summary Findings and Guide Overview
EM Forum - September 25, 2013



THE Louis Berger Group, INC.

Presentation Overview

- » Project Overview
- » Key Findings
- » Guide Outline/Focus
- » Guide Excerpts
- » Discussion, Q&A

Project Overview

Phase I Tasks

1. Literature Review
2. Roles of Modes and Other Entities in Evacuation
3. Mode Integration
4. Matching Resources to Needs
5. “Workshop in a Box”
6. Case Studies
7. Operations Plan Templates
8. Report and Draft Outline

Phase 2 Tasks

9. Draft and Final Guide
10. Final Report



Minnesota, 1997 FEMA staff photo

NCHRP 20-59(32) – “Whodunit”

Study Team

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- » Jane Mobley Associates
- » Brian Wolshon (LSU)
- » John Renne
- » Roberta Thomas (Atkins)
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Oversight

- » Panel Chair: Mark Krentz
- » NCHRP Senior Program Officer: Stephan Parker

Project Focus

Develop procedures and tools to help transportation entities plan for a major evacuation event requiring coordination between multiple:

- » **Agencies:** law enforcement, emergency mgt., health, transit, etc.
- » **Modes:** highway (truck, auto), transit (bus, paratransit, rail), water, air, pedestrian, etc.
- » **Jurisdictions:** towns, cities, counties, states
- » **Levels of government:** local, regional, state(s), possibly tribal and federal
- » **Private and non-profit entities:** emergency focus (e.g., American Red Cross), client focus (e.g., service providers)

Key Findings

- » Transportation and emergency management are interdependent, so plan ahead (time/scale)
- » Establish and maintain communication and coordination – among agencies and public
- » Prepare, train, and practice – stakeholders, public
- » Adapt existing practices, systems, resources
- » Lessons specific to evacuation
 - Evacuation plans must concur with shelter plans
 - Plan evacuee services – fuel (& power for fuel), repairs, water, more
 - Plan for post-event reentry

Final Guide



Guide Organization

- » Introduction
- » Step 1 – Form a Collaborative Planning Team
- » Step 2 – Understand the Situation
- » Step 3 – Determine Goals and Objectives
- » Step 4 – Develop the Plan
- » Step 5 – Prepare, Review and Approve Plan
- » Step 6- Implement and Maintain the Plan
- » Resource- “Workshop in a Box”
- » Glossary
- » Database Tools, Checklists (Word or Excel format) (CD)
- » Appendices (CD)

Form a Collaborative Planning Team

Tasks

- » 1.1 Identify likely interagency and inter-regional partners (jurisdictions and levels of government) required for transportation and emergency management coordination
- » 1.2 Engage the whole community in planning

Tools

- » 1.1 Network contact database
- » 1.2 Potential frameworks for integrating modes for effective evacuation: Convener Agencies for Multimodal Evacuation Planning (CAME)
- » 1.3 Introduction to ESF and transportation roles and interactions with each ESF
- » 1.4 Potential community partners

Introduction to Emergency Support Functions (ESFs)

ESF Description

- » ESF # 6: Mass care, emergency assistance, housing, & human services



Shelter registration and tracking. FEMA Staff Photo

- » **Transportation interactions focused on evacuation**
- » Self-evacuees need roadway capacity, services such as fuel to get to shelter.
- » Assisted evacuees need transit or other transportation support to get to shelter, including their mobility devices, service animals, and other support.

Step 2

Understand the Situation

Tasks

- » 2.1 Gather information on potential risks/hazards
- » 2.2 Gather contacts and data on people and animals
- » 2.3 Plan and convene a regional workshop



Tools

- » 2.1 Preliminary risk assessment
- » 2.2 Estimated # of Evacuees
- » 2.3 Institutional Facilities
- » 2.4 Assisted evacuees - non-institutional
- » 2.5 Livestock and other animals
- » 2.6 Evacuation needs discussion guide

Example text and resources from Tool 2.5:

Livestock and Other Animals

Identify facilities at risk: Livestock, Animal Shelters, Zoos, Animal Research Facilities. Contact Cattlemen's Associations, local scan

Resources: National Alliance for State Animal and Agricultural Emergency Programs (NASAAEP.org); National Animal Rescue and Sheltering Coalition (narsc.net), and the American Veterinary Medical Association (AVMA)

2006 PETS Act requires planning for people with pets and service animals.

Resources: AVMA tool for estimating numbers of pets in a given community, links to state plans; American Humane Association, American Society for the Prevention of Cruelty to Animals, American Red Cross, FEMA, others have pet-care emergency preparedness info.



Figure 2-1: Cattle rescued from the flooded marshes of lower Cameron Parish, Louisiana. FEMA Staff Photo



Figure 2-2: Hurricane Gustav's animal evacuation, Texas, 2005. FEMA Staff Photo

Note: Each step is followed by text and table tools, plus a synopsis and instructions for database tools and checklists. Full database tools and checklists are in Word or Excel on the accompanying CD.

Step 3

Determine Goals and Objectives

Tasks

- » 3.1 Determine operational priorities – scenarios, challenges, opportunities
- » 3.2 Establish goals and objectives



Figure 3-6: Louisiana, September 2008. FEMA Staff Photo

Figure 3-12: Hurricane evacuation route directional shoulder pavement markings (normal lanes at left and contraflow lanes at right), U.S. Route 290, Texas

(Note These photos were not taken under evacuation conditions)



Tools

- » 3.1 Evacuation operational priorities, goals and objectives discussion guide
- » 3.2 Transportation coordination spectrum of considerations for access and functional needs populations
- » 3.3 Primary entities and modes involved in evacuation
- » 3.4 Transportation operations coordination checklists
- » 3.5 Traffic control devices supporting evacuation

Example Tool 3.2

Spectrum of Considerations

TOOL 3.2, TRANSPORTATION COORDINATION SPECTRUM OF CONSIDERATIONS FOR ACCESS AND FUNCTIONAL NEEDS POPULATIONS			
Level	Types of Access and Functional Needs	Sheltering	Transportation Mode or Vehicle
Independent	Travel and transfer without help	Self-selected: private home, hotel or general shelter	Mass transit (buses, trains) or personal autos
Minor assistance not related to mobility	Persons who are deaf or hearing impaired, blind, or with cognitive disability	Self-selected: private home, hotel or general shelter	Mass transit (buses, trains) or personal autos
Minor mobility assistance	Walker, collapsible wheelchair, service animal	Self-selected: private home, hotel or general shelter; communication assistance needed in general shelter; possibly including companion or caregiver (case by case)	Mass transit (buses, trains), personal autos, vans (e.g., from group homes or adult day care)
Adaptive transport	Motorized wheelchair or scooter – need lift or ramp, able to transfer independently	Self-selected or accessible areas in general shelters, may need elevated cots, other accommodations	Mass transit (buses, trains) or personal autos – transport with mobility device/animal
Travel with assistance	Motorized wheelchair or scooter – need lift or ramp, unable to self-transfer mobility device	Self-selected or accessible areas in general shelters, may need elevated cots, other accommodations	Mass transit, personal autos, lift-equipped vans or buses – transport with
Major mobility assistance	Wheelchair with assistance, gurney or stretcher	Self-selected or accessible areas in general shelters, may need elevated cots, other accommodations	Mass transit, personal autos, lift-equipped vans or buses, or more specialized transport with caregiver – case management
Major medical assistance	Continuous medical attention – IV, oxygen, medical monitoring equipment	Assisted living (individual or facility), long-term care facility (LTC) or acute care hospital	Ground and air ambulances, accessible buses, mass transit with caregiver – case management
		Facility-to-facility (hospital to hospital, LTC to LTC, assisted living to assisted living)	Ground and air ambulances, accessible buses, mass transit with caregiver – case management

Develop the Plan

Tasks

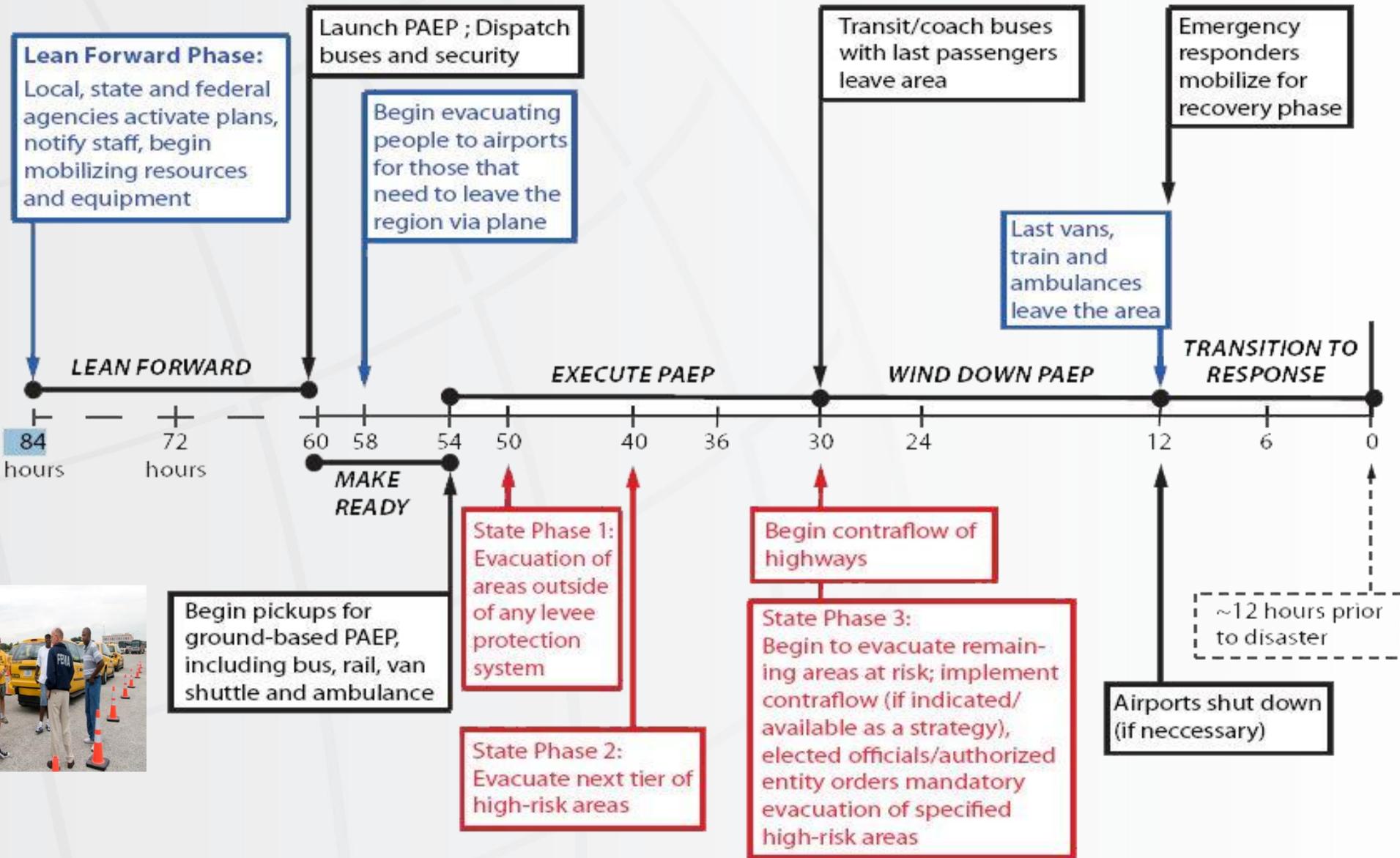
- » 4.1 Develop and analyze courses of action - including timeline
- » 4.2 Identify resources
- » 4.3 Identify information and intelligence needs

Tools

- » 4.0 “Thought Starters”
- » 4.1 Timeline tools: real time evacuation planning model and public assisted evacuation plan timeline for notice events
- » 4.2 Resource tools: examples, FEMA resource typing overview, 7 database templates- vehicles, intermodal facilities, shelters (transportation aspects), more
- » 4.3 Checklist for interagency communications and information sharing between transportation agencies, emergency management and others



Public Assisted Evacuation Plan Timeline for Notice Events



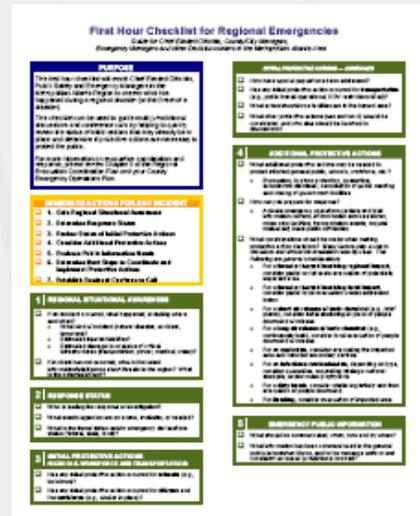
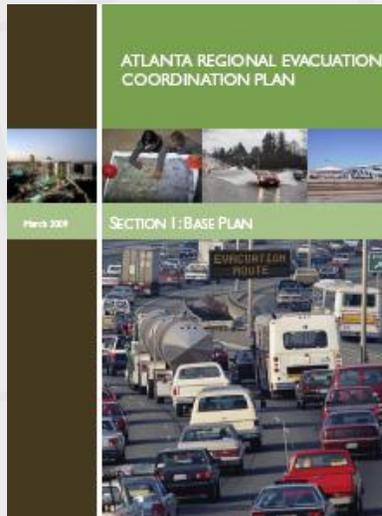
Prepare, Review and Approve Plan

Tasks

- » 5.1 Write the plan
- » 5.2 Review the plan
- » 5.3 Approve and maintain the plan
- » 5.4 Disseminate the plan

Tools

- » 5.1 and 5.2 Multi-jurisdiction multimodal evacuation coordination template outline (5.1) and planning checklists (5.2)
- » 5.3 Sample MOU with transit agency as convener
- » 5.4 Sample agreement with a Metropolitan Planning Organization as convener



Step 6

Implement and Maintain Plan

Tasks

- » 6.1 After action reporting
- » 6.2 Updating the plan
- » 6.3 Training, testing and exercising

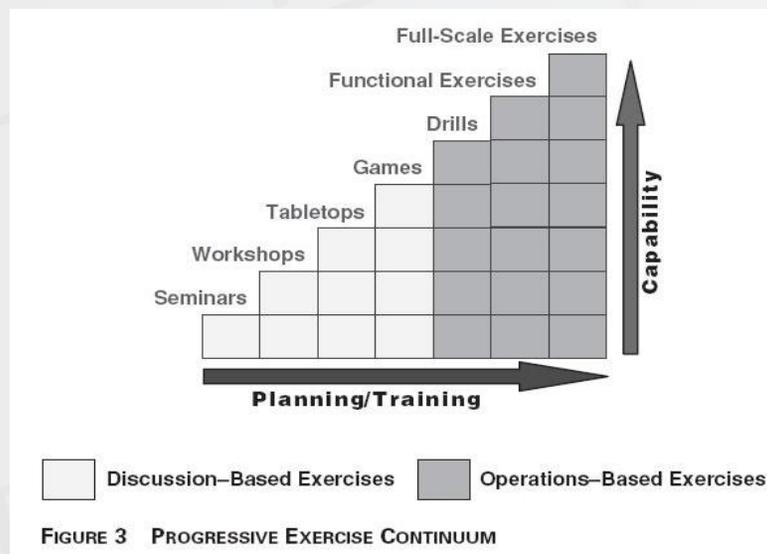


FIGURE 3 PROGRESSIVE EXERCISE CONTINUUM

Figure 6-2: Progressive Exercise Continuum
(TCRP 2005, page 10, Figure 3)

Tools

- » 6.1 After action reporting – real events-FEMA guidance
- » 6.2 After action/corrective action report survey template
- » 6.3 Overview description of drills, simulations and exercises
- » 6.4 Participant feedback form
- » 6.5 Facilitator report form
- » 6.6 Summary of full after action report template

Additional Materials

- » Resource: Evacuation Workshop Planning 101 - “Workshop in a Box”
- » Glossary of Terms
- » Useful Resources and Direct References
- » Tools - Checklists and Worksheets (on CD, online)
- » Appendix A - Target Capabilities List for Evacuation (on CD, online)
- » Appendix B - Synopsis and Links to Sample Evacuation Plans and Related Resources (on CD, online)

“Workshop in a Box”- Steps

Plan the workshop

1. Assess current status
2. Develop preliminary goals/desired outcomes
3. Build support, collect input
4. Design workshop
5. Develop meeting materials
6. Secure facility, plan logistics
7. Recruit participants

Implement workshop

8. Recheck facility, supplies
9. Plan assignments
10. Facilitator tips

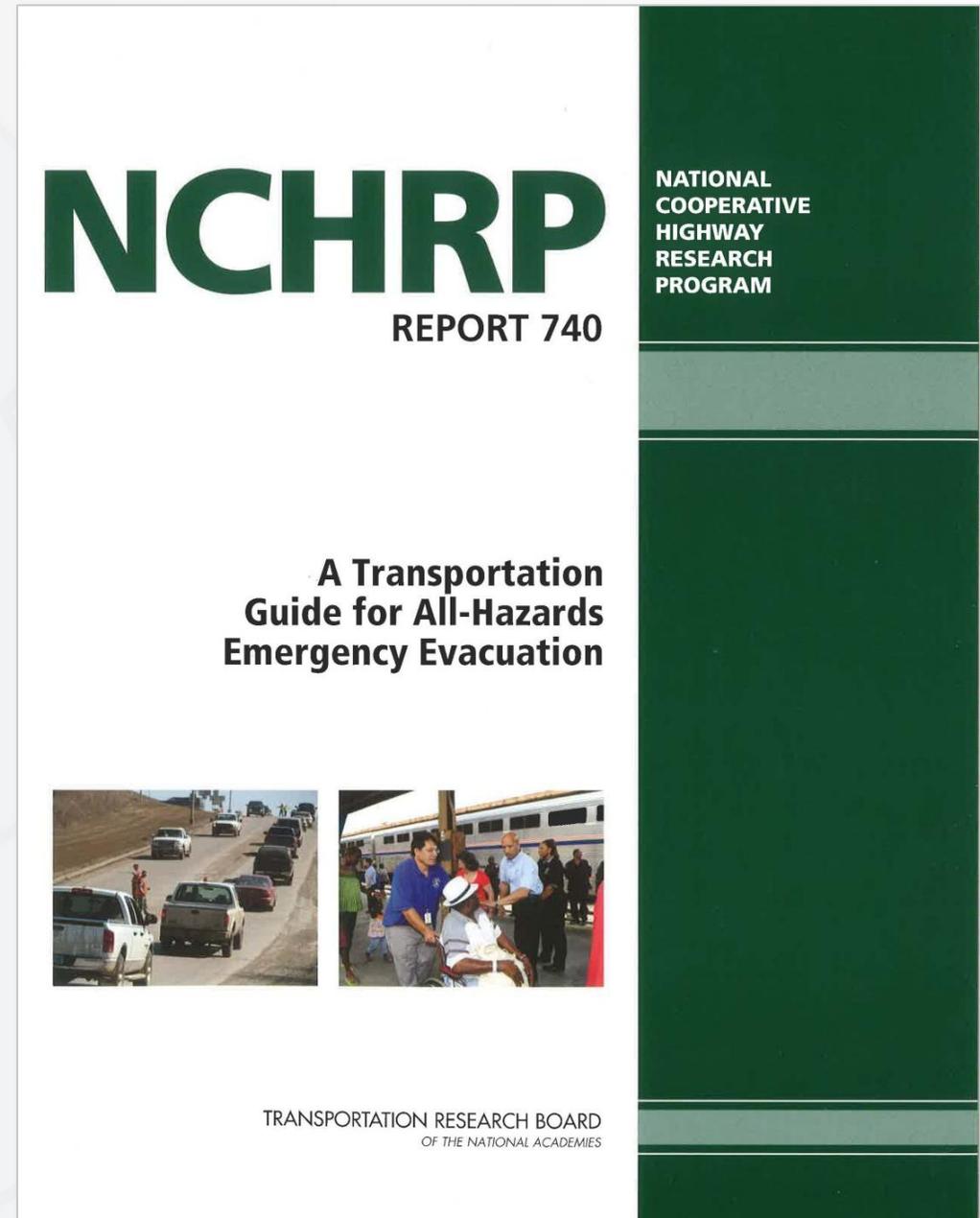
Follow up

11. Document meeting, share
12. Maintain momentum
13. Strengthen working relationships
14. Use feedback to improve

To get a copy of the Guide:

- » Report completed May, 2012.
Published in early 2013.
Available on-line at
<http://www.trb.org/Main/Blurbs/168631.aspx>

Questions?



To Provide Comments/ For Further Information

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