

1. Report No. FHWA/TX-00/1834-3	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle EMERGENCY MANAGEMENT FOR PUBLIC TRANSPORTATION SYSTEMS: RESEARCH REPORT (TASKS 3 AND 4)		5. Report Date September 1999; Revised May 2000	
		6. Performing Organization Code	
7. Author(s) Laura L. Higgins, Mark D. Hickman, and Cynthia A. Weatherby		8. Performing Organization Report No. Report 1834-3	
9. Performing Organization Name and Address Texas Transportation Institute The Texas A&M University System College Station, Texas 77843-3135		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No Project 0-1834	
12. Sponsoring Agency Name and Address Texas Department of Transportation Research and Technology Transfer Office P. O. Box 5080 Austin, Texas 78763-5080		13. Type of Report and Period Covered Research: February 1999-August 1999	
		14. Sponsoring Agency Code	
15. Supplementary Notes Research performed in cooperation with the Texas Department of Transportation and the U.S. Department of Transportation, Federal Highway Administration. Research Project Title: Role of Public Transportation Operations in Emergency Management			
16. Abstract This project examines the possible roles that public transit agencies can fulfill in the emergency management plans of their cities and/or counties. This report summarizes Tasks 3 and 4 of the project. Task 3 was the production of a primer for transit agencies on developing emergency management plans and coordinating with the emergency management efforts in their local jurisdictions. In Task 4, the primer was tested with two Texas transit agencies and modified in response to comments and suggestions received from these potential users of the primer.			
17. Key Words Emergency, Disaster, Transit, Planning		18. Distribution Statement No restrictions. This document is available to the public through NTIS: National Technical Information Service 5285 Port Royal Road Springfield, Virginia 22161	
19. Security Classif.(of this report) Unclassified	20. Security Classif.(of this page) Unclassified	21. No. of Pages 27	22. Price

**EMERGENCY MANAGEMENT FOR PUBLIC TRANSPORTATION
SYSTEMS: RESEARCH REPORT (TASKS 3 AND 4)**

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Report 1834-3

Project Number 0-1834

Research Project Title: Role of Public Transportation Operations in Emergency Management

Sponsored by the
Texas Department of Transportation
In Cooperation with the
U.S. Department of Transportation
Federal Highway Administration

September 1999

Resubmitted: May 2000

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ACKNOWLEDGMENTS

This research was performed for the Texas Department of Transportation (TxDOT), in cooperation with the U.S. Department of Transportation, Federal Highway Administration. Ms. Laura Higgins was the Texas Transportation Institute's research supervisor on the study. The report authors were Ms. Laura Higgins, Dr. Mark Hickman, and Ms. Cynthia Weatherby.

The authors would like to recognize and thank TxDOT's Project Director, Ms. Susan Hausmann from the Public Transportation Division, for her help and guidance in this study. Her assistance is greatly appreciated. Assistance from Ms. Jeannie Sagebiel of the Alamo Area Council of Governments and Ms. Lisa A. Cortinas of the Golden Crescent Regional Planning Commission is also greatly appreciated by the authors.

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Chapter 1. TRANSIT IN EMERGENCY RESPONSE: INTRODUCTION

Public transit systems have a history of providing assistance during crisis situations by performing vital services such as evacuation of victims and transport of emergency personnel. In the aftermath of major disasters, public transit systems have often supplemented or replaced damaged or blocked roadways, maintaining mobility for residents and for repair and recovery workers. The Texas Disaster Act of 1975 and the resulting Texas Emergency Management Plan include transit vehicles, personnel, and facilities among the resources that can and should be called into service in case of disasters, but many local jurisdictions do not have a detailed plan for transit's role in emergency response activities. Since public transit systems can and do play such an important role in many emergency situations, written guidelines for public transit emergency planning is a useful and potentially crucial tool.

This research project has two primary objectives:

- to explore the possible roles of public transit systems in emergency planning, operations, and recovery; and
- to present guidelines for developing, implementing, and evaluating a transit system's emergency management plan.

The project team outlined four work tasks to accomplish these objectives. Task 1 included a review of the state-of-the-practice in emergency management in Texas and across the United States. This task included a literature review and a survey of Texas transit agencies and city/county emergency management personnel. In Task 2, researchers used this information, along with additional guidance on applicable legislation and institutional issues pertaining to emergency management, to develop a more detailed review of organizational roles that transit agencies might assume in an emergency. Suggestions were also developed regarding the preparation needed for emergency response activities. Research report 1834-2 documents the results of these two tasks.

The following chapters document Tasks 3 and 4. In Task 3, researchers produced a guidebook to provide information and recommendations for developing an emergency plan for an urban or rural transit agency. In Task 4, researchers pilot-tested the guidebook in two case studies with selected transit agencies in Texas.

Chapter 2. DEVELOPMENT OF AN EMERGENCY PLANNING PRIMER FOR TRANSIT AGENCIES

The purpose of Task 3 was to use the information gathered in Tasks 1 and 2 to produce a guidebook on emergency planning for transit agencies in the state. The guidebook was to include information on coordinating with community emergency planning efforts and on training and testing emergency readiness. Guidelines comply with the requirements of the Texas Disaster Act of 1975 and the Texas Emergency Management Plan.

EXISTING GUIDELINES

The **Federal Emergency Management Agency (FEMA)** prescribes a four-phase cycle of emergency management activities called comprehensive emergency management (CEM). The four phases are as follows: mitigation, preparedness, response, and recovery. CEM is widely used throughout government agencies and industry, and is the basis for the Texas Emergency Management Plan. CEM views emergency management as a continuous process that includes activities before, during, and following an emergency situation. CEM is an all-hazards approach.

In the *mitigation* phase, hazards that may threaten lives, property, or normal operations are identified and eliminated or controlled, thereby reducing the potential effects of a future emergency. Mitigation activities include establishing procedures and policies that promote a safe operating environment, determining and adhering to design codes and standards, and purchasing appropriate insurance coverage.

The *preparedness* phase includes all planning, coordination, training, and evaluation of emergency readiness within an agency and between agencies in a jurisdiction. Preparedness within a single agency includes establishing general emergency procedures such as communication/notification, situation assessment, evacuation from hazardous areas, and use of emergency equipment; hazard-specific procedures for severe weather, hazardous material spills, and other natural or technological disasters; and establishment of a command and control structure. At the county or city level, or in any emergency plan that involves multiple organizations, a similar command and control structure must be established, with designated leaders for overall emergency operations and for each segment or function of those operations. Interorganizational agreements should specify in detail the responsibilities and tasks of all involved. Training and drills of individual procedures and of full-scale mock disasters are valuable tools for developing and perfecting emergency readiness.

Effective emergency *response* depends greatly on the activities accomplished in the preparedness phase, and on continued communication and situation assessment throughout the crisis. Communication must also be maintained with the public, through the media and otherwise. Information aids such as checklists and reference cards will help to ensure that all necessary activities are carried out, even in confusing and chaotic circumstances.

Recovery from an emergency may involve a continuation of many of the same activities that were performed during emergency response as facilities, roadways, and other infrastructure are gradually restored to normal conditions. A return to normal operations within government and industry will

also be a goal of the recovery period, as well as evaluation of the response effort and modifications, as necessary, to the emergency plan.

FEMA has several publications detailing the CEM process and provides training courses and materials geared to industries, state and federal employees, and individuals.

The Federal Transit Administration (FTA) has published two documents that interpret and detail FEMA's guidelines for transit operations. *Recommended Emergency Preparedness Guidelines for Urban, Rural, and Specialized Transit Systems (1)* describes eight types of emergency situations that may directly affect transit vehicles or operations and recommends mitigation, preparedness, and response measures for addressing those emergencies. *Critical Incident Management Guidelines (2)* describes the complete CEM process as it applies to the transit industry and touches briefly on some roles transit might play in community emergency response. Other FTA-published documents address specific areas such as safety equipment (3), accident prevention (4), and transit security (5, 6).

The Texas Emergency Management Plan (EMP) designates responsibilities and activities for emergency management according to specific functional areas such as communications, evacuation, transportation, food and water, and law enforcement. In all, the plan specifies 23 functional areas. Activities and leadership structure required for each functional area are detailed in annexes to the plan. The EMP also prescribes similar organization for local emergency planning.

Other sources include manuals, training courses, and software from a variety of public and private agencies that provide guidance on preparing and training for emergencies, assessing risk, and evaluating emergency response capabilities.

GUIDEBOOK TOPICS

The guidebook produced in Task 3 was designed to provide Texas transit systems with the following:

- an overview of the emergency planning process from the transit perspective,
- a starting point for coordinating with other city or county agencies in a local emergency plan, and
- a starting point for seeking more detailed information and training in emergency management topics.

The guidebook table of contents is shown in [Figure 1](#).

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Appendix F. EMERGENCY MANAGEMENT PLAN OR ANNEX OUTLINE	

Figure 1. Emergency Planning Guidebook Table of Contents.

Chapter 1 — Introduction

This chapter provides background on the Texas Emergency Management Plan and its annexes, and summarizes the legislation governing local emergency planning and response. The basic concepts

of CEM, as defined by FEMA, are also introduced.

Chapter 2—Mitigation

Risk and hazard assessment, including a list of possible risk factors, are outlined in Chapter 2. Methods for mitigating hazards, including design criteria, operating practices, and passenger education, are outlined. Also included are examples of maintenance, communications, and other operating procedures collected from existing transit emergency plans, and references to additional tools and guidelines for mitigation activities.

Chapter 3—Preparedness

Chapter 3 begins with an overview of transit-related emergency planning, including examples of emergency procedures. An overview of a county/city emergency management plan is provided, with guidelines for initiating contact with local governments to coordinate emergency planning. A worksheet and an example are provided for initial assessment of transit system resources, including vehicles, facilities, equipment, and personnel. Fundamentals of interorganizational agreements with other agencies are listed. Examples are provided of local emergency plan sections to illustrate how responsibilities and activities are outlined in the basic city/county plan and detailed in local plan annexes and in transit system plans.

Education and training recommendations are summarized, from table-top discussions to full-scale drills. Training opportunities provided by the Texas Division of Emergency Management, FEMA, the Community Transportation Association of America (CTAA), and the Transportation Safety Institute (TSI) are listed with contact information. References are provided to additional resources in print and online.

Chapter 4—Response

Checklists for first responder tasks and for emergency notification procedures begin this chapter. Recommendations are made for these and other quick-reference aids that should be available to all transit personnel who may be involved in emergency response. Finally, suggestions for communicating with the media and the public during a crisis are provided.

Chapter 5—Recovery

This chapter briefly outlines recovery activities and restoration of normal transit service. After-action reports, debriefing, and assessment of the response phase are discussed.

Chapter 6—Building and Maintaining Emergency Management Capability: The IEMS Process

This chapter briefly outlines FEMA's Integrated Emergency Management System (IEMS) process, which parallels the comprehensive emergency management (CEM) process and focuses on assessing, building, and maintaining emergency management capabilities. The 13-step process can act as a

checklist for evaluating current emergency response capabilities against the standards adopted by FEMA. Information for obtaining FEMA's standard (adopted from the National Fire Protection Association) for emergency readiness is included.

EXAMPLES, FIGURES, AND INFORMATION RESOURCES

To supplement the text of the guidebook, information from and about other sources was included.

Examples

Examples from existing transit system, county, and city plans were included throughout the guidebook to provide a starting point for transit systems to develop similar portions of their own plans. Examples were designated by page headings, as shown in [Figure 2](#).

Chemical/Biological Hazard Procedure

SUSPECTED CHEMICAL/BIOLOGICAL DEVICE

What to Look For:

1. Strange odors, haze, or “fog” in unexpected areas. Chemicals often have a sweet or “freshly cut grass” smell. Or may have an “almond” smell. Note: not all chemicals are visible or carry an odor.
2. Oily or wet residue on floor or walls.
3. Broken or abandoned containers that indicate two or more chemicals have been mixed together.
4. Birds, mice, insects or other animals appearing ill, confused, or dead or dying in a certain area.
5. People falling ill at the same time, with difficulty breathing, or with dizziness or nausea.

What to Do:

1. Turn off car-borne HVAC if in a vehicle. Notify your dispatcher via radio of the possible emergency.
2. Stop short of the area if at all possible — do not enter into the suspect area.
3. If suspected release is outside the vehicle and vehicle is already in the area of the release, attempt to move out of the area to an upwind location before opening doors.
4. If release is inside the vehicle, stop vehicle as soon as possible in an area where the doors can be safely opened without exposing others outside the vehicle to the suspect release.
5. Evacuate customers to a safe location upwind from the release, to a minimum distance of 300 feet. **DO NOT CAUSE A PANIC** — Remain calm and collected.
6. Once outside the suspect release area, do not re-enter the area, or allow anyone else to enter the area. Specially equipped and trained personnel will be en-route to handle the incident.
7. Meet the police as soon as they arrive — they will need to talk to you for important information.

Source: Houston METRO

Figure 2. Guidebook “Example” Page.

Figures

Some already-published checklists, tables, and guidelines were included in the guidebook as directly reproduced material, designated as figures with the original source cited. This was done where the clarity or completeness of the original source would have been diminished if the information was paraphrased in the text. [Figure 3](#) of this report displays Figure 3 of the guidebook.

Figure 3. Hazard Resolution Matrix.

	I. Catastrophic	II. Critical	III. Marginal	IV. Negligible
A. Frequent	<i>Unacceptable</i>	<i>Unacceptable</i>	<i>Unacceptable</i>	Acceptable/WR*
B. Probable	<i>Unacceptable</i>	<i>Unacceptable</i>	Undesirable	Acceptable/WR*
C. Occasional	<i>Unacceptable</i>	Undesirable	Undesirable	Acceptable
D. Remote	Undesirable	Undesirable	Acceptable/WR*	Acceptable
E. Improbable	Acceptable/WR*	Acceptable/WR*	Acceptable/WR*	Acceptable

*Acceptable/WR — Acceptable with review by management staff

Source: *Critical Incident Management Guidelines*, p. 18.

Figure 3. Guidebook “Figure” Format.

Information Resources

Information resources in the guidebook act as pointers to more thorough or specialized information on emergency planning or related topics, or to tools or training that could assist transit personnel in emergency management activities. Information resources are designated with a bordered box, as shown in [Figure 4](#).

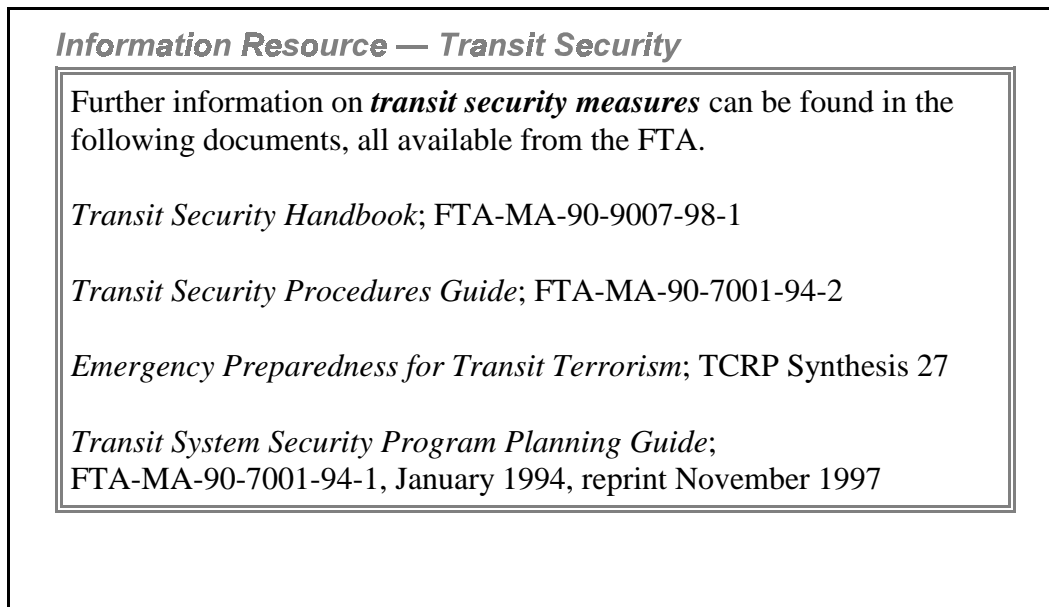


Figure 4. Guidebook “Information Resource” Format.

APPENDICES AND WORKSHEETS

Appendix A to the guidebook is a longer version of the directly quoted material presented in the guidebook figures, presenting a chapter and a related appendix from the 1991 FTA document *Recommended Emergency Preparedness Guidelines for Urban, Rural, and Specialized Transit Systems* on federal legislation pertaining to transit vehicles.

Appendices B through E in the guidebook are examples of complete local plans, annexes, and transit system plans. As with the shorter examples in the guidebook, these example plans provide a picture of what is included and how the documents are arranged.

Appendix F, excerpted in [Figure 5](#), provides an outline of an emergency plan to be completed with information provided by the transit system. A worksheet in Chapter 3 of the guidebook ([Figure 6](#)) serves the similar purpose of providing transit agencies with a starting point for developing and organizing information for their emergency plans.

Transit Agency Emergency Plan

I. AUTHORITY

[Some of the federal and state legislation governing emergency response is listed below. Additional legislation may be cited by the city/county emergency plan, as well as local legislation. Instead of listing these citations in the annex, this section may read “Refer to Basic Plan.”]

A. Federal

2. Federal Civil Defense Act of 1950, PL 81-920 as amended.
2. The Disaster Relief Act of 1974, PL 93-288 as amended.
2. Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-707.

B. State

1. The Texas Disaster Act of 1975, 64th Legislature, Article 6889-7, Vernon’s Texas Civil Statutes, as amended.
1. Executive Order of the Governor GWB 95-1a.
1. Attorney General Opinion MW-140.
1. State of Texas Emergency Management Plan.

[C. Local]

[1.]

[2.]

II. PURPOSE

The purpose of this plan is to outline the procedures for responding to emergencies that affect this transit agency and its customers, and to outline services and activities that the agency will perform for community residents and other local agencies during any disaster.

III. SITUATION AND ASSUMPTIONS

A. Situation

1. *[Name of transit agency]* may encounter situations which threaten transit operations and/or the safety of transit customers, employees, and the general public. Established policies and procedures for responding to emergency situations will help to minimize the situation’s effects and to maintain safe, efficient transportation service to the community.

1. *[City or county]* is subject to a number of disaster circumstances that could occur locally and would create a need for *[summarize the community needs related to transportation or other transit agency services that could arise locally in the event of an emergency.]*

1. *[Any additional information concerning potential local emergency needs.]*

B. Assumptions

1. *[Summarize relevant information about the local area and residents, and any expected conditions that might affect emergency response activities.]*

Figure 5. Guidebook Appendix F (Excerpt).

CAPABILITY ASSESSMENT SUMMARY

Types of emergency response services the transit agency is able to perform:

- Surplus transportation for emergency response personnel
- Shelter/respice facilities for emergency response personnel
- Transport of emergency equipment and supplies
- Evacuation assistance
- Communications support
- Traffic control/roadblocks or barriers
- Other (describe) _____

Transit System — Resources Available

Buses	Size/Capacity	Number	Lift-Equipped?	Heated/Air-Conditioned?
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
Other Vehicles	Sedans _____			
	Other (describe): _____			
Personnel	Vehicle Operators _____			
	Transit Security _____			
	Dispatch _____			
	Administrative _____			
	Other (specify) _____			
	Personnel with Special Training:			
	EMT/First Aid _____			
	Other _____			
Facilities Suitable for use as:	<input type="checkbox"/> Communications Center _____			
	<input type="checkbox"/> Evacuation Shelter for ___ persons: _____			
	<input type="checkbox"/> Other (specify) _____			

Figure 6. Guidebook “Capability Assessment Summary” Worksheet.

CHAPTER 3. CASE STUDIES

The draft guidebook was reviewed by personnel at two Texas transit systems that volunteered their time and expertise. The information presented in the guidebook was evaluated for usefulness in a transit setting, and for its usability by the intended audience. Some of the questions that the research team asked concerning the guidebook included the following:

- Was there any information that is not included that would be helpful to you?
- Was there any information currently included in the book that is unnecessary?
- Was there any information included that you know to be inaccurate or outdated?
- Was the format easy to read and understand? If not, what would make the guidebook easier to use?

The *Alamo Area Council of Governments* (AACOG), represented by Ms. Jeannie Sagebiel, Rural Public Transportation Specialist, is preparing to update the standard operating procedures for its 11 county operation. Alamo Coordinated Transit provides demand-response transit service with 36 vehicles to an area of 10,145 square miles. Transit personnel consist of 15 full-time employees, 28 part-time employees, and 34 volunteers.

Ms. Sagebiel commented that overall the guidebook's recommendations and examples would be helpful to the effort by providing a broad understanding of the emergency planning process and would be helpful in the planning effort. She also found the plan outlines in Appendix F useful. Ms. Sagebiel plans on implementing the guidebook's example of parking a spare transit vehicle at a local fire station for immediate use by emergency personnel. It was further noted that some of the examples and suggestions in the draft guidebook would need to be modified to accommodate rural systems such as hers, in which relatively few vehicles and personnel must serve a large, geographically scattered community. Her suggestions are listed below and were incorporated into the guidebook.

- Brief definitions of the Texas EMP annexes should be included as part of the description of the plan.
- In addition to the lists of possible hazards defined by FEMA in the chapter on mitigation, mention should be made of other hazards that may be unique to particular areas of Texas. Similarly, procedures and equipment may vary with different types of transit service, and some additional examples should be noted in the text.
- Rural transit systems have unique limitations and challenges due to their relatively small fleet sizes and large service areas. Instructions on coordinating with community emergency plans should take these challenges into account. Conversely, rural systems (or other dial-a-ride, demand-responsive systems) also have some unique strengths to offer emergency services. For example, they may maintain lists of transit-dependent people within a particular city or county, which is valuable information for the overall local emergency effort if evacuation becomes necessary. This should also be mentioned in the guidebook, as it pertains to the functions the transit system may be able to support in the local emergency plan.

- Volunteer workers should be mentioned as part of the potential emergency team, particularly for remote areas where few if any transit system personnel are located.

The *Golden Crescent Regional Planning Commission (Golden Crescent)*, represented by Ms. Lisa Cortinas, Director of Transportation Services, is preparing to coordinate with the Red Cross on the local area emergency plan. Golden Crescent provides public transportation for the region by contracting with providers in seven counties. In total, Golden Crescent operates 25 transit vehicles, 11 of them lift-equipped, and is staffed by 19 full-time and 30 part-time employees. Elderly riders make up the majority of the ridership, and that segment is expected to increase in the future.

Ms. Cortinas found the plan examples, outlines (Appendix F of the guidebook), and the discussion of hazard mitigation (Chapter 2 of the guidebook) to be particularly helpful. The plan outline will be used to develop the transit system's emergency plan and to assist with the Golden Crescent's coordination with the Red Cross. Ms. Cortinas took the draft guidebook to a tabletop emergency planning exercise. Several questions and suggestions arose that were not included in the guidebook. These and other suggestions for the guidebook are listed below and have been incorporated in the final draft.

- Recommended intervals for reviewing and updating plans should be included.
- TxDOT's requirements and/or recommendations for transit system emergency plans should be included as part of the discussion on federal and state emergency planning legislation (Chapter 1 of the guidebook). Additionally, if TxDOT offers assistance to transit systems for developing emergency plans, e.g., through district Public Transportation Coordinators (PTCs), it should be noted.
- The possible suspension of transit fare payment during emergency operations should be addressed as a policy issue by the public transit system.
- At some point during a hurricane, flood, or other disaster, continued transportation and evacuation operations may have to cease because of the unacceptable risk involved. The emergency plan should include a recommendation that jurisdictions determine what constitutes unacceptable risk, thereby suspending transportation-related emergency operations when those conditions occur.
- An emergency plan should make provisions for evacuating and sheltering the families of emergency workers during a disaster. The planning process should include this as a consideration.

Both Ms. Sagebiel and Ms. Cortinas expressed their opinions that the guidelines are needed and timely to their own transit operations. Both believe that the guidelines provide the proper resource for development of their own agency plans and coordination with other local planning efforts.

Emergency Planning Efforts

Emergency planning has commenced at Alamo Regional Transit beginning with an update of the transit system's Standards of Procedure. The update will be completed after the Rural Public Transportation Advisory Committee discusses the issues and determines priorities. Initial meetings will be held with Rural Public Transportation subcontractors and Advisory Committee members who are county representatives from the AACOG region. AACOG will also be a part of the metropolitan emergency planning, but Alamo Regional Transit, as a rural transportation service, will not be included in the metropolitan plan.

Ms. Cortinas represented Golden Crescent transportation services at a recent joint meeting of emergency medical service (EMS) personnel, city planners, and others involved in emergency response in the city of Victoria. Emergency transportation planning is still in early stages on a regional level, though arrangements for emergency transportation of senior citizens in the Golden Crescent area have been made through the Area Agency on Aging.

Both [Tables 1](#) and [2](#) outline sections of potential emergency plans for these transit providers. These plans are tentative, and are subject to the ongoing planning processes in the two communities; however, they provide examples of the topics that may be included.

Table 1. Section III, “Situation and Assumptions”: Sample Plans for AACOG and GCRPC

III. SITUATION AND ASSUMPTIONS	
AACOG — Alamo Coordinated Transit	Golden Crescent — R Transit
<p>A. Situation</p> <ol style="list-style-type: none"> 1. Alamo Regional Transit may encounter situations which threaten transit operations and/or the safety of transit customers, employees, and the public. Established policies and procedures for responding to emergency situations will help to minimize their effects and to maintain safe, efficient transportation service to the community. 2. The counties served by Alamo Regional Transit are subject to a number of disaster circumstances that could occur and create a need for an emergency relocation of the population. <p>B. Assumptions</p> <ol style="list-style-type: none"> 1. The transit-dependent population served by Alamo Regional Transit most likely will need transit assistance to evacuate. When the need arises, Alamo Regional Transit vehicles will be made available to assist in this effort. 2. The AACOG maintains lists of transit-dependent people in the 11-county service area. These lists should be consulted in event of evacuation or other emergency conditions. 3. For small, localized emergencies, emergency transportation needs can be met using spare transit vehicles, along with privately owned vehicles. Spare transit vehicles, when feasible, will be parked at local fire stations to facilitate their availability for emergency use. For large-scale emergencies, transit resources will be coordinated through the AACOG, according to the regional plan. 	<p>A. Situation</p> <ol style="list-style-type: none"> 1. R Transit may encounter situations which threaten transit operations and/or the safety of transit customers, employees, and the general public. Established policies and procedures for responding to emergency situations will help to minimize their effects and to maintain safe, efficient transportation service to the community. 2. The City of Victoria and the seven counties served by R Transit are subject to a number of disaster circumstances that could occur and create a need for an emergency relocation of the population. <p>B. Assumptions</p> <ol style="list-style-type: none"> 1. The majority of R Transit’s riders are elderly, and this ridership segment is expected to increase. 2. The transit-dependent population served by R Transit will need transit evacuation assistance, including nursing homes and adult day care centers in the Golden Crescent counties. When the need arises, R Transit vehicles will be made available to assist in this effort.

Table 2. Section IV, “Concept of Operations”: Sample Plans for AACOG and GCRPC

IV.CONCEPT OF OPERATIONS	
AACOG — Alamo Regional Transit	Golden Crescent — R Transit
<p>A. General Alamo Regional Transit will provide a supporting Transportation provider role (Annex S) in the emergency plans of the 11 county service area. Transit vehicles will also be made available to fire and police personnel for smaller incidents in which additional transportation resources are needed.</p> <p>B. Phases of Management</p> <ol style="list-style-type: none"> 1. Mitigation <ol style="list-style-type: none"> a. Train personnel in emergency procedures b. Develop and maintain a current listing of transportation resources, equipment, and personnel/volunteers. c. Maintain listing of transit-dependent people in the 11-county area. d. Identify possible transportation needs which could result from various disasters. 2. Preparedness <ol style="list-style-type: none"> a. Review plans for transporting persons lacking personal transportation. b. Prepare Standards of Procedure for emergency service conditions c. Coordinate with Rural Transportation Subcontractors and county representatives through the Rural Public Transportation Advisory Committee d. Provide emergency procedures training for transit staff and volunteers 3. Response <ol style="list-style-type: none"> a. Maintain contact with EOC b. Follow Standard Procedure for emergency conditions c. Coordinate all transportation requests within the counties 4. Recovery <ol style="list-style-type: none"> a. Provide transportation as needed b. Restore normal service as conditions permit c. Revise/update Standards of Procedure 	<p>A. General RTransit will provide a supporting role in Transportation (Annex S) of the emergency plans of (counties/cities) for area-wide emergencies.</p> <p>B. Phases of Management</p> <ol style="list-style-type: none"> 1. Mitigation <ol style="list-style-type: none"> a. Train personnel in emergency procedures b. Develop and maintain a current listing of transportation resources, equipment, and personnel. c. Maintain listing of transit-dependent people in the 7-county area. d. Identify possible transportation needs which could result from various disasters. 2. Preparedness <ol style="list-style-type: none"> a. Review plans for transporting persons lacking personal transportation. b. Coordinate emergency response plans with the Red Cross, the Area Associations on Aging, the City of Victoria, and the counties. 3. Response <ol style="list-style-type: none"> a. Maintain contact with EOC b. Coordinate all transportation requests within the City of Victoria and the counties c. Implement no-fare emergency transportation policy 4. Recovery <ol style="list-style-type: none"> a. Provide transportation as needed for recovery activities b. Restore normal service as conditions permit c. Revise plan as necessary

REFERENCES

1. Hathaway, W.T., and Markos, S.H. *Recommended Emergency Preparedness Guidelines for Urban, Rural, and Specialized Transit Systems*. Report number UMTA-MA-06-0196-91-1, Federal Transit Agency, Washington, D.C., 1991.
2. Boyd, M.A., Maier, M.P, and Caton, J.E. *Critical Incident Management Guidelines*. Report number FTA-MA-26-7009-98-1, Federal Transit Agency, Washington, D.C., 1998.
3. Balog, J.N., and Gribbon, R.B. *Standardization of Availability, Location, and Safety Equipment on Urban Transit Buses*. Report number FTA-MA-26-0011-96-1, Federal Transit Agency, Washington, D.C., 1996.
4. Byman, J.A., and Hathaway, W.T. *Bus and Passenger Accident Prevention*. Report number DOT-VNTSC-FTA-94-2. Federal Transit Administration, Washington, D.C., 1994.
5. Balog, J.N., Schwartz, A.N., and Doyle, B.C. *Transit System Security Program Planning Guide*. Report number FTA-MA-90-7001-94-1. Federal Transit Administration, Washington, D.C., 1994.
6. Balog, J.N., Schwartz, A.N., and Doyle, B.C. *Transit Security Procedures Guide*. Report number FTA-MA-90-7001-94-2. Federal Transit Administration, Washington, D.C., 1994.

