

THE ROLE OF SCHOOL BUSES IN RURAL EVACUATIONS



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Conference on Rural Public and
Intercity Bus Transportation
Burlington, VT
October 25, 2010

Overview

- Background
 - Why study rural areas and school buses?
 - What is the role of public transit in evacuations?
- Study of school bus emergency preparedness in Northern Gulf of Mexico
- Advantages/Disadvantages of school bus use in evacuations

Why Study Rural Areas?

- 40% of the country's transit dependent population live in rural areas
- Rural areas are underserved by public transportation
- Emergency transit use information is readily available for urban areas but lacking in rural locations

Why Include School Buses?

- Widely available in rural areas
- Often the only means of rural public transportation
- Easily accessible and recognizable

Examples of School Bus Use in Emergency Evacuations

- Air Ontario jet crash, Northern Ontario, 1989: school buses were only means of public transportation for hospital transport
- Gander, Newfoundland, 9/11/2001: school buses used to evacuate 6,600 passengers to & from airport
- Senior center evacuation, Martinsburg, WV, 2009: over 100 patients and staff evacuated from nursing home by school bus due to fire on premises



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Role of Transit in Evacuation

School buses can perform multiple roles in four tasks of emergency management planning:

- (1) Mitigation
- (2) Preparedness
- (3) Response
- (4) Recovery



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www.eastpdxnews.com



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Objective

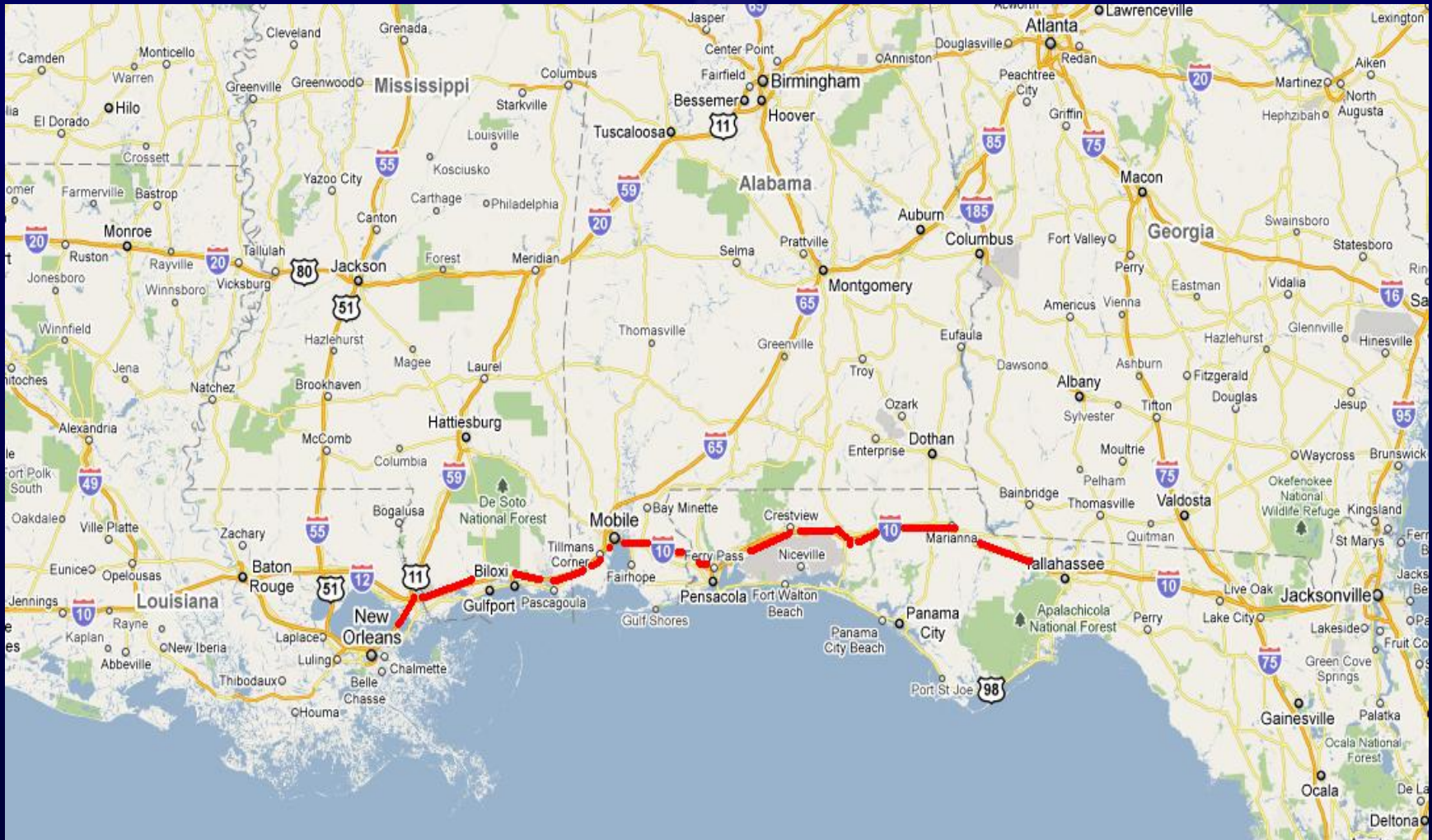
Assess the emergency preparedness of school buses in rural coastal communities in the Gulf Coast region

- The assessment focuses on:
 - **how adequately school systems are prepared**
 - **what role they can play in the event of an emergency/evacuation**

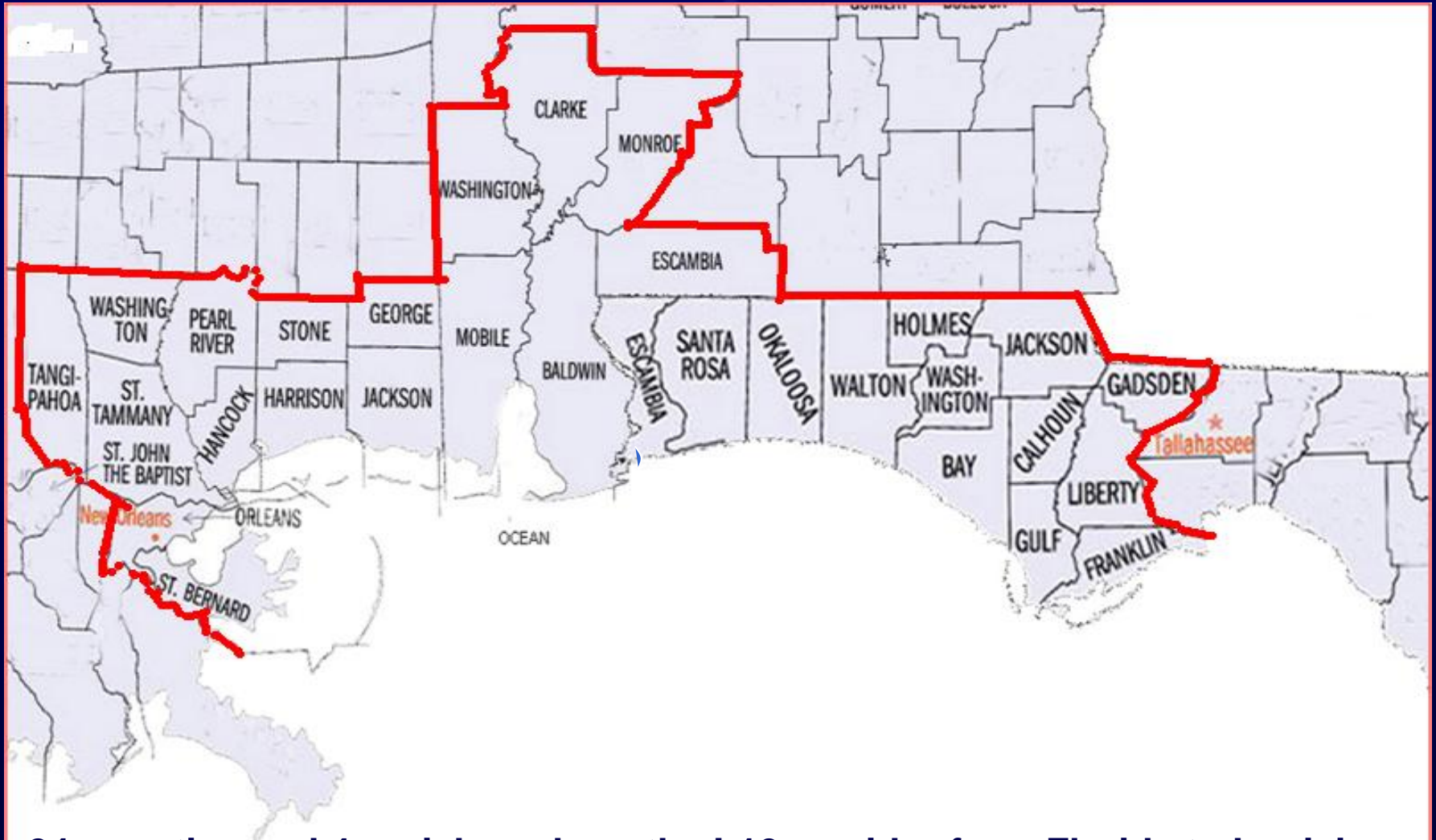
Survey Methodology

- Surveys were distributed to 46 public, private and school transportation agencies within the study area
- Ten public school systems responded
- Major topics:
 - **Transit Services Provided in Rural Areas**
 - **Communication Systems Used for Transit**
 - **Emergency Event Issues**
 - **Employee Issues**
 - **Evacuation Preparation**
 - **Transit Expenditure and Evacuation Assessment of Needs/Coordination**

Study Area

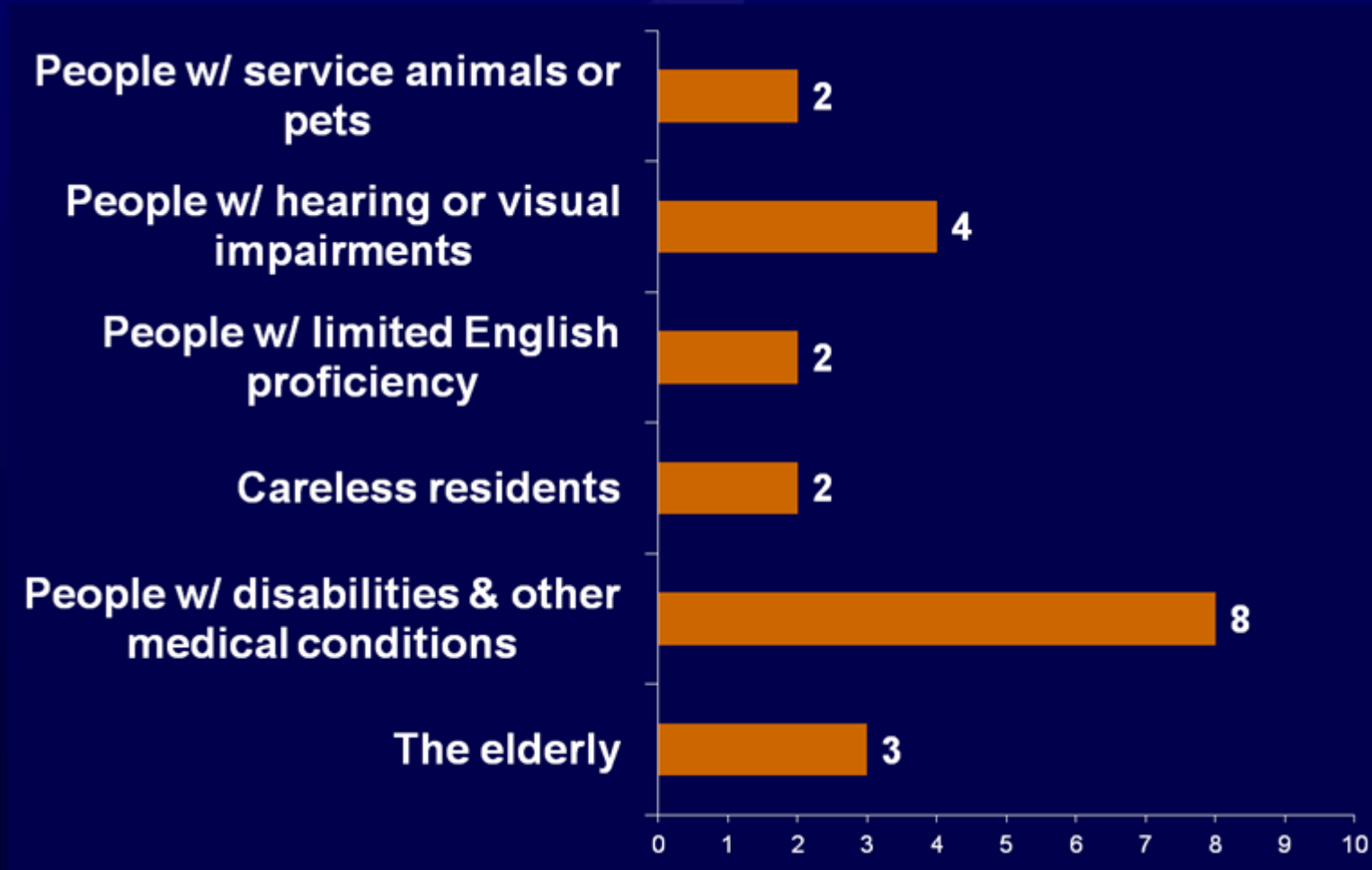


Study Area



24 counties and 4 parishes along the I-10 corridor from Florida to Louisiana

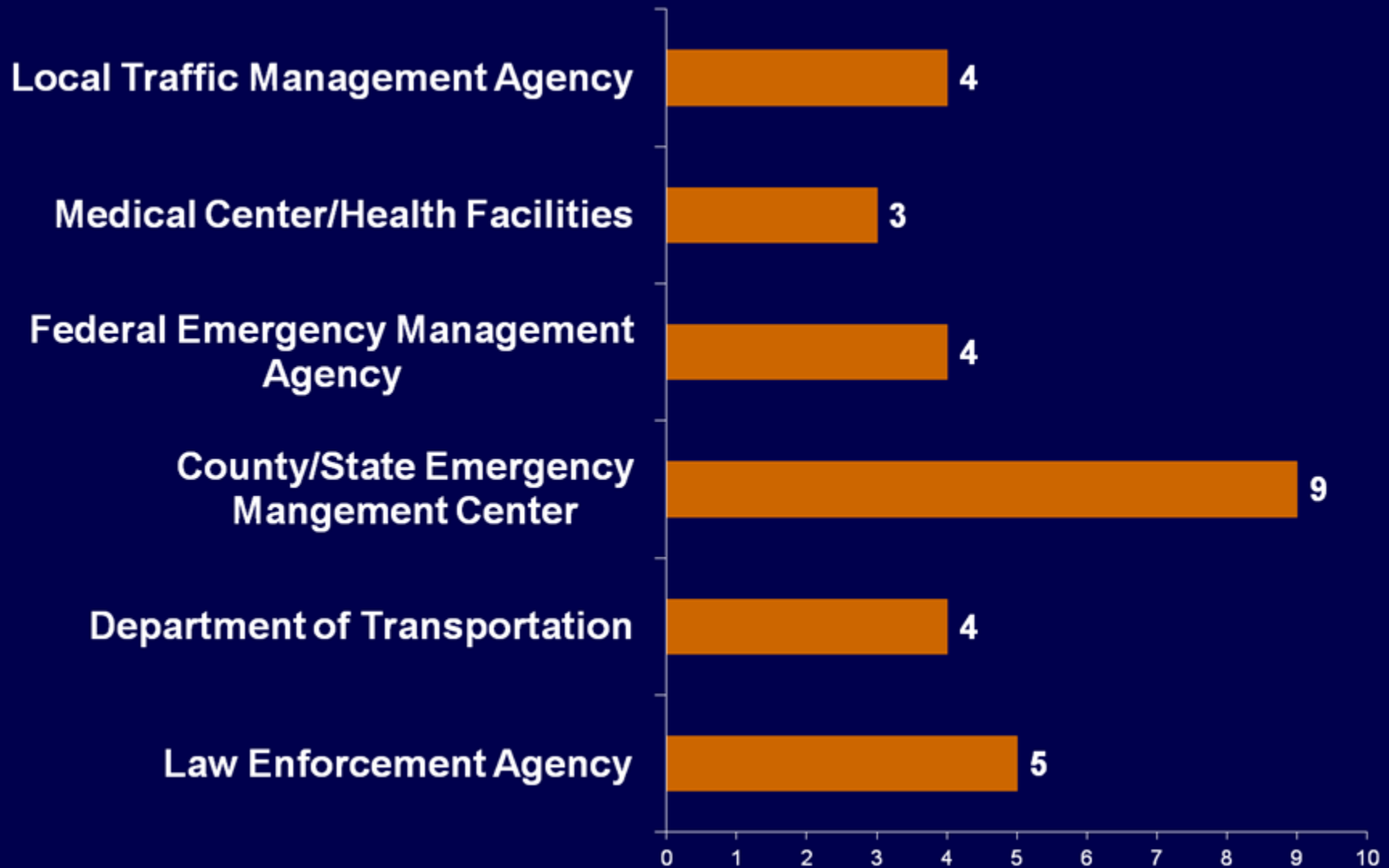
Employee Training



Employee Training



Established Communication Protocols w/ Agencies

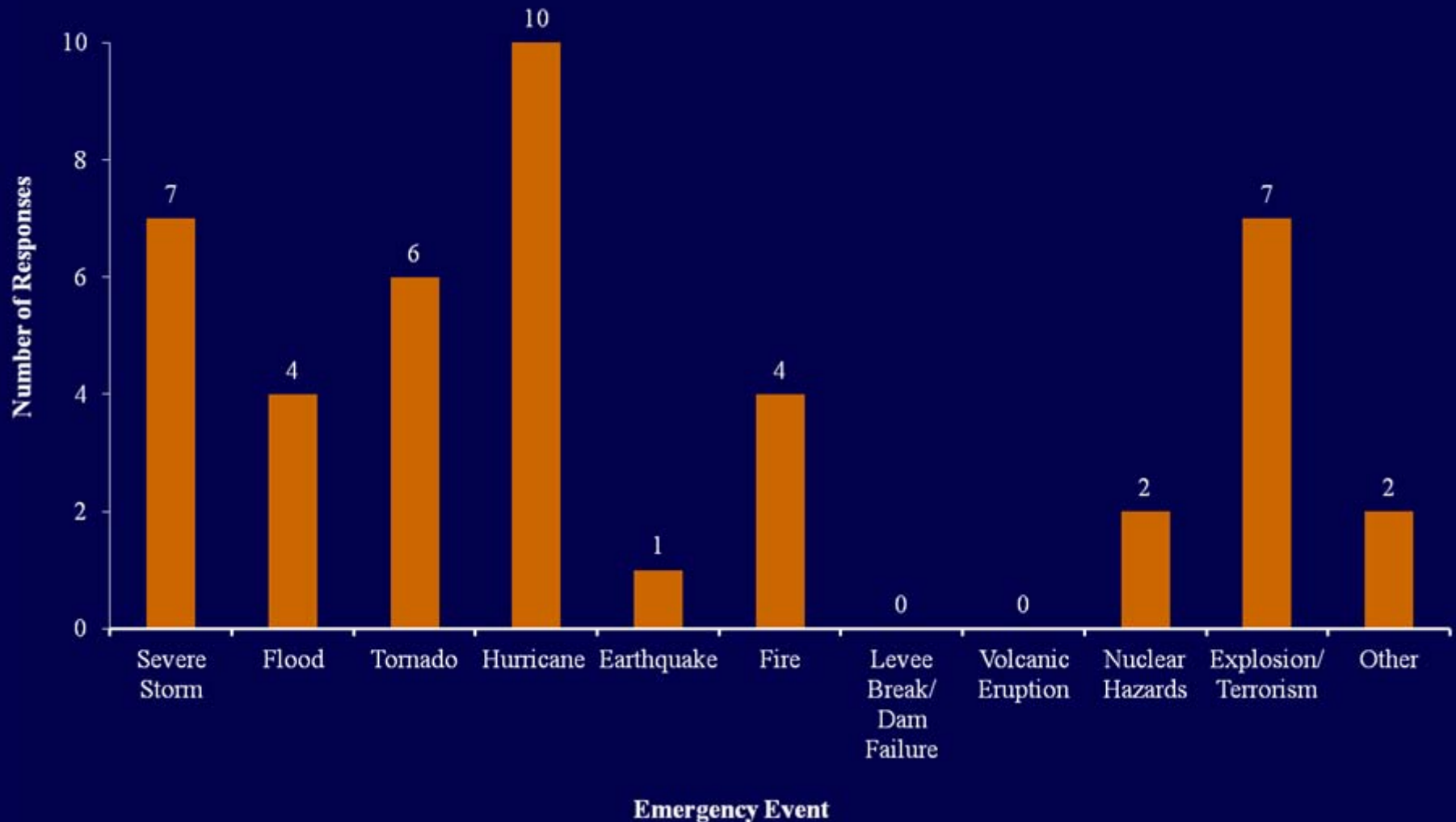




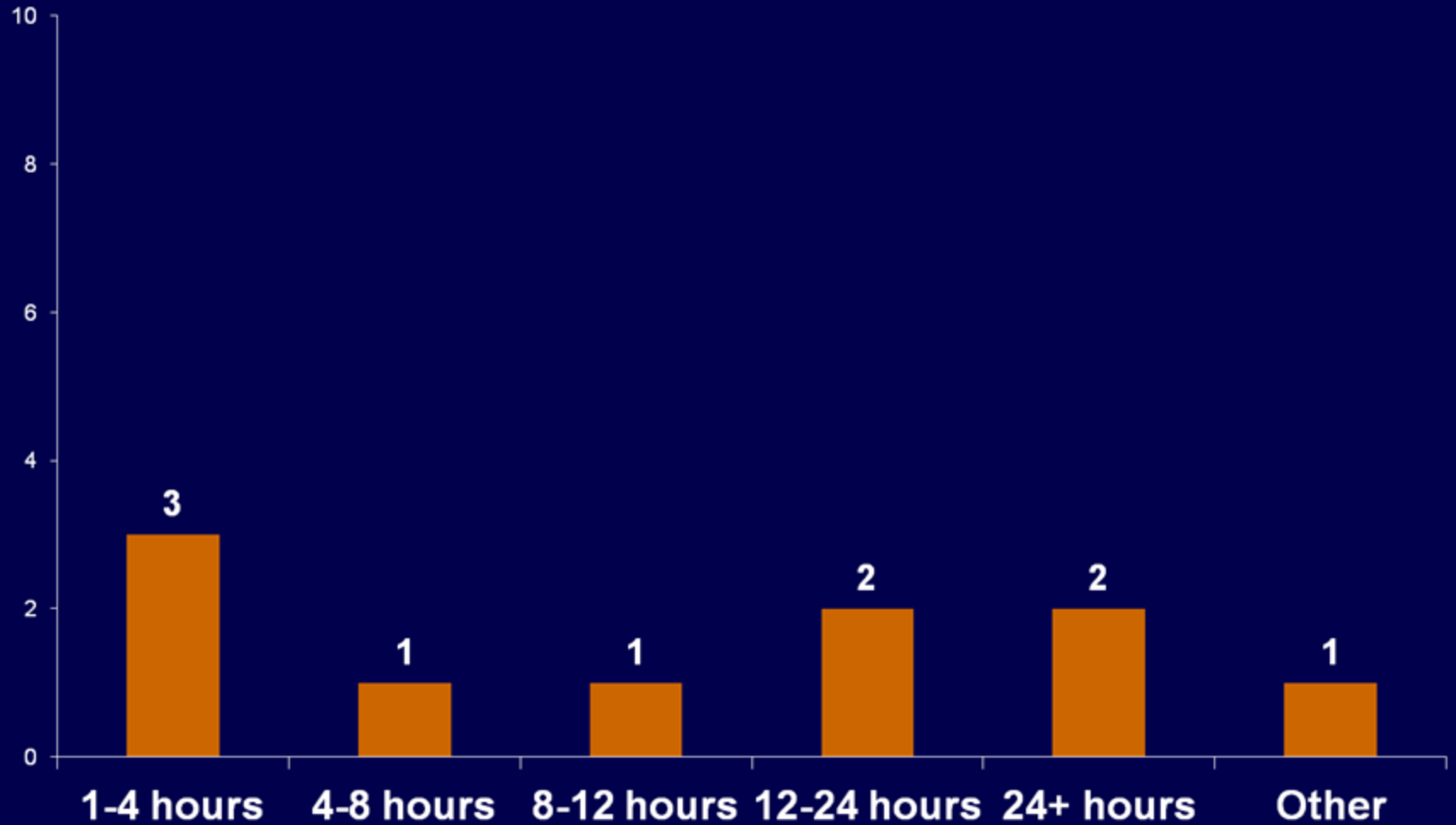
Mock Drills

- Number of school systems that had conducted mock drills: 6
- Most drills took place before or at the start of hurricane season, and all were within the last 2 years

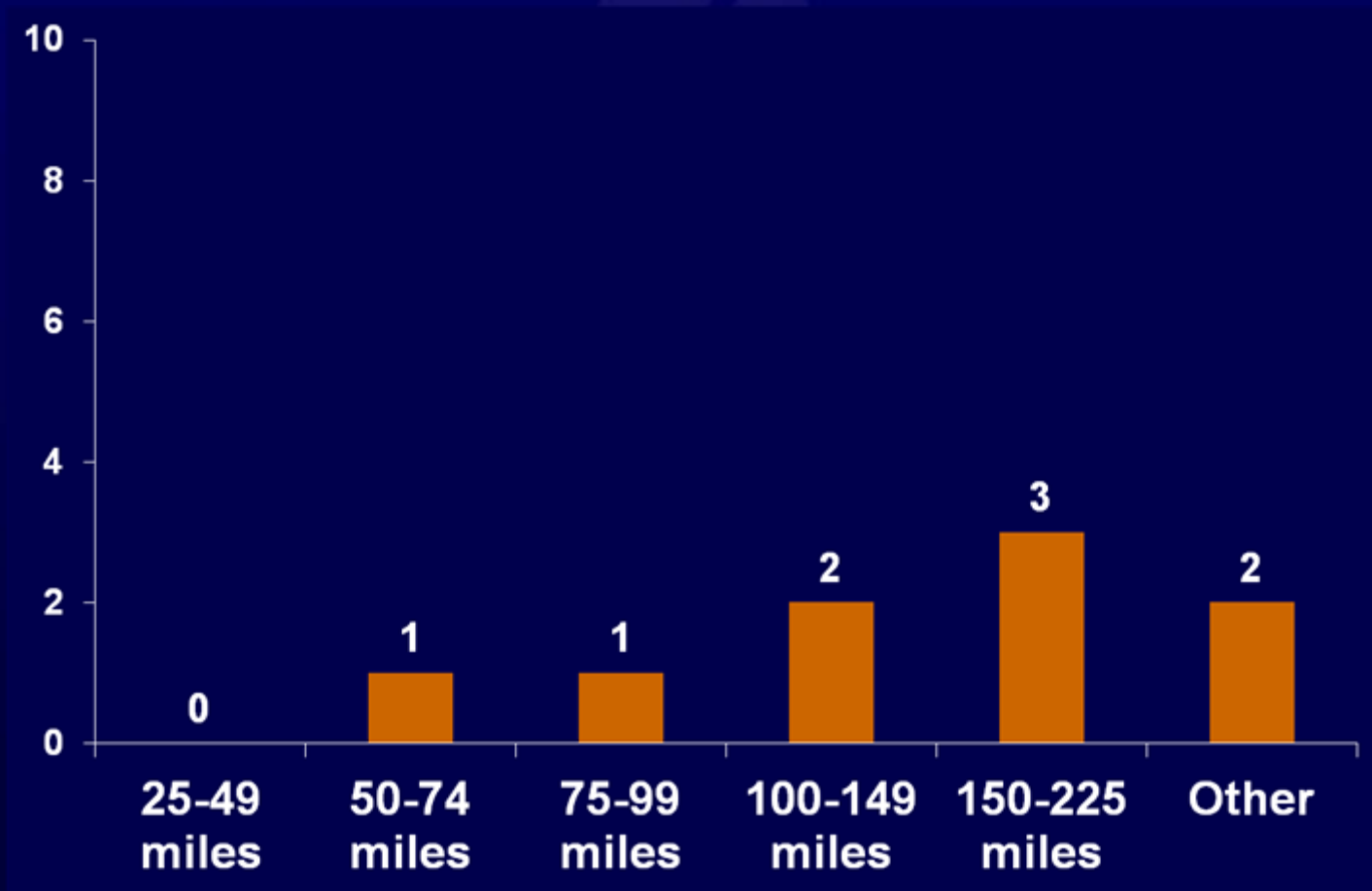
Planning For Emergency Events



Evacuation Preparation Time



Maximum Travel Distance



Vehicle Fleet

Vehicle Type	Total Passenger Capacity (No. of Seats)	Total Number of Vehicles	Total Number of Wheelchair Accessible Spots
• Cars	599	35	
• Sport Utility Vehicles (SUVs)	47	6	1
• Minivans	470	34	16
• Standard 15-passenger vans	750	51	21
• Converted 15-passenger vans (<i>e.g.</i> , raised roof, wheelchair lift)	395	59	90
• Light-duty bus (body-on-chassis type capacity between 16-24 passengers)	1117	61	52
• Medium duty bus (body-on-chassis type capacity over 22 passengers)	1191	28	35
• School bus (yellow school bus capacity between 20 and 76 students)	61640	791	120
• Medium or heavy duty transit bus	840	30	33



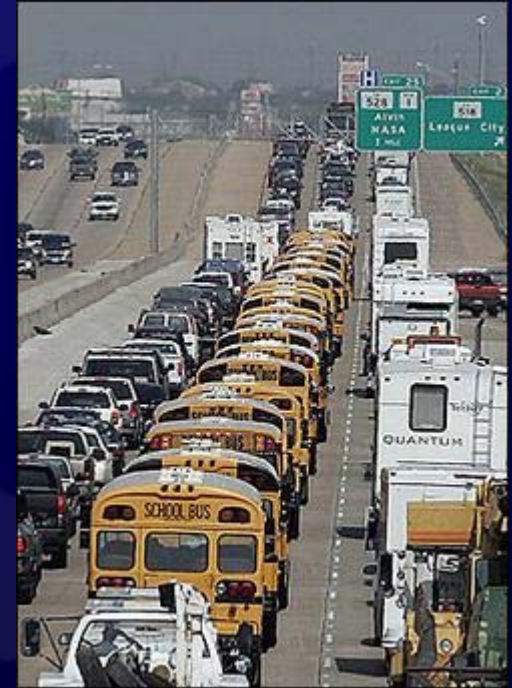
Conclusions

- **School bus systems actively participate in evacuation operations**
- **Bus drivers, operational equipment, and buses are ready to perform multiple tasks in emergency events**
- **Schools must conduct regular emergency management planning exercises, education and training programs, and mock drills**
- **It is essential to foster and support pre-established mutual aid agreements with transit authorities, transportation departments, emergency and law-enforcement agencies, emergency responders, health care facilities, and media**

School Bus Systems

ADVANTAGES:

- Buses are equipped to deal with issues such as altered bus schedules, traffic congestion, and weather conditions
- Schools act as shelters
- School buses are highly visible—beneficial for law enforcement agencies to give them priority in traffic
- Resources such as drivers, school nurses, safety officers, coordinators, and mechanics would be available to supplement emergency services



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School Bus Systems

DISADVANTAGES:

- Limited wheelchair accessible seats
- Have to rely on local EMAs for passenger information, maps, and directions
- Greater risk of exposure to litigation
- Delayed response time/integration into emergency response
- Not equipped with air-conditioning
- Reduced passenger capacity in evacuations



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Questions?

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Rural matters

Roads that work for people should work for the environment, too.

References:

- Federal Highway Administration. Planning. <http://www.fhwa.dot.gov/planning/rural/planningfortrans/2ourrts.html> (Accessed on May 15,2009)
- Meit, M., Briggs, T., & Kennedy, A. (2008). *Urban to rural evacuation: planning for rural population surge*. Research Report, Bethesda, MD: The Walsh Center for Rural Health Analysis.
- Burkett, V. R., Hyman, R. C., Hagelman, R., Hartley, S. B., & Shephard, M. (2008). *Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: Gulf Coast Study, Phase 1, Chap. 2: Why Study the Gulf Coast?* Retrieved October 30, from U.S. Climate Change Science Program website: <http://www.climatechange.gov/Library/sap/sap4-7/final-report/sap4-7-final-front-matter.pdf>
- Google Maps. www.maps.google.com (accessed on January 15, 2010)