

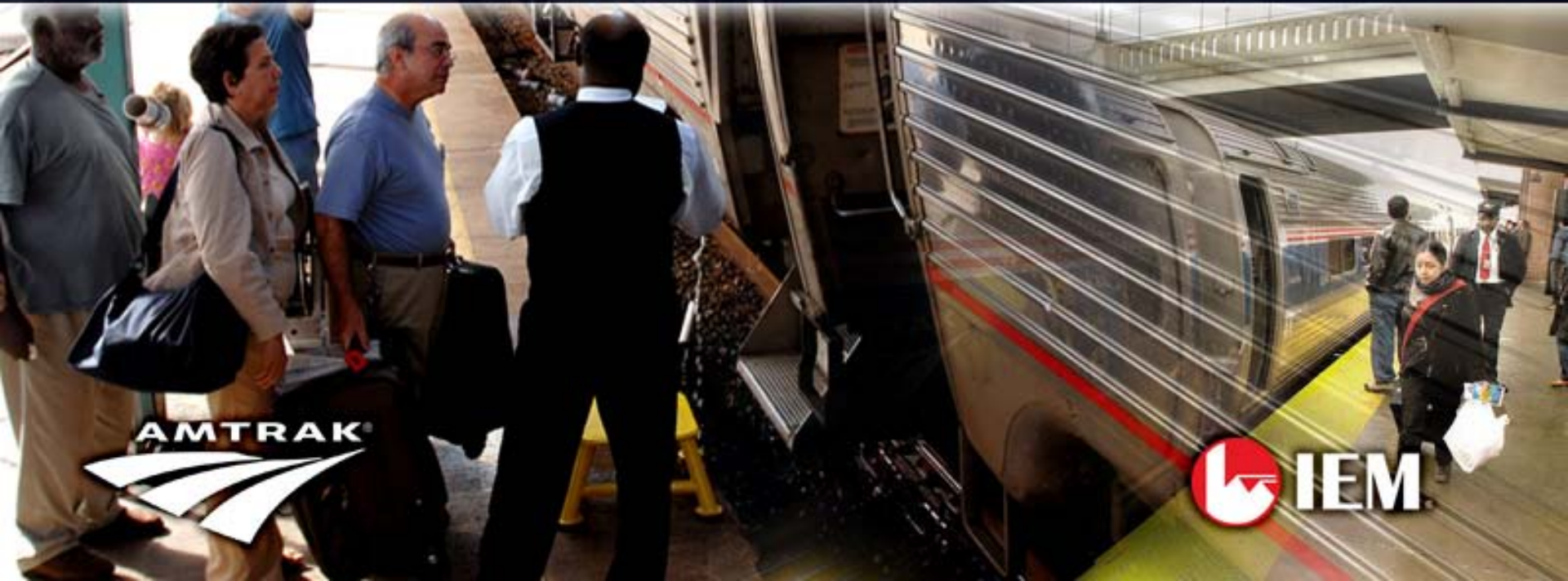


Planning For Successful Rail Evacuation

2010 National Evacuation Conference

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Introduction

- Rail can be and has been used successfully to evacuate people out of harm's way
- Requires multi-jurisdictional (federal, state, local) and multi-rail system planning
- Successful planning includes many issues in addition to planning for rail assets



Amtrak

- National Railroad Passenger Corporation
- Intercity trains
- 43 routes throughout the United States
- 29 million yearly passengers

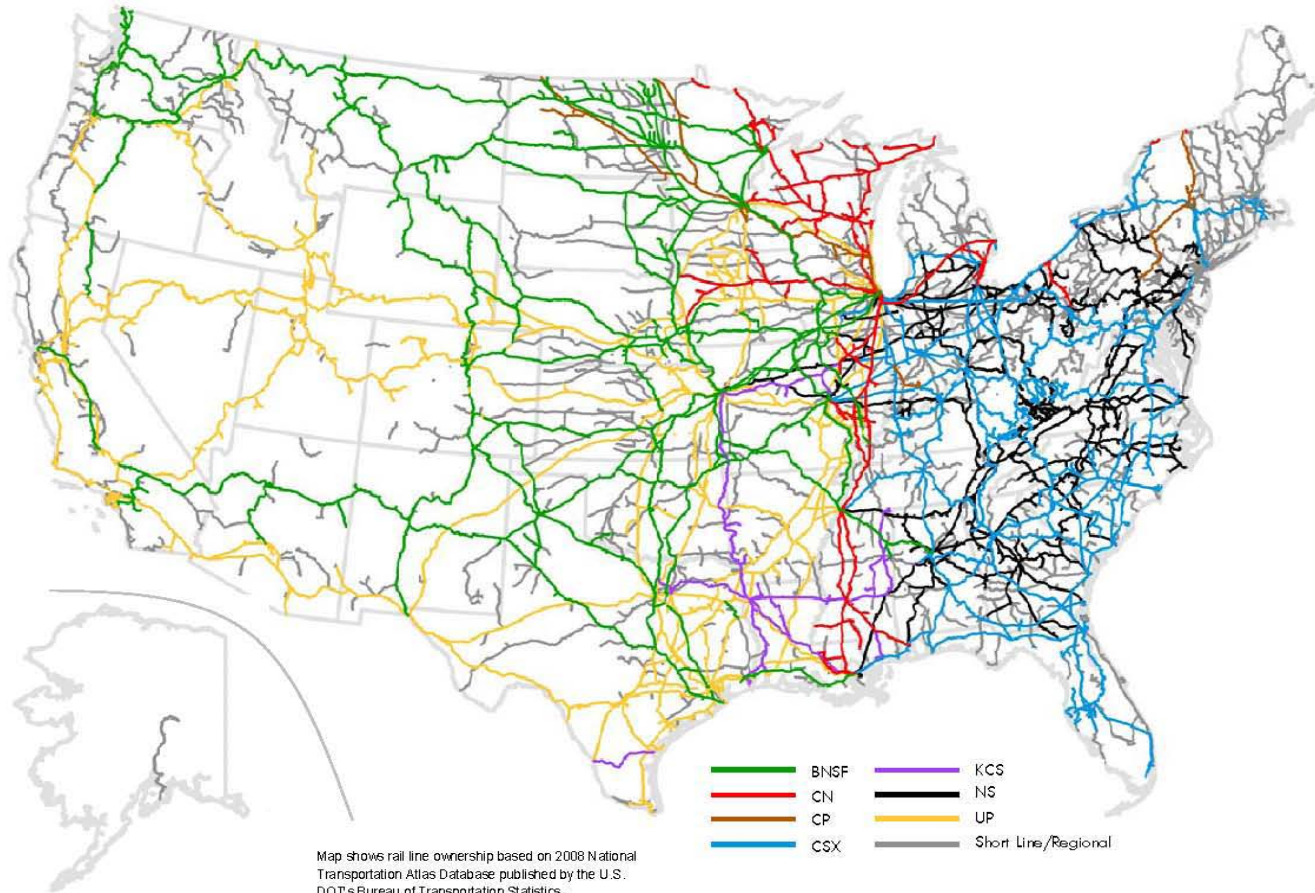


THE AMTRAK® SYSTEM

serving over 500 destinations > plus 400 destinations served by VIA Rail Canada



Railroad Network of The United States



Amtrak Rail Assisted Evacuations

- Hurricanes
 - 2005: Katrina and Rita
 - 2008: Gustav



Rail Assistance Planning

- Feasibility
- Preparedness
- Mobilization
- Activate and Deploy



Planning Accomplishments

- Federal Support for Louisiana Rail Evac Planning
 - After Hurricane Katrina in 2005, PKEMRA charged FEMA with assisting states in planning for multi-modal, pre-event evacuations, including rail
 - Technical assistance to LA and New Orleans
 - All aspects of rail movement were studied, including travel distance, availability of cars, evacuation routes, and additional issues
 - Planning efforts highlighted essential planning elements and things to avoid



Louisiana Rail Planning

- Embarkation Site: Union Passenger Terminal (UPT)
- Debarkation: Memphis, Tennessee
- Planning partners:
 - GOHSEP
 - New Orleans OEP
 - Amtrak
 - DSS
 - DOTD
 - Memphis



Hurricane Gustav

- September 1, 2008
- Safe assisted evacuation of 2,022 residents from New Orleans to Memphis by rail using pre-staged Amtrak passenger cars
- Built upon federally-assisted Louisiana rail planning efforts
- Involved critical efforts by local, state, and federal and private sector organizations tasked with transport, shelter, and feeding



2009 Hurricane Season

- Planning efforts called for up to 2,835 individuals to be evacuated to Memphis on two trains making three trips each
- Rail plan validation meetings
- “Issue Teams” used to resolve specific issues (e.g., Medical, Security, C2)
- New Mexico Medical Teams
 - Emergency Management Assistance Compact (EMAC)
 - Can be a resource to meet shortfalls



Train Schedules

Train # and Trip #	Departs	Arrives	Unload and Turn Around	Departs	Arrives	Turn Around and Load
1 / 1	UPT H-48	MEM H-40	2 Hrs	MEM H-38	UPT H-30	3 Hrs
2 / 1	UPT H-44	MEM H-36	2 Hrs	MEM H-34	UPT H-26	3 Hrs
1 / 2	UPT H-27	MEM H-19	2 Hrs	MEM H-17	UPT H-9	3 Hrs
2 / 2	UPT H-23	MEM H-15	2 Hrs	MEM H-13	UPT H-5	3 Hrs
1 / 3	UPT H-6	MEM H+2				
2 / 3	UPT H-2	MEM H+6				



Regional Aspect of Planning

- Louisiana rail evacuation efforts involved three states, two cities, and two FEMA regions
- All jurisdictions (embarkation, debarkation, and en route) should be involved in planning, not just operations
- Inform host jurisdiction of special medical needs, infants, dialysis patients
- Rail plan validation meetings—identified related and regional issues



Houston Feasibility Study Summary

- Evacuees can be transported out of Houston by rail:
 - Up to 3,642* to Dallas, or
 - Up to 6,420* to transfer point 50-75 miles north
 - San Antonio is *not* a feasible destination
- Requires coordinated assets of Amtrak, Trinity Rail Express, Union Pacific, and BNSF
- Costs estimated at \$30 to \$550 per passenger
 - Dependent on destination, time of activation, and number actually transported

* Assumes request is made at H-72 or earlier; number will be less if request is made later than H-72.



2009 Houston/Harris County Rail Evacuation

- Factors Affecting Evacuation Options
 - Track availability
 - Equipment – locating available rail cars
 - Destination – shorter rail trip allows more trips, more evacuees
 - Timeframes to mobilize – time of activation order affects number of trips and number of evacuees transported
 - Crew/staffing – training and qualification for selected routes
 - Costs
 - Other Processes and Operations – coordinated efforts involve four railroads



Track Availability – Host Railroad

- Union Pacific Railroad
 - Owns and dispatches railroad Houston-San Antonio
 - Rail operations suspended 48-72 hours prior to tropical storm force winds expected to make landfall

- BNSF Railway
 - Owns and dispatches railroad Fort Worth – Dallas
 - Rail operations suspended in some areas when tropical storm force winds begin
 - Railroad pilots will be needed



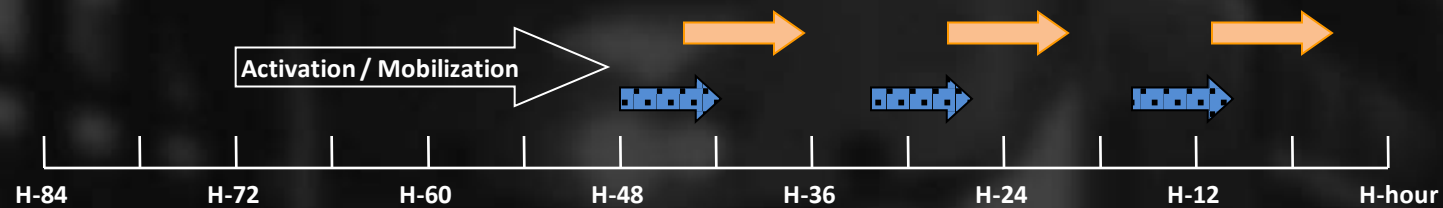
Rail Transport Destination – Two Options


- Trains run from Houston to Dallas
 - 16 hour cycle time for Amtrak; 17 hour cycle time for TRE
 - 6 hour trip Houston-Dallas; 2 hour turn-around at Dallas
 - 6 hour trip back to Houston; 2 hour turn-around at Houston
 - 1 hour servicing/watering stop (TRE equipment)


 - Trains run from Houston to Inland Transfer Point*
 - 8 hour cycle time for either Amtrak or TRE
 - 3 hour trip Houston-Transfer Point; 1 hour turn-around at Transfer Point
 - 3 hour trip back to Houston; 1 hour turn-around at Houston
- * Trains may be operated as shuttles running from Houston to a debarkation location 50 to 100 miles from the gulf coast; this would allow for more trips based on a 8-hour cycle time



Timeline – Houston to Dallas Option



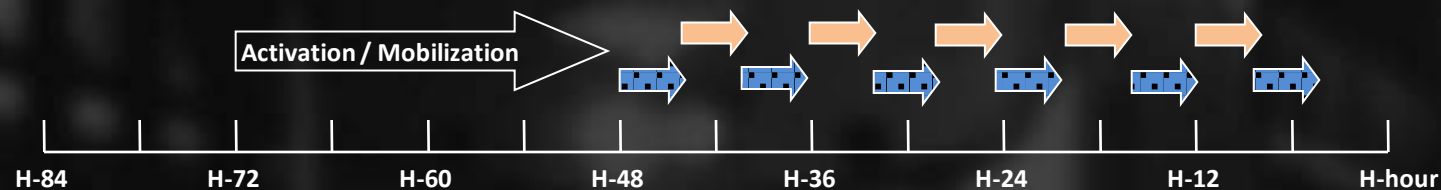
 TRE Train (7 hours)

 Amtrak Train (6 hours)


Arrow length includes travel time with passengers. Space between arrows includes 2 hour servicing & turnaround of train, return trip, turnaround and loading of train.



Timeline – Houston to Transfer Point Option



 TRE Train (4 hours)

 Amtrak Train (4 hours)

Arrow length includes travel time with passengers. Space between arrows includes 1 hour servicing & turnaround of train, return trip, and 1-hour turnaround and loading of train.



Total Capacity for Various Activation Times

Activation Time Amtrak/TRE	Option	Evacuees Transported
H-72 / H-66	Houston-Dallas	3,612
	Shuttle/Transfer	6,370
H-60 / H-60	Houston-Dallas	2,408
	Shuttle/Transfer	4,456
H-48 / H-48	Houston-Dallas	1,204
	Shuttle/Transfer	2,058



Other Processes and Operations

- Direction and Control L,A
- Set-Up of Reception/Processing Area L
- Communications L,A
- Reception of Passengers at Station L
- Transportation Triage L
- Manifesting L
- Security L,A
- Medical Support L
- Baggage L
- Food, Water, Sanitation L,A
- Logistics Support S,F
- Debarkation and Transport to Shelter S,A
- Reentry S,L



Responsibility: L=Local S=State F=FEMA A=Amtrak



Conclusion

- Rail can be and has been used successfully to evacuate people out of harm's way
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