

# Resiliency in the Face of Disaster:

# The Role of Transportation

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# WHAT IS RESILIENCE?

## ❖ National Academies of Science =

“To adapt to stress ...so that it may continue to function, or quickly recover its ability to function, during and after stress.”(14)

“The ability of groups, such as communities and cities, to withstand hazards or to recover from such disruptions as natural disasters. Building and maintaining resilience depend on the ability of a group to monitor changes and to modify its plans to deal with adversity appropriately.”(14)

## ❖ Coles and Buckle =

“Community participates fully in the recovery process and ... it has the capacity, skills and knowledge to make its participation meaningful.”





# Hallmarks of Resiliency

## ❖ Prepare for the identified hazards

### ❖ Natural hazards

❖ Weather, seismic

❖ Fire

❖ Disease- human, plant, animal

### ❖ Technological hazards

❖ Hazardous material,  
transportation, power outage,  
infrastructure failure

### ❖ Human-caused hazards

❖ Crime, terrorism



# Hallmarks of Resiliency

## ❖ Mitigation

- ❖ Physical mitigation
- ❖ Planning
- ❖ Education
- ❖ Insurance

## ❖ Engagement

- ❖ All community approach to emergency planning and business continuity planning means every sector has a role

## ❖ Preparation

- ❖ ICS/NIMS training, exercises
- ❖ Hazards education in the K-12 curriculum
- ❖ Car kits, family kits
- ❖ School/ day camp supplies for children
- ❖ Hospital and nursing home shelter-in-place/evacuation plans and exercises





# Role of the Transportation Sector

## ❖ 1. All disasters are local

- ❖ Collaborate with local governments on emergency planning
  - ❖ Don't want to meet in the parking lot of a disaster!
  - ❖ Establish common expectations of transportation sector's roles
  - ❖ Agree on reimbursements, who is responsible for what paperwork: FHWA/FEMA, MAP-21 impacts

## ❖ 2. No roads, no codes

- ❖ Bridge Inspection
- ❖ Debris removal – how many lanes are “emergency” restoration, MAP-21 impacts
- ❖ Rapid repairs- road surface, culverts, drainage
- ❖ Overweight permits

# Role of the Transportation Sector

## ❖ 3. Evacuation

- ❖ Legal authority to call for evacuation
- ❖ Legal authority to call for contraflow
  - ❖ Plan in place that includes one lane in opposite direction for emergency vehicles- police, fire, ambulance, gas trucks
  - ❖ Who has barricades, signage; who blocks entrances at local streets?
- ❖ Plans for towing, repairs, gas – only expressway gas stations? Plans to boost supply in advance of evacuation? Payments? Price gouging?
- ❖ Destination?
  - ❖ South Jersey Transit – plenty of entry points but what is exit point? Only Philadelphia?
- ❖ Shelters?
  - ❖ Who provides support enroute ? – restrooms, diapers, water, food, medical care (heart attack, stroke, labor, asthma attack, allergic reaction)



# Role of the Transportation Sector

## ❖ 4. Logistics

- ❖ Collaborate with the private sector – “whole community” – Walmart EOC is 24/7 monitoring roads, other “big box”
- ❖ Rolling stock to support the emergency response
  - ❖ School busses, paratransit, airport busses, public busses, commuter rail
  - ❖ Courier trucks, specialty trucks, plows, crane
- ❖ Goods by shortest route after disaster – may be different than before disaster
  - ❖ Use GPS, road sensors, HAM radio/CB radio reports, traffic cameras
  - ❖ Information coordination is role for Transportation EOC
- ❖ First responders to the disaster sites
  - ❖ Police, fire, EMS, hospital medical personnel
  - ❖ Staging areas?
  - ❖ Who requests that people be transported? 9/11 problem.
  - ❖ Problem of credentials, self-dispatching

# Role of the Transportation Sector

## ❖ Conclusion

- ❖ Transportation is the key to all disaster response
- ❖ Resiliency requires rigorous inter-agency planning before the event
- ❖ The whole community has to participate in developing the plan, and in executing it when needed





# Resources



- ❖ A Whole Community Approach to Emergency Management: Principles, Themes, and Pathways for Action [http://www.fema.gov/media-library-data/20130726-1813-25045-0649/whole\\_community\\_dec2011\\_2.pdf](http://www.fema.gov/media-library-data/20130726-1813-25045-0649/whole_community_dec2011_2.pdf)
- ❖ Building Community Disaster Resilience through Private-Public Collaboration <http://www.nap.edu/catalog/13028.html>
- ❖ Coles and Buckle, Developing community resilience as a foundation for effective disaster recovery <http://www.em.gov.au/Documents/DevelopingCommunityResilience.pdf>
- ❖ California Resiliency Alliance Disaster Assistance Registry <http://www.caresiliency.org/>



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