

**URBAN HAZARDS FORUM  
CATASTOPHIC EVENTS TRACK**

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**By  
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**Summary**

While the events of September 11<sup>th</sup> have focused our national attention on the threat of terrorism, our nation's emergency managers must also maintain vigilance over the potential catastrophic events that threaten our communities every day. Preparing for and learning from man-made and natural catastrophes will strengthen our ability to manage disasters of all types.

The presentations made at the Urban Hazards Forum represented a wide diversity of catastrophic events, both in terms of type and geographical location. In addition, the Forum brought together a myriad of individuals that resulted in a lively exchange both during and after the presentations.

**Opening Plenary Session**

Catastrophic events were the subject of one of the opening plenary session keynote presentations. Ellis Stanley, Director of the Emergency Preparedness Department for the City of Los Angeles, highlighted the relationship between emergency management and the political environment in which it operates. He stressed that it is essential that elected officials understand their critical role of bringing together the public and private sectors to deal with disasters. Often, he pointed out, political success is determined by how well a politician responds to a disaster.

Although disasters occur locally, they typically affect a larger area than the jurisdiction in which they occur. Toxic plumes know no artificial jurisdictional boundaries. They are capable triggering national economic problems.

Learning from a disaster is in itself a lesson that has yet to be learned. Why is there so little change after a catastrophic event? We don't take the lessons to heart and apply them. We ignore them until they are repeated again.

We must think differently, striving for new ideas and technologies. We also must ensure basic preparedness and be ready for response. We must implement the lessons learned from a disaster.

### Joint Mitigation/Catastrophic Event Session

An international group of speakers addressed a joint session of the Mitigation and Catastrophic Events tracks. While their presentations addressed a full spectrum of issues, there were common elements amongst them.

The use of technology for mitigation and disaster response was perhaps the most evident theme that ran through the presentations. The other predominant element was the need for further research; to be more effective, we must know more.

The first of the presenters, Lucio Ubertini, stressed the importance of collecting data during a disaster. In his presentation, "Mitigation of Hydrological Hazards in Urban Areas," such information gathering was essential for the creation of mapping software which is utilized for flood prediction. In addition, event scenarios using the mapping system are developed for training purposes

Ubertini described a centralized computer system that is used for predicting the impact of flooding upon specific locations an actual event is occurring ("scientific intervention" during an incident). Cultural institutions are included in the maps, allowing for response to specific locations that are in danger during a flood. An integrated response of emergency personnel, academia, and government come together to deal with the event.

Ubertini was followed by Fausto Guzzetti, who made a complementary presentation entitled "SICI: An Information System on Historical Landslide and Flood Events in Italy." He discussed the use of the computer mapping for landslide prediction, often utilized for land development decision making. He indicated that investments in development are not made unless the level of risk is established.

Getting the right information at the right time was the theme of Larry Roeder's presentation "Global Disaster Information Network." A product of the US State Department, GDIN has been utilized by State Department personnel in many foreign countries to disseminate relevant disaster information to key personnel.

"Research Directions for Disaster Response and Recovery Following September 11<sup>th</sup>, 2001" presented by Rae Zimmerman spotlighted the New York University/National Science Foundation efforts at studying the performance of New York infrastructure as well as the human response to the event. Of great importance was the validation of models that have been developed to simulate disasters.

Zimmerman identified several environmental issues that have emerged as a result of the attack on lower Manhattan. Documentation and analysis of the "fragility" of the

infrastructure was described, including the need for constant damage assessment. She advocated looking at the disaster holistically, including a “systems” review of the interface between safety and security.

In the New York City metropolitan area, most individuals do not give hurricanes a second thought. Nicholas Coch has been working to alter that attitude. In his presentation “Hurricane Hazards and Mitigation in the New York Metropolitan Area,” he described the use of a hurricane damage scale and applied it to New York City and surrounding areas. What he found was that New York is vulnerable to extensive damage in a significant hurricane.

A success story entitled “Coordinating Administrators, Citizens, and Scientists: Lessons Learned from Qinglong County, China in the Tangshan Earthquake in 1976 and Recent Application of These Lessons in Other Countries” was given by Jean-Marie Col. After a number of damaging earthquakes in a remote Chinese region, local officials in Qinglong County studied the effects of the earthquakes and developed a strategy for the future.

Col described how these officials in this county implemented the strategy. When an actual quake occurred in 1976, Qinglong County sustained no deaths while adjacent areas had substantial losses of life. This was truly an example of lessons learned and applied, resulting in very good outcome. Studying the strategy and how it was implemented will yield significant information for other disaster mitigation and response initiatives.

Creating an international-ready urban search and rescue program in South Korea was the primary objective of Jin Jong Choi as described in his presentation “International Efforts and Issues in Search and Rescue.” Issues of standardization of training, equipment, and command structure all present themselves when search and rescue teams cross boundaries. Efforts at coordinating an international response capability have been recently been initiated by some teams around the world.

Michael Armstrong suggested that as a nation we need to move emergency management to the next level in his presentation “Beyond Mitigation – Applications to Homeland Security.” Security also needs to be part of the planning process in the urban environment. We must look at issues such as density, land use, and the urban/wildland interface. He advocated that a vulnerability index be utilized to assess the problem

Competing interests – such a housing and transportation - necessitate that elected officials play a leadership role in bringing them together to solve this significant problem. Armstrong pointed out that we must have the political will and employ the financial resources to deal with the problem.

### Catastrophic Events: Urban Rail Emergencies

Peter Dworsky presented “New Jersey Transit Passenger Train Collision, February 1997.” He described several important issues that developed during the incident

including problems accessing the scene (it occurred in a swampy area), the accident occurring near the boundary of two jurisdictions, and the intense crush of the press. He highlighted the essential importance of utilization of the incident command system.

Dworsky explained how a patient transport corridor along the railroad tracks was opened, including the use of a specially equipped train car that shuttled people and supplies to a staging area. Communicating with multiple units from multiple agencies also surfaced as an issue for this incident.

Another rail emergency discussed was the “CSX Tunnel Derailment, Fire and Hazardous Materials Release,” given by Donald Heinbuch. The incident, which occurred in downtown Baltimore, created a significant challenge for local responders. A freight train left the tracks in a tunnel under downtown Baltimore, triggering a fire. In addition, a 40” water main ruptured above the tunnel during the incident, complicating the disaster.

Getting accessing to the fire became a prime objective. With hazardous materials involved, this became a dangerous proposition. A few attempts were made, but one crew was overcome and had to be rescued. Eventually, the train was pulled from the tunnel and the fire extinguished out of the tunnel.

Heinbuch identified several lessons learned. There is a constant need to track the types of hazardous materials shipments traversing the city, including the tunnel. Working with responders from the private sector was a challenge, including firefighters working for the rail company. Additionally, the interface with responding federal agencies needs to be strengthened.

#### Catastrophic Events: Water Emergencies

Richard Colombaroni discussed the many issues that he was presented with when Tropical Storm Floyd struck his community. In his presentation “Firefighting During Flooding,” Colombaroni detailed the flooding of his community, the loss of a fire station, and the need to search many homes for trapped people in addition to the fire developing in his downtown area.

The fire was inaccessible, making fighting it difficult to fight. In addition, the fire was moving towards occupied buildings down the street. Unable to get access to local marine firefighting equipment due to bureaucratic red tape, he called across state lines and appealed to New York City for assistance. A fireboat was sent by New York, which subsequently extinguished the fire. It is necessary, sometimes, to bypass non-functioning emergency management components of the incident command chain.

A large disaster in a small community necessitates innovative thinking. This includes the Rochelle Park, N.J. Building Department who was confronted with such a situation. In his presentation “Structural Damage Assessment Following Tropical Storm Floyd,” Gary Montroy explained that he was confronted with conducting inspections of well over 1,000 buildings. The key, he identified, was the use of a mutual aid network of building

inspectors from other communities. Since the plan was in place before the storm, he was able to have an inspection program up and running quickly.

The final presentation was given by Steven Worley. Entitled "Swiftwater Rescue Management," Worley described San Antonio's program of dealing with swiftwater rescue. Besides the equipping and training of firefighters for rescue, a unique penalty system was established for individuals endangering themselves by entering posted/blockaded low water crossings. The fine was established as a deterrent, attempting to avoid having to rescue individuals in the first place.

## CATASTROPHIC EVENTS SESSION PAPERS AND PRESENTATIONS

Armstrong, M. J., 2002. *“Urban Hazards Mitigation: Increasing Human Security through Re-Assessing the Steps Toward Livable Communities.”* Paper presented at the Urban Hazards Forum: Mitigation in Urban Areas – A Review of Theory and Practice, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York, 11p.

Choi, J. J., 2002. *“International Efforts and Issues in Urban Search and Rescue.”* Presentation at the Urban Hazards Forum: Mitigation in Urban Areas – A Review of Theory and Practice, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York.

Coch, N. K., 2002. *“Hurricane Hazards and Mitigation in the N.Y.-N.J.-CONN. Metropolitan Region.”* Paper presented at the Urban Hazards Forum: Mitigation in Urban Areas – A Review of Theory and Practice, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York, 19p.

Col, J. and J. J. Chu, 2002. *“Coordinating Administrators, Citizens and Scientists: Lessons Learned from Qinglong Country, China and CSCAN, the Philippines 2001+.”* Paper presented at the Urban Hazards Forum: Mitigation in Urban Areas – A Review of Theory and Practice, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York, 15p.

Dworsky, P. I., 2002. *“Don't Get Derailed at Train Wrecks.”* Paper presented at the Urban Hazards Forum: Urban Rail Emergencies, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York, 5p.

Guzzetti, F., F. Cipolla, O. Lolli, S. Pagliacci, C. Sebastiani and G. Tonelli, 2002. *“Information System on Historical Landslides and Floods in Italy.”* Paper presented at the Urban Hazards Forum: Mitigation in Urban Areas – A Review of Theory and Practice, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York, 15p.

Heinbuch, D., 2002. *“Briefing on the Baltimore CSX Tunnel Derailment.”* Presentation at the Urban Hazards Forum: Urban Rail Emergencies, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York.

Jennings, C., 2002. *“Rationale for the Conference.”* Welcoming Remarks at the Urban Hazards Forum, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York.

Leidner, A., 2002. “*New York City GIS Utility.*” Presentation at the Urban Hazards Forum: Panel on (Re-) Implementing and Using Geographic Information Systems (GIS) Following the World Trade Center Event, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York.

Roeder, L. W., 2002. “*GDIN : The Global Disaster Information Network.*” Paper presented at Urban Hazard Mitigation: Mitigation in Urban Areas – A Review of Theory and Practice, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York, 6p.

Stanley, E. M., 2002. “*Management of Catastrophic Events.*” Paper presented at the Urban Hazards Forum: Emergency Management in the Urban Context, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York, 6p.

Tarnowski, M. and B. Fricke, 2002. “*An Application Of Virtual Reality For Hazmat Assessment And First Response.*” Paper presented at the Urban Hazards Forum: Catastrophic Events, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York, 8p.

Ubertini, L., S., Grimaldi and M. Ferrante, 2002. “*Mitigation of Hydrological Hazards in Urban Areas.*” Paper presented at the Urban Hazards Forum: Mitigation in Urban Areas – A Review of Theory and Practice, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York, 9p.

Worley, S., 2002. “*Swift Water Rescue Management.*” Presentation at the Urban Hazards Forum: Water Emergencies, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York.

Zimmerman, R., 2002. “*Urban Public Service Response and Recovery Post-September 11<sup>th</sup>: Preliminary Research Findings and Summary of a Research Workshop.*” Paper presented at the Urban Hazards Forum: Mitigation in Urban Areas – A Review of Theory and Practice, January 22-24, 2002, John Jay College of Criminal Justice, City University of New York, 6p.