

New Paradigms for Private Sector Preparedness

Statement of

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Good morning, Mr Chairman and members of the Committee.

My name is John Harrald and I am with the Virginia Tech Center for Technology, Security and Policy and am the Emeritus Co-Director of the George Washington University Institute for Crisis, Disaster, and Risk Management. I am currently serving as the Chairman of the National Academies National Research Council's Disasters Roundtable. The National Research Council is the operating arm of the National Academy of Sciences, National Academy of Engineering, and the Institute of Medicine of the National Academies, chartered by Congress in 1863 to advise the government on matters of science and technology. I am also a Member of the Board of Scientific Counselors for the Center for Disease Control and Prevention's Office of Public Health Preparedness and Emergency Response and I am the Executive Editor of the Journal of Homeland Security and Emergency Management. The conclusions and recommendations that I am presenting today are my own and do not necessarily represent those of any of these organizations.

The preliminary title of this hearing, "New Paradigms for Private Sector Preparedness" is appropriate and timely. A paradigm shift is a fundamental change in how we perceive the world, what we believe, and in the ways we act. In my opinion, we are at a point in time where such a shift in our policies and actions concerning extreme events is both necessary and possible. This paradigm shift will fundamentally effect how both the private and public sectors react strategically and operationally to these events.

As the images of Hurricane Katrina, Hurricane Andrew and the 9/11 attacks recede, and the issues identified seem less urgent, recent catastrophic earthquakes in Haiti and Chile have once again reminded us that our world view must include extreme events and their impacts. We know that the United States is particularly vulnerable due to its large populations living and working in high risk areas: seismic zones, coastal and riverine flood plains, and urban terrorist targets. Catastrophic events can and will happen here. Are we resilient enough to ensure that our nation and society can recover and thrive after such an event?

Understanding and reacting to risk of low probability/high consequence events is a challenge for any society. It is difficult to envision that which has not yet happened. In our current paradigm, many view extreme events as such rare exceptions to the normal that preparing for them is a

waste of time and money and that if an event should occur the government, the Red Cross, and others should be able to meet their needs. U.S. response doctrines imply that disasters produce victims that must depend upon the assistance provided by those trained and equipped to do so and, reacting to past events, we have created larger and more capable government-centric response systems. This system has worked well for large events such as the 9/11 attacks and the 1984 Florida hurricanes, but has failed during catastrophic events such as Hurricane Andrew and Hurricane Katrina with devastating social and economic impacts.

How can this paradigm shift to one that will work when we need it most? I believe that there are three areas where change is occurring now, and that with investment and leadership will lead to a fundamental paradigm shift. The private sector plays a critical and central role in each of these elements. The three areas are:

- Building and sustaining community resilience.
- Creating a collaborative and enabling preparedness and response culture.
- Using science and technology to replace reactive doctrine with proactive, agile systems.

*Community resilience is the key to preparedness.* Relationships and resources that exist at the local level are primary predictors of the ability to absorb, adapt, survive and thrive when faced with extreme events. We have historically focused on promoting individual preparedness, supporting business recovery, and ensuring government continuity of operations. Resilience, however, requires the building of collaborative relationships that will enable communities and businesses to better absorb, adapt, survive, and thrive when confronted with extreme events. Significant national steps have been taken to make the development of community and national resilience a national strategic objective. A Resilience Directorate has been established within the White House National Security Council. In its Quadrennial Homeland Security Review, the US Department of Homeland Security (DHS) has adopted the objective that the United States be “A Nation that is resilient to all threats and hazards”. The Department of Health and Human Services (DHHS) emphasizes community resilience in the recently released National Health Security Strategy for the United States. The recently released DHS/HUD National Disaster Recovery Framework states that, for successful recovery to occur, communities should adopt sustainability and resilience strategies.

*Disaster management culture is changing.* Current preparedness, response, and recovery doctrine based on government centric control will be replaced by a culture that enables collaboration. Most people impacted by a disaster are uninjured, healthy, and willing and able to help those more seriously impacted and to rebuild their community. As stated by FEMA Administrator Craig Fugate, these willing and able citizens should be thought of as resources, not victims. Catastrophic events will exceed the capability and resources available to the national, state and local governments. The objective is not to create government organizations capable of doing things for people; we must be able to mobilize national resources, public and private, to work with citizens to help restore social, physical, and economic systems. The model envisioned in the National Response Framework will not scale up. The solution is not increasing government resources or tasking DOD, although some level of both will be required. The solution is in partnerships that creatively leverage the resources we have in both the public and private sectors.

*Science and Technology are providing us with new knowledge, capability and opportunities.* We are witnessing a very significant shift in how science and technology are used in disaster response. Physical science better informs us of our risk exposure and helps us develop credible planning scenarios. Social scientists have introduced the concept of social vulnerability into the preparedness, response, and recovery doctrine and have studied how people behave during the crisis and recovery periods. Preparedness must be based on what we have learned from science, not on disaster myths and fears. We are rapidly evolving from centralized, rigid, closed government systems to decentralized, agile, open, private sector owned and operated systems. The challenges of the future are three fold and will include: (1) recognizing the new capabilities technology is providing rather than being constrained by narrowly designed systems, (2) creating ways to capture and integrate the flood of information from unanticipated sources rather than relying on pre-existing formal lines of communication, and (3) creating the relationships and networks needed for each event rather than living with artificial organizational and physical constraints.

Already in 2010, there are two vivid disasters that exemplified the use of emerging technology: the earthquakes in Haiti and in Chile. In Haiti, after the January earthquake that measured 7.0 on the Richter scale, SOUTHCOM established an open web blog to coordinate activities with the

NGO community resulting in critical military/civilian collaboration. Thousands of structural engineers around the world assisted in assessing damaged buildings using web based satellite imagery; and people checked on and were re-united with relatives using mobile phone applications designed during the Haiti crisis. About a month later, there was a larger earthquake in Chile, and thousands of people evacuated vulnerable areas in Hawaii and around the Pacific Basin in response to an accurate and timely tsunami warning system; and international aid organizations monitor the evolving situation by following Ustream and other web sources. As in these cases, we expect to see in future events that cell phones and mobile technology will play a key role in alerts and warnings and in social networking during response and recovery. Collaborative and display technology will create virtual operations centers, allowing open and agile collaboration between public and private organizations and individual citizens. The results of this increased use of technology is impressive. Just compare our awareness of the situation on the ground in Haiti and the rapid mobilization of appropriate resources with the confusion that followed the Exxon Valdez oil spill, the Loma Prieta earthquake, Hurricane Andrew, or Hurricane Katrina

The Boards and Committees of the National Academies have analyzed the research available addressing many of these issues. For example, current committee efforts are examining public private partnerships and the use of mobile devices in alerting and warning systems. The Academies will soon undertake a study on increasing national resilience to hazards and disasters. I have attached a list of study and workshop reports published by the Academies during the last five years to my remarks.

In conclusion I would like to emphasize that the private sector involvement and leadership is key in all three paradigm changing trends I have described: building resilience, creating a collaborative culture, and creating new capabilities through technology. The policy implications for the federal government are, I believe, in three primary areas. The first is implementing policies and programs that enable local and regional capabilities to set their priorities and use their local resources and knowledge. The second is to ensure that federal grant programs that are intended to create resilience are adequately funded and coordinated. The stovepiping of current grants by agencies and programs can produce conflicting government mandated priorities that lead to competition for resources and discourage collaboration at the local level. Finally, the

creation of trusted relationships is the basis of any collaborative network. This requires open and frequent information sharing---which conflicts with the cultural values of both the public and private sectors. Managers in both the private and public sectors are trained in and rewarded for the withholding and controlling of information. In my opinion, the trusted relationships needed to break down these barriers are most likely to develop at the local and regional level.

Thank you for the opportunity to testify today. I look forward to your questions.

National Research Council Committee Reports. Available at <http://www.nap.edu/>

Private-Public Sector Collaboration to Enhance Community Disaster Resilience: Workshop Summary (2010)

The New Orleans Hurricane Protection System: Assessing Pre-Katrina Vulnerability and Improving Mitigation and Preparedness (2009)

Guidance for Establishing Crisis Standards of Care for Use in Disaster Situations (letter report) (2009)

Private-Public Sector Collaboration to Enhance Community Disaster Resilience: A Workshop Report (2009)

Tools and Methods for Estimating Populations at Risk from Natural Disasters and Complex Humanitarian Crises (2007)

Successful Response Starts with a Map: Improving Geospatial Support for Disaster Management (2007)

Improving Disaster Management: The Role of IT in Mitigation, Preparedness, Response, and Recovery (2007)

Facing Hazards and Disasters: Understanding Human Dimensions (2006)

Workshops held by the National Academies Disasters Roundtable. Reports available at <http://dels.nas.edu/dr/reports.php>

Children and Youth in Disasters: Closing Gaps among Research, Practice, and Policy (2009)

Cascading Disasters: How Disasters Unfold (2009)

Making the World Safer from Disasters: the U.S. Role (2008)

Disaster Risk Management in an Age of Climate Change (2008)

Recovering from Disaster (2008)

Creating and Using Multi-Hazards Knowledge and Strategies (2007)

Protecting our Lives and Property at our Coastlines (2007)

Citizen Engagement in Emergency Planning for a Flu Pandemic (2007)

Rebuilding for Health, Sustainability, and Disaster Preparedness in the Gulf Coast Region (2007)

Community Disaster Resilience (2006)

Facing Hazards and Disasters: The Human Dimension (2006)

Law, Science, and Disasters (2006)

The Indian Ocean Tsunami Disaster: Implications for U.S. and Global Disaster Reduction and Preparedness (2005)

Lessons Learned Between Hurricanes: From Hugo to Charley, Frances, Ivan, and Jean (2005)

Creating a Disaster Resilient America Grand Challenges in Science and Technology (2005)

Public Health Risks of Disasters: Building Capacity to Respond (2005)