Meeting Minutes of the Subcommittee on Disaster Reduction

7 July 2011, 10:00 a.m. to 12:00 p.m., White House Conference Center Lincoln Room

Italics indicate absent members. "T" indicate members participating via teleconference.

Co-Chairs

David Applegate (USGS)
Margaret Davidson (NOAA) (T)
Dennis Wenger (NSF)

NSTC Liaison

Tamara Dickinson (OSTP)

Designated Representatives

BLM *Edwin Roberson*
Daniel Lechefsky
CDC *Mark Keim*
DHS Bruce Davis
DHS/FEMA *Sandra Knight*
DHS/USCG *Austin Gould*
DOD *Al Johnson*
DOT *Kelly Leone*
Sheila Duwadi
EOP/OSTP *Tamara Dickinson*
EDA *Audrey Clarke*
EPA *Peter Jutro*
Stephen Clark
FERC Pamela Romano (T)
HUD *David Engel*
NASA Craig Dobson
NGA *Chris Crosiar*
NGB *Daniel Bochicchio*
NIH Allen Dearry (T)
NIST *William Grosshandler*
NOAA Margaret Davidson (T)
Laura Furgione
NSF Dennis Wenger
OPHS *Sven Rodenbeck*
State Nicholas Suntzeff
Brian Lieke
Fernando Echavarria
USACE *Steven Cary*
Dimitra Syriopoulou
USAID Sezin Tokar
USDA *TBD*
USFS *Carlos Rodriguez-Franco*
USGS David Applegate

Other Attendees

DHS Mary Ellen Hynes
EPA Alona Bachi (AAAS)
Marcy Rockman (AAAS)
FEMA Roy Wright
NASA Dalia Kirschbaum
NIST Long Phan
NOAA Nell Codner
Margaret McCalla
Tracy Rouleau
Jacob Sutherlin (T)
NSF Bob O'Connor
Woodrow Wilson Center/ Smithsonian Lea Shanley
Secretariat Ross Faith
Barbara Haines-Parmele
DHS Contractors
Paul Domich (T)
Shakia Dorsey
Univ. of South Carolina
Michael Hodgson

Agenda

10:00 Welcome, Introductions, and Approval of Minutes
10:05 Report from the Co-Chairs
10:30 Presentation: PPD-8 Mitigation Working Group
10:45 Presentation: NSTC Subcommittee on Infrastructure
11:05 Presentation: Preliminary Findings from the Joplin Tornado
11:55 Close and Next Actions

Handouts

- Agenda
- Draft June Meeting Minutes
- New SDR Charter
- Excerpt from pending legislation tasking SDR: Natural Hazards Risk Reduction Act of 2011

I. Welcome, Introductions, and Approval of Minutes

Subcommittee on Disaster Reduction (SDR) Co-Chair David Applegate (USGS) called the meeting to order at 10:03 a.m., participants introduced themselves, and the minutes from the June meeting were approved.

II. Report from the Co-Chairs

Applegate reported that the SDR Co-Chairs met in late June with the subcommittee's NSTC Liaison, Tammy Dickinson (OSTP), as well as Steve Fetter, former OSTP Associate Director At-Large who now serves as OSTP Associate Director for Environment. The meeting included a discussion of agency representation on the SDR, which will be expanded, as allowed for in the subcommittee's charter. Additional entities include the Nuclear Regulatory Commission and the White House Council on Environmental Quality, which will be represented by Cathleen Kelly, CEQ Associate Deputy Director for Climate Adaptation. The charter, which was recently revised to conform with those of other NSTC subcommittees, prescribes representation to the SDR at the Department level. This is a departure from past years when individual agencies, and in some cases two or more agencies from a given Department, were specifically called out as members. The SDR will continue to welcome multiple representatives from Departments. Although the SDR is not planning to conduct a broad re-vetting of membership, members are welcome to contact Dickinson (tdickinson@ostp.eop.gov) if it would be helpful for OSTP to issue a letter to their Department requesting a new (or re-affirmed) designation of representatives. Ideas for other entities that should be represented on the SDR are also welcome.

Applegate invited SDR Members to consider serving on the subcommittee's International Working Group, which will be reconstituted to handle the subcommittee's international portfolio, such as its engagement with the UN International Strategy for Disaster Reduction (ISDR). In recent years the working group has been dormant, and the SDR has handled its international activities at the subcommittee level. Those interested in serving on the reconstituted working group are encouraged to email the Secretariat (ross.faith@mantech.com). On a related front, some SDR members will be meeting with InterAction's Disaster Risk Reduction (DRR) Working Group from 2:30-4:00pm on July 14th in Washington, DC. Those interested in participating in the discussion are invited to email the Secretariat (ross.faith@mantech.com) for more details.

Co-Chair Dennis Wenger (NSF) endorsed the idea of revitalizing the SDR's International Working Group in order to address the subcommittee's role as the U.S. National Platform and consider how the platform could be expanded to include NGO and academic partners. He cited the creation of a "blue-ribbon panel" for the International Decade for Natural Disaster Reduction (IDNDR) as a potential a model for reorganizing the U.S. National Platform.

OSTP has expressed interest in the SDR standing up a working group to draft a white paper identifying lessons learned from the major earthquakes and tsunami that have occurred around the world during the past two years--in Haiti, Chile, New Zealand, and Japan—and suggesting how the lessons can be applied in the U.S. to reduce disaster risk and impacts. Applegate expected that activity to go forward in the fall.

Legislation pending in the current Congress concerning the SDR includes the Natural Hazards Risk Reduction Act of 2011. If passed in present form, the Act (S646) would reauthorize the National Earthquake Hazard Reduction Program (NEHRP), the National Windstorm Impact Reduction Program (NWIRP), the U.S. Fire Administration, and various assorted other hazard risk reduction activities. Last year's version of the bill passed the House and then did not move in the Senate. This year it is moving in the Senate. Section 301c of the Act calls for the SDR, not later than two years after the date of enactment, to submit a report to Congress identifying:

(1) current Federal research, development, and technology transfer activities that address hazard mitigation for natural disasters, including earthquakes, hurricanes, tornados, wildfires, floods, and the current budgets for these activities;
(2) areas of research that are common to two or more of the hazards identified in paragraph (1); and
(3) opportunities to create synergies between the research activities for the hazards identified in paragraph (1).

Applegate encouraged the SDR on behalf of OSTP to consider how it would respond to the reporting requirement if the Act is passed. He suggested that one approach would be to treat the reporting requirement as a follow-on effort to the Grand Challenges and conduct a mid-term review of progress on activities specified in the implementation plans.

Mary Ellen Hynes (DHS) asked whether consideration was being given to including in the Act reauthorization for the National Tsunami Hazard Mitigation Program (NTHMP). Applegate responded that the NTHMP reauthorization had not been wrapped in at this point. The NTHMP was originally authorized through separate legislation and was out of phase with the Natural Hazard Risk Reduction Act of 2004. Applegate believed that the NTHMP reauthorization was scheduled to come up in 2012, and because Congress was "behind the ball" in reauthorizing NEHRP, NWIRP, and the Fire Administration, he thought it was conceivable that the NTHMP could possibly be lumped in. He also noted that there had been discussions of including landslide hazard in the pending legislation.

Wenger reported that the Natural Hazards Center at the University of Colorado-Boulder is facing a rather dire funding situation. As the status of agency budgets becomes clearer with FY2011 drawing to a close, Wenger encouraged agencies to provide funds to the Center, and for that matter, also consider contributing FY2012 funds. Since 1976, the Natural Hazards Center has served as a critical national and international clearinghouse of knowledge concerning the social science and policy aspects of disasters. It occupies a unique space in the hazards community – bringing researchers together with the individuals, organizations, and agencies concerned with reducing damages caused by disasters – and has been a very worthy recipient of federal funding for many years. The National Science Foundation coordinates federal support for the Center, and those interested in contributing are invited to contact Wenger (dwenger@nsf.gov).

Marcy Rockman (EPA/AAAS) reported that next week at the Natural Hazards Center's annual workshop she and Peter Jutro (EPA) will be running a panel session entitled "Risk Perception: Historical and Cultural Influences." While there is a growing body of work on the cognitive, attitude and emotional factors that relate to an individual's perception of risk, there seems to be a gap in understanding some of the broader historical influences on how and whether or not populations and communities translate remembered disasters into preparedness and recovery.

Ross Faith (SDR Secretariat) reported that the FY'07-08 NWIRP Biennial Progress Report to Congress had undergone a recent review by the Office of Management and Budget and received some light editing. It has been passed back to OSTP for submission to Congress. The FY'09-10 report recently underwent a round of copy editing by the Secretariat and is now back with the NWIRP Working Group for comments. After this step, the report is expected to go into a more formal clearance process as determined by OSTP.

Bruce Davis (DHS) stated that a few years ago he and Dr. Michael Hodgson (University of South Carolina) reported to the SDR on a survey they had conducted on how state emergency managers use geospatial information, remote sensing information, and GIS models in their operations. DHS and the University of South Carolina are teaming up again to conduct a follow-on study. Hodgson welcomed SDR input on the design of the survey. The goal of the survey is to determine the capabilities, the use,

and the perceptions of the states and counties with regard to geospatial information use in disaster management. This survey will target the response and recovery phases because, historically, one of the greatest challenges has been getting geospatial capabilities operational within three to four days to deliver time-critical information. The survey is divided into four different blocks: 1) geospatial data; 2) data research sharing; 3) emerging technologies, mobile devices, social networking; and 4) confidential questions and answers regarding state and county expectations of federal geospatial information providers. It was noted that the survey would be shared electronically with the SDR in order to solicit the subcommittee's input.

Nick Suntzeff (State) recommended that the survey design team consider adding questions where feasible and appropriate to gain a better understanding of the cross-border relationships between U.S. states and counties and their Mexican and Canadian counterparts. He commented that the current Administration in Mexico was interested in establishing similar data structures to enhance communication with American counterparts across the border.

Co-Chair Margaret Davidson (NOAA) stated that the Coastal Inundation Working Group (CIWG) would be meeting next week in Silver Spring for a two-day workshop to discuss points of synergy across the federal agencies for coastal inundation modeling as well as related topics, such as risk communication. Davidson also noted that those working on CEQ climate adaptation initiatives had expressed interested in the work of the CIWG. She applauded the recent inclusion of CEQ on the SDR and pointed out that having the CEQ Associate Deputy Director for Climate Adaptation as the CEQ representative to the SDR was an important step for emphasizing the linkages between disaster risk reduction and climate adaptation. Davidson also endorsed the emphasis placed by the State Department on disaster risk reduction and its connectivity to things like climate adaptation and national security in writing up its post-meeting summary of the Third Session of the Global Platform for Disaster Reduction. She noted that disaster risk reduction had been proposed as an element for the U.S. draft platform for the Rio Plus 20 United Nations Conference on Sustainable Development (June 4-6, 2012, Rio de Janeiro, Brazil). She added that making those connections at the international level as well as within executive offices of the federal agencies is a positive step forward.

III. Presentation: PPD-8 Mitigation Working Group

Roy Wright, Deputy Director for Risk Analysis at FEMA's Federal Insurance and Mitigation Administration, joined the SDR to provide a general overview of Presidential Policy Directive-8 (PPD-8): National Preparedness, and to specifically discuss the efforts of the interagency working group that is drafting the mitigation framework called for by the directive.

In summary, PPD-8, which was issued on March 30, 2011, replaces and rescinds most of its 2003 predecessor document, Homeland Security Presidential Directive (HSPD)-8. The issuing of PPD-8 is part of a larger effort, begun after President Obama took office, to reduce the number of—and streamline—presidential directives relating to emergencies and disasters, of which there are currently 26. The White House's decision to first revise HSPD-8 stemmed from the fact that HSPD-8 was quite far-reaching in scope, so revisions to it should help lay the groundwork for changes to other directives in the future.

In departure from HSPD-8 and other past directives, PPD-8 forgoes the concept of scenario-based planning in favor of capabilities-based planning. The new directive calls for the creation of an overarching National Preparedness Goal that will identify the core capabilities necessary for preparedness, as well as a National Preparedness System comprised of an integrated set of guidance, programs, and processes that will enable the Nation to achieve the goal. The goal and system will include five separate planning frameworks that specify in greater detail the capabilities needed for protection, prevention, response, recovery and mitigation. The all-hazards, integrated capabilities approach required

by PPD-8 is also novel in that it intentionally attempts to prevent the agencies from treating issues such as natural hazards, pandemic health crises, and terrorist threats in classic stovepipe fashion.

As a starting point, the mitigation working group will likely organize the mitigation framework around the six Grand Challenges for Disaster Reduction, which are:

1. Provide hazard and disaster information where and when it is needed.
2. Understand the natural processes that produce hazards.
3. Develop hazard mitigation strategies and technologies.
4. Recognize and reduce vulnerability of interdependent critical infrastructure.
5. Assess disaster resilience using standard methods.
6. Promote risk-wise behavior.

Although the SDR did not conceive or write the Grand Challenges as capabilities *per se*, Wright characterized the reorganization from challenges to capabilities as mostly a matter of re-phrasing. He expected that the Grand Challenges would be expanded to include some dimensions related to terrorism and health issues, as well as additional elements related to infrastructure. He also expected issues surrounding natural resources to play an important part in the mitigation framework.

The mitigation working group will be meeting on July 18, likely in Crystal City, Arlington, to continue developing the framework. Noting that the working group's composition was somewhat light on natural hazard experts, Wright invited SDR members to help identify the right individuals inside their agencies who should be participating in the effort as it moves forward. Wright may be contacted at Roy.Wright@fema.gov.

Following the presentation, discussion turned to the use of standard methodologies for assessing disaster resilience, which PPD-8 calls for as part of the National Preparedness System. Measuring resilience in a way that allows for meaningful comparison of communities and progress over time (or lack thereof) continues to be an ongoing challenge in the disasters field. (Susan Cutter of the University of South Carolina spoke to the SDR at its January 2011 meeting on the topic). As PPD-8 emphasizes the need for such a capability, Wright expressed hope that the directive may help to advance the development of standard resilience methodologies and metrics.

Wenger stated that the SDR had taken care in developing the Grand Challenges to include not only structural mitigation components, but also approaches for non-structural mitigation. He stressed the importance of continuing to integrate non-structural mitigation approaches, such as sound land use planning and zoning, in disaster risk reduction strategies. PPD-8 does mention the need for non-structural mitigation capabilities, albeit briefly. Wenger asked for further details about the status of non-structural mitigation capabilities under the mitigation framework. Wright stated that the framework would not change the reality of planning and zoning occurring at the community level and revolving around local economic considerations. He elaborated that a challenge for FEMA is to work with communities to help ensure that federal efforts in floodplain management, such as facilitating the purchase of structures and relocating individuals living in floodplains, does not result in the displacement of these persons outside the community, which would erode the community's tax base. He noted that relocation efforts have tended to be more successful in instances where economic development has been spurred in tandem inside the community to offset revenue loss.

Wright offered to provide an update on the efforts of the PPD-8 mitigation working group at a future SDR meeting. In terms of a timeline for preparing the mitigation framework, the working group has been asked to come to conclusion on the draft framework by July 18th. The first round of stakeholder review is scheduled for completion by July 22nd, and following cross-walks of the document, three days in early

August have been set aside for additional feedback before the draft enters the concurrence process by August 15th. The deadline for delivery of the draft to the National Security Advisor is September 15th.

IV. Presentation: NSTC Subcommittee on Infrastructure

Mary Ellen Hynes (DHS) is Co-Chair of the NSTC Infrastructure Subcommittee, and Director of the Research, Infrastructure Protection and Disaster Management Division within the Science and Technology Directorate at the Department of Homeland Security.

The NSTC Infrastructure Subcommittee was established in 2004 with a focus entirely on terrorism. Consequently, its work largely revolved around developing an infrastructure protection plan. Over the years, however, it became increasingly clear that the terrorism lens was too narrow, failing to incorporate other loads on infrastructure, such as from natural hazards, and due to the effects of aging, neglect, and economic pressures. With these considerations in mind, the Infrastructure Subcommittee was reconstituted earlier this year with a broader all-hazards outlook. It held its first meeting under this new mandate on June 20th. The subcommittee is continuing to work on attracting the right people from the agencies to round out its membership. One of the key reasons for promoting communication between the Infrastructure Subcommittee and the SDR is that the information about the forces of nature that produce loads on infrastructure comes from the hazard community.

The Infrastructure Subcommittee is not an operational body, but rather, is focused on R&D. As is the case with other NSTC bodies, it is working to coordinate research agendas across the federal government to promote synergy and avoid duplication of effort. Hynes observed that military solutions do not always translate well into civil engineering and infrastructure applications, so what on the surface may appear to be a duplication of effort is in fact necessary research for systems that perform well in the civilian world. She cited the Department of Defense's work on blast-resistant windows, which in a blast can blow outward from a structure up to 200 feet. The people inside the building will be safe, but the debris danger to pedestrians and others outside the building makes the design unsuitable for civilian applications.

The Infrastructure Subcommittee is mandated by law to produce an annual plan. Until last year, the plans had focused on showcasing technology. In departure from this format, the 2010 document is an implementation plan that identifies the steps necessary to promote resilient infrastructure. A key challenge is making the business case to private industry that its interests are better served and safeguarded through investing in resilient systems. Quantifying the costs of disasters and therefore the value of building stronger structures is an essential aspect of convincing private industry to make those investments. Hynes identified the President's new manufacturing initiative as an opportunity to integrate more resilience into new system designs for future U.S. advanced materials manufacturing.

Another opportunity, although not without its own set of challenges, is presented by the gathering momentum in the U.S. for green building design. New green construction and retrofits afford opportunities to integrate resilient design aspects, but the desire to save energy can also have unanticipated consequences. As an example, Hynes cited an incident that took place in a newly built LEED certified school in Arlington County. When a medical emergency unfolded in the school, the response team's radios were rendered ineffective due to the energy-saving, metal film on the building's windows. If the metal film layer is not the correct size and material, then the radio waves will not pass through it.

The Infrastructure Subcommittee held summits in September and December 2010 to lay out the format and framework of its 2010 plan. A bulleted summary of the plan can be found on the following page.

2010 Plan Framework

- Integrates infrastructure resiliency and high-performance design with security and protection requirements
- Highlights R&D investments and strategies to help secure and fortify infrastructure and key resources from natural, technological, and manmade hazards (all-hazard perspective)
- Strives to accelerate private and public sector adoption and investment in Critical Infrastructure and Key Resources (CIKR) security and resiliency
- Necessitates a change in the composition of representatives serving on the ISC

Plan Goals/Focus

- Address common requirements across all eighteen sectors for CIKR assets focusing on enhanced protection, guiding renewal of aging assets, promoting integrated designs
- Responds to goals identified in the National Security Strategy and priorities of a board range stakeholders and interest groups
- Articulate and join common needs and efforts resulting in increased efficiency and effectiveness, cooperation, and faster results at reduced costs
- Focus on Physical, Human, Business/Regulatory components contributing to CIKR protection and resiliency including the interdependencies

Strategic Goals

- National common operating picture (COOP) for critical infrastructure
- Next-generation computing and communications network with security "designed-in" and inherent in all elements
- Resilient next-generation physical and cyber infrastructure systems

Objectives

- Identify innovative technologies and strategies enhancing CIKR protection and resilience
- Identify business or financial vehicles that promote continuity of operations and resiliency assessments and metrics
- Increase human and social behavior emphasis
- Support local and state regulatory, code, zoning, and planning
- Address interdependencies of infrastructures, people, and communities

Priority Areas

- Physical Structures
- Production and Distribution Networks
- Financial, Information, and Communication Networks
- Advanced Materials
- Human Factors and Behaviors
- Rapid Response and Recovery

A PDF version of Hynes's PowerPoint presentation is available on the SDR Members Only website: http://www.sdr.gov/formembers.html (username SDR.member; password SDR#2003. including the period at the end).

V. Presentation: Preliminary Findings from the Joplin Tornado

Long Phan is a Research Structural Engineer in the Materials and Construction Research Division at the National Institute of Standards and Technology (NIST). He spoke to the SDR about the preliminary reconnaissance conducted by NIST on how Joplin, Missouri's buildings and emergency response communications performed during the EF-5 tornado that struck the city on May 22nd.

In responding to such disaster events, NIST often conducts two types of studies. The first is a preliminary reconnaissance, which tends to be followed by a technical investigation. A preliminary reconnaissance is a field study at the disaster or failure site to gather information and to determine if a technical investigation is warranted. A technical investigation is a fact-finding study that may include an assessment of the safety and performance of buildings and infrastructure, associated hazard(s), and/or emergency response and evacuation procedures and will likely result in recommendations for improvements to standards, codes, and practices and/or new knowledge. Studies may range anywhere from:

- *limited scope*, i.e., based on data collection and interpretation, modest analytical efforts, and judgment of technical experts, to;
- *extensive scope*, i.e., based on in-depth technical study, including extensive use of data, models, analytical and computational tools, laboratory and/or field experiments, and/or interviews.

Based on the preliminary reconnaissance, Phan noted that discussions within NIST at present are pointing to it conducting a future limited scope technical investigation in Joplin.

To conduct the preliminary reconnaissance, NIST deployed a four-member team to Joplin from May 25-28. Team members had expertise in structural, wind, and fire protection engineering, meteorology, and emergency evacuation communication. The team collected information and data on:

- Tornado hazard
- Pattern, location, and cause of fatalities and injuries
- Tornado warning system, evacuation, emergency response, and occupant behavior
- Response of buildings, tornado shelters, and designated safe areas
- Damage to lifelines (natural gas, electrical distribution, etc.) and resulting fires

The tornado touched down in Joplin beginning at 5:41 PM CDT and delivered estimated maximum wind speeds of 200+ mph along a west-to-east 13.8 mile track (6 miles in Joplin) with a maximum path width of ¾ mile. Loss of life is currently estimated at 155 individuals. The U.S. Army Corps of Engineers (USACE) had estimated that the tornado damaged or destroyed 4,000-8,000 structures and created about 3 million cubic yards of debris, enough to fill a football field extending 470 yards high. The damage area covered about 30 percent of the city. The Joplin tornado affected a whole range of buildings, including reinforced concrete, engineered structures, as well as non-engineered structures. Critical, institutional, commercial, residential and lifeline facilities were damaged and destroyed, which makes this tornado different from the one that on April 27 struck Tuscaloosa, Alabama, where mostly residential and wood frame structures were affected.

While all seven of the steel frame and reinforced concrete buildings that make up the St. John's Regional Medical Center in Joplin were spared structural damage, the high winds caused the building envelops to fail, allowing the complex to become heavily contaminated with medical biohazard waste and rendering the repairs and clean-up that would be needed to meet EPA decontamination guidelines cost prohibitive. The owner of the medical center has therefore decided is to demolish the entire complex, since it is less expensive to rebuild completely. Although the building structures performed well, the failure of the façades points to an inconsistent design requirement for maintaining the functionality of this critical medical infrastructure, and is something that the structural engineering community should look into. Like the St. John's Medical Center, several buildings in Joplin, including schools, churches, and commercial properties, survived the tornado with no structural damage, yet also lost function due to façade damage.

The Joplin tornado also exposed a weakness with precast "tilt-up" construction, which is vulnerable to tornadic uplift. The roofing system in tilt-up construction is critical to holding the walls in place, and damage to it from tornadic uplift can leave the walls unsupported and subject to failure. A Home Depot

store and the auditorium of the Joplin East Middle School failed in such a manner. Essentially, the buildings lost their roofing systems and lacked structural redundancies to hold up their walls.

Context for Preliminary Findings from Joplin

- Current national codes, standards, and practices seek to achieve life safety but do not require buildings and other structures to withstand tornadoes
- Current national model codes require critical and high-occupancy buildings to resist greater wind loads than other buildings
- During the model building codes and standards development process and during adoption and enforcement at the state or local level, trade-offs between risks and costs are made

Note: The current national standards, codes and practices really do not require building to withstand tornadoes. Designs are for a straight windspeed of 90mph usually related to hurricane-type wind. Withstanding loads from 90 mph tornadic winds, which produce natural uplift and also debris fields different than straight winds, is not specified as a design requirement.

Note: Current model codes require critical or essential facilities and high occupancy buildings to resist wind load greater than those that are less critical. A hospital is an example of a critical facility. A school with more than 250 students or any place or store that at any one time has more than 250 people congregating would be deemed a critical facility.

Preliminary Findings from Joplin

- Tornado Hazard
    - Tornado rating procedure (i.e., Enhanced Fujita intensity scale) lacks adequate indicators for distinguishing intense tornadoes (observations used in the determination not included as indicators in EF scale)
- Pattern, Location, and Cause of Fatalities & Injuries (Preliminary findings pending receipt of additional information requested)
- Tornado Warning Systems, Evacuation, Emergency Response, and Occupant Behavior
    - More warning time for this event compared with NWS national average (almost doubled)
    - The Joplin siren-based warning system was intended to alert people outdoors; it was not intended to alert people located indoors
    - In the City of Joplin, there were no designated public safe rooms or tornado shelters
    - In the City of Joplin, most buildings did not have basements; general NOAA Weather Radio guidance is to "…move to an interior room on the lowest floor of a sturdy building, avoid windows..."
- Response of Buildings, Tornado Shelters, and Designated Safe Areas
    - The City of Joplin has adopted a model building code over the past five decades with modifications
    - A large number of residential and non-residential buildings in Joplin sustained complete loss of function and require either major repair or replacement
    - The high level of fatalities in the Joplin tornado indicate that life safety was not achieved; there is no such expectation in current model codes or standards
    - The critical and high-occupancy buildings in Joplin did not perform better than buildings of similar construction type in lower-risk categories with regard to loss of function or damage
    - Reinforced concrete frame and steel frame buildings that were surveyed also suffered total loss of function and major damage to the envelope and the interior, but the structural frame remained largely intact

    - Most other buildings, including pre-cast concrete wall construction, metal buildings, concrete and brick masonry, and wood-frame construction, suffered partial or complete collapse
- Lifelines and Fires
    - Utility-related fires did not appear to play a prominent role in fatalities, injuries, or property damage

A PDF version of Phan's PowerPoint presentation is available on the SDR Members Only website: http://www.sdr.gov/formembers.html (username SDR.member; password SDR#2003. including the period at the end).

VI. Adjournment

The meeting adjourned at 12:18 p.m.

VII. Future Meetings

In 2011, the SDR will meet from 10:00 a.m. to 12:00 p.m. on the first Thursday of each month in the Lincoln Room of the White House Conference Center. The meeting dates are:

*~~Thursday, August 4, 2011~~	Thursday, October 6, 2011	Thursday, December 1, 2011
Thursday, September 1, 2011	Thursday, November 3, 2011	

*Canceled

VIII. Agenda Items and Other Communications with the Subcommittee

Please send proposed agenda items and any other items intended for distribution to the full Subcommittee to Ross Faith (ross.faith@mantech.com).

IX. Contact Information

SDR Leadership

David Applegate	Co-Chair	703-648-6714	applegate@usgs.gov
Margaret Davidson	Co-Chair	843-740-1220	margaret.davidson@noaa.gov
Dennis Wenger	Co-Chair	703-292-8606	dwenger@nsf.gov
Tamara Dickinson	NSTC Liaison	202-456-6105	tdickinson@ostp.eop.gov

Secretariat

Ross Faith	703-388-0308	Ross.Faith@ManTech.com
Barbara Haines-Parmele	703-388-0309	Barbara.Haines-Parmele@ManTech.com

X. Summary of July Actions

Action	Lead	By When
Contact Roy Wright (Roy.Wright@fema.gov) if you are interested in participating in the PPD-8 mitigation working group workshop in Crystal City, Arlington, on Monday, July 18.	SDR Members and Federal colleagues	ASAP
Let the Secretariat (ross.faith@mantech.com) know if you or someone from your agency's international office is interested in participating in the SDR's discussion with InterAction's DRR Working Group, to be held July 14 in Washington, DC.	SDR Members and Federal colleagues	July 13, 2011

Action	Lead	By When
Send comments on the Department of Homeland Security/University of South Carolina geospatial information survey to the Secretariat (ross.faith@mantech.com).	SDR Members and Federal colleagues	July 14, 2011
Let Tammy Dickinson (tdickinson@ostp.eop.gov) know if it would be helpful for OSTP to issue a letter to your Department requesting new (or re-affirmed) designation of representatives. Ideas for other entities that should be represented on the SDR are also welcome.	SDR Members	ASAP
Contact Dennis Wenger (dwenger@nsf.gov) if your agency is able to provide funding support to the University of Colorado-Boulder's Natural Hazards Center.	SDR Members and Federal colleagues	ASAP
Contact the Secretariat (ross.faith@mantech.com) if you are interested in participating in a working group that will be drafting a lessons learned report covering the earthquakes and tsunami in Japan, New Zealand, Chile, and Haiti.	SDR Members and Federal colleagues	ASAP
Contact Dave (applegate@usgs.gov) or Ross (ross.faith@mantech.com) for information on how to tie into the National Level Exercise 2011 calendar of events.	SDR Members and Federal colleagues	ASAP
Let the Secretariat (ross.faith@mantech.com) know if you are interested in participating in an ad hoc SDR International Working Group.	SDR Members and Federal colleagues	Standing
Send Sezin Tokar (stokar@usaid.gov) your ".gov" e-mail address to receive USG-only updates from USAID on global disaster response activities.	SDR Members and Federal colleagues	Standing
Contact Ross (ross.faith@mantech.com) to receive copies of the Grand Challenges for Disaster Reduction Implementation Plan packets or CD.	SDR Members	Standing
Let Dave (applegate@usgs.gov) or Ross (ross.faith@mantech.com) know how you use the implementation plans, including when you link to the plans from your agency websites. Send Ross or Dave additional distribution suggestions, including relevant contact information.	SDR Members	Standing