

Meeting Minutes of the Subcommittee on Disaster Reduction

4 March 2010, 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.

Officers

David Applegate (USGS), Chair
Margaret Davidson (NOAA), Vice-Chair (T)
Dennis Wenger (NSF), Vice-Chair

NSTC Liaison

TBD

Designated Representatives

BLM *Edwin Roberson*

Daniel Lechefsky

CDC *Mark Keim*

DHS *Bruce Davis*

DHS/FEMA *Deborah Ingram*

DHS/USCG *Steven Cohen*

DOD *Al Johnson*

DOE *Patricia Hoffman*

DOT *Kelly Leone*

Sheila Duwadi

Tim Schmidt

EOP/OSTP TBD

EDA *Audrey Clarke*

EPA *Peter Jutro*

Stephen Clark

FERC *Howard Wheeler*

HUD *David Engel*

NASA *Andrea Donnellan*

NGA *Stephen Homeyer*

Whitney Nelson

NGB *Daniel Bochicchio*

NIH *Allen Dearry*

NIST *William Grosshandler*

Jack Hayes

NOAA *John Gaynor*

NSF *Dennis Wenger*

OPHS *Sven Rodenbeck (T)*

State *Cari Enav*

Fernando Echavarria

USACE *Barbara J. Sotirin*

Dimitra Syriopoulou

USAID *Sezin Tokar*

USDA TBD

USFS *Carlos Rodriguez-*

Franco

USGS *David Applegate*

Paula Gori

Other Attendees

BLM *Nora Devoe*

DOE *Patrick Willging*

DOT *Phillip Yen*

FEMA *Alaina Deans*

EPA *Marcy Rockman*

NASA *Michael Goodman*

NGA *James Jordan*

NOAA

Nell Codner

Lewis Kozlosky

Jenifer Rhoades

NSF *Gregory Anderson*

John Daniels

Jacqueline Meszaros

Joy Pauschke

OSTP *Sarah Johnson*

USAID *Wayne Pennington*

USFS *Mike Hilbruner*

USGS *Walter Mooney*

Secretariat *Kate Cantrell (T)*

Ross Faith

Michelle Yang

Agenda

10:00 Welcome and Introductions

10:05 Approval of February Meeting Minutes

10:10 Report from the Chair

10:30 Report from the Vice-Chairs

10:45 Report on Chilean Offshore Earthquake and
Pacific Ocean Tsunami

10:55 Presentation: USGS-EERI Haiti Field Team

11:55 Close and Next Actions

Handouts

- Agenda
- February Meeting Minutes
- USGS Earthquake Hazard and Safety Statement for Haiti
- Agency S&T Responses to Haiti Earthquake
- Executive Summary of Sea Level Rise and Inundation Community Workshop

I. Call to Order and Introductions

Subcommittee on Disaster Reduction (SDR) Chair David Applegate (USGS) called the meeting to order at 10:02 a.m. and the participants introduced themselves.

II. Approval of February Meeting Minutes

The February Meeting Minutes were approved with one alternation. Dennis Wegner (NSF) indicated that the last paragraph of the section describing the National Science Foundation's response to the earthquake in Haiti should be removed. The minutes have been changed accordingly.

III. Report from the Chair

Applegate kicked off the Report from the Chair by noting that Deb Ingram (FEMA) had been keeping the SDR abreast of the evolving Long Term Disaster Recovery Working Group's report. The draft report is currently undergoing a public comment period. It includes several specific charges to the SDR and also cites one of the Grand Challenges for Disaster Reduction.

Applegate reported that the SDR was moving forward with plans to convene a workshop for developing priority science and engineering recommendations for rebuilding Haiti's infrastructure and communities in ways that reduce the risk of future disasters. The "Rebuilding for Resilience" workshop is scheduled for March 22-23 at the University of Miami's Coral Gables campus. Financial support had been offered by the NSF, U.S. Geological Survey, and NASA. The Department of State, U.S. Agency for International Development and UN International Strategy for Disaster Reduction (UNISDR) are co-sponsoring the event. Applegate invited SDR Members to stay after the meeting for a discussion on the workshop.

At the March 2nd meeting of the U.S. Group on Earth Observations (USGEO), Applegate delivered a presentation which included background information on the SDR and a summary of the science and technology aspects of agencies' responses to the earthquake in Haiti. The presentation is available on the SDR Members Only website at <http://www.sdr.gov/formembers.html> (username SDR.member; password SDR#2003. including the period at the end).

The SDR is seeking volunteers to participate in an ad hoc working group to explore and eventually draft a report identifying lessons learned from the Haiti Earthquake as they relate to science and technology. Following the Indian Ocean tsunami and resulting disaster of December, 2004, the SDR spearheaded an analogous effort to draft a lessons learned document, which is available on the SDR website at: <http://www.sdr.gov/Tsunami%20Science%20and%20Technology%20Lessons%20Learned%202005-1130%20FINAL.pdf>.

USGEO and the National Earthquake Hazard Reduction Program (NEHRP) have expressed interest in pooling resources to mine the lessons from Haiti's unfortunate disaster. It also seems natural that lessons from the Chile earthquake could be rolled into this effort. Those keen to participate in the working group should email the Secretariat (Ross.Faith@ManTech.com) with an expression of interest.

Also, with the tandem disasters in Haiti and Chile and the germane nature of disaster risk reduction to the growing global discussion on climate change adaptation, the SDR will be standing up an ad hoc International Working Group (IWG) to help keep the subcommittee abreast and tied into developments farther afield. If you are interested in joining this group to

help organize SDR efforts in the international arena, let the Secretariat (Ross.Faith@Mantech.com) know.

Applegate reported that he had recently met with Margareta Wahlström (UNISDR), who reiterated the request for active U.S. engagement in ISDR, which she initially made at the SDR's March 31, 2009 meeting.

IV. Report from the Vice-Chairs

SDR Vice-Chair Margaret Davidson (NOAA) reported that in December she attended the Sea Level Rise and Inundation Community Workshop, held in Lansdowne, VA. The workshop was chaired by Dr. Jerry Schubel (Aquarium of the Pacific). The goal of the workshop was to develop a national framework, standards and protocols on how to approach coastal inundation and sea level rise mitigation to ensure interoperability among communities. Davidson (margaret.davidson@noaa.gov) invited feedback on the draft executive summary (included in Members' meeting folders) and welcomed engagement from those interested in working towards achieving interoperability, inter-compatibility, and scalability of models and initiatives focused on coastal inundation and sea level rise.

V. Presentation: USGS-EERI Haiti Field Team

Applegate introduced seismologist Walter Mooney (USGS), who participated in the five-member USGS- Earthquake Engineering Research Institute advance reconnaissance team that conducted post-earthquake field work in Haiti from January 26th to February 3rd. In addition to Mooney, the team included concrete expert Marc Eberhard (University of Washington), structural design engineer Steve Baldrige, metals/steels expert Justin Marshall of Auburn University, and Glenn Rix of Georgia Tech to assess geo-technical issues related to Port-au-Prince's harbor facilities. The field team's report is available at: <http://pubs.usgs.gov/of/2010/1048/>.

Mooney reported that U.S. Southern Command had provided significant logistical support for inserting the team into Haiti as well as LIDAR coverage. The team also received support from NSF. The purpose of the trip was to assess building damage and provide technical advice. The team stayed on the grounds of the U.S. Embassy, where the buildings were undamaged.

In the field Mooney set up instruments to record aftershocks of the January 12th quake. (There were no seismographs in the country at the time of the event.) Mooney stated that the most recent significant earthquake occurred in 1960, but the January 12th earthquake's "twin brother" – of comparable size – occurred in 1770. Due to the long interlude between these large quakes, awareness of the hazard in Haiti was relaxed and communities were ill-prepared.

The January 12th earthquake was shallow and released waves of energy which hit Port-au-Prince suddenly, leaving almost no time for Haitians to evacuate their homes and other buildings. The earthquake was also followed by several aftershocks, which have deterred Haitians from reoccupying still standing but vulnerable buildings.

The team found that structural damage varied widely throughout the city. Localized topography and soil compositions as well as the materials used in building construction all factored into the collapse or survival of buildings in a given area. Buildings that failed were often constructed with hurricane-resistant but heavy roofs, high amounts of aggregate and sand, and very little actual concrete. Wood-framed buildings are rare in Haiti, which is largely deforested. Well-engineered and -constructed buildings had largely survived the quake.

Mooney reported that food and water were limited and distribution of supplies had proved difficult for those trying to coordinate relief efforts. Power was limited, as was communications. Contrary to media reports, Mooney noted that security was not an issue. The Canadian military had done a good job of clearing roads.

SDR Vice-Chair Dennis Wenger noted that some Haitians had been rescued from collapsed structures 10, 11 and 12 days after the earthquake, which was quite amazing. He was aware of successful post-earthquake rescues under similar circumstance having occurred up to five days afterwards, but nothing approaching these long-term survival rates and asked if any explanations had been uncovered. He noted that trapped earthquake victims often die from suffocation and questioned whether the poor quality but more porous concrete used to construct the buildings had possibly allowed air and oxygen to reach those trapped in the rubble?

Mooney responded anecdotally that the head of Fairfax County Search and Rescue had stated that the Haitians were tougher than any people they had ever encountered. They were not able to provide a definitive reason for the higher survival rates.

VI. Presentation: Chilean Offshore Earthquake & Pacific Ocean Tsunami

Applegate compared and contrasted Haiti's January 12th earthquake with the more recent 8.8 magnitude quake off Chile's coast. The earthquake in Haiti was the 4th deadliest on record. Chile's earthquake of February 27th was the 5th largest recorded with modern equipment. The fact that Chileans were four times less likely to die when compared to the Haitian experience testifies to the great importance of enforced building codes in the former, and the need for properly engineered buildings and reduced vulnerability in the later.

Applegate introduced Jen Rhoades, NOAA Tsunami Program Coordinator and National Tsunami Hazards Mitigation Program (NTHMP) Administrator. Rhoades recapped the Pacific Ocean tsunami event and gave a performance assessment of the national tsunami warning system, for which the SDR advocated in 2005. She noted that while tsunami science is still in its relative infancy and imperfect, five years of research and development under the NTHMP had resulted in great strides in terms of tsunami detection and warning capability.

Rhoades reported that the Pacific Tsunami Warning Center (PTWC) issued a limited area warning 12 minutes after detection of the earthquake. The center expanded the warning to majority of the Pacific Basin approximately four hours later. The first waves arrived in Hawaii 15 hours after earthquake and in Japan 22 hours after the event. Hawaiian residents and visitors headed to higher ground in response to the warning. The Hawaiian Islands experienced a tsunami within approximately ten minutes of the forecasted time.

The PTWC also issued a tsunami advisory for California 4 hrs 21mins after earthquake and expanded the advisory to the rest of the U.S. West Coast, British Columbia, and Alaska 7.5 hours after earthquake. (Tsunami advisories indicate a lower level of threat than a warning). Strong currents and minor damage were observed along the U.S. and Canadian West Coasts as well as in Hawaii and Alaska. Along the California coast, navigational buoys and boats were damaged in Ventura Harbor; unmoored boats were damaged near Santa Cruz; and docks were damaged in San Diego. Additional reports were still coming in. NOAA sea-level stations provided critical data that refined the accuracy and resolution of NOAA tsunami forecast models. The combination of data and forecasts eliminated unnecessary evacuations along the U.S. West Coast.

Sample of Forecasted and Recorded Tsunamis around the Pacific Basin

Location	Forecasted Wave Height (ft)	Highest Measured Wave Height (ft.)
Talcahuano, Chile	N/A	7.7
Acapulco, Mexico	N/A	2.0
Hanasaki, Hakkaido	N/A	2.7
Pago Pago, American Samoa	N/A	2.3
Kahalui, HI	3.0	3.2
Santa Barbara, CA	2.5	3.0
Santa Monica, CA	3.9	2.1

Timely seismic data from USGS, the Incorporated Research Institutions for Seismology (IRIS), and other organizations enabled Tsunami Warning Centers to analyze and assess earthquake magnitude and location for initial warning. NOAA's education and outreach with local emergency managers, state and local governments, and the media minimized the potential for loss of life and economic impact.

VII. Adjournment

The meeting adjourned at 12:03 p.m.

VIII. Future Meetings

The SDR meets on the first Thursday of every month from 10 a.m. to 12 p.m. unless otherwise noted.

*Note: The SDR's 2010 meetings are scheduled to be held at the White House Conference Center.

April 1, 2010

July 1, 2010

October 7, 2010

May 6, 2010

August 5, 2010

November 4, 2010

June 3, 2010

September 2, 2010

December 2, 2010

IX. 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.fait@mantech.com).

X. Contact Information

SDR Leadership

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Chair

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XI. Summary of March Actions

Action	Lead	By When
Let Ross know if you are interested in participating in an ad hoc Haiti-Chile Lessons Learned Working Group. (<i>ross.faith@mantech.com</i>)	SDR Members	Friday, March 19
Let Ross know if you are interested in participating in an ad SDR International Working Group. (<i>ross.faith@mantech.com</i>)	SDR Members	Friday, March 19
Let Margaret Davidson know if you have feedback on the draft sea-level rise executive summary or would like to engage with the corresponding community of practice. (<i>margaret.davidson@noaa.gov</i>)	SDR Members	ASAP
Send Sezin Tokar your ".gov" e-mail address to receive USG-only updates from USAID on global disaster response activities. (<i>stokar@usaid.gov</i>)	SDR Members	Standing
Contact Ross to receive copies of the Grand Challenges for Disaster Reduction Implementation Plan packets or CD. (<i>ross.faith@mantech.com</i>)	SDR Members	Standing
Let Dave or Ross 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. (<i>ross.faith@mantech.com</i>)	SDR Members	Standing