Meeting Minutes of the Subcommittee on Disaster Reduction

1 October 2015, 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)
Tamara Dickinson (OSTP)
Dennis Wenger (NSF)

Designated Representatives

BLM *Edwin Roberson*
CDC *Mollie Mahany*
DHS Mary Ellen Hynes (T)
DHS/FEMA *Roy Wright*
DHS/USCG *Robert Thomas*
DOD *Al Johnson*
DOE *Patricia Hoffman*
DOT Sheila Duwadi
EOP/OMB *Michael Clark*
EOP/OSTP Jack Meszaros
EPA *Greg Sayles*
FERC *Marsha Palazzi*
HUD *Dana Bres*
NASA *Craig Dobson*
NGA *Patricia Allen Aquinas*
NGB *TBD*
NIH *Aubrey Miller*
NIST Steve Cauffman (T)
NOAA Margaret Davidson (T)
Laura Furgione
NPS Marcy Rockman
NSF Dennis Wenger
OPHS Estella Jones (T)
State *Fernando Echavarria*
USACE *Steven Cary*
Dimitra Syriopoulou
USAID *Sezin Tokar*
USDA *TBD*
USFS *Elizabeth Reinhardt*
Carlos Rodriguez-Franco
Matt Rollins
USGS David Applegate
USNRC *Steven West*

Other Attendees

DHS Mitch Erickson (T)
Mila Kennett
Dan Marasco
Erin Walsh
DHS/FEMA Doug Ham
Benigno Ruiz (T)
DOT Phil Yen
EOP/NSC Dave Adams
Stephanie Morrison
EPA Stephen Clark
Keely Maxwell
NASA Gerald Bawden
NIST Jack Haynes (T)
NIH April Bennett (T)
NOAA Mike Halpert
Lindsey Kraatz
Rocky Lopes
Chip McCreery (T)
John Murphy
Paul Schlatter
NGA Bob Kluba (T)
NPS Ann Hitchcock
USACE Mary Cialone
Tony Niles
USGCRP
Amanda McQueen (T)
USGS Mike Blanpied (T)
Jonathan Godt (T)
Bill Leith
Kris Ludwig (T)
Teresa Stoepler
USNRC John Nakoski (T)
STPI Chris Clavin (T)
Zoe Petropoulos
SDR Secretariat
Bret Schothorst
Barbara Haines-Parmele

Agenda

10:00 Welcome, Introductions, and Approval of Minutes
10:05 Report from the Co-chairs
10:15 Briefing: Potential U.S. and Global Impacts of the El Niño
10:45 Roundtable: Agency S&T Responses to Chile Earthquake
11:55 Close and Next Actions

Handouts

- October Meeting Agenda
- Draft September Meeting Minutes

I. Welcome and Introductions

National Science and Technology Council (NSTC) Subcommittee on Disaster Reduction (SDR) Co-chair David Applegate (USGS) called the October meeting to order at 10:02 a.m. in the Lincoln Room of the White House Conference Center, and participants introduced themselves.

II. Report from the Co-chairs and Approval of Minutes

The September monthly meeting minutes draft was approved with no changes.

Applegate began the meeting by thanking Josh Barnes from the National Security Council (NSC) for passing along several links to blog posts and video messages associated with the September 30 *PrepareAthon!* National Day of Action in conjunction with National Preparedness Month: 1) Lisa Monaco blog post for National Preparedness Month: https://www.whitehouse.gov/blog/2015/09/30/10-things-do-national-preparedness-month; 2) OSTP blog post on citizen science and preparedness: https://www.whitehouse.gov/blog/2015/09/28/calling-citizen-scientists-you-can-help-when-disasters-strike; 3) Alice Hill of the NSC video on climate change and preparedness: https://youtu.be/8b81WOmp8yE; and 4) Sunny and Bo pet preparedness video: https://www.facebook.com/63811549237_10153810946089238.

Applegate also reminded SDR members that the 2015 Great ShakeOut nationwide earthquake drill will be held on October 15 at 10:15 a.m. The ShakeOut drill is an opportunity for individuals to practice how to protect themselves during earthquakes -- "Drop, Cover, and Hold On" -- as well as create a dialogue around other actions that can be taken to reduce vulnerability and build resilience. Over 24 million people are signed up to take part in this year's drills. More information on the drill can be found at: http://www.shakeout.org/home.html.

With regards to updates from SDR working groups and task forces, SDR Co-chair Dennis Wenger (NSF) noted that SDR's International Disaster Risk Reduction (IDRR) Working Group meeting agenda for Thursday afternoon included: 1) a readout on the Sendai Framework "Open-ended Intergovernmental Expert Working Group on Indicators and Terminology"; 2) an update on the Economic and Social Commission for Asia and the Pacific (ESCAP) survey on disaster-related statistics; 3) an update on U.S. participation in the InterAction International Disaster Risk Reduction Day panel event on Monday, October 19 as well as engagement in the topic-specific working groups to develop practical "Words into Action" implementation guides for the Sendai Framework for Disaster Risk Reduction; 4) a discussion of the updated white paper on reshaping the U.S. National Platform; and 5) an update on the latest UN International Strategy for Disaster Reduction (UNISDR) Science and Technical Advisory Group activities, for which Wenger serves as Chair.

As a side note from NSF, the agency has teamed with The Weather Channel and NBC Learn to produce an original video series that explores the science of natural disasters to avert their human and economic toll. The 10-part series, titled "When Nature Strikes: Science of Natural Hazards," was released on Sep. 29 and spotlights fundamental scientific research that NSF funds to improve predictability and risk assessment that will reduce impacts from catastrophic events. More information on the video series is posted online at: http://www.nsf.gov/news/special_reports/naturestrikes/overview.jsp.

SDR Co-chair Jack Meszaros (OSTP) provided an update on two SDR-developed reports currently being cleared by the parent body to SDR, the NSTC Committee on Environment, Natural Resources, and Sustainability (CENRS): 1) the SDR Space Weather Operations, Research, and Mitigation (SWORM) Task Force's National Space Weather Strategy and Action Plan; and 2) the Final Report of the SDR Wildland Fire Science and Technology Task Force. Meszaros offered to provide a list of the agency principals to CENRS who have received those documents for review and comment in order to better coordinate feedback. If you have any questions with regards to connecting with your agency's CENRS

representative for the report clearance process, please reach out to Meszaros (Jacqueline_R_Meszaros@ostp.eop.gov).

Meszaros also reported that the work of the Hazard Review Teams within the SDR National Preparedness S&T (NPST) Task Force is well underway with regards to completing their rosters and beginning to assemble the S&T program crosswalk within PPD-8 mission areas. The teams will also undertake the task of developing recommendations on a formal protocol to conduct joint, interagency post-event S&T evaluation and assessment. The protocol will leverage recent event experiences and lessons learned to identify critical science needs and inform the prioritization of future national preparedness S&T investments. Please reach out to Chris Clavin (cclavin@ida.org) of the Science and Technology Policy Institute (STPI) for more information on the NPST.

Meredith Lee (DHS S&T) reported that she continues to coordinate weekly calls for the SDR Technology and Innovation for Disaster Preparedness (TIDP) Working Group and is excited to firm up the group's final roster as they proceed with plans for a Safety DataPalooza event at the U.S. Trademark and Patent Office in Alexandria, VA, on Friday, October 30 and activities to celebrate the one-year anniversary of the Disasters.Data.gov launch this December. For more information on the activities of the TIDP, please email Lee (meredith.lee@associates.hq.dhs.gov). The TIDP will provide a more in-depth update on its latest activities at the SDR November meeting.

Lee also reported on the September 30 White House Citizen Science Forum "Open Science and Innovation: Of the People, By the People, For the People." The forum brought together citizen-science professionals, researchers, and stakeholders from local, state, Federal, and tribal governments, as well as academia, non-profits, and the private sector to celebrate the contributions of crowdsourcing and citizen science to enhancing agencies' missions, and scientific and societal outcomes. More information on the event is located at: https://www.whitehouse.gov/blog/2015/09/09/open-science-and-innovation-people-people-people. A memo and blog post from OSTP on crowdsourcing and citizen science can be viewed at: https://www.whitehouse.gov/sites/default/files/microsites/ostp/holdren_citizen_science_memo_092915.pdf and https://www.whitehouse.gov/blog/2015/09/30/accelerating-use-citizen-science-and-crowdsourcing-address-societal-and-scientific.

III. Briefing: Potential U.S. and Global Impacts of the El Niño

Applegate introduced Mike Halpert of the NOAA Climate Prediction Center and Jonathan Godt with the USGS Landslide Hazards Program, who provided a briefing to the SDR on the potential U.S. and global impacts of the current strong El Niño event.

According to Halpert, El Niño is a large-scale climate phenomenon that is defined by changes in rainfall, pressure, and winds across the tropical Pacific Ocean. El Niño characteristics can be seen in measurements of the sea surface temperature of the tropical central and eastern Pacific Ocean. Halpert noted that a strong El Niño event is in place now, which currently ranks within the top five percent by a measure of the east-central Pacific Ocean sea surface temperature anomalies.

Halpert stated that there is a greater than 95 percent chance that the El Niño event will continue through the Northern Hemisphere's winter in 2015-16, gradually weakening during the spring months. It is expected to remain strong during the upcoming winter and will generally make impacts more likely (but still never guaranteed), such as: 1) an above average chance for increased levels of precipitation for certain regions like the mid-Atlantic states and the southern half of the country (including Southern California); and 2) likely increased temperature outlooks for the western and northern U.S. states.

With regards to the increased risks of flooding, debris flow, and landslides during a strong El Niño event, Halpert noted that forecasts of these hazards months in advance are beyond the state of science as these

will result from high-impact, currently unforeseen weather events. Godt added, however, that typical strong El Niño conditions elevate the risk for these types of extreme events (i.e., similar El Niño events in 1982-83 and 1997-98 both featured numerous occurrences), along with dry precursor conditions (drought) and an above average wildfire season.

After detailing historic examples of landslide impacts that occurred in the western U.S. in El Niño years 1982-83 and 1997-98, Godt turned his attention to wildfires and mentioned that the USGS produces a debris flow hazard assessment in conjunction with major wildfires that occur in the western U.S. A few days after the fire is out and burn severity data is made available, Godt stated that the USGS will produce a debris flow hazard assessment that consists of a basin-by-basin characterization of the likelihood of debris flow potential and an estimate of debris flow volume. The USGS and the National Weather Service also jointly operate an early warning system for debris flow in areas burned by wildfires, primarily for the urban areas in Southern California.

In response to a question from Meszaros regarding what measures citizens can take after they've received a debris flow warning, Godt outlined that emergency management officials in areas where debris flow warnings are frequently issued typically develop a debris flow response strategy in advance of an event that outlines safety precautions for the surrounding community. Applegate added that Federal agencies such as USGS and NOAA will often times work collaboratively with state and local entities to provide debris flow and flooding prediction and assessment services to vulnerable areas.

Dave Adams of the National Security Council closed the discussion by suggesting that the response communities involved with strong El Niño impacts in past years might be able to provide guidance for future El Niño resilience and preparedness policies. Halpert offered that some parallels could be drawn to the state of California, which was well prepared for the El Niño events of 1997-98 and saved upwards of $1 billion through its preparedness efforts.

For more information on the potential impacts of this season's El Niño event, please contact Halpert (Mike.Halpert@noaa.gov) and, specific to debris flow and landslide issues, Godt (jgodt@usgs.gov).

IV. Roundtable: Agency S&T Responses to Chile Earthquake

Applegate introduced Bill Leith from the USGS, Chip McCreery from NOAA's Pacific Tsunami Warning Center (PTWC), and Gerald Bawden with NASA, who briefed the SDR on the recent Sep. 16 magnitude-8.3 Chilean earthquake.

Leith began the discussion by stating that the quake occurred on a shallow-angle thrust fault within the subduction zone plate boundary between the Nazca and South America plates in Central Chile, with the rupture initiated at a depth of about 26 km. The latest loss estimates from USGS indicate at least 15 people were killed, 34 were injured, 4 went missing, more than 16,646 were displaced, 1,069 houses were destroyed, and 1,791 were damaged from the earthquake and tsunami combined.

Leith noted that overall, the population in this region resides in structures that are resistant to earthquake shaking and have significant experience with prior events, which kept the damage figures quite low. Leith highlighted several USGS situational awareness tools that were used in the immediate aftermath of the earthquake, including Did You Feel It?, Prompt Assessment of Global Earthquakes for Response (PAGER), ShakeMap, and Twitter Earthquake Dispatch (TED), which collected 85,000 geo-tagged earthquake tweets ("terremoto" or "temblor") within in the first hour.

McCreery provided addition details with respect to the tsunami that followed the earthquake. Within six minutes after the earthquake, initial advisories were issued from the PTWC for several nations in the immediate vicinity of the event, including Chile, Ecuador, and Peru, as well as for western coastal U.S.

states and other potentially affected Pacific Ocean countries. McCreery stated that the initial judgment of the potential tsunami threat from PTWC was on target, and the three tsunami forecast models used for seismic and sea level model constraints were sufficient.

According to McCreery, all models gave consistent and accurate forecasts as the event unfolded and appropriate alert and threat levels were issued for the expected coastal impacts. McCreery noted that the greatest sea-level rise from the tsunami occurred in Coquimbo, Chile, which registered waves of 4.72 m (over 15 feet). It appears that coastal evacuations in Chile of as many as a million people were successful in avoiding loss of life from the tsunami.

To close the discussion, Bawden added that NASA used experimental geospatial and remote sensing research techniques to measure the displacement of GPS signals in the ionosphere from the pressure waves emitted by the earthquake and tsunami as a means to detect its severity. Bawden asked SDR members not to share the research findings widely at this time as the data results of the experiments are novel and still undergoing further evaluation.

V. Adjournment

Applegate adjourned the SDR October meeting at 12:01 p.m. and noted that the group's next meeting will be held on Thursday, November 5 in the White House Conference Center Lincoln Room.

VI. SDR 2015 Meeting Calendar

SDR meetings in 2015 will be held from 10:00 a.m. to 12:00 p.m. on the dates listed below in the Lincoln Room of the White House Conference Center unless otherwise noted:

2015

- ✓ Thursday, January 8*
- ✓ Thursday, February 5
- ✓ Thursday, March 5
- ✓ Thursday, April 2
- ✓ Thursday, May 7
- ✓ Thursday, June 4
- ✓ Thursday, July 9*
- ✓ Thursday, August 6**
- ✓ Thursday, September 10*
- ✓ Thursday, October 1
- ✓ Thursday, November 5
- ✓ Thursday, December 3

* January, July, and September meetings shifted to the second Thursday of the month to avoid proximity to holidays. The January and July meetings will be held in Room 430ABC of the White House Eisenhower Executive Office Building (EEOB).

** August meeting subject to cancellation.

VII. 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 the SDR Secretariat Bret Schothorst (bret.schothorst@mantech.com).

VIII. Contact Information

SDR Leadership

David Applegate	Co-chair	703-648-6600	applegate@usgs.gov
Margaret Davidson	Co-chair	843-740-1220	margaret.davidson@noaa.gov
Dennis Wenger	Co-chair	703-292-8606	dwenger@nsf.gov
Jack Meszaros	Co-chair	202-456-6020	Jacqueline_R_Meszaros@ostp.eop.gov

Executive Secretariat

Bret Schothorst	703-388-0312	bret.schothorst@mantech.com
Barbara Haines-Parmele	703-388-0309	barbara.haines-parmele@mantech.com

IX. Summary of October Actions

Action	Lead	By When
The next SDR meeting will be held on Thursday, November 5 in the White House Conference Center Lincoln Room.	SDR Members	For Information
Email Jack Meszaros (Jacqueline_R_Meszaros@ostp.eop.gov) to be connected with your agency's CENRS representative for coordination of the report clearance process for the Space Weather Operations, Research, and Mitigation Task Force's National Space Weather Strategy and Action Plan and the Final Report of the SDR Wildland Fire Science and Technology Task Force.	SDR Members	ASAP
Contact Mike Halpert (Mike.Halpert@noaa.gov) and Jonathan Godt (jgodt@usgs.gov) for more information on the potential impacts of this season's El Niño event.	SDR Members	Standing
Visit http://www.shakeout.org/home.html for more information on the 2015 Great ShakeOut nationwide earthquake drill that will be held on October 15, 2015 at 10:15 a.m.	SDR Members and Federal Colleagues	Standing
Visit http://www.nsf.gov/news/special_reports/naturestrikes/overview.jsp to view the 10-part video series from NSF, The Weather Channel, and NBC Learn that spotlights fundamental scientific research that NSF funds to improve predictability and risk assessment that will reduce impacts from catastrophic events.	SDR Members and Federal Colleagues	Standing