Meeting Minutes of the Subcommittee on Disaster Reduction

07 November 2013, 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)
Dennis Wenger (NSF)

OSTP Liaison

Tamara Dickinson (OSTP)

Designated Representatives

BLM *Edwin Roberson*
CDC Mark Keim (T)
DHS Mary Ellen Hynes
DHS/FEMA *Roy Wright*
DHS/USCG *Robert Thomas*
DOD *Al Johnson*
DOE *Patricia Hoffman*
DOT *Sheila Duwadi*
EOP/OMB *Grace Hu*
EOP/OSTP Tamara Dickinson
EPA *Peter Jutro*
Stephen Clark
FERC *Marsha Palazzi*
HUD *Dana Bres*
NASA Craig Dobson (T)
NGA *Paul Lewis*
NGB *TBD*
NIH Aubrey Miller (T)
NIST Marc Levitan (T)
NOAA *Margaret Davidson*
Christopher Strager
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
USGS David Applegate
USNRC Steven West

Other Attendees

BLM Nancy Dean (T)
DHS Mitch Erickson (T)
Meredith Lee
DHS/FEMA Tom Glen
David Miller
David Trissell
DOI Jenna Sloan
EOP/OSTP Katrina Laygo
EPA Paul Kudarauskas
NIST Steve Cauffman
Howard Harary
NOAA Nell Codner (T)
USDA Glenn Bethel (T)
USGS Kiza Gates
Lucy Jones (T)
Kris Ludwig
USNRC Joseph Kanney
UC Boulder Kathleen Tierney
STPI Chris Clavin
Ellory Matzner
Secretariat Bret Schothorst
Barbara Haines-Parmele

Agenda

10:00 Welcome and Introductions
10:05 Report from the Co-chairs and Approval of Minutes
10:10 Report from the OSTP Liaison
10:15 Briefings and Roundtable Discussion: Colorado Flooding
- Briefing: NOAA/National Weather Service
- Briefing: FEMA
- Briefing: UC Boulder Natural Hazards Center
- Roundtable Discussion: Agency S&T Activities

11:05 Presentation: USGS SAFRR Tsunami Scenario
11:30 Briefing: NIST Disaster Resilience Initiative
11:55 Close and Next Actions

Handouts

- November 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 November meeting to order at 10:00 a.m. in the Lincoln Room of the White House Conference Center (WHCC), and participants introduced themselves.

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

The September monthly meeting minutes were approved with no changes.

In the report from the Co-chairs, Applegate drew attention to a recently released report and upcoming workshop from the Commons Lab of the Woodrow Wilson International Center for Scholars. "Connecting Grassroots and Government for Disaster Management," a new report by Commons Lab Public Policy Scholar John Crowley, explores approaches to the questions that commonly emerge when building an interface between the grassroots and government agencies, with a particular focus on the accompanying legal, policy, and technology challenges. The report was released in October 2013 and can be found online at: http://www.scribd.com/doc/177818033/Connecting-Grassroots-Government-for-Disaster-Response. "Connecting Grassroots to Government for Disaster Management: Workshop Summary," a companion report by Ryan Burns and Lea Shanley of the Commons Lab, discusses the key findings, policy suggestions, and success stories that emerged during a workshop last year, which sought to prioritize academic and applied research opportunities and challenges. The report points to best practices, useful tools, and practical approaches for integrating crowdsourced data with more traditional data sources. Released in September 2013, the workshop summary can be viewed at: http://www.scribd.com/doc/165813847/Connecting-Grassroots-to-Government-for-Disaster-Management-Workshop-Summary.

Regarding an upcoming workshop at the Wilson Center, Applegate noted that the Commons Lab is seeking to help Federal agencies understand how open innovation and science can support community and agency goals. As part of their effort, they are hosting "New Visions for Citizen Science," the first in a series of roundtable discussions on open innovation and science, on Wednesday, November 20, 2013. This roundtable will connect Federal agencies hoping to initiate or expand open innovation projects with leaders from the field of citizen science, a well-established form of mass collaboration where volunteers contribute to scientific research. To RSVP for the workshop or view the live webcast, please visit: http://www.wilsoncenter.org/event/rescheduled-for-nov-20-new-visions-for-citizen-science.

Co-chair Dennis Wenger (NSF) reminded members that the SDR International Working Group (IWG) meets on the same day as the full Subcommittee from 1:00 p.m. to 2:30 p.m. in the WHCC Lincoln Room. At the working group's November meeting, the IWG will: 1) discuss agency perspectives on the United Nations (UN) International Strategy for Disaster Reduction (ISDR) second iteration of the Hyogo Framework for Action document, known as HFA2; and 2) brainstorm potential meeting topics and discussion items for upcoming SDR IWG meetings in 2014.

III. Report from the OSTP Liaison

In the monthly report from the SDR's Office of Science and Technology Policy (OSTP) Liaison, Tammy Dickinson (OSTP) briefly mentioned the recent release of a Presidential Executive Order focused on "Preparing the United States for the Impacts of Climate Change." The full text of the EO can be read online at: http://www.whitehouse.gov/the-press-office/2013/11/01/executive-order-preparing-united-states-impacts-climate-change.

Mary Ellen Hynes (DHS S&T) mentioned that the next NSTC Infrastructure Subcommittee meeting will take place on Tuesday, November 12, 2013, from 1:30 to 3:30 p.m. in the WHCC Lincoln Room. Brandon Wales, Director of the Homeland Infrastructure Threat and Risk Analysis Center at DHS, will

talk about the Report from the Cyber Dependent Infrastructure Identification Working Group, which identified critical infrastructure segments most at risk due to cyber security threats. Please reach out to the ISC Secretariat Denise Richards (denise.richards@associates.hq.dhs.gov) to RSVP to the meeting or learn more about the subject.

IV. Briefings and Roundtable Discussion: Colorado Flooding

To kick-off a series of briefings and a roundtable discussion on the recent flooding disaster in Colorado, Applegate introduced Chris Strager (NOAA/NWS), who is Acting Director of the National Weather Service Office of Climate, Water, and Weather Services. Strager briefed the SDR on the weather event that led to the disaster as well as some aspects of the NWS response.

To open his presentation, Strager provided meteorological background information on the week-long heavy rainfall that resulted in severe flash and river flooding in parts of Colorado, noting that 13-18 inches of precipitation fell in the hardest hit areas in and around Boulder County in the Colorado foothills on September 11-12, 2013. Strager outlined that prior conditions exacerbated the impacts associated with the rainfall, noting that: 1) burn scars from past wildfires created a surface conducive to runoff; 2) the atmosphere was abnormally wet with a plume of subtropical moisture flowing north through Colorado; and 3) low-level winds flowed upslope behind a cold front and also tapped moisture from the Gulf of Mexico, which converged on the Front Range.

According to Strager, several daily, monthly, and even annual rainfall records were set for Boulder during the event. He added that annual exceedance probabilities for the worst-case 7-day rainfall suggest this was a 1 in 1,000-year event for some locales:

- 24-Hour Daily Record: 9.08" (previous record: 4.80"on July 31, 1919)
- Monthly Record for September: 18.16" (previous record: 5.50" in September 1940)
- Monthly Record (any month): 18.16" (previous record: 9.60" in May 1995)
- Annual Record (through September 30): 31.12" (previous record: 29.47" in 1995)

Strager underlined that a service assessment team is looking at aspects of the performance of NWS decision support services in response to the disaster, specifically the usefulness, timeliness, and efficiency of its coordination with members of the Boulder County Emergency Operations Center and Office of Emergency Management, Larimer County emergency communications staff, and Fort Collins water quality officials. The report is due out in March 2014. Strager stated that NWS chartered its 9-member service assessment team on October 24, 2013 and that the team is currently in Colorado gathering information and conducting interviews on the ground. The team is co-led by the USGS Associate Director of the Colorado Water Science Center and the NWS Hydrologist in charge of the Northeast River Forecast Center. The team also includes membership and consultants from several fields of study, including hydrology, meteorology, social science, emergency management, hydrometeorological forecast modeling, program management, warning coordination, and scientific research.

David Miller (FEMA), Associate Administrator of the Federal Insurance and Mitigation Administration at FEMA, discussed his agency's role in response and recovery as the next speaker on the topic. According to FEMA statistics on the disaster, 18,097 people were evacuated during the event, and eight people lost their lives. The flooding impacted 1,533 square miles of land, destroying 1,882 homes and damaging 16,101 others. FEMA estimates that the total emergency operations costs to the state of Colorado sit at almost $19.5 million, with impacts to transportation – 200 miles of state highways and roads were damaged as well as 50 bridges – projected to be even greater at an estimated $475 million in repairs.

According to Miller, there were extensive discussions of flood insurance amongst Federal, state, and local officials who were on the ground in the aftermath of the event. Because coverage numbers in Colorado

are usually low, FEMA estimates that less than 5,000 National Flood Insurance Program (NFIP) policyholders were affected. Miller stated that one of the most important takeaways from his visit to Colorado after the disaster was that assessing the best available data of hydrologic changes that occurred as a result of the flooding will be critical for effective rebuilding and comprehensive decision-making to mitigate future losses. He also noted that dam performance and NFIP flood insurance dynamics will be reevaluated as a result of the devastating impacts to an area not normally prone to such extreme flooding. Miller underscored that a number of other issues will be scrutinized, including soil erosion control methods and the duplication of funding and benefits of Federal flood-related programs.

In response to a question from Kathleen Tierney (University of Colorado Boulder, Natural Hazards Center) wondering if the Federal government shutdown adversely affected FEMA's ability to respond to the event, Miller stated that while the full effects of the shutdown are still to be determined, environmental and historical preservation (EHP) reviews conducted on the front-end of FEMA-funded recovery projects were delayed because some employees from his agency could not be deployed to Colorado. Tierney also asked if FEMA is considering climate change into future mitigation planning activities, to which Miller responded that incorporating the effects of climate change into decision-making models will be critical to inform local planning in the future.

Tierney, who is Director of the Natural Hazards Center at the University of Colorado Boulder, provided the perspective of both a hazards researcher and disaster victim as the last speaker in the series of presentations. She began by describing what the Natural Hazards Center has been doing subsequent to the flood, highlighting that the Center activated its quick response research program and put out a call for proposals to the academic community, to which 17 were received and evaluated. According to Tierney, seven of the proposals were funded on a variety of topics, including ecological and natural research, household recovery, damage to oil and gas industry, and the impact of the flood to vulnerable populations (e.g., homeless and elderly people). Additionally, the Center is engaged with the work of a documentary filmmaker to produce a movie about the disaster and has internal projects ongoing related to assessing the emotional and mental health impacts of the flood in the Colorado communities of Boulder, Longmont, Lyons, and Estes Park.

Tierney then identified several important areas for research stemming from the event, including: 1) the potential to compare the socio-economic impacts of the flood across widely varying community types; 2) the role of prior disaster experiences on ensuing preparedness and response activities; and 3) the flood's effects on land use and property rights and how the legal, political, and ecological dynamics surrounding the issue may change. The recreation and tourism industries also were hit hard by the flood, and Tierney noted that several potential research topics could come from analyzing these business impacts to the local economies that were affected. Tierney added that many traditional social science research questions were raised as well after the disaster, including: how were warnings and emergency communications received; what was the effectiveness of pre-event mitigation measures; and will communities adopt novel approaches to recovery?

During the Q&A portion of the discussion following the briefings, Craig Dobson (NASA) inquired as to whether the shifting "riskscape" of disasters, namely the cascading impacts of landslides and enhanced debris flow in this case, impacts the risk-reassessment process of how these events are perceived and analyzed. Applegate noted that a joint effort at USGS and the National Park Service is underway to understand the complex dynamics of events of this unique scope and magnitude. Miller added that an emphasis on causal relationships and attributing specific impacts to their sources can help set priorities for recovery and understand the changing landscape. To close the discussion, Mark Keim (CDC) commented on the long-term health effects of people who have been displaced by floods. Keim stated that research shows that the worsening of preexisting conditions and the development of new chronic diseases occur at higher rates in flood-affected individuals, even after they've been placed back in their homes. This

stresses the importance of reducing overall risk exposure as the most effective way to decrease morbidity and mortality rates in these affected populations.

V. Presentation: USGS SAFRR Tsunami Scenario

Applegate introduced Lucy Jones (USGS), who is a seismologist with the U.S. Geological Survey and is the Senior Science Advisor for Risk Reduction in the USGS Natural Hazards Mission Area. Jones discussed the recent tsunami scenario developed by the USGS Science Application for Risk Reduction (SAFRR) project in partnership with NOAA, the State of California, and many others. The team comprised of Federal, state, and local emergency managers, business continuity planners, land-use planners, and elected officials modeled the impact of the tsunami on the California coast with an emphasis on ports and other coastal areas near Los Angeles, Long Beach, and Orange County.

Jones outlined that the source of the theoretical tsunami is a magnitude 9.1 earthquake occurring offshore of the Alaska Peninsula at 11:57 a.m. PDT on Thursday March 27, 2014, which is the 50th anniversary of the historic 1964 Alaska earthquake and tsunami. According to the SAFRR project's summary paper of the theoretical event, travel times to California from the occurrence of the earthquake to the arrival of the first tsunami waves range from four hours in Crescent City to almost six hours in San Diego. Tsunami warnings and wave arrivals would occur during a workday afternoon, impacting nearly a half million people in the scenario's inundation area in California at residences and businesses as well as public venues such as parks and beaches. Evacuation would likely be ordered for the State of California's previously designated maximum mapped tsunami inundation zone (based on a variety of possible tsunamis), evacuating an additional quarter million people from area residences and businesses. Some island and peninsula communities would face particular evacuation challenges because of limited egress options and short warning time. Evacuations also would be challenging for dependent-care populations, such as patients in hospitals and nursing homes and children in daycare facilities. Jones added that timing this scenario during the summer months when beach and coastal use is highest would have greatly increase the exposure of coastal populations, resulting in additional evacuation difficulties.

As part of the scenario, six modeling teams were created to develop models of the tsunami source and its wave-propagation field. According to the scenario summary article published by the team of experts, a rough model of wave heights was run for the entire Pacific basin, and higher resolution models were run for coastal areas primarily in California. Current-velocity models also were analyzed for selected ports and harbors. The peak tsunami heights would range from 5 to 10 feet near shore in southern California. In central California, from Lompoc through Marin County, they would range from 8 to 24 feet, and in northern California, the peak tsunami heights would range from 9 to 23 feet. Jones made a point to note that high tide could greatly increase these values – by about 3 feet or more above normal tide conditions.

Regarding the potential impacts of the tsunami, the scenario predicts several possibilities of devastating effects, including:

1) One third of the boats in California's coastal marinas could be damaged or sunk and over half of the docks could be damaged or destroyed;
2) Fires ignited by electrical problems would likely start at many sites where fuel and petrochemicals are stored in ports and marinas;
3) Potential sediment transport and environmental contamination would increase the recovery costs significantly;
4) Removal of debris and recovery of inundated and damaged areas would take days, months, or years depending on the severity of impacts and the available resources for recovery;
5) Some commercial fishing vessels may be directly damaged by the tsunami, while other boats would be unable to operate because of damage to harbors and fish-processing plants;
6) Other potential ecological damage includes erosion of beach sand and contamination of marshes, features that, if intact, help protect communities from the tsunami;

7) The Ports of Los Angeles and Long Beach would be shut down for a minimum of two days because of strong currents;
8) Inundation of dry land in the ports of Los Angeles and Long Beach could result in approximately $100 million in damages to cargo and additional downtime at some terminals;
9) Losses from the disruption of port trade could total more than $1.2 billion, whereas associated business-interruption losses in the California economy could be more than triple that value to nearly $6 billion; and
10) Other estimated costs include $2.6 billion in property damage, $700 million in marina and small craft damage, $85 million for highway and railroad repairs, and an estimated $3.4 billion in repairs and replacement costs for California marinas, coastal properties, and the Ports of Los Angeles and Long Beach.

In response to a question from Hynes on whether the project team included debris flow modeling and other cascading impacts of tsunamis such as fire outbreaks into the development of the scenario, Jones reported that one of the leading experts on fires after earthquakes worked on the project to address some of the peripheral risks associated with tsunami hazards. One specific area addressed in the scenario was to analyze potential environmental contamination risks from disruptions to the chemical shipping industry in and around California ports.

Additionally, Jones outlined that the SAFRR tsunami scenario focused on facilitating the following key functions:

- Spurring research related to Alaskan earthquake sources including studies of historic and prehistoric tsunamis in California;
- Developing advanced models of currents and inundation for the event;
- Evaluating the warnings and evacuations necessary to save lives with a special focus on vulnerable populations;
- Modeling tsunami damage to small craft and marinas;
- Estimating the physical damages, repair costs, and downtimes;
- Examining the economic impacts to the California economy with and without resilience strategies;
- Understanding the ecological, environmental, and societal impacts of coastal inundation;
- Engaging port, harbor, and U.S. Coast Guard decision makers;
- Creating enhanced communication products for education and decision-making tools for policymakers before, during, and after a tsunami event; and
- Evaluating the scenario development process.

Jones closed her presentation by noting that one of the primary goals of the hazard scenario is to serve as a critical planning resource to teach preparedness and inform those who are responsible for making mitigation decisions before a future tsunami and those who will need to make rapid decisions during such events. She highlighted that a public awareness campaign is underway to increase the visibility of the scenario through messaging and educational products and channels such as social media, mobile phone apps and games, paper brochures and other promotional products, and public events. Contact Jones (jones@usgs.gov) for more information and next steps on the USGS SAFRR tsunami scenario and how the SDR agencies can play a role in the initiative.

VI. Briefing: NIST Disaster Resilience Initiative

Applegate introduced Howard Harary and Steve Cauffman, who are Acting Director and Research Engineer, respectively, of the Engineering Laboratory at the National Institute of Standards and Technology (NIST). They presented NIST's new initiative on disaster resilience that the agency has initially funded with $2 million in the FY 2013 budget. Harary introduced the project, telling SDR

members that reaching out to a highly diverse all-hazards stakeholder group will be critical to its success. The initiative's main aim is to create a resilience-based approach to disaster risk reduction that will provide the framework and guidance needed to break the cycle of destruction and recovery, allowing communities to resist, respond to, and recover from hazard events more rapidly and at lower cost.

To implement the initiative, Cauffman outlined that NIST will: 1) convene diverse Federal and non-governmental stakeholders to adopt a Disaster Resilience Framework 1.0 and serve on an associated Panel for Model Resilience Standards and Guidelines; 2) develop the comprehensive Disaster Resilience Framework 1.0 for achieving community resilience that considers the technical interdependence of the community's physical and human assets, operations, and policies and regulations; and 3) formulate Model Resilience Standards and Guidelines for critical buildings and infrastructure lifelines essential to community resilience based on existing model standards, codes, and best practices. The Disaster Resilience Framework 1.0 will focus primarily on the role that buildings and infrastructure lifelines play in ensuring community resilience. Cauffman added that the development of the initiative was included as a goal in the President's Climate Action Plan, which was released this past June.

Cauffman stated that the NIST program team tasked with leading the initiative will be comprised of a resilience team program manager, a research engineer focused on buildings and infrastructure lifelines, a research engineer with expertise in the social sciences, and administrative support contractors. The resilience "Tiger Team" as it's called will: access NIST expertise to provide advice; align existing programs related to disaster resilience to achieve broader resilience goals; offer technical support to draft the initial resilience framework; and provide administrative and logistical support to organize and conduct regional workshops.

In addition to reaching out to a range of Federal government stakeholders, the non-governmental stakeholder community will be engaged extensively. Cauffman stated that the list includes, but is not limited to, the following groups:

- Codes and standards organizations
- Local and regional managers
- Insurance/reinsurance industry
- Architects
- Engineers
- Utility operators
- Urban planners
- Industry
- Emergency managers
- Relief organizations
- Regulators

Applegate, Hynes, and Miller asked a series of questions directed at the involvement of various entities in NIST's initiative. Applegate wondered if the project will engage non-governmental experts in the standards panel, while Hynes advocated for having strong economic analysts and investment strategists advising the development team. Miller recommended that the initiative should make use of existing building codes and standards bodies to develop its set of resilience goals for critical infrastructure, and Wenger added that NSF should be included as a Federal stakeholder to the program's development process, noting that his agency will be able to provide some vital expertise on the role of the social sciences in disasters. Cauffman and Harary noted that the resilience framework and standards panel will be advised by a diverse mix of both government and non-government experts and will focus on these important areas of interest to the Subcommittee.

According to Cauffman, this coordination will be achieved through a series of regional workshops over the next two years to gather input and capture the differences in perspective on disaster resilience around the nation, the first of which is scheduled to be held in the Washington, DC area in March or April 2014. NIST plans to deliver the Disaster Resilience Framework 1.0 in the spring of 2015. Please contact Harary (howard.harary@nist.gov) and Cauffman (stephen.cauffman@nist.gov) to attend a specific development workshop or to engage your agency more broadly in NIST's disaster resilience project.

VII. Adjournment

Applegate adjourned the SDR November meeting at 12:05 p.m.

VIII. Future Meetings

SDR meetings in 2013 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:

2013

- ✓ Thursday, December 5

2014

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

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

X. 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
Tamara Dickinson	OSTP Liaison	202-456-6105	tdickinson@ostp.eop.gov

Secretariat

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

XI. Summary of November Actions

Action	Lead	By When

Reach out to Howard Harary (howard.harary@nist.gov) and Steve Cauffman (stephen.cauffman@nist.gov) to engage your agency in NIST's disaster resilience project to develop and adopt a Disaster Resilience Framework and an associated Panel for Model Resilience Standards and Guidelines.	SDR Members and Federal Colleagues	ASAP
Contact Lucy Jones (jones@usgs.gov) for more information and next steps on the USGS SAFRR tsunami scenario and how SDR agencies can play a role in the initiative.	SDR Members and Federal Colleagues	ASAP
Contact Susan Ruffo (Susan_L_Ruffo@ceq.eop.gov) copying the OSTP Liaison Tammy Dickinson (Tamara_L_Dickinson@ostp.eop.gov) and SDR Secretariat (bret.schothorst@mantech.com) with ideas of how the SDR member agencies can get involved with follow-on activities associated with the President's *Climate Action Plan*.	SDR Members and Federal Colleagues	Standing
Contact the SDR Secretariat (bret.schothorst@mantech.com) and OSTP Liaison Tammy Dickinson (tdickinson@ostp.eop.gov) with ideas or suggestions for a path forward of how the SDR can address the issue of Federal geospatial and remote sensing data interoperability and availability identified in our post-Sandy S&T lessons learned white paper.	SDR Members	Standing
Send brief write-ups outlining the impacts that budget sequestration cuts are having on your agency's disaster reduction S&T activities in FY 2013 as well as an outlook of the President's FY 2014 budget request to the SDR Secretariat (bret.schothorst@mantech.com) copying our OSTP Liaison (tdickinson@ostp.eop.gov).	SDR Members	Standing
Email the SDR Secretariat (bret.schothorst@mantech.com) and OSTP Liaison Tammy Dickinson (tdickinson@ostp.eop.gov) if willing to pilot an assessment of the progress of the short-, mid-, and long-term goals outlined in an SDR Grand Challenges for Disaster Reduction implementation plans.	SDR Members	Standing
Please consider supporting the work of the SDR and its Secretariat through a contribution from your agency. Let Co-chair David Applegate (applegate@usgs.gov) know if you need an Agency- or Department-specific request letter.	SDR Members	Standing
Contact Co-chair 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	Standing

Contact OSTP Liaison Tammy Dickinson (tdickinson@ostp.eop.gov) if it would be helpful for OSTP to issue a letter to your agency or department requesting new (or re-affirmed) designation of official representatives. Ideas for other entities that should be represented on the SDR are also welcome.	SDR Members	Standing