

National Earthquake Hazards Reduction Program (NEHRP)
Advisory Committee on Earthquake Hazards Reduction (ACEHR)
National Institute of Standards and Technology
Gaithersburg, MD
August 20-21, 2019
Meeting Summary

Meeting Attendance

Advisory Committee Members

Glenn Rix, Chair	Geosyntec Consultants, Inc
Lucy Arendt	St. Norbert College
Greg Deierlein*	Stanford University
Susan Dowty	International Code Council
John Gillengerten	Consulting Structural Engineer
Nathan Gould	ABS Consulting
Ryan Kersting	Buehler & Buehler Structural Engineers, Inc.
Keith Koper	University of Utah, Salt Lake City
Lisa Grant Ludwig	University of California, Irvine
Lori Peek	University of Colorado, Boulder

NEHRP Agency Representatives and NIST Support

Walter Copan	NIST Director
Howard Harary	NIST/EL Director
Jason Averill	NIST/EL/MSSD Chief
Luciana Astiz*	NSF Program Director, Division of Earth Sciences
Jazalyn Dukes	NIST/EL/MSSD, Research Structural Engineer
Tina Faecke	NIST/EL/MSSD, NEHRP Program and Management Analyst, and Designated Federal Officer (DFO)
John Harris	NIST/EL/MSSD, Acting NEHRP Deputy Director
Katherine Johnson	NIST/EL/MSSD, Earthquake Risk Mitigation Policy Analyst
William Leith*	USGS, Senior Science Advisor for Earthquake and Geologic Hazards
Mike Mahoney*	DHS/ FEMA, Senior Geophysicist
Joy Pauschke*	NSF Program Director, Division of Civil, Mechanical and Manufacturing Innovation Program
Steve Potts	NIST/EL/MSSD, NWIRP Program and Management Analyst

* Participated via teleconference

I. Welcome and Opening Remarks

Harary opened the meeting at 8:35 am welcoming the participants. Harary reminded the ACEHR that this meeting is structured differently than most Committee meetings to focus on developing the report. He introduced NIST Director Copan.

Copan thanked participants for their engagement and described this program as a priority for NIST and the Administration. He welcomed the newest members – Dr. Lucy Arendt, Susan Dowty, and Dr. Keith Koper. He looks forward to reading the Committee report, as the passion for reducing the impact of seismic risk comes across in the recommendations. He was pleased to have recently convened the Interagency Coordinating Committee (ICC) with NIST as chair and FEMA, USGS, NSF, OSTP and OMB actively participating.

The ICC committed to updating Circular 1242 and the NEHRP Strategic and Management Plans. They also committed to develop an FY 2018-2019 biennial report. Copan recently met with Tina Neal, Scientist in Charge at the USGS Hawaiian Volcano Observatory at Hilo. He also recently met with NOAA leadership.

The General Accounting Office held an entrance interview with NIST and other agencies to begin assessing the Program, as required in the 2018 NEHRP reauthorization. Copan said the assessment will characterize progress in the U.S. toward being more earthquake resilient, and the role NEHRP has played in developing resiliency codes and standards.

NIST is looking forward to continued engagement between annual ICC meetings, with the possibility of brief teleconferences or webinars that can be scheduled more easily than full meetings. If needed, however, NIST will convene the full ICC in person in between the annual meetings. Finally, Copan announced a special recognition for Nathan Gould who has served honorably for the last six years, presenting him a certificate. He then turned the meeting over to ACEHR Chair Rix.

Rix said the purpose of this working meeting is to significantly advance the state of the biennial report due at the end of September. He turned the meeting over again to Harary.

II. NEHRP Interagency Coordinating Committee Meeting

Harary reported that NEHRP agencies committed human resources beyond the Program Coordination Working Group (PCWG) to the tasks directed by the reauthorization. He specified that:

- NIST is the lead on updating the Strategic Plan, which will start in the fall, and will take 12 to 18 months to complete;
- FEMA and NIST, are working with a number of partners including the Earthquake Engineering Research Institute (EERI) and Structural Engineers Association of California on the functional recovery project. FEMA is committed to reinvigorate their work on lifelines;
- USGS and NSF are planning a subduction zone research initiative;
- NEHRP is supporting a symposium on the 2018 M7.1 Anchorage earthquake in September in Anchorage to summarize the post-earthquake investigation of Cook Inlet, Alaska. A workshop a year out will also be held concerning the sequence of earthquakes and aftershocks in Searles Valley, California;
- NIST has previously funded a study to guide the update to Circular 1242, and the ICC committed NEHRP agency staff to work together on it;
- The NEHRP agencies committed to strengthening coordination across the Federal government and have already started coordinating with NOAA. Additional memorandums of understanding regarding coordination are planned with NASA, DOT and HUD among others. The NEHRP Program Office will provide an early draft to get input from other agencies;

- The budget coordination among NEHRP agencies was discussed and a decision was made to concentrate on programmatic coordination based on enacted budgets. Sharing budget submissions to OMB is challenging, but programmatic coordination represents a viable alternative that has proven successful.

III. ACEHR Membership and Responsibilities

Harris gave a presentation on the status of current ACEHR membership and their responsibilities (https://nehrp.gov/pdf/NEHRP%20ACEHR%20Briefing%20Slides-JHarris_20Aug2019.pdf).

IV. Public Input Period

Committee DFO Faecke reported that no one from the public registered and asked if anyone else joined the meeting remotely. There was no response.

V. Report Development

Rix reminded the group they had agreed to develop a tight, concise report. Koper asked who the audience is for this report. Rix said it goes to Dr. Copan, and then to other NEHRP agencies. Harary added that we provide copies to appropriate committees on the Hill.

Committee members met in small groups and worked on sections of the report. After lunch the group walked through the draft sections. The following points came through in the discussion:

- While the other hazards programs can learn from NEHRP, and vice versa, it's best not to get into a multi-hazard framework discussion in this report;
- The report currently addresses background, which is good for someone who doesn't know the programmatic history. The focus of this report, however, should be on reauthorization and beyond. The history of the Program could be an Appendix.
- The Opportunities to Achieve Resilience section was taken from the ACEHR White Paper on Achieving National Disaster Resilience, developed in 2010. It explains what it would look like, and provided agencies with a list of tasks to consider.
- The New Knowledge and Techniques section should include information on the following components of the earthquake early warning system: social; planning; communications; signal detection, and computation.
- Hospitals are a significant issue in themselves, possibly some case studies and lessons learned would be useful.

VI. ACEHR Discussion with PCWG Members

PCWG members Mike Mahoney from FEMA, and Joy Pauschke and Luciana Astiz from NSF joined by phone at 3:00 pm. Rix asked them if there is anything their agencies are doing in response to some of the ideas in the reauthorization that we should be aware of as we make recommendations on what the agencies should be pursuing in regard to reauthorization? Pauschke responded that most of the prescriptive things in legislation are for the other agencies. There are things NSF is doing that she can't speak to right now because they haven't been rolled out yet, related to the Natural Hazards Engineering Research Infrastructure (NHERI) and interagency cooperation.

Pauschke added that NSF funded the organizing of the Alaska earthquake symposium in September, while USGS and NIST are funding travel support. Pauschke will be going to the Anchorage symposium. NSF funded some grants for Rapid Response Research (RAPID), and will have meetings during the Southern California Earthquake Center (SCEC) meeting in early September regarding the Ridgecrest earthquake sequence that Astiz will attend. Finally, NSF had ongoing meetings with the Japanese government on the Tokyo resilience project, which NSF funded, to test wood frame structures, and a spine structure.

Mahoney said there are two major changes for FEMA in the reauthorization, and a new allocation of resources internally:

1) A panel of experts for the Functional Recovery Report must be convened by the end of calendar year. The panel of experts (project technical panel) have already been convened and have started working. The International Code Council and California Building Officials held a Seismic Roundtable at the California State Capitol State Building in July to determine a roadmap for the development of a nationally applicable approach to seismic functional recovery for new construction.

2) The State assistance program has changed from the original 50% cash match to mirror all other FEMA state programs to 25% in-kind match. FEMA is in the process of modifying the State Assistance Program. A funding opportunity went out a month ago, and approximately 30 states have already responded. Before this year, FEMA provided funding to state partners through the multi-state consortia, EERI, SCEC and others. Now we are able to give money directly to states.

FEMA has placed a new focus on lifelines across the agency and will be fully funding a lifelines study. The new multi-year project will tap into the NIST lifelines research roadmap done several years ago.

Leith said the reauthorization calls for USGS to develop a set of systematic maps of earthquake risk and earthquake induced phenomena like liquefaction and landslides. The requirement comes to USGS as an unfunded mandate. USGS does produce maps on those topics, but the “systematic” definition requires coverage of all U.S. landmass and territories and will be a major undertaking. USGS will go back to Congress on that.

VII. Report Development (continued)

An additional writing session took place from 3:30 – 4:45 pm. A discussion followed, in which the main topics for the report and some changes were discussed:

- Moved discussion of NEHRP Reauthorization up to the top.
- Described what’s new in the reauthorization – functional recovery and post operational time – and defined those terms.
- Finished with the observation that this is a long journey and will take multiple iterations to complete.
- Included a discussion about funding commitments for the large difference between reauthorization and appropriations.
- Included the 4-step process: awareness, coordination, collaboration and integration which is essential for accomplishing the objectives.
- Highlighted past accomplishments which need to be included (a look back so we can look forward).
- Changed the title of the Benefits section to Impacts, which will include savings, and risks mitigated.

- Included a discussion on major barriers to action: complacency, other natural hazards threats in competition for attention. Peek emphasized that even though there's been a lot of changes – more people are living in harms' way, so risks are increasing. Focusing on the drivers of earthquake risk.
- Included a section on New Knowledge and Technologies, and another section on Implementation Challenges/Impacts.

Rix closed by setting the goal for day two as starting with a good document in the morning and then having a good draft by 1:00 or 2:00 pm.

VIII. Adjournment

The meeting adjourned at 5:00 pm.

ACEHR Meeting – Day Two August 21, 2019

I. Opening Remarks and Plan for Additional Meeting

Rix suggested the Committee will need a 2-hour teleconference between now and September 30 to receive final consensus on the report. The group decided on a teleconference from 3:00-5:00 pm EDT on Monday, September 23, 2019.

They would like to hold an in-person meeting in early February before John Gillengerten's ACEHR term ends. NIST will research venue options for February 6-7, 2020. At this meeting, the agencies will come prepared with responses to the 2019 ACEHR biennial report recommendations. The Committee accepted Harris' offer to have the meeting restructured to report programmatically rather than agency focused.

Harary noted that it would be helpful if the ACEHR members review the current NEHRP Strategic Plan and be prepared to share their feedback with the agencies for input to the draft update.

II. Revising the Draft Report Sections

Rix sought agreement on the major themes for the report, which were displayed on the screen, and also printed and distributed. Regarding the reauthorization, he posed four questions that should be addressed, and teed up the answer for the first three:

- 1) What factors contribute to the significant earthquake risks facing the nation?
Answer: the risk drivers that are described.
- 2) What is vital to advance earthquake risk mitigation and resilience? Answer: focus on functional recovery and community resilience.
- 3) How do we make progress towards this long-term goal? Answer: recognize the barriers that we face and develop new knowledge, tools, policies, guidelines.

4) How can the NEHRP agencies position themselves to play a leadership role in this endeavor?

He didn't provide an answer in the same manner as the others but reminded the Committee that this is an aspirational biennial report that represents ACEHR's view of where we should be going rather than a list of specific recommendations for the agencies.

Rix summarized a discussion about functional recovery (FR) by stating that if FR is the performance objective at a high level, there's a huge gap between the notion of performance objective and performance criteria that can achieve that objective.

Harary suggested the Committee reference NIST's Community Resilience Planning Guide, as each community needs a framework which is really accessible and useable for them. Kersting suggested the struggle in California is that there's 500 jurisdictions. We can't have that conversation 500 times. The conversation in LA county might be different than the conversation in San Francisco. We need a model that conveys typical targets for schools, shopping centers etc. Rix charged Kersting and Gillengerten with including that concept into the report.

Rix will work to get the report down to 10 pages by next week. He welcomed all members of the Committee to go through the document and put in comments for him to consider.

III. Adjournment

The meeting adjourned at 2:00 pm.