

**National Earthquake Hazards Reduction Program (NEHRP)
Advisory Committee on Earthquake Hazards Reduction (ACEHR)
National Institute of Standards and Technology (NIST)**

August 10, 2021

Virtual Meeting Summary

Meeting Participants

ACEHR Members

Glenn Rix, Chair	Geosyntec Consultants, Inc.
Lucy Arendt, Vice Chair	St. Norbert College
Ann Bostrom	University of Washington
Robert Carey	Utah Division of Emergency Management
Gregory Deierlein	Stanford University
Susan Dowty	International Code Council
Robert Ezelle	Washington Military Department
Thomas Heausler	Consulting Structural Engineer
Ryan Kersting	Buehler
Danielle Mieler	City of Alameda
Jonathan Stewart	University of California, Los Angeles
Douglas Wiens	Washington University in St. Louis

NIST Management, Staff, and NEHRP Representatives

Jason Averill	Chief, Materials and Structural Systems Division (MSSD)
Steven McCabe	NEHRP Director, MSSD
John “Jay” Harris	Acting NEHRP Deputy Director, MSSD
Katherine Johnson	Earthquake Risk Mitigation Policy Analyst, EEG, MSSD
Tina Faecke	Designated Federal Officer for ACEHR

NEHRP Representatives from Partner Agencies

Luciana Astiz	National Science Foundation
Jacqueline Meszaros	National Science Foundation
William Blanton	Federal Emergency Management Agency
Michael Mahoney	Federal Emergency Management Agency
Mai “Mike” Tong	Federal Emergency Management Agency
Gavin Hayes	United States Geological Survey

Registered Guests

Gregory Beroza	Stanford University
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I. Welcome

As Designated Federal Officer (DFO) for the Advisory Committee on Earthquake Hazards Reduction (ACEHR), Ms. Tina Faecke called the meeting to order at 1:00 pm ET, took roll call, and confirmed the quorum requirement was satisfied.

Committee Chairperson Dr. Glenn Rix affirmed the purpose of the meeting was to finalize and obtain consensus on the ACEHR 2021 biennial report content.

II. Public Input Period

Faecke reported that no one from the public registered to speak.

III. Draft Biennial Report Discussion

Rix shared his screen and reviewed the draft report. Faecke reviewed the ground rules for contributing to the draft report following this meeting. No significant changes or additions may be submitted by the ACEHR members, but minor edits are welcome.

Rix included the Committee's charge as a separate text box. The *Executive Summary* will be written by Rix based on the report content resulting from this meeting. The *Introduction* summarizes the history and benefits of NEHRP, progress to date, and the intent of the report. Dr. Gregory Deierlein suggested highlighting the trillions of dollars saved through NEHRP activities; Dr. Jonathan Stewart agreed.

The *Assessment of Progress* section summarizes the progress of NEHRP since its inception and includes the following subsections:

- *NEHRP Strategic Plan for FY22-FY29*
- *Interagency Coordinating Committee Meetings*
- *ACEHR Meeting Format*
- *U.S. Government Accountability Office Assessment of NEHRP*
- *Specific Agency Initiatives* – this subsection highlights noteworthy NEHRP activities within the last two years. Susan Dowty offered to provide additional summaries of two “Codes and Standards” items (FEMA/ATC Seismic Code Support Committee and the Building Seismic Safety Council Symposium). A suggestion was made to consolidate the individual agency efforts into Program highlights. FEMA and USGS didn't agree with consolidating all of the agency contributions into one Program bucket.

Faecke suggested any ongoing NEHRP efforts the Committee would like to see continued should be highlighted as an observation, not as a recommendation. Recommendations should be actionable items which the NEHRP agencies must formally respond to and which are also reported in the public Federal Advisory Committee Act database as fully or partially implemented.

Below are six recommendations agreed upon during the meeting, as modified.

Recommendation #1:

Once the FY22-29 NEHRP Strategic Plan is approved and adopted, the focus will change to ensuring the Plan is implemented. Depending on available resources, ACEHR calls upon the Interagency Coordinating Committee to provide the resources required for full implementation of the Plan, including appropriations and budgetary mechanisms that are closely aligned with the Plan at agency and sub-agency levels.

Rix clarified this first recommendation is a request for the NEHRP agencies to report to the Committee on their budget as well as their activities and how they align with the Strategic Plan.

Recommendation #2:

- a. ACEHR calls upon the NEHRP agencies to add progress updates on previous ACEHR recommendations as a regular agenda item for ACEHR meetings.
- b. ACEHR calls upon the NEHRP agencies to continue identifying synergetic programs to present during ACEHR meetings in an effort to promote inter-programmatic coordination.

Deierlein noted that the suggested examples to illustrate the second part of this recommendation are all from NEHRP agencies and should include other entities; Rix agreed and made a note to expand the list of examples.

Recommendation #3:

- a. ACEHR calls upon the NEHRP agencies to implement the seven recommendations in the joint FEMA-NIST report on Recommended Options for Improving the Built Environment for Post-Earthquake Reoccupancy and Functional Recovery Time and move the nation forward with respect to recovery-based objectives and community resilience.
- b. ACEHR calls upon the NEHRP agencies to sponsor a multi-agency and multi-hazard workshop bringing together individuals, divisions, etc. working on functional recovery, community resilience, and related topics.

Recommendation #4:

ACEHR calls upon the NEHRP agencies to support research in earth science, engineering, and social science to further develop earthquake early warning (EEW) capabilities and better understand how EEW can best inform protective actions. ACEHR also calls upon the NEHRP agencies to support investments in education and outreach campaigns to increase awareness and understanding of EEW.

Recommendation #5:

ACEHR calls upon the NEHRP agencies to further undertake additional jointly funded activities depending on available resources and where synergy is applicable.

Recommendation #6:

ACEHR calls upon the NEHRP agencies to help organize workshop(s) for the earthquake science and engineering community to explore how applying lessons learned from the COVID-19 pandemic, multi-hazard approaches, climate change, and data-driven models and new sensing technologies can enhance earthquake risk-reduction efforts.

The *Key Initiatives* section includes two subsections:

- *Functional Recovery and Community Resilience* - A suggestion was made to include equity-related issues and strengthen the reference for commonalities other than health care. Clarification is needed for what is considered “essential”.
- *EEW Research* – Dr. Gavin Hayes clarified EEW rollouts in northern California, Oregon, and Washington state are not complete; however, testing of public alerts to cell phones for those three states are complete. ShakeAlert is still being built.

The *Basic Research to Support NEHRP* section will incorporate the information from the appendices and will emphasize the importance of basic research in earth science, engineering, and the social sciences to earthquake risk reduction. NSF's support for NEHRP-relevant basic research through standing programs, research infrastructure, and special partnerships and competitions will be emphasized.

The *Related Topics and Issues* section includes the following subsections that have significant potential to affect earthquake mitigation, preparedness, response, and recovery:

- *Learning from the COVID-19 Pandemic* – a suggestion was made to emphasize homes were not damaged during the pandemic compared to recovery following an earthquake.
- *Multi-hazard Approaches*
- *Climate Change*
- *Data-driven Models and New Sensing Technologies* – it was suggested to broaden this subsection to include all of the sciences.

This section is related to the third element of ACEHR's charge (trends and development in the science and engineering of earthquake hazards reduction) and is intended to draw on the Committee's collective expertise to bring some operational issues to the attention of NEHRP.

An abbreviated bibliography was included at the end of the report.

General Comments

Rix tried to highlight the numerous accomplishments of NEHRP over the years by citing various documents throughout the report. Stewart suggested replacing the detailed references within the report with a link to the reference. Rix will review the list of references to ensure it is inclusive.

Deierlein suggested summarizing the observations and recommendations together and move them to the front of the report instead of at the end.

Faecke suggested removal of "ICC" as an abbreviation for the Interagency Coordinating Committee to avoid possible misperception with the International Code Council.

The Committee agreed to delete the appendices and incorporate the information into other sections of the report.

IV. Report Adoption

Rix motioned to adopt the draft report content in full, as modified. The motion was seconded by Vice Chairperson Dr. Lucy Arendt. No one opposed the report content or the recommendations, as modified.

A clean version of the edited report resulting from this meeting will be provided to the Committee by Friday, August 13. The deadline for submitting any additional editorial suggestions is Friday, August 20.

Rix and Arendt will finish formatting the report and will formally submit it to Faecke by September 30, 2021.

V. Meeting Closure

Rix recommended waiting until February or early March 2022 for the next ACEHR meeting. It is unclear whether the meeting will be in-person or virtual. Faecke will poll the members for the best meeting dates and times.

Faecke thanked everyone for their participation and adjourned the meeting at 4:04 pm.