



2018 BASIN AND RANGE PROVINCE EARTHQUAKE WORKING GROUP (BRPEWG) MEETING SUMMARY

Thursday, February 15, 2018

**Utah Department of Natural Resources Building, Auditorium (1st Floor)
1594 West North Temple, Salt Lake City, Utah**

WELCOME AND INTRODUCTION

The Utah Geological Survey (UGS) has reactivated the Basin and Range Province Earthquake Working Group (BRPEWG), due to the general lack of other Basin and Range Province (BRP)/ Intermountain West (IMW) state earthquake working groups and the need for effective communication and collaboration in applied earthquake-hazard research in the region. Additionally, the U.S. Geological Survey (USGS) National Seismic Hazard Maps will be updated in 2020, instigating a need for updated cross-border fault parameters. Steve Bowman (Utah Geological Survey [UGS]) called the 2018 Basin and Range Province Earthquake Working Group (BRPEWG) meeting to order at 8:15 a.m. After welcoming Working Group members and guests, Steve summarized the BRPEWG's past activities and outlined the Working Group's purpose and goals for the future. BRPEWG was previously convened in 2006 and 2011, in response to USGS National Seismic Hazard Map update issues, and was hosted by the UGS.

BRPEWG Purpose and Goals

- Establish and coordinate earthquake-hazard research agenda in the Basin and Range Province.
- Provide discussion regarding technical issues related to fault behavior in the Basin and Range Province.
- Identify and prioritize BRP cross-border Quaternary faults and future paleoseismic investigations.

TECHNICAL PRESENTATIONS

The state presentations on technical issues facing the Basin and Range Province https://geology.utah.gov/docs/pdf/BRPEWG-2018_Presentations.pdf

- Arizona: Phil Pearthree, Arizona Geological Survey
- California: Gordon Seitz, California Geological Survey
- Colorado: Matt Morgan, Colorado Geological Survey
- Idaho: Zach Lifton, Idaho Geological Survey
- Montana: Mike Stickney, Montana Bureau of Mines and Geology
- Nevada: Rich Koehler, Nevada Bureau of Mines and Geology
- New Mexico: Andy Jochems, New Mexico Bureau of Geology and Mineral Resources

- Oregon: Bill Burns, Oregon Department of Geology and Mineral Industries
- Utah: Emily Kleber, Utah Geological Survey
- Wyoming: Seth Wittke, Wyoming Geological Survey

DISCUSSION ITEMS

This was the first meeting of BRPEWG since 2011. The participants included both existing and new state survey representatives, so the focus of the meeting was to introduce each state's geologic hazard programs. The focus of the discussion was to discuss successes and desired improvements of each program. Many state representatives cite budgetary restrictions as a major limitation for continuing existing projects or beginning new projects on Quaternary faulting. The agenda included specific discussion items, listed below, with commentary of what was discussed in the meeting:

- Cross-border Quaternary fault issues (fault trace mapping discrepancies, lack of mapping, fault parameter discrepancies, and poorly defined or lack of parameter data).
 - Several state surveys commented that budgetary restrictions limit them from having dedicated personnel to, in some cases, develop, and maintain a statewide Quaternary fault database.
 - Some states, like California, have very specific language about what is considered an “active” fault. Can complicate coming to a consensus for updating for the *USGS Quaternary fault and Fold Database of the United States*.
- Quaternary fault investigation priorities in the region outside Utah.
 - Existing priorities
 - Nevada: http://www.nbmg.unr.edu/docs/Earthquakes/NBMG_priorities_NEHRP.pdf
 - Utah: https://geology.utah.gov/docs/pdf/NEHRP-2018_Priorities.pdf
 - IMW (BRPSHSIII, 2015) : https://ugspub.nr.utah.gov/publications/misc_pubs/mp-15-5/mp-15-5_workshop.pdf
- Coordination and funding opportunities for acquiring new lidar data, such as the USGS 3D Elevation Program (3DEP) and multi-state/multi-agency partnerships.
 - Consensus is that forming and retaining partnerships with local and regional organizations, as well as the 3DEP program, is a successful means of acquiring lidar for Quaternary fault investigations.
- Interest in paleoseismic investigation best practices to assist those states with limited expertise.
 - The group was very interested in additional training opportunities for trenching, structure from motion (SfM), and technical aspects of Quaternary fault mapping and characterization.

Other discussion topics not on the agenda:

- Emergency management
 - Working group expressed interest in a sub-committee to help set-up or improve

emergency management and response to geologic hazards within individual states and across state lines.

- Several new mission assignment packages were recently developed as part of the Emergency Management Compact (EMAC).
- Format for next year's meeting
 - Have more opportunities to discuss and present research, more like a professional society meeting.
 - Technical training in lidar data management, lidar data applications, paleoseismic trenching, and other relevant fields.

WORKING GROUP PRODUCTS AND RELATED DATA

The final agenda, speaker presentations, and this summary document are available on the BRPEWG web page at <https://geology.utah.gov/hazards/earthquakes-faults/utah-earthquake-working-groups/basin-and-range-province-earthquake-working-group/>.