

Minutes from the 9-16-2021 CEHMC Meeting

Present: Matt Morgan, Rob Jackson, Robin McGuire, Dee Stevens, Oliver Boyd, Sean McGown, Michael Haughey, Kyren Bogolub, Mark Zellman

Notetaker: Matt Morgan/Mark Zellman

Colorado Geological Survey Seismic Station Update by Kyren Bogolub

Our four legacy TA stations are old, obsolete and no longer technically supported. They are Streckeisen broadband instruments. CGS has only one spare station so this is a problem if the equipment breaks. Telemetry is cellular. The cell signal seems to be degrading over time. Why? Maybe more cell traffic. Stations were not built to be permanent, but they have been surprisingly durable.

CGS has installed an additional four REFTEK-151 sensors. These tend to not reset due to ground settlement. Digitizer and logger in one set, RT-130 datalogger. Also obsolete. Simple to use and set up. Server that controls these is at USGS. Have to bother them to access these or drive to them. Most are cell, but the MCSU (CSU Mountain Campus) is hardwired into internet. All above ground.

Potential locations for future installations-Edgar Mine and Rocky Flats with CSM students and one on Colorado Mountain College, Glenwood (Priority)

Based on 120-degree swath of no station coverage, could use more coverage in San Luis Valley, SW Colorado, and east of the Sangres near Spanish Peaks.

All stations are being used to locate earthquakes in CO, US and occasionally around the world. The M3.8 Pritchett event was recorded on the CGS LAMA (Lamar, CO) station more strongly. Recorded as far away as the HAYD (Hayden, CO) station.

Installed temporary station on Mines campus between Sept-Oct 2020, was picked up by SSA for a brochure.

Ordered some Shakeout materials that we can provide to the public.

Working on website updating maps for recent earthquake activity and seismic stations.

Alternatives to current USGS NSH maps by Robin McGuire. Challenge for design is that the maps change every 5 years. Perhaps USGS could put out 2 maps-current mean ground motion map and a second map, 90 percentile ground motion. This percentile map may be more helpful to local governments plan and build new structures. If you design for 90th percentile you will meet the requirement to the mean ground motion map. Rob- it is something to consider but would the MCR as it stands now, be changed? Oliver-Important topic; we are (USGS) looking at fractiles and uncertainty estimates in different parts of the country.

Seismic Committee of the Structural Engineers Association of Colorado Position Statement by Rob Jackson.

Vote did not take place. Jim Harris and Rob presented opinions on this. Jim thought we should not just restrict to schools and maybe going overboard a bit on the non-structural items. As it stands now, is in progress.

CEHMC Website-Roster update, Kyren emailed to Rob today and he will send back. Kyren looking to create an EQ storymap through ArcGIS.

Cheraw fault update by Mark Zellman- A paper was published in The Seismic Record which documents USGS NEHRP-funded work to assess the fault using oil and gas industry 2D seismic data. Access the open access paper at the following link. <https://pubs.geoscienceworld.org/ssa/tsr/article/1/1/56/605730/Subsurface-Characterization-of-the-Quaternary>

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Dean Ostenaar is working on was submitted to BSSA a month ago, reviewers said too long and make shorter and more concise. Will redo and resubmit.

Update of Williams Fork Mtns fault by Bob Kirkham-Client had to turn in a summary to DRMS, so Bob will be able to give an update soon. Evidence of Holocene movement. Report documents a prior trenching project on the Williams Fork Mountain fault might be available through the Colorado Division of Reclamation, Mining, and Safety. He also mentioned that he has permission to share information about his trenching study on the Jarre Creek fault.

Update on Ute Pass fault NEHRP study by Matt Morgan-Geophysical survey conducted over two segments of the fault; one near Cascade and one splay near Cheyenne Mountain. Addendum: Final Technical Report Submitted and available here:

https://earthquake.usgs.gov/cfusion/external_grants/reports/G20AP00030.pdf

Date of next meeting: November 18, 2021

Possible future speakers:

Kathleen Wilmes of DHSEM on Utah Wasatch Fault Earthquake preparation, a Colorado perspective

Bob Kirkham

Jim McCalpin?-Ute Pass fault

2021 meeting schedule: Jan 21, March 18, May 20, July 15, Sept 16, and Nov 18.