

**CEHMC Meeting
January 20th, 2022
Remote Zoom Meeting**

Attendees: James McCalpin, Kyren Bogolub, Robin McGuire, Bob Kirkham, Michael Haughey, Will Levendowski, Oliver Boyd, Mark Thompson, Steve Board, Matt Morgan, Rob Jackson, Sean McGowen, Bill Bischof, Ivan Wong

Approval of the November 18th 2021 Meeting motioned, seconded and approved.

James P. McCalpin of GEO-HAZ Consulting will give a presentation on “Ute Pass Fault Zone: 2021 Studies.”

Problematic fault because of large losses predicted by HAZUS model. Is this really a capable fault? With all the Lidar and updated higher resolution geologic maps, is there a way to an answer?

Southern Splay Fault

Landslide pull apart explanation does not work here. Lateral spread might be evidence of seismic ground shaking from movement on the fault, however this feature exists quite a bit beyond the faulted area. Road cut: tilted block in Kirkham and Rogers or oblique view of paleochannel, alluvium beds are warped. No visible faulting the road cut. Seismic reflections show contact between gravel and Pierre shale is mostly parallel to the surface. Low probability of this scarp being tectonic, but also not land slide. Could be channel margin or something else alluvial.

Manitou Springs Landslide

Paleovalley floor, has ~50m of vertical mis-alignment but no obvious fault scarps. Two possible fault strands, one has a convincing lineament in lidar. Fault zone must be under the landslide, question is what layers does it cut? Possibly a break in the reflector near a fault, but no strong evidence of vertical displacement in geophysics. Lateral displacement would be pretty challenging to find in geophysics unless there was a change in elevation along the strike. Seems unlikely that the fault has cut across any of the landslide deposit.

Woodland Park

700ft of vertical displacement in contact between Paleovalley gravels (Tdg) and Ypp. There is good evidence of Neogene fault here. Trout creek is deflected by fault movement, at one point it probably flowed through Wind Gap, but no longer. Could it be tectonic uplift of the block or passive unroofing?

Conclusions.

No fault scarps on <150ka deposits. Lineaments near Cheyenne Mt are landslide. Splay fault doesn't seem to be a splay fault, no good evidence. Manitou Springs has vertical offset of paleovalley but no evidence of faulting through French Creek landslide deposit. Best evidence of fault movement on fault is >5Ma, next best is >150Ka. UPFZ is not capable based on no evidence of fault movement in last 35,000 years.

A tidbit of background from Bob:

Back in the 70's almost no geologists thought there were any large EQs since the Laramide, folks wanted to take a closer look at that theory.

The 2020 Building Resilient Infrastructure and Communities (BRIC) program and the Mitigation Project Proposal entitled “Colorado Earthquake Resilience Investigation – Code Review & Rapid Visual Screening Pilot Study.” Matt Arsenault will provide an update.

Matt is not here, Steve Boand will provide update. Project goals are to take a look at school codes and see where they stand. Project has been approved by FEMA so we can now get started. Next steps are to develop scope of work and make a work plans and schedule. Fire Prevention and Control has program manager that's very interested in participating in the program. We will try to get an update from DHSEM by next meeting, but they are a bit bogged down these days.

The Seismic Committee of the Structural Engineers Association of Colorado has developed a Position Statement regarding the seismic safety of Colorado schools and other buildings. Voting is scheduled for March 2022.

Site classes are going up because of changing shear wave velocity models. Expanding recommendations are now going beyond school buildings and now include basically everything except for barns. These recommendations will be formally voted on in March. Still no recommendations for non-structural, unlikely to be put into recommendations any time soon.

Shake-Out and Outreach

Kyren will send out a list of activities and target groups that will be distributed to CEHMC members. Please distribute if possible. Sean may have some materials to contribute to outreach events and activities.