

UTAH EARTHQUAKE RESEARCH PRIORITIES FOR 2015

The 2014 Utah Earthquake Working Groups and the Utah Geological Survey defined priorities for earthquake research in Utah in 2015, provided for consideration in responding to the U.S. Geological Survey Earthquake Hazards Program (EHP) Request for Proposals (<http://earthquake.usgs.gov/research/external/>).

Faults

- Studies of faults should focus on those structures that have been identified as a priority by the 2014 Utah Quaternary Fault Parameters Working Group listed below:

Highest Priority (not in order of priority)

- Acquire new paleoseismic information for the five central segments of the Wasatch fault zone to address data gaps – e.g., (a) the rupture extent of earthquakes on the Brigham City and Salt Lake City segments, (b) long-term earthquake records for the northern Provo, southern Weber, and Salt Lake City segments, and (c) the subsurface geometry and connection of the Warm Springs and East Bench faults on the Salt Lake City segment.
- Acquire long-term earthquake record for the West Valley fault zone – Taylorsville fault.
- Improve the long-term earthquake record for Cache Valley (East and West Cache fault zones).
- Use recently acquired LiDAR data to more accurately map the traces of the Wasatch, West Valley, and Hurricane fault zones, and search for and map as appropriate previously undiscovered mid-valley Quaternary faults.

Liquefaction

- As the Utah Liquefaction Advisory Group (ULAG) did not meet in 2014, we have listed the priorities defined in the 2013 ULAG meeting.
 - Revision/refinement of the multilinear regression (MLR) equations currently used for determining horizontal ground displacement generated by liquefaction-induced lateral spread (Bartlett and Youd, 1992; Youd and others, 1999), using an updated dataset.
 - Application of the revised MLR equations in probabilistic mapping of liquefaction-induced ground failure in Utah County, Utah, a Wasatch Front region of high population growth and extensive infrastructure vulnerable to significant damage from earthquake-induced liquefaction.