

PRIORITIES FOR 2009 EARTHQUAKE RESEARCH IN UTAH

Utah Ground Shaking, Quaternary Fault Parameters, and Liquefaction Working Groups February 12-14, 2008

The Utah Geological Survey, Utah Seismic Safety Commission, and U.S. Geological Survey convened Utah's Earthquake Working Groups on February 12-14, 2008, to update priorities for earthquake research in Utah. Priorities for 2009 are listed below for each working group.

Ground Shaking Working Group:

- Coordinate 2009 working group meetings with EERI Annual meeting in Salt Lake City in February.
- Update Wasatch Front community velocity model (CVM) with revised site-conditions units and USGS shallow- to intermediate-depth data when it becomes available.
- Expand CVM to include basins to west (Tooele and Rush Valleys)
- Transfer CVM to UGS, USGS, and users.
- Form working groups to use the validated CVM to develop near-surface site-amplification and basin models.

Quaternary Fault Parameters Working Group (perform detailed paleoseismic studies for the following fault zones, listed in order of priority):

- Provo segment, Wasatch fault zone – timing of penultimate event (priority 1)
- West Valley fault zone (priority 1)
- Washington fault
- Carrington fault (Great Salt Lake)
- Rozelle section, northern Great Salt Lake fault

Liquefaction Working Group:

- Develop techniques for mapping the liquefaction potential of under-sampled geologic units.
- Collect and analyze subsurface data to identify under-sampled geologic units and data-collection requirements for Utah Valley and Davis County.
- Conduct additional CPT investigations to resolve the origin of potential fault vs. lateral-spread offsets in downtown Salt Lake City.
- Collect and analyze subsurface data for comparison of the liquefaction hazard mapped using the Liquefaction Potential Index and using probabilistic techniques in Salt Lake Valley.
- Develop an "Importance Matrix" to determine the appropriate level of ground shaking to use in liquefaction-hazard assessments based on building use and displacement thresholds.

- Develop techniques to evaluate liquefaction-induced large lateral deformations on gentle slopes by analyzing the Farmington Siding landslide complex, Davis County.

Utah's Earthquake Working Groups include over 50 geologists, seismologists, and engineers from state and federal agencies, local governments, universities, and private consulting companies. The working groups are tasked with setting earthquake research goals for the State of Utah, and to develop a plan for the next generation of hazard maps for the state. The results of the 2008 working group meetings can be viewed at the UGS Web site: <http://ugs.utah.gov/ghp/workgroups/index.htm>