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From: John Louie, Convener of the Western Basin & Range CVM Workshops  
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Subject: **Consensus Nevada priorities from the Western Basin & Range CVM Followup Workshop, Nov. 3, 2008**

For USGS NEHRP-NIW FY 2008 external research program proposals, the location <http://www.nbmg.unr.edu/eq/priorities.pdf> offered a list of specific priorities for Nevada. These priorities were not updated for FY 2009. As part of the discussions during the Western Basin & Range CVM Workshop and Followup held on January 14 and 15, and on November 3, 2008, on the campus of at the University of Nevada, Reno, and sponsored by the USGS NEHRP-NIW program, the assembled working group (list attached) came to a consensus to make the following modifications to the previous Nevada priorities. We recommend that these revised FY 2010 Nevada priorities be posted for the next round of proposals due May 2009:

The principal change is to substitute the priority that begins with the words: “Improve and validate 3D velocity models...” with the following consensus priorities:

- Continue development of a Western Basin & Range Community Velocity Model (CVM):
  - To provide for urban hazard mapping in the Reno-Carson City Urban Corridor (including Tahoe and Fallon) as a first priority, and to cover the entire region with existing geological and geophysical information. The Las Vegas Metro area (including Pahrump Valley and the I-15 corridor) is the next priority. Events outside the urban areas, with propagation through intervening basins, are crucial model scenarios.
  - Validate the CVM during its development by generating synthetics from the 3-d model to compare with recordings of moderate earthquakes and explosions, and EGFs. Validation should show where critical data needs lie. Revise the model to incorporate validation results.
- Develop new data for urban hazard mapping (goal of 1-sec waves), and incorporation into the Western Basin & Range CVM:
  - Reno/Carson City Urban Corridor (including the Lake Tahoe basin and the Fallon area)
    - Construct cross sections of the significant basins, consistent with available geological and geophysical data sets, for inclusion in the CVM. A priority is to capitalize on recordings of the M5 4/25/08 and other Mogul events.
    - Collect shear-wave velocity measurements (e.g.,  $V_{S30}$ ) at uncharacterized ANSS sites, on geologic units that are not well characterized, and at urban basin depths below 300 m.

- Compile and develop a detailed shallow shear-velocity model for the Urban Corridor using existing geological and geophysical data.
  - Obtain generalized depths of important impedance contrasts in the Urban Corridor.
- Las Vegas Metro Area (including Pahrump Valley)
  - Construct a model for the structure of the edges of the Pahrump basin, consistent with fault models, for inclusion in the CVM.
  - Obtain generalized depths of important impedance contrasts in Las Vegas Valley for inclusion in the CVM.
- Western Basin & Range Region
  - Aggregate seismic velocity and density information from existing measurements for inclusion in the CVM, and for use in ShakeMap.

The following additional Nevada priorities appeared in the FY08 document, and the Nevada CVM Working Group came to a consensus to modify them as follows:

- **Delete:** ~~Test the sensitivity of shaking to velocity structure at various scales~~
  - ~~As a guide to identifying those parts of the velocity model most in need of further study~~
- **Keep:** Use ANSS data in Reno/Carson, and Las Vegas
  - To find empirical site response, validate predictions of 3D velocity models, and improve ground-motion prediction approaches.
- **Update:** Prepare scenario ground-motion models based on waveform modeling with the *Western Basin & Range CVM*.
  - For earthquakes on major faults affecting Reno/Carson and Las Vegas.

cc:

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