Consensus on the Implementation of WUS Basin Effects into the 2018 NSHM

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USGS 2018 NSHM Update Workshop

Thursday, March 8th, 2018

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Considerations/Issues

1. Should we consider basin depth terms (Z1.0 and Z2.5) from a local velocity model in calculating long-period ground shaking for the four regions (i.e., Seattle, San Francisco, Salt Lake, Los Angeles) and default ground motions everywhere else? NSHMP: We should consider basin effects where Z2.5 is greater than 3 km depth in four areas and default ground motion everywhere else. However, we may want to consider a logic tree to weight alternatives.

Considerations/Issues

2. How much should we trust the deamplifying characteristics of the GMMs when depths are below the defaults. Should we consider the entire local velocity model and accept that portions of the basin will deamplify with respect to the default ground motions? NSHMP: not sure but Ken Campbell and Art Frankel will discuss

Considerations/Issues

3. Should we use the Z2.5 and the Z1.0 based GMPEs in calculating ground motions or only the Z2.5 GMPE as suggested by investigators in Seattle for subduction earthquakes? NSHMP: not sure but we are considering methods to incorporate all equations (conversions between Z2.5 and Z1.0).

Considerations/Issues

4. What local velocity models should we use? What should we do, if anything, outside the local models? NSHMP: only use local model weighted 100% and defaults outside of those areas. Oliver Boyd will discuss other alternatives.

Considerations/Issues

5. How do we model the subduction ground motion model to allow for basin response? NSHMP: add amplification terms to Vs30=760 model, see Atkinson discussion.