

California Geological Survey Project Review

California Geological Survey reviews geologic and seismic aspects of a wide variety of projects statewide, following a **variety of statutes & regulations**.

About 20 staff regularly involved in reviewing seismic input to different projects.

Use NSHMP model, and work with USGS in developing these. And use USGS maps, publications, web tools and related products.



Building Code application

School and hospital construction – follow enhanced building code provisions. Use these tools daily.

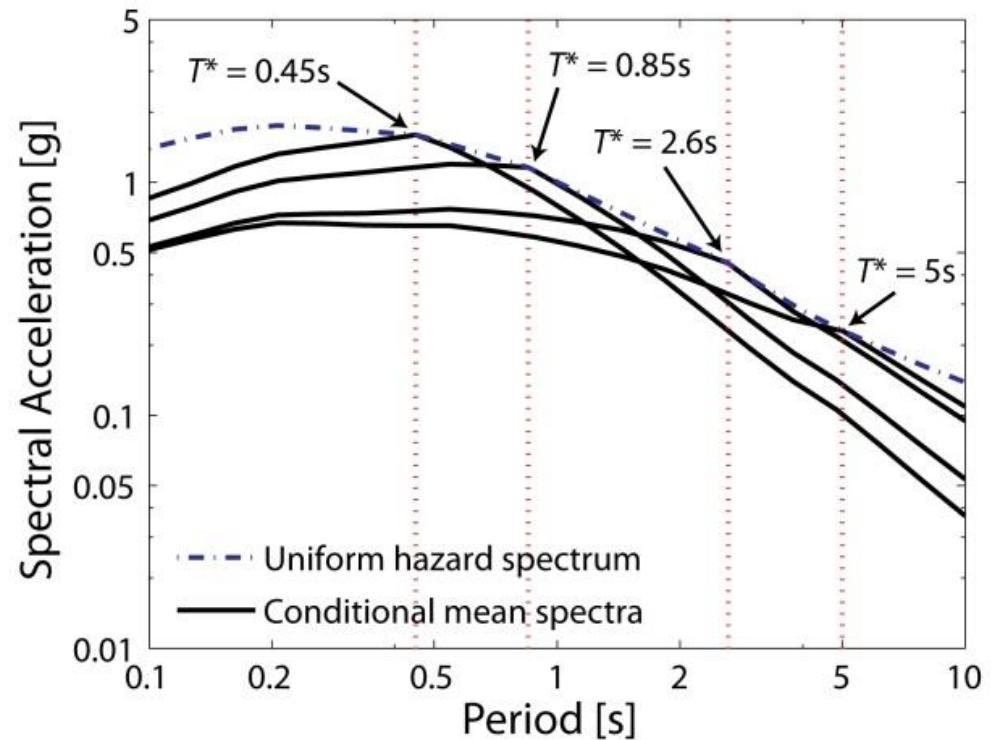
- ❖ Run NSHM (Fortran codes) at CGS to obtain site-specific probabilistic ground motion.
- ❖ USGS web tools:
 - Design Maps web tool
 - Hazard Curves
 - Interactive Deaggregation,
 - Quaternary Fault and Fold Database
 - Gridded hazard maps
 - Gridded design maps
 - All manner of documentation and primers available for training



Building Code application

Building code change upcoming.
ASCE 7-16 will encourage use of Conditional Mean Spectra. This will mean significant **increase in use of deaggregation tools** in order to select appropriate scenarios.

Available on NSHMP web site.



Elsewhere in California Regs

California regulatory language dating back to 1975 requires “**maximum credible earthquake**” to be:

“Maximum credible earthquake” means the maximum earthquake which rationally appears capable of occurring under the presently known tectonic framework and all known geologic and seismologic facts. The following factors and standards shall be applied in determining the maximum credible earthquake:

...

(f) the time factor (known or expected frequency of occurrence) shall not be a parameter.”



Elsewhere in California Regs

U3 Section Name	U3 Mmax	M8.25	M8.35	M8.45
Contra Costa (Ozal - Columbus) 2011	8.3	1.25E-08	1.78E-13	0.00E+00
Contra Costa (Reliez Valley) 2011	8.2	1.58E-09	0.00E+00	0.00E+00
Contra Costa (Southampton) 2011	8.3	1.39E-08	8.72E-13	0.00E+00
Contra Costa (Vallejo) 2011 CFM	8.2	1.26E-09	0.00E+00	0.00E+00

These regulations should be updated to reflect modern seismic hazard models, such as UCERF3 source model, but this is difficult and time-consuming.

An interim listing of “maximum earthquakes” from UCERF3 would help bridge the gap between current regulations and current science.

