

State of California Department of Conservation

CGS → Regional Geologic Hazards and Mapping Program → PSHA → Of9608

California Geological Survey - Regional Geologic Mapping Program

California Department of Conservation
Division of Mines and Geology
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PROBABILISTIC SEISMIC HAZARD ASSESSMENT FOR THE STATE OF CALIFORNIA

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a faults

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**APPENDIX A
CALIFORNIA FAULT PARAMETERS**

FAULT NAME AND GEOMETRY (ss) strike slip, (r) reverse, (n) normal (rl) rt. lateral, (ll) left lateral, (o) oblique	LENGTH (km)	SLIP RATE (mm/yr)	RANK (1)	Mmax (2)	CHAR. RATE (events/yr)	R.I. (3)	Down dip Width (km) (4)	ruptop (5)	rupbot (6)	rake	dip	daz (7)	Endpt N	Endpt S	COMMENTS			
A FAULTS																		
SAN ANDREAS FAULT ZONE																		
San Andreas - Coachella (rl-ss)	95	10	25.00	5.00	P	7.1	0.00000	n/a	12	2	0	12	180	90	0	- 116.48; 33.92	- 115.71; 33.35	Slip rate based on Sieh and Williams (1990); Sieh (1986); Keller et al. (1982); Bronkowski (1981). Model assumes slip only in S. San Andreas events.
San Andreas - San Bernardino (rl-ss)	107	11	24.00	6.00	M	7.3	0.00231	433	18	2	0	18	180	90	0	- 117.53; 34.31	- 116.48; 33.92	Slip rate reported by Weldon and Sieh (1985).
San Andreas (southern) (rl-ss)	203	20	24.00	6.00	P	7.4	0.00454	220	12	2	0	12	180	90	0	- 117.53; 34.31	- 115.71; 33.35	Rupture of San Bernardino and Coachella segments. Slip rate based on Coachella segment.
San Andreas - Mojave (rl-ss)	99	10	30.00	7.00	P	7.1	0.00182	550	12	2	0	12	180	90	0	- 118.50; 34.70	- 117.53; 34.31	Slip rate based on Sieh (1984), Salyards et al. (1992), and WGCEP (1995).
San Andreas - Carrizo (rl-ss)	145	15	34.00	3.00	W	7.2	0.00000	n/a	12	2	0	12	180	90	0	- 119.86; 35.31	- 118.51; 34.70	Slip rate based on Sieh and Jahns (1984). Model assumes slip only in 1857-type events.
San Andreas - Cholame (rl-ss)	62	6	34.00	5.00	P	6.9	0.00229	437	12	2	0	12	180	90	0	- 120.29; 35.75	- 119.86; 35.31	Slip rate based on analogy with Carrizo segment.
San Andreas Parkfield Segment (rl-ss)	37	4	34.00	5.00	P	6.7	0.04060	25	12	2	0	12	180	90	0	- 120.56; 36.00	- 120.29; 35.75	Slip rate reported by WGCEP (1995).
San Andreas (1857 rupture) (rl-ss)	345	35	34.00	5.00	W	7.8	0.00485	206	12	2	0	12	180	90	0	- 120.56; 36.00	- 117.53; 34.31	Rupture of Parkfield, Cholame, Carrizo, and Mojave segments. Max. magnitude based on 1857 event (Ellsworth, 1990). Slip rate based on Carrizo segment.
San Andreas (creeping segment) (rl-ss)	125	13	34.00	5.00	P	*	0.00000	n/a	12	2	0	12	180	90	0	- 121.51; 36.82	- 120.56; 36.00	Background seismicity.
San Andreas (Pajaro)	22	2	14.00	3.00	P	6.8	0.00000	n/a	18	2	0	18	180	90	0	- 121.69;	- 121.51;	Pajaro segment assumed to rupture only in 1906-type

Laguna Salada (rl-ss)	67	7	3.50	1.50	M	7.0	0.00297	336	15	2	0	15	180	90	0	-	-	Slip rate reported by Mueller and Rockwell (1995).
Elsinore-Coyote Mountain (rl-ss)	38	4	4.00	2.00	M	6.8	0.00160	625	15	2	0	15	180	90	0	116.36; 32.97	116.01; 32.78	Slip rate and fault length reported by WGCEP (1995).
Elsinore-Julian (rl-ss)	75	8	5.00	2.00	P	7.1	0.00294	340	15	2	0	15	180	90	0	117.01; 33.38	116.36; 32.97	Slip rate and fault length reported by WGCEP (1995).
Elsinore-Temecula (rl-ss)	42	4	5.00	2.00	M	6.8	0.00417	240	15	2	0	15	180	90	0	117.35; 33.64	117.01; 33.34	Slip rate and fault length reported by WGCEP (1995).
Elsinore-Glen Ivy (rl-ss)	38	4	5.00	2.00	M	6.8	0.00294	340	15	2	0	15	180	90	0	117.64; 33.85	117.35; 33.64	Reported slip rates vary from 3.0-7.2 (Millman and Rockwell, 1986)
Whittier (rl-ss)	37	4	2.50	1.00	M	6.8	0.00156	641	15	2	0	15	180	90	0	118.02; 33.97	117.64; 33.85	Slip rate based on Rockwell et al. (1990); Gath et al. (1992) description of offset drainage.
HAYWARD - RODGERS CRK FAULT ZONE																		
Hayward (total length) (rl-ss)	86	9	9.00	1.00	M-W	7.1	0.00600	167	12	2	0	12	180	90	0	122.41; 38.05	121.81; 37.45	Well constrained slip rate for southern segment reported by Lienkaemper, et al. (1995) and Lienkaemper and Borchartd (1996). Recurrence (167 yrs) and slip per event (1.5 m) are based on WGCEP (1990). Model weighted 50%.
Hayward (south) (rl-ss)	43	4	9.00	1.00	W	6.9	0.00600	167	12	2	0	12	180	90	0	121.13; 37.73	121.81; 37.45	Well constrained slip rate reported by Lienkaemper, et al. (1995) and Lienkaemper and Borchartd (1996). Recurrence (167 yrs) and slip per event (1.5 m) are based on WBCEP (1990). The southern segment can be projected to Calaveras fault along prominent zone of seismicity. Net slip rate of 9mm/yr can be resolved into 3mm/yr vertical and 7.6mm/yr r.l. along postulated Mission Link blind thrust of Andrews, et al (1992) along this southern connection. Model weighted 50%.
Hayward (north) (rl-ss)	43	4	9.00	1.00	M	6.9	0.00600	167	12	2	0	12	180	90	0	122.41; 38.05	122.13; 37.73	Well constrained slip rate for southern segment reported in Lienkaemper, et al. (1995) and Lienkaemper and Borchartd (1996). Recurrence (167 yrs) and slip per event (1.5 m) are based on WGCEP (1990). Model weighted 50%.
Rodgers Creek (rl-ss)	63	6	9.00	2.00	M	7.0	0.00450	222	10	2	0	10	180	90	0	122.77; 38.54	122.34; 38.09	Slip rate is composite of slip rate reported by Schwartz, et al. (1992) and slip rate from Hayward fault (Lienkaemper and Borchartd, 1996). Recurrence (222yrs) and slip per event (2.0 m) are based on WGCEP (1990).