10% in 50 yrs AFE
2% in 50 yrs AFE

Annual Frequency of Exceedance

Ground Motion (g)

UCERF3 Mean, below [2%in50, 10%in50]
Fault [87%, 85%]
BG [13%, 15%]

UCERF2 Mean, below [2%in50, 10%in50]
Fault [88%, 88%]
BG [12%, 12%]
AC01 (34.42, -118.10) : 5Hz

10% in 50 yrs AFE

2% in 50 yrs AFE

Ground Motion (g)

Annual Frequency of Exceedance

UCERF3 Mean, below [2%in50, 10%in50]

Fault [ 85%, 85% ]

BG [ 15%, 15% ]

UCERF2 Mean, below [2%in50, 10%in50]

Fault [ 86%, 87% ]

BG [ 14%, 13% ]
Big Sur (36.25, −121.75) : 5Hz

- Annual Frequency of Exceedance
- Ground Motion (g)

10% in 50 yrs AFE
2% in 50 yrs AFE

Blue line: UCERF3 Mean, below [2% in 50, 10% in 50]  
Dashed blue line: Fault [84%, 56%]  
Blue dash-dotted line: BG [15%, 43%]

Red line: UCERF2 Mean, below [2% in 50, 10% in 50]  
Dashed red line: Fault [65%, 59%]  
Red dash-dotted line: BG [35%, 41%]
Ground Motion (g)

Annual Frequency of Exceedance

Bakersfield (35.35, -119.00) : 5Hz

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2% in 50, 10% in 50]

Fault [6%, 20%]

BG [93%, 80%]

UCERF2 Mean, below [2% in 50, 10% in 50]

Fault [10%, 28%]

BG [89%, 72%]
Brawley (33.00, −115.55) : 5Hz

- Annual Frequency of Exceedance
- UCERF3 Mean, below [2% in 50, 10% in 50]
  - Fault [96%, 95%]
  - BG [4%, 5%]
- UCERF2 Mean, below [2% in 50, 10% in 50]
  - Fault [84%, 83%]
  - BG [16%, 17%]

10% in 50 yrs AFE
2% in 50 yrs AFE
Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

BKBU (34.56, -117.73) : 5Hz

UCERF3 Mean, below [2%in50, 10%in50]

Fault [76%, 80%]

BG [24%, 20%]

UCERF2 Mean, below [2%in50, 10%in50]

Fault [77%, 80%]

BG [23%, 20%]
Brookings (42.05, -124.25) : 5Hz

Annual Frequency of Exceedance

Ground Motion (g)

- UCERF3 Mean, below [2%in50, 10%in50]
- Fault [67%, 44%]
- BG [33%, 56%]
- UCERF2 Mean, below [2%in50, 10%in50]
- Fault [22%, 24%]
- BG [78%, 76%]

10% in 50 yrs AFE
2% in 50 yrs AFE
Carson City (39.15, -119.75) : 5Hz

Annual Frequency of Exceedance

Ground Motion (g)

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2%in50, 10%in50]
Fault [ 69% , 54% ]
BG [ 30% , 46% ]
UCERF2 Mean, below [2%in50, 10%in50]
Fault [ 6% , 9% ]
BG [ 94% , 91% ]
Century City (34.05, −118.40) : 5Hz

Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE
Ground Motion (g) vs. Ground Motion (g)

- UCERF3 Mean, below [2% in 50 yrs, 10% in 50 yrs]
- Fault [42%, 36%]
- BG [58%, 64%]
- UCERF2 Mean, below [2% in 50 yrs, 10% in 50 yrs]
- Fault [78%, 74%]
- BG [22%, 26%]

Annual Frequency of Exceedance (AFE)

- 10% in 50 yrs AFE
- 2% in 50 yrs AFE

Coalinga (36.15, -120.40) : 5Hz
Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

Concord (37.95, -122.00) : 5Hz
Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE
2% in 50 yrs AFE

Cucamonga (34.20, −117.55) : 5Hz

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [84%, 78%]
BG [16%, 22%]

UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [99%, 98%]
BG [0%, 2%]
Ground Motion (g)

Annual Frequency of Exceedance

Diablo Canyon (35.20, −120.85) : 5Hz

10% in 50 yrs AFE
2% in 50 yrs AFE

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [84%, 60%]
BG [16%, 39%]

UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [89%, 71%]
BG [11%, 28%]
Death Valley (36.35, −116.85) : 5Hz

Annual Frequency of Exceedance

Ground Motion (g)

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2%in50, 10%in50]

Fault [88%, 53%]

BG [11%, 47%]

UCERF2 Mean, below [2%in50, 10%in50]

Fault [99%, 89%]

BG [1%, 11%]
Eureka (40.80, −124.20) : 5Hz

10% in 50 yrs AFE
2% in 50 yrs AFE

Ground Motion (g)

Annual Frequency of Exceedance

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [94%, 81%]
BG [6%, 18%]
UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [98%, 92%]
BG [1%, 8%]
Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

Fresno (36.75, -119.75) : 5Hz

UCERF3 Mean, below [2% in 50, 10% in 50]

Fault [2%, 11%]

BG [98%, 88%]

UCERF2 Mean, below [2% in 50, 10% in 50]

Fault [5%, 28%]

BG [92%, 72%]
GLBT (33.96, −117.38) : 5Hz

10% in 50 yrs AFE
2% in 50 yrs AFE

Ground Motion (g)

Annual Frequency of Exceedance

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [38%, 47%]
BG [62%, 53%]

UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [60%, 69%]
BG [40%, 31%]
GOPH (33.90, −117.36) : 5Hz

Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2%in50, 10%in50]

UCERF2 Mean, below [2%in50, 10%in50]

Fault [ 37%, 49% ]

BG [ 63%, 51% ]

Fault [ 54%, 66% ]

BG [ 46%, 34% ]
GV03 (34.28, -117.23) : 5Hz

10% in 50 yrs AFE
2% in 50 yrs AFE

Ground Motion (g)

Annual Frequency of Exceedance

UCERF3 Mean, below [2%in50, 10%in50]
Fault [ 77%, 71% ]
BG [ 23%, 29% ]
UCERF2 Mean, below [2%in50, 10%in50]
Fault [ 95%, 91% ]
BG [ 4%, 9% ]
Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

LMAT (33.79, -117.40) : 5Hz

UCERF3 Mean, below [2%in50, 10%in50]

UCERF2 Mean, below [2%in50, 10%in50]

Fault [ 83% , 82% ]

BG [ 17% , 18% ]

Fault [ 73% , 73% ]

BG [ 27% , 27% ]
Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2%in50, 10%in50]

BG

UCERF2 Mean, below [2%in50, 10%in50]

Fault

BG

LBUT2 (34.59, -117.81) : 5Hz
Ground Motion (g)

Annual Frequency of Exceedance

- UCERF3 Mean, below [2% in 50, 10% in 50] Fault [74%, 61%]
- UCERF2 Mean, below [2% in 50, 10% in 50] Fault [78%, 71%]
- BG [26%, 39%]
- BG [22%, 29%]

10% in 50 yrs AFE
2% in 50 yrs AFE
Los Angeles (34.05, −118.25) : 5Hz

Annual Frequency of Exceedance

Ground Motion (g)

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2%in50, 10%in50]
Fault [85%, 73%]
BG [15%, 27%]

UCERF2 Mean, below [2%in50, 10%in50]
Fault [96%, 90%]
BG [5%, 10%]
Malibu West (34.05, −118.95) : 5Hz

Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2%in50, 10%in50]
Fault [68%, 52%]
BG [31%, 48%]
UCERF2 Mean, below [2%in50, 10%in50]
Fault [97%, 86%]
BG [3%, 14%]
Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

Ground Motion (g)

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [69%, 59%]
BG [31%, 41%]

UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [90%, 86%]
BG [10%, 14%]

LP ER (33.89, −117.16) : 5Hz

LPER (33.89, −117.16) : 5Hz
Monterey (36.60, −121.90) : 5Hz

Ground Motion (g) vs Annual Frequency of Exceedance

- UCERF3 Mean, below [2% in 50 yrs AFE, 10% in 50 yrs AFE]
- Fault [75%, 62%]
- BG [25%, 38%]
- UCERF2 Mean, below [2% in 50 yrs AFE, 10% in 50 yrs AFE]
- Fault [63%, 57%]
- BG [37%, 43%]
MKBD (33.88, -117.39) : 5Hz

Annual Frequency of Exceedance

Ground Motion (g)

UCERF3 Mean, below [2%in50, 10%in50]
Fault [42%, 54%]
BG [58%, 46%]

UCERF2 Mean, below [2%in50, 10%in50]
Fault [52%, 64%]
BG [48%, 35%]
Morgan Hill (37.15, -121.65) : 5Hz

- 10% in 50 yrs AFE
- 2% in 50 yrs AFE

Ground Motion (g)

Annual Frequency of Exceedance

UCERF3 Mean, below [2%in50, 10%in50]
- Fault [88%, 83%]
- BG [12%, 17%]

UCERF2 Mean, below [2%in50, 10%in50]
- Fault [91%, 89%]
- BG [9%, 11%]
MRVY (33.93, −117.17) : 5Hz

10% in 50 yrs AFE
2% in 50 yrs AFE

Annual Frequency of Exceedance

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [79%, 64%]
BG [20%, 36%]

UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [93%, 89%]
BG [7%, 11%]

Ground Motion (g)
Northridge (34.20, -118.55) : 5Hz

Annual Frequency of Exceedance

Ground Motion (g)

10% in 50 yrs AFE

2% in 50 yrs AFE
NUEVO (33.78, -117.15) : 5Hz

10% in 50 yrs AFE

2% in 50 yrs AFE

Ground Motion (g)

Annual Frequency of Exceedance

UCERF3 Mean, below [2% in 50, 10% in 50]

Fault [46%, 50%]
BG [54%, 50%]

UCERF2 Mean, below [2% in 50, 10% in 50]

Fault [68%, 71%]
BG [32%, 29%]
Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [84%, 84%]
BG [16%, 16%]

UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [83%, 85%]
BG [17%, 15%]

PACI2 (34.39, -118.05) : 5Hz
Oakland (37.80, −122.25) : 5Hz

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

Ground Motion (g)

UCERF3 Mean, below [2%in50, 10%in50]
Fault [ 87%, 83% ]
BG [ 13%, 17% ]
UCERF2 Mean, below [2%in50, 10%in50]
Fault [ 96%, 94% ]
BG [ 4%, 6% ]
### Fault and Background (BG) Comparison

#### UCERF3 Mean, below [2% in 50, 10% in 50]
- Fault: [99%, 98%]
- BG: [1%, 2%]

#### UCERF2 Mean, below [2% in 50, 10% in 50]
- Fault: [99%, 98%]
- BG: [1%, 2%]

### Annual Frequency of Exceedance (AFE)

- 10% in 50 yrs AFE
- 2% in 50 yrs AFE

### Location
- Palmdale (34.50, -118.00): 5Hz
Palm Springs (33.85, -116.55) : 5Hz

Annual Frequency of Exceedance

Ground Motion (g)

10% in 50 yrs AFE
2% in 50 yrs AFE

UCERF3 Mean, below [2%in50, 10%in50]
Fault [ 76%, 69% ]
BG [ 24%, 31% ]

UCERF2 Mean, below [2%in50, 10%in50]
Fault [ 73%, 65% ]
BG [ 27%, 35% ]
Ground Motion (g)

Annual Frequency of Exceedance

PBWL (34.41, -117.86) : 5Hz

10% in 50 yrs AFE

2% in 50 yrs AFE
Pasadena (34.15, -118.15) : 5Hz

10% in 50 yrs AFE

2% in 50 yrs AFE

Ground Motion (g)

Annual Frequency of Exceedance

UCERF3 Mean, below [2%in50, 10%in50]

Fault [ 93%, 81% ]

BG [ 7%, 18% ]

UCERF2 Mean, below [2%in50, 10%in50]

Fault [ 98%, 95% ]

BG [ 2%, 5% ]
PEDLEY1 (33.99, -117.46) : 5Hz

- Annual Frequency of Exceedance
- Ground Motion (g)

**UCERF3 Mean, below [2%in50, 10%in50]**
- Fault [40%, 50%]
- BG [60%, 50%]

**UCERF2 Mean, below [2%in50, 10%in50]**
- Fault [52%, 66%]
- BG [48%, 34%]

10% in 50 yrs AFE
2% in 50 yrs AFE
Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [44%, 55%]
BG [55%, 45%]

UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [58%, 66%]
BG [42%, 34%]

PERR2 (33.79, -117.24) : 5Hz
Annual Frequency of Exceedance

Ground Motion (g)

10% in 50 yrs AFE

2% in 50 yrs AFE

PERRM (33.80, −117.25) : 5Hz

UCERF3 Mean, below [2% in 50, 10% in 50]

Fault [44%, 54%]

BG [56%, 46%]

UCERF2 Mean, below [2% in 50, 10% in 50]

Fault [56%, 65%]

BG [44%, 35%]
Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

PIBU (34.65, -117.85) : 5Hz

UCERF3 Mean, below [2%in50, 10%in50]

Fault [67%, 74%]

BG [32%, 26%]

UCERF2 Mean, below [2%in50, 10%in50]

Fault [72%, 77%]

BG [28%, 23%]
Reno (39.55, -119.80) : 5Hz

Annual Frequency of Exceedance vs. Ground Motion (g)

- UCERF3 Mean, below [2% in 50 yrs, 10% in 50 yrs]
- Fault [6%, 9%]
- BG [94%, 91%]
- UCERF2 Mean, below [2% in 50 yrs, 10% in 50 yrs]
- Fault [NaN%, 2%]
- BG [100%, 98%]
Ground Motion (g)

Annual Frequency of Exceedance

UCERF3 Mean, below [2% in 50, 10% in 50]  
Fault [38%, 48%]  
BG [62%, 52%]  

UCERF2 Mean, below [2% in 50, 10% in 50]  
Fault [56%, 67%]  
BG [44%, 33%]  

Riverside (33.95, -117.40) : 5Hz
Sacramento (38.60, −121.50) : 5Hz

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

Ground Motion (g)

UCERF3 Mean, below [2%in50, 10%in50]

Fault [26%, 49%]

BG [73%, 50%]

UCERF2 Mean, below [2%in50, 10%in50]

Fault [34%, 59%]

BG [63%, 41%]
San Bernardino (34.10, -117.30) : 5Hz

Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [82%, 73%]
BG [18%, 27%]

UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [93%, 90%]
BG [7%, 10%]
San Diego (32.70, −117.15) : 5Hz

Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2% in 50, 10% in 50]

Fault [96%, 86%]

BG [4%, 14%]

UCERF2 Mean, below [2% in 50, 10% in 50]

Fault [90%, 69%]

BG [9%, 31%]
San Francisco (37.75, -122.40) : 5Hz

Ground Motion (g)

Annual Frequency of Exceedance

- 10% in 50 yrs AFE
- 2% in 50 yrs AFE

UCERF3 Mean, below [2% in 50, 10% in 50]

Fault [74%, 76%]
BG [26%, 24%]

UCERF2 Mean, below [2% in 50, 10% in 50]

Fault [85%, 86%]
BG [15%, 14%]
San Jose (37.35, -121.90) : 5Hz

Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2%in50, 10%in50]
- Fault [83%, 82%]
- BG [17%, 18%]

UCERF2 Mean, below [2%in50, 10%in50]
- Fault [72%, 79%]
- BG [27%, 21%]
San Luis Obispo (35.30, −120.65) : 5Hz

Annual Frequency of Exceedance vs Ground Motion (g)

- 10% in 50 yrs AFE
- 2% in 50 yrs AFE

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [78%, 66%]
BG [22%, 33%]

UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [65%, 59%]
BG [35%, 41%]
San Mateo (37.55, -122.30) : 5Hz

Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [92%, 88%]
BG [8%, 12%]

UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [92%, 87%]
BG [9%, 13%]
Santa Barbara (34.45, −119.70) : 5Hz

Ground Motion (g)

Annual Frequency of Exceedance

10% in 50 yrs AFE

2% in 50 yrs AFE
San Onofre (33.40, −117.55) : 5Hz

Annual Frequency of Exceedance

- 10% in 50 yrs AFE
- 2% in 50 yrs AFE

Ground Motion (g)

UCERF3 Mean, below [2%in50, 10%in50]
- Fault [54%, 50%]
- BG [46%, 50%]

UCERF2 Mean, below [2%in50, 10%in50]
- Fault [55%, 58%]
- BG [45%, 42%]
Santa Cruz (36.95, −122.05) : 5Hz

Annual Frequency of Exceedance

Ground Motion (g)

10% in 50 yrs AFE

2% in 50 yrs AFE

UCERF3 Mean, below [2%in50, 10%in50]

Fault    [ 74% , 74% ]
BG       [ 26% , 26% ]

UCERF2 Mean, below [2%in50, 10%in50]

Fault    [ 60% , 62% ]
BG       [ 40% , 38% ]
Santa Rosa (38.45, −122.70) : 5Hz

Ground Motion (g)

10% in 50 yrs AFE

2% in 50 yrs AFE

Annual Frequency of Exceedance

UCERF3 Mean, below [2%in50, 10%in50]

Fault [97%, 90%]

BG [3%, 9%]

UCERF2 Mean, below [2%in50, 10%in50]

Fault [99%, 96%]

BG [1%, 4%]
Annual Frequency of Exceedance

Ground Motion (g)

10% in 50 yrs AFE

2% in 50 yrs AFE

SW01 (34.30, −117.34) : 5Hz

UCERF3 Mean, below [2%in50, 10%in50]

Fault [ 86%, 80% ]

BG [ 14%, 20% ]

UCERF2 Mean, below [2%in50, 10%in50]

Fault [ 95%, 93% ]

BG [ 5%, 7% ]
UCR (33.96, -117.32) : 5Hz

Annual Frequency of Exceedance

<table>
<thead>
<tr>
<th>Fault</th>
<th>UCERF3 Mean, below [2% in 50, 10% in 50]</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG</td>
<td>UCERF2 Mean, below [2% in 50, 10% in 50]</td>
</tr>
</tbody>
</table>

10% in 50 yrs AFE

2% in 50 yrs AFE
Vallejo (38.10, −122.25) : 5Hz

Annual Frequency of Exceedance

Ground Motion (g)

10% in 50 yrs AFE
2% in 50 yrs AFE

UCERF3 Mean, below [2% in 50, 10% in 50]
Fault [93%, 89%]
BG [7%, 11%]

UCERF2 Mean, below [2% in 50, 10% in 50]
Fault [81%, 85%]
BG [19%, 15%]
Ventura (34.30, −119.30) : 5Hz

- 10% in 50 yrs AFE
- 2% in 50 yrs AFE

**Ground Motion (g)**

**Annual Frequency of Exceedance**

**UCERF3 Mean, below [2% in 50, 10% in 50]**
- Fault [93%, 85%]
- BG [7%, 15%]

**UCERF2 Mean, below [2% in 50, 10% in 50]**
- Fault [96%, 91%]
- BG [4%, 9%]