



Determining a PGA Using the New USGS Tool

Website for PGA determination



The URL for the new PGA tool is:
<https://earthquake.usgs.gov/hazards/interactive/>

The new website looks like this:

The screenshot shows the USGS Earthquake Hazards Program website. The header includes the USGS logo and the text "Earthquake Hazards Program". The main content area is titled "Beta - Unified Hazard Tool" and features a yellow warning box stating: "Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical." Below the warning, there is a navigation menu with options: "Earthquake Hazard and Probability Maps", "Input", "Edition", "Spectral Period", "Time Horizon", "Location", and "Site Class". The "Edition" dropdown is set to "Conterminous U.S. 2014 (v4.0.x)". The "Spectral Period" dropdown is set to "Peak ground acceleration". The "Time Horizon" section shows "Return period in years" with a text input field containing "2475" and two radio button options: "2% in 50 years (2,475 years)" and "10% in 50 years (475 years)". The "Location" section includes fields for "Latitude" and "Longitude" (with a note: "Decimal degrees, negative values for western longitudes"). A "Search..." field and a "Search" button are located on the left side of the page.

Calculating PGA



Ensure the appropriate selections are made in the drop-down menus for **Edition** and **Spectral Period** as indicated below:

^ Input

Edition
Dynamic: Conterminous U.S. 2014 (v4.1.0) ▼

Spectral Period
Peak ground acceleration ▼

Location

Latitude
Decimal degrees

Longitude

Time Horizon
Return period in years

2% in 50 years
(2,475 years)

10% in 50 years
(475 years)

Calculating PGA

To determine the **Location** of the property, enter the address by selecting the link for *Choose location using a map*:

Location

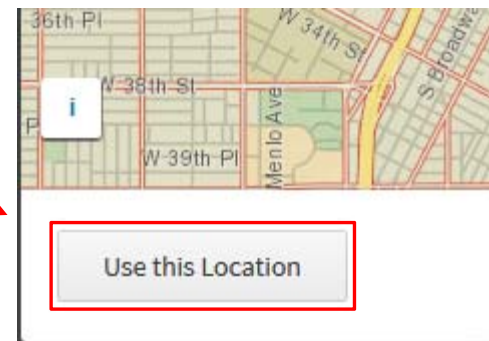
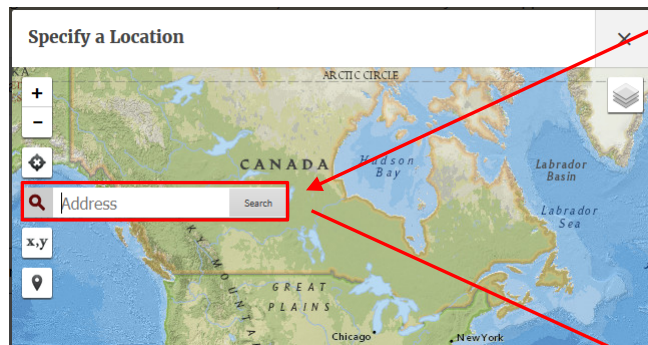
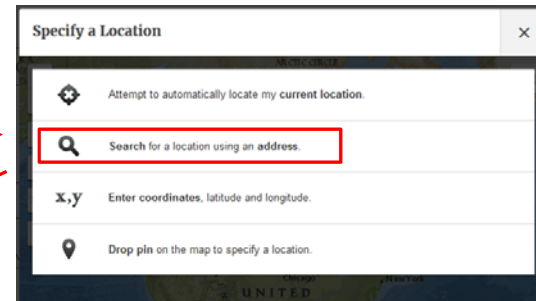
Latitude

Decimal degrees

Longitude

Decimal degrees, negative values for western longitudes

[Choose location using a map](#)



The latitude/longitude will automatically be entered based on the address

Calculating PGA



The **Time Horizon** field will be automatically populated when you select the **10% in 50 years** button:

^ Input

Edition
Conterminous U.S. 2014 (v4.0.x) ▼

Spectral Period
Peak ground acceleration ▼

Location

Latitude
Decimal degrees

Longitude
Decimal degrees, negative values for western longitudes

[Choose location using a map](#)

Site Class

Time Horizon
Return period in years
2475

2% in 50 years
(2,475 years)

10% in 50 years
(475 years)


Calculating PGA

Select the appropriate **Site Class** based on the property's location as indicated below:

Decimal degrees, negative values for western longitudes

[Choose location using a map](#)

Site Class

Site Class

- 760 m/s (B/C boundary) ▼
- Please select...
- 180 m/s (D/E boundary)
- 259 m/s (Site class D)
- 360 m/s (C/D boundary)
- 537 m/s (Site class C)
- 760 m/s (B/C boundary)
- 1150 m/s (Site class B)
- 2000 m/s (Site class A)

[compute a hazard curve.](#)

- **259 m/s (Site class D)** for properties located in California, Nevada, Oregon or Washington
- **760 m/s (B/C boundary)** for properties all other locations

Calculating PGA



Scroll down to the **Deaggregation** section and select “Compute Deaggregation”

^ Deaggregation

Component

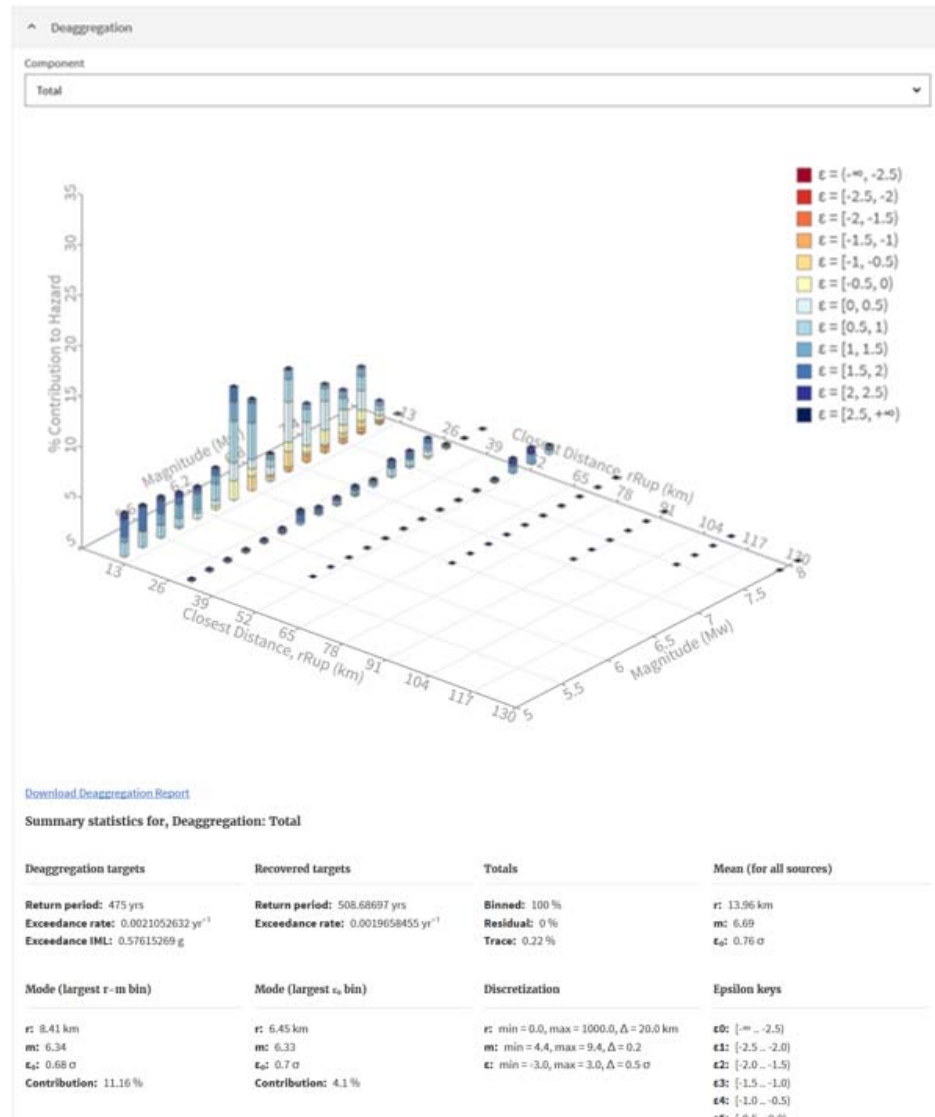
Please select “Edition”, “Location”, “Site Class”, “Spectral Period” & “Time Horizon” above to compute a deaggregation.

Compute Deaggregation

Calculating PGA



The output will look similar to this:



Calculating PGA



The PGA is noted as the Exceedance IML.

Exceedance IML: 0.57615269 g

Calculating PGA



Use your browser's print function to print the webpage to PDF for upload to DMS.

If you use the "Download Deaggregation Report" button, the result is a difficult to read text file:

```
deaggregation-report - Notepad
File Edit Format View Help
*** Deaggregation of Seismic Hazard at One Period of Spectral Acceleration ***** Data from USGS NSHM 2014 Dynamic ****PSHA Deaggregation. %cont
σEpsilon keys:  ε0: [-∞ .. -2.5)  ε1: [-2.5 .. -2.0)  ε2: [-2.0 .. -1.5)  ε3: [-1.5 .. -1.0)  ε4: [-1.0 .. -0.5)  ε5: [-0.5 .. 0.0)  ε6: [0.0 .. 0.
90      7.3      0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
.9      0.024  0.000  0.013  0.006  0.004  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
.127    0.038  0.039  0.035  0.015  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
0.012   0.224  0.290  0.155  0.067  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
9       1.139  1.245  0.344  0.058  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
0.259   0.112  0.476  0.538  0.431  0.385  0.038  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
stance (km): 14.489261 Magnitude: 7.2563994 Epsilon (mean values): 0.18625386 Azimuth: 203.66829 Latitude: 33.847381 Longitude: -118.36396P
5 Magnitude: 7.4850427 Epsilon (mean values): 0.38415342 Azimuth: 15.135002 Latitude: 34.162534 Longitude: -118.21987UC33brAvg_FM32: Perc
tude: 33.847381 Longitude: -118.36396Puente Hills (Santa Fe Springs) [1]: Percent Contributed: 2.09 Distance (km): 13.164527 Magnitude: 7.0
ude: 34.065558 Longitude: -118.30633Newport-Inglewood alt 2 [6]: Percent Contributed: 1.1 Distance (km): 14.007187 Magnitude: 7.5687729 Ep
6PointSourceFinite: -118.25600,34.11046,0.00000: Percent Contributed: 1.71 Distance (km): 8.0730958 Magnitude: 5.6447439 Epsilon (mean valu
25600,34.11046,0.00000: Percent Contributed: 1.53 Distance (km): 8.0792502 Magnitude: 5.6415867 Epsilon (mean values): 1.0268536 Azimuth:
```