Fannie Mae

Earthquake Hazard Toolbox

United States Geological Survey (USGS) Peak Ground Acceleration (PGA) Tutorial

Fannie Mae requires the Lender to assess the seismic risk for each Property that secures a Mortgage Loan being purchased by Fannie Mae. The Property Condition Assessment (PCA) Report provides the Lender with the information needed to evaluate whether a Property is located in an area or region that may have a propensity to be impacted by a seismic event. To assess the seismic risk, the PCA Report must identify the Peak Ground Acceleration (PGA) for the Property. The PGA, which replaced the reporting of the Seismic Zone for the Property, is reported by the United States Geological Survey (USGS), and represents the shaking or ground motion from an earthquake, expressed as a percentage of g, with g being the acceleration of a falling object due to gravity. If the Property is located in a region with a high seismic risk (i.e., the Property is located in a region that has a 10% or greater probability of the maximum Peak Ground Acceleration equal to or greater than 0.15g at any point in a 50-year period), then the Lender must perform additional seismic risk analysis.

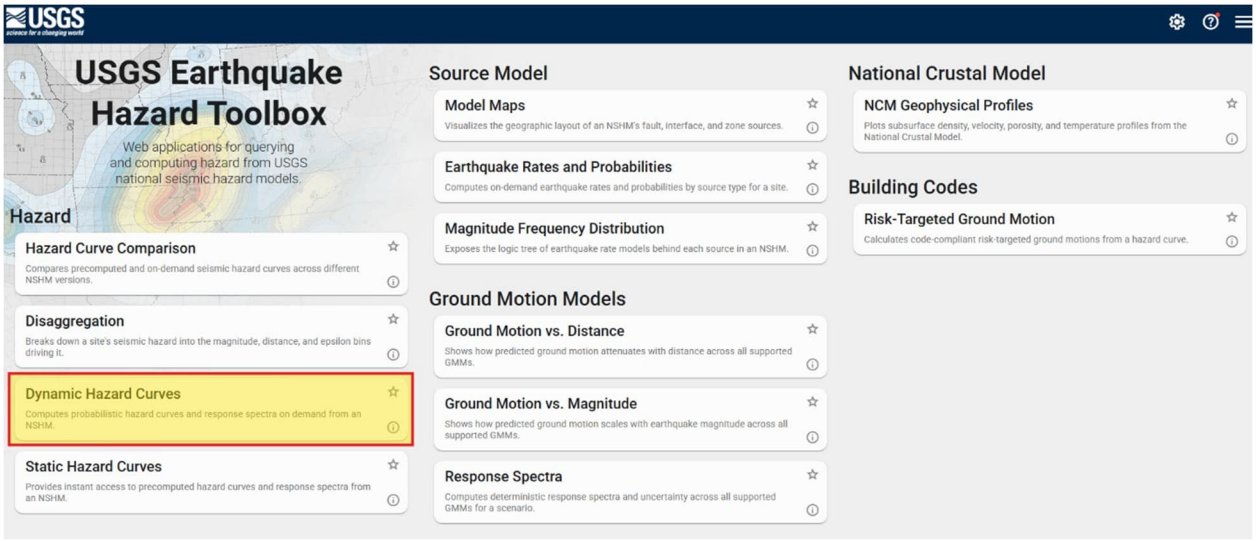
The Lender may wish to determine a Property's seismic risk earlier in the underwriting process, before the PCA is ordered, to assess whether to proceed with full underwriting for a Property that may require additional seismic risk analysis. This tutorial will assist the Lender in using the USGS Earthquake Hazard Toolbox website (see link below). There are other publicly available sources for determining a Property's PGA, as well as numerous seismic hazardous determination tools made available by USGS.

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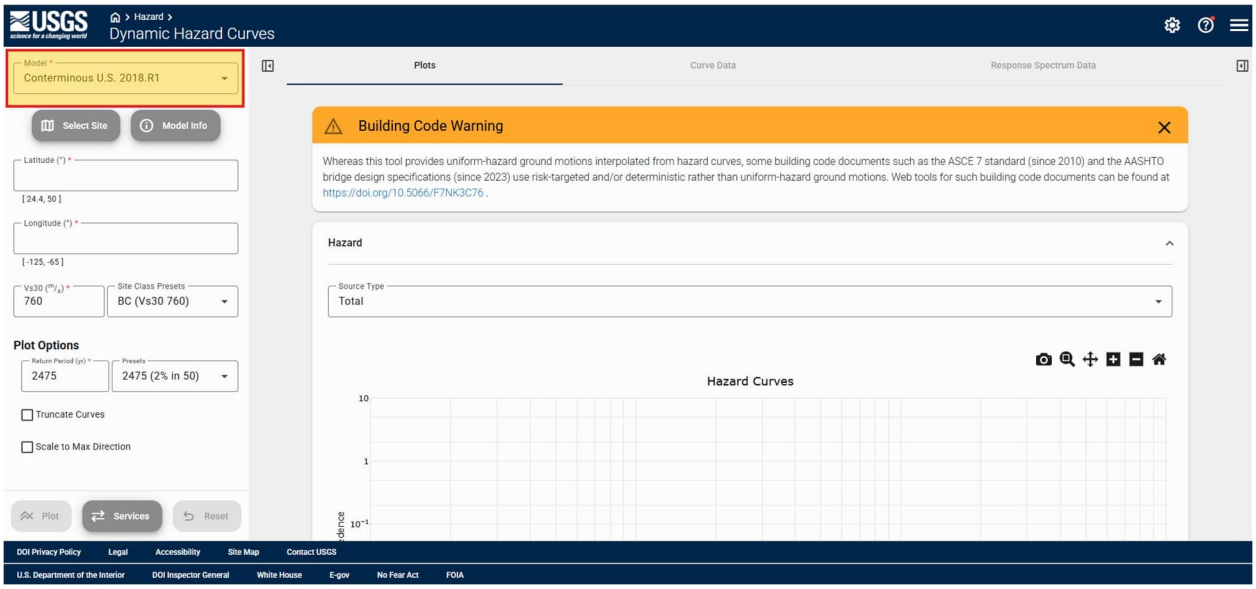
Determining PGA Values Using Updated USGA Website

Navigate to USGS website: https://earthquake.usgs.gov/nshmp/

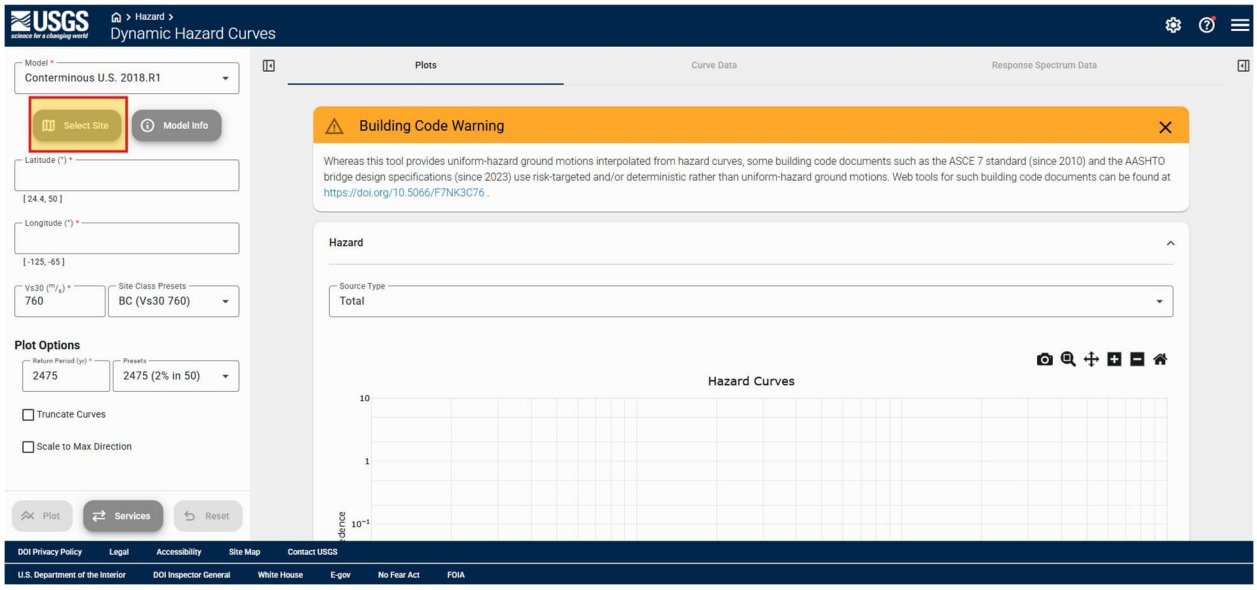
Step 1: Select **Dynamic Hazard Curves**.



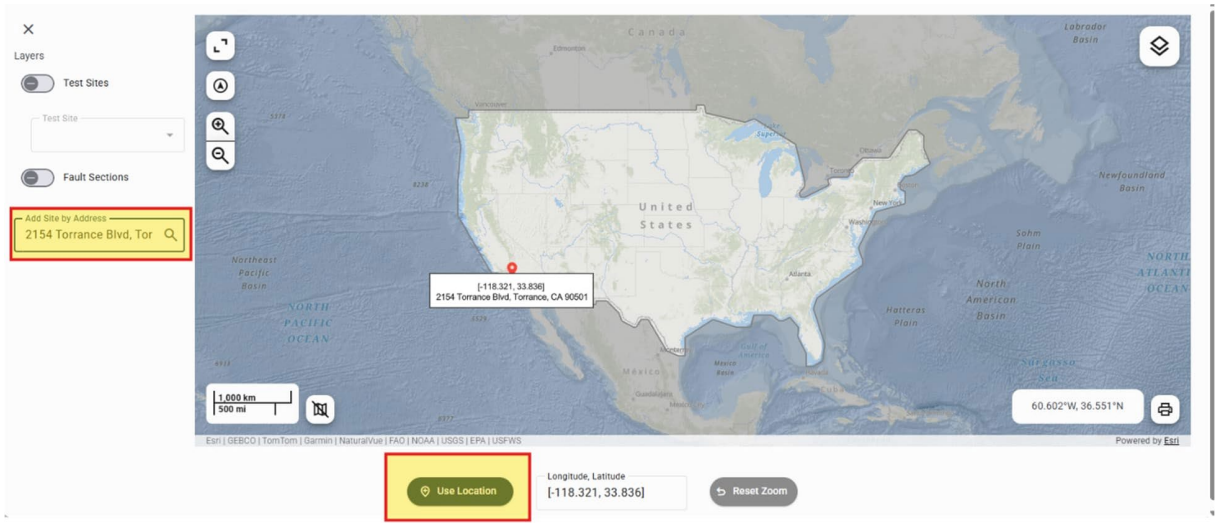
Step 2: Go to **Model** and Select the version that you need. For most properties, select Conterminous U.S. 2018.R1 model. If the property is located in Alaska, Hawaii or Puerto Rico/Virgin Islands, select those presets.



Step 3: Click on "**Select Site**".

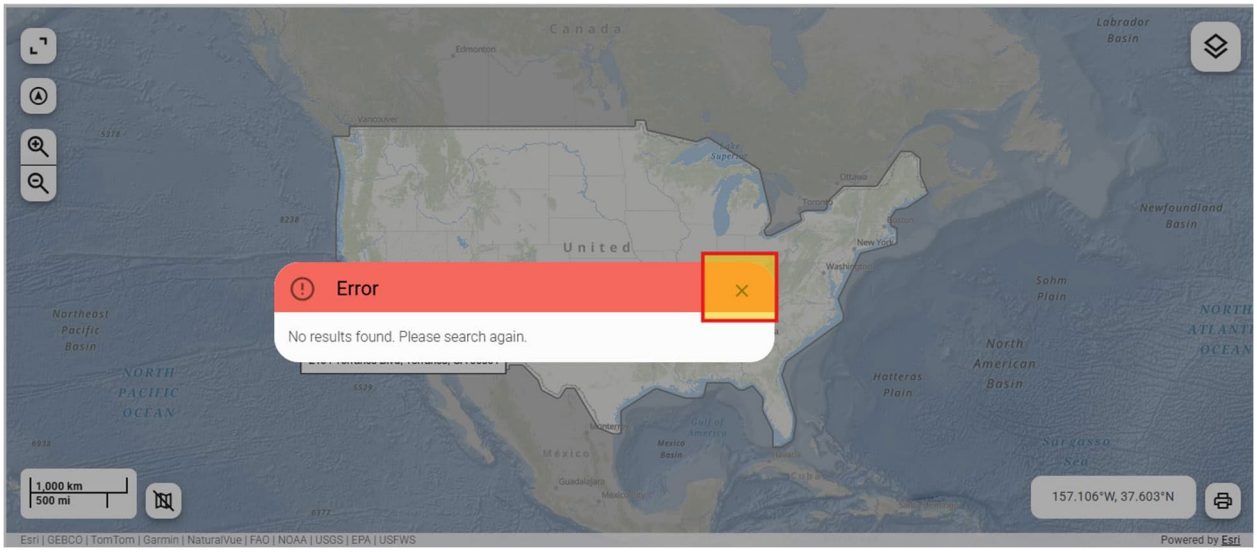


Step 4: Enter Address under "**Add Site by Address**" and press Enter or Press the magnifying glass icon, then click on "**Use Location**".

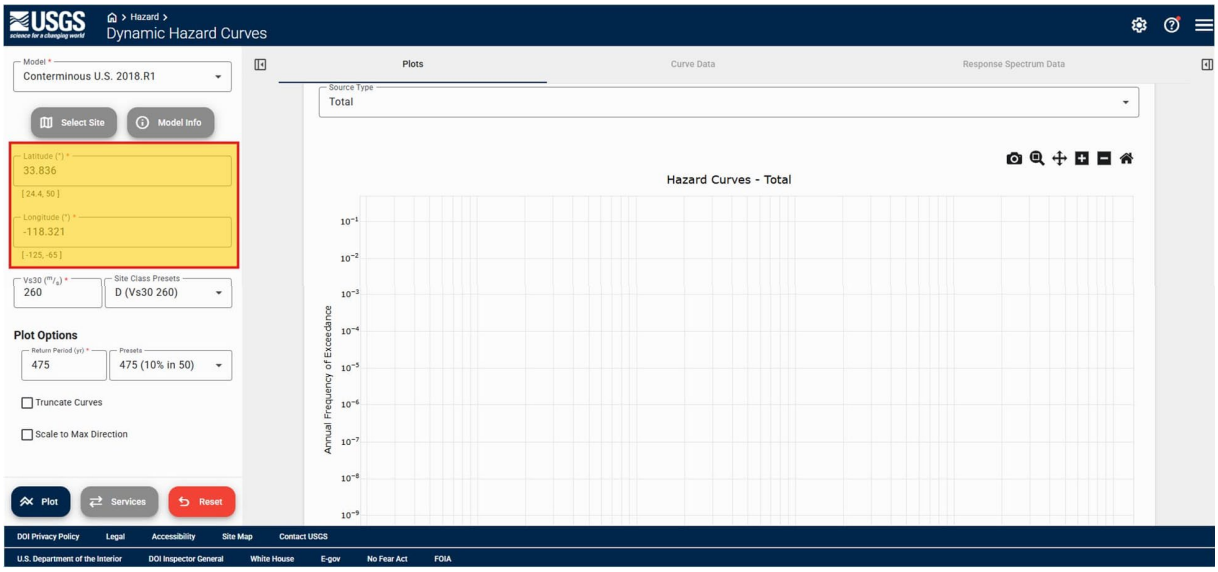


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Note, an **Error** prompt may be displayed. Press the "X" on the Error prompt to exit out. The pin should be placed on the address you have entered.



If there is no pin, try entering an alternate address or manually entering the Latitude and Longitude on the prior page.



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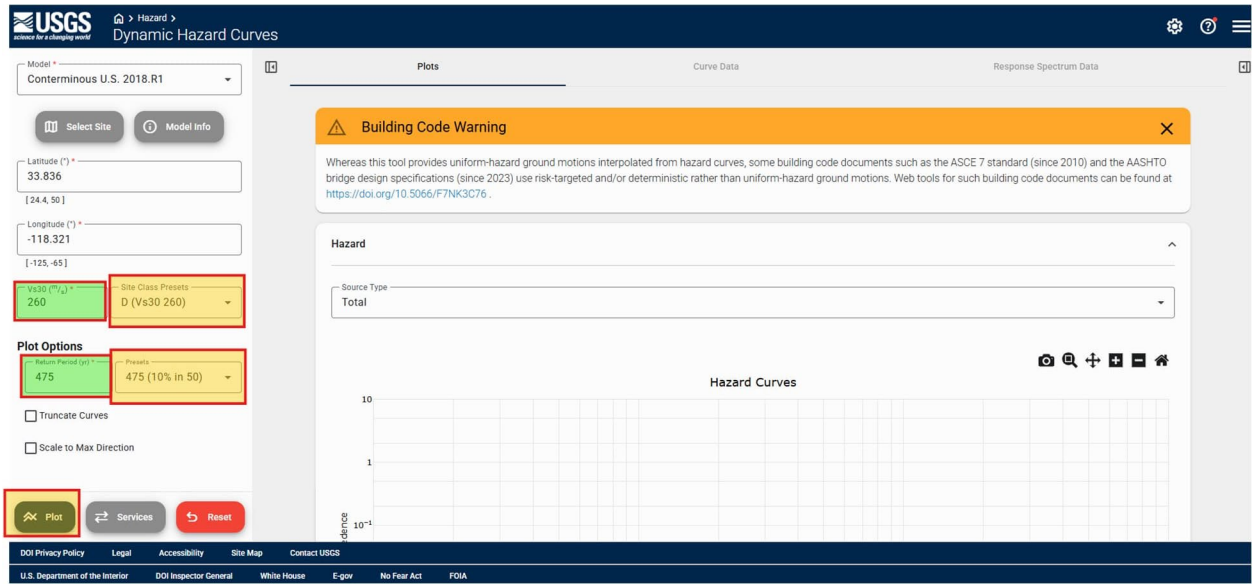
Step 5: Select **Site Class**.

- All locations: Type "**260**" or select '**D (Vs30 260)**' in Site Class Presets.

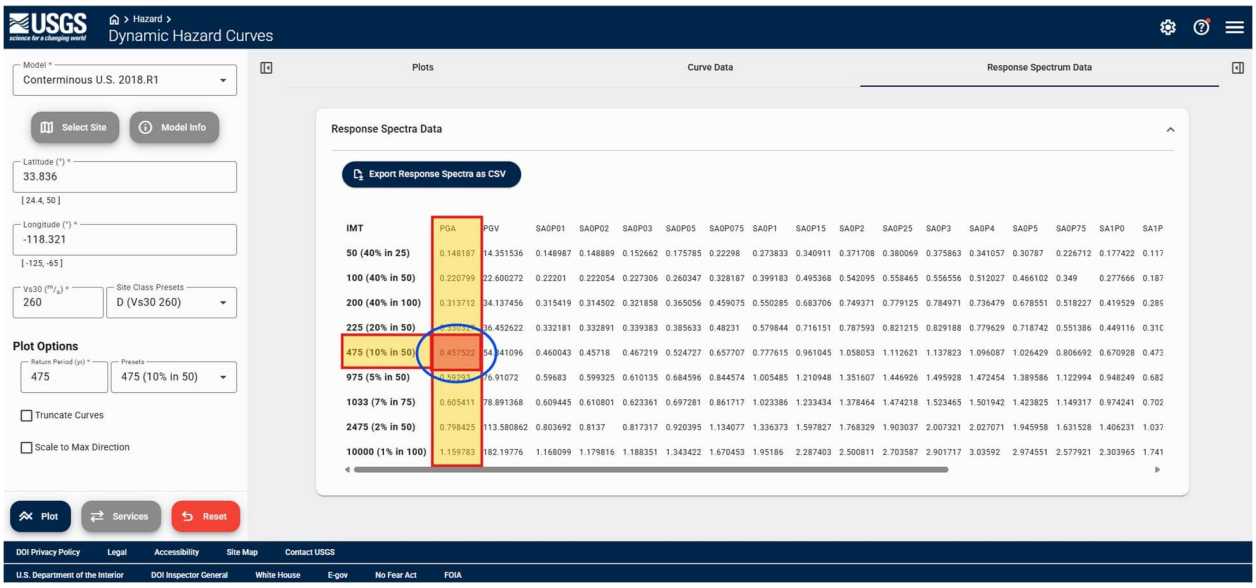
Step 6: Select **Plot Options**.

- Type "475" in Return Period or select "475 (10% in 50)" in Presets.

Step 7: Click "**Plot**" button.



Step 8: Click on "**Response Spectrum Data**" on the top ribbon and look for **475 (10% in 50)** row and select value from the "**PGA**" column. **THIS IS YOUR PGA VALUE.**



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