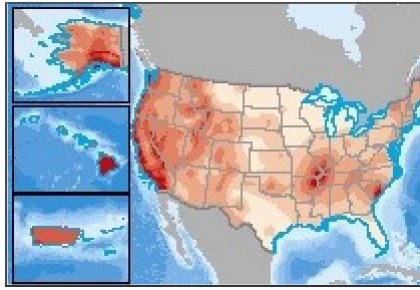


## Seismic Risk (2% in 50 years)



**Tags**  
seismic risk, USGS

### Summary

Depicts seismic hazard as estimated peak ground acceleration (%g) at a 2% occurrence level in 50 years. The data are intended for geographic display and analysis at the national level, and for large regional areas. The data should be displayed and analyzed at scales appropriate for 1:2,000,000-scale data.

### Description

The U.S. Geological Survey (USGS) National Seismic Hazard Maps display earthquake ground motions for various probability levels across the United States and are applied in seismic provisions of building codes, insurance rate structures, risk assessments, and other public policy. The updated maps represent an assessment of the best available science in earthquake hazards and incorporate new findings on earthquake ground shaking, faults, seismicity, and geodesy. The USGS National Seismic Hazard Mapping Project developed these maps by incorporating information on potential earthquakes and associated ground shaking obtained from interaction in science and engineering workshops involving hundreds of participants, review by several science organizations and State surveys, and advice from expert panels and a Steering Committee. The new probabilistic hazard maps represent an update of the seismic hazard maps; previous versions were developed by Petersen and others (2008) and Frankel and others (2002), using the methodology developed Frankel and others (1996). Algermissen and Perkins (1976) published the first probabilistic seismic hazard map of the United States which was updated in Algermissen and others (1990).

The National Seismic Hazard Maps are derived from seismic hazard curves calculated on a grid of sites across the United States that describe the annual frequency of exceeding a set of ground motions. Figures depict probabilistic ground motions with a 2 percent probability of exceedance. Spectral accelerations are calculated for 5 percent damped linear elastic oscillators. All ground motions are calculated for site conditions with  $V_{s30}=760\text{m/s}$ , corresponding to NEHRPB/C site class boundary.

### Credits

USGS

### Extent

<b>West</b>	-179.999989	<b>East</b>	179.999989
<b>North</b>	72.050000	<b>South</b>	16.671028

## Scale Range

**Maximum (zoomed in)** 1:500,000  
**Minimum (zoomed out)** 1:20,000,000

## Topics and Keywords

THEMES OR CATEGORIES OF THE RESOURCE environment, geoscientificInformation  
\* CONTENT TYPE Downloadable Data  
EXPORT TO FGDC CSDGM XML FORMAT AS RESOURCE DESCRIPTION No  
TEMPORAL KEYWORDS 2021

## Citation

TITLE Seismic Risk (2% in 50 years)  
PUBLICATION DATE 2021-01-01  
PRESENTATION FORMATS \* digital map

## Citation Contacts

RESPONSIBLE PARTY  
INDIVIDUAL'S NAME Jim Kuiper  
ORGANIZATION'S NAME Argonne National Laboratory  
CONTACT'S ROLE user  
CONTACT INFORMATION  
PHONE  
VOICE 630-252-6206  
ADDRESS  
TYPE postal  
DELIVERY POINT 9700 S. Cass Avenue  
CITY Lemont  
ADMINISTRATIVE AREA Illinois  
POSTAL CODE 60439  
COUNTRY US  
E-MAIL ADDRESS jkuiper@anl.gov

## Resource Details

DATASET LANGUAGES \* English (UNITED STATES)  
DATASET CHARACTER SET utf8 - 8 bit UCS Transfer Format  
SPATIAL REPRESENTATION TYPE \* vector  
\* PROCESSING ENVIRONMENT Version 6.2 (Build 9200) ; Esri ArcGIS 10.8.0.12790  
CREDITS  
USGS  
ARCGIS ITEM PROPERTIES  
\* NAME seismic\_risk\_zone\_area\_v3

## Extents

EXTENT  
GEOGRAPHIC EXTENT  
BOUNDING RECTANGLE  
EXTENT TYPE Extent used for searching  
\* WEST LONGITUDE -179.999989  
\* EAST LONGITUDE 179.999989  
\* NORTH LATITUDE 72.050000  
\* SOUTH LATITUDE 16.671028  
\* EXTENT CONTAINS THE RESOURCE Yes  
EXTENT  
TEMPORAL EXTENT  
DATE AND TIME 2021-01-01

#### EXTENT IN THE ITEM'S COORDINATE SYSTEM

- \* WEST LONGITUDE -20037507.067162
- \* EAST LONGITUDE 20037507.067162
- \* SOUTH LATITUDE 1882564.123400
- \* NORTH LATITUDE 11771220.721000
- \* EXTENT CONTAINS THE RESOURCE Yes

## Resource Points of Contact

#### POINT OF CONTACT

INDIVIDUAL'S NAME Jim Kuiper  
ORGANIZATION'S NAME Argonne National Laboratory  
CONTACT'S ROLE distributor

#### CONTACT INFORMATION

##### PHONE

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DELIVERY POINT 9700 S. Cass Avenue  
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ADMINISTRATIVE AREA Illinois  
POSTAL CODE 60439  
COUNTRY US  
E-MAIL ADDRESS [jkuiper@anl.gov](mailto:jkuiper@anl.gov)

## Resource Maintenance

#### RESOURCE MAINTENANCE

UPDATE FREQUENCY unknown

## Spatial Reference

#### ARCGIS COORDINATE SYSTEM

- \* TYPE Projected
- \* GEOGRAPHIC COORDINATE REFERENCE GCS\_WGS\_1984
- \* PROJECTION WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere
- \* COORDINATE REFERENCE DETAILS

##### PROJECTED COORDINATE SYSTEM

WELL-KNOWN IDENTIFIER 102100  
X ORIGIN -22041257.77387803  
Y ORIGIN -30241100  
XY SCALE 144148035.89861274  
Z ORIGIN -100000  
Z SCALE 10000  
M ORIGIN -100000  
M SCALE 10000  
XY TOLERANCE 0.001  
Z TOLERANCE 0.001  
M TOLERANCE 0.001  
HIGH PRECISION true

LATEST WELL-KNOWN IDENTIFIER 3857

WELL-KNOWN TEXT PROJCS["WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere",GEOGCS  
["GCS\_WGS\_1984",DATUM["D\_WGS\_1984",SPHEROID  
["WGS\_1984",6378137.0,298.257223563]],PRIMEM["Greenwich",0.0],UNIT  
["Degree",0.0174532925199433]],PROJECTION["Mercator\_Auxiliary\_Sphere"],PARAMETER  
["False\_Easting",0.0],PARAMETER["False\_Northing",0.0],PARAMETER  
["Central\_Meridian",0.0],PARAMETER["Standard\_Parallel\_1",0.0],PARAMETER  
["Auxiliary\_Sphere\_Type",0.0],UNIT["Meter",1.0],AUTHORITY["EPSG",3857]]

#### REFERENCE SYSTEM IDENTIFIER

- \* VALUE 3857
- \* CODESPACE EPSG
- \* VERSION 8.8(9.3.1.2)

## Spatial Data Properties

#### VECTOR

- \* LEVEL OF TOPOLOGY FOR THIS DATASET geometry only

#### GEOMETRIC OBJECTS

FEATURE CLASS NAME seismic\_risk\_zone\_area\_v3

- \* OBJECT TYPE composite
- \* OBJECT COUNT 370

#### ARCGIS FEATURE CLASS PROPERTIES

FEATURE CLASS NAME seismic\_risk\_zone\_area\_v3

- \* FEATURE TYPE Simple
- \* GEOMETRY TYPE Polygon
- \* HAS TOPOLOGY FALSE
- \* FEATURE COUNT 370
- \* SPATIAL INDEX TRUE
- \* LINEAR REFERENCING FALSE

## Distribution

#### DISTRIBUTION FORMAT

- \* NAME File Geodatabase Feature Class

## Fields

#### DETAILS FOR OBJECT seismic\_risk\_zone\_area\_v3

- \* TYPE Feature Class
- \* ROW COUNT 370

#### FIELD OBJECTID

ALIAS OBJECTID

- \* DATA TYPE OID
- \* WIDTH 4
- \* PRECISION 0
- \* SCALE 0
- \* FIELD DESCRIPTION  
Internal feature number.
- \* DESCRIPTION SOURCE  
Esri

- \* DESCRIPTION OF VALUES  
Sequential unique whole numbers that are automatically generated.

#### FIELD Shape

- \* ALIAS Shape
- \* DATA TYPE Geometry
- \* WIDTH 0
- \* PRECISION 0
- \* SCALE 0
- \* FIELD DESCRIPTION  
Feature geometry.
- \* DESCRIPTION SOURCE  
Esri
- \* DESCRIPTION OF VALUES  
Coordinates defining the features.

#### FIELD Per\_Cent\_G

- \* ALIAS Per\_Cent\_G
- \* DATA TYPE String
- \* WIDTH 80
- \* PRECISION 0
- \* SCALE 0

#### FIELD DESCRIPTION

Minimum Peak Horizontal Acceleration (%g, 2% prob in 50 yrs)

#### DESCRIPTION SOURCE

USGS

#### FIELD Shape\_Length

- \* ALIAS Shape\_Length
- \* DATA TYPE Double
- \* WIDTH 8
- \* PRECISION 0

- \* SCALE 0

#### \* FIELD DESCRIPTION

Length of feature in internal units.

#### \* DESCRIPTION SOURCE

Esri

#### \* DESCRIPTION OF VALUES

Positive real numbers that are automatically generated.

#### FIELD Shape\_Area

- \* ALIAS Shape\_Area
- \* DATA TYPE Double
- \* WIDTH 8
- \* PRECISION 0
- \* SCALE 0

#### \* FIELD DESCRIPTION

Area of feature in internal units squared.

#### \* DESCRIPTION SOURCE

Esri

#### \* DESCRIPTION OF VALUES

Positive real numbers that are automatically generated.

## Metadata Details

- \* METADATA LANGUAGE English (UNITED STATES)
- \* METADATA CHARACTER SET utf8 - 8 bit UCS Transfer Format
- SCOPE OF THE DATA DESCRIBED BY THE METADATA \* dataset
- SCOPE NAME \* dataset
- \* LAST UPDATE 2022-05-24

#### ARCGIS METADATA PROPERTIES

METADATA FORMAT ArcGIS 1.0  
METADATA STYLE FGDC CSDGM Metadata  
STANDARD OR PROFILE USED TO EDIT METADATA FGDC  
CREATED IN ARCGIS FOR THE ITEM 2021-08-11  
LAST MODIFIED IN ARCGIS FOR THE ITEM 2022-05-24  
AUTOMATIC UPDATES  
HAVE BEEN PERFORMED Yes  
LAST UPDATE 2022-05-24

## Metadata Contacts

### METADATA CONTACT

INDIVIDUAL'S NAME Jim Kuiper  
ORGANIZATION'S NAME Argonne National Laboratory  
CONTACT'S ROLE user

### CONTACT INFORMATION

#### PHONE

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