USGS science for a changing world

Earthquake Shaking — Red Alert

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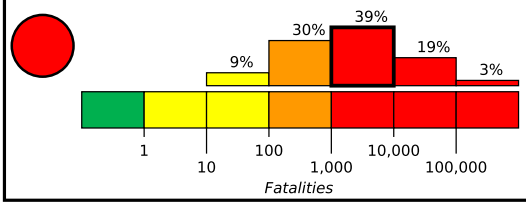
M 7.1, 1km ESE of Ayutla, Mexico

Origin Time: 2017-09-19 18:14:38 UTC (Tue 13:14:38 local)
Location: 18.5462° N 98.4871° W Depth: 51.0 km

PAGER Version 4

Created: 4 days, 3 hours after earthquake

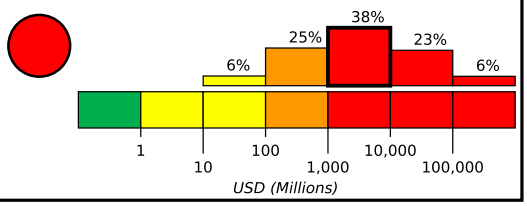
Estimated Fatalities



Red alert for shaking-related fatalities and economic losses. High casualties and extensive damage are probable and the disaster is likely widespread. Past red alerts have required a national or international response.

Estimated economic losses are less than 1% of GDP of Mexico.

Estimated Economic Losses

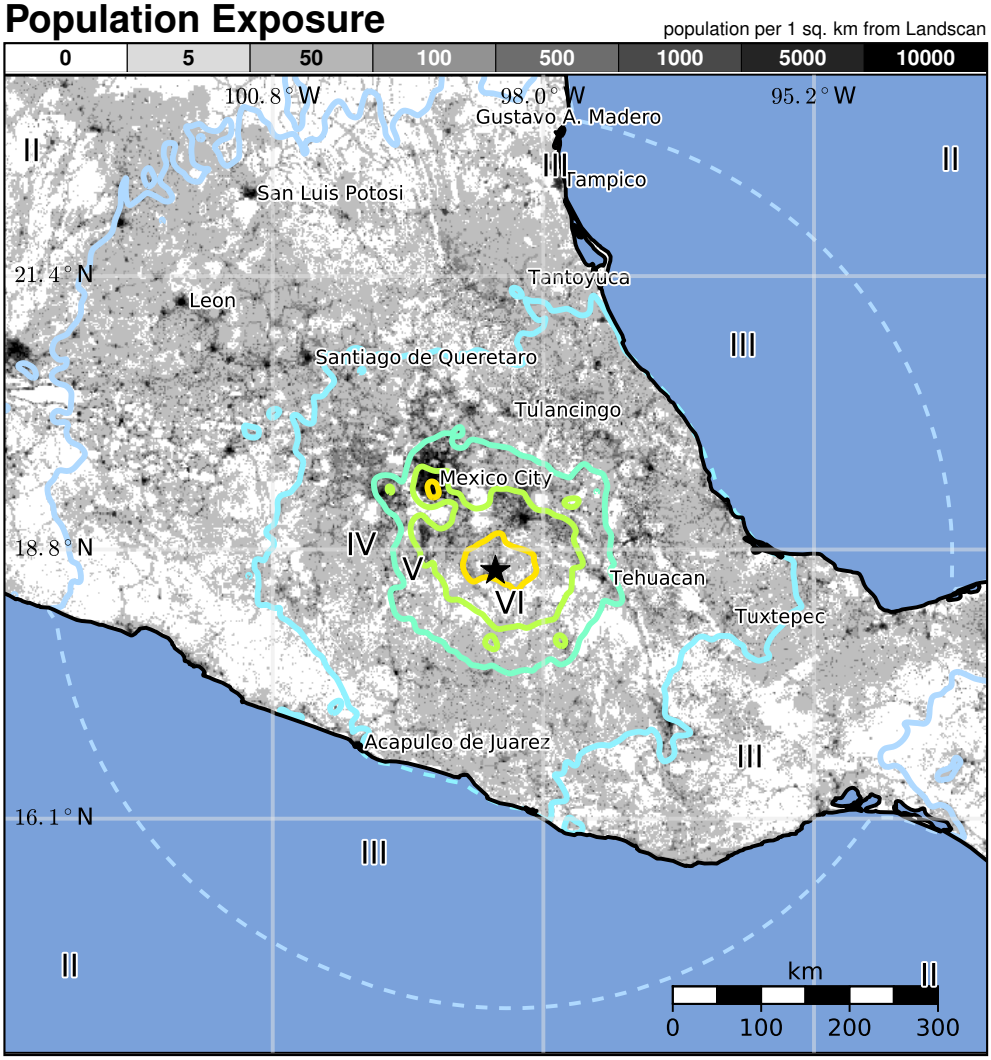


Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k=x1000)		–*	29,710k	19,320k	11,284k	14,744k	5,764k	0	0	0
ESTIMATED MODIFIED MERCALLI INTENSITY		I	II-III	IV	V	VI	VII	VIII	IX	X+
PERCEIVED SHAKING		Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	Resistant Structures	None	None	None	V. Light	Light	Moderate	Mod./Heavy	Heavy	V. Heavy
	Vulnerable Structures	None	None	None	Light	Moderate	Mod./Heavy	Heavy	V. Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure



Structures

Overall, the population in this region resides in structures that are a mix of vulnerable and earthquake resistant construction. The predominant vulnerable building types are nonductile concrete frames and unreinforced masonry bearing wall construction.

Historical Earthquakes

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
1999-12-29	313	5.9	V(29k)	0
1980-10-24	49	7.1	VIII(11k)	65
1973-08-28	201	7.2	VII(847k)	600

Recent earthquakes in this area have caused secondary hazards such as tsunamis and landslides that might have contributed to losses.

Selected City Exposure

from GeoNames.org

MMI	City	Population
VII	Ayutla	7k
VII	San Juan Colon	1k
VII	Tlapanala	<1k
VII	Zolonquiapa	1k
VII	Ahuatlan	1k
VII	Ahuatlan	<1k
VII	Puebla	1,590k
VI	**Mexico City**	**12,294k**
III	**San Luis Potosi**	**678k**
III	Aguascalientes	658k
II	Guadalajara	1,641k

bold cities appear on map. (k=x1000)

PAGER content is automatically generated, and only considers losses due to structural damage. Limitations of input data, shaking estimates, and loss models may add uncertainty.

https://earthquake.usgs.gov/earthquakes/eventpage/us2000ar20#pager

Event ID: us2000ar20