Venezuela Earthquake June 24, 2026 affected structures.

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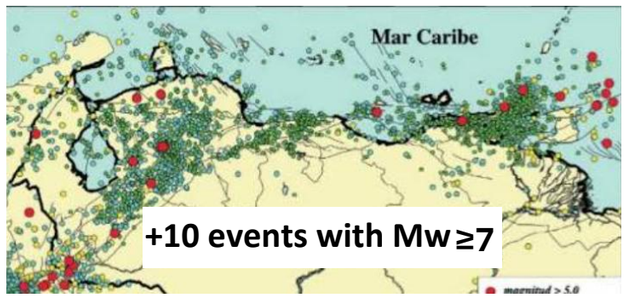
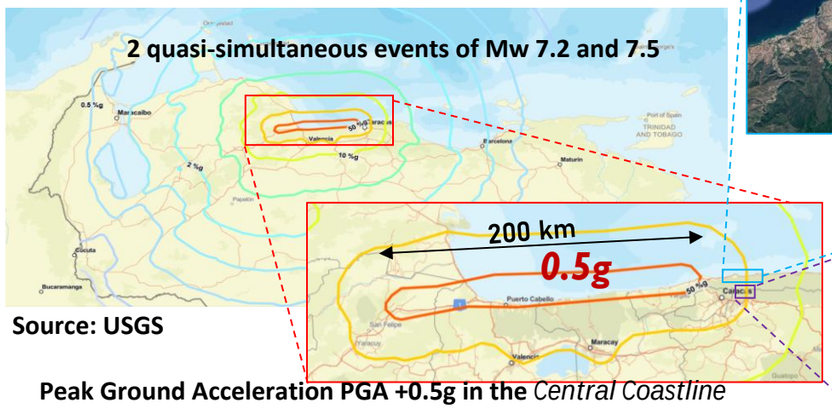
Historical seismicity:



Source: FUNVISIS

+80% population lives in high-hazard Zones

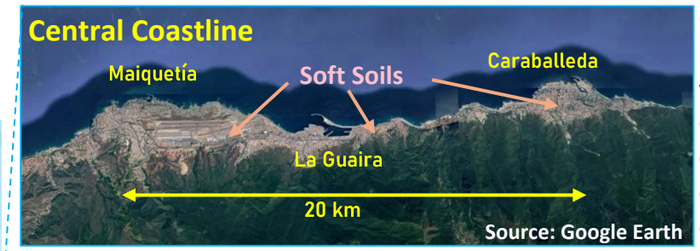
June 24, 2026 Earthquake:



Source: USGS

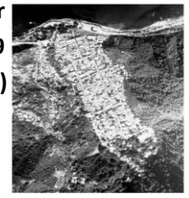
Peak Ground Acceleration PGA +0.5g in the *Central Coastline* (67% to 277% higher than current regulatory design standards). Accelerations in Caracas (+0.20g) within code specifications.

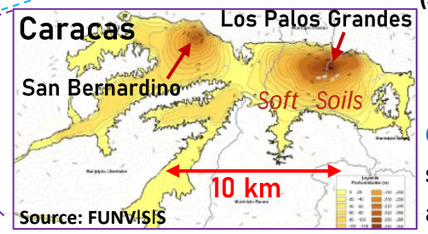
Additional effects that amplify seismic response



Central Coastline (Maximum Damage Density): Area heavily impacted by torrential rains in 1999, which left severe damage across hundreds of buildings and caused sediment accumulation along the coastal axis (soft soils) plus the presence of a shallow water table.

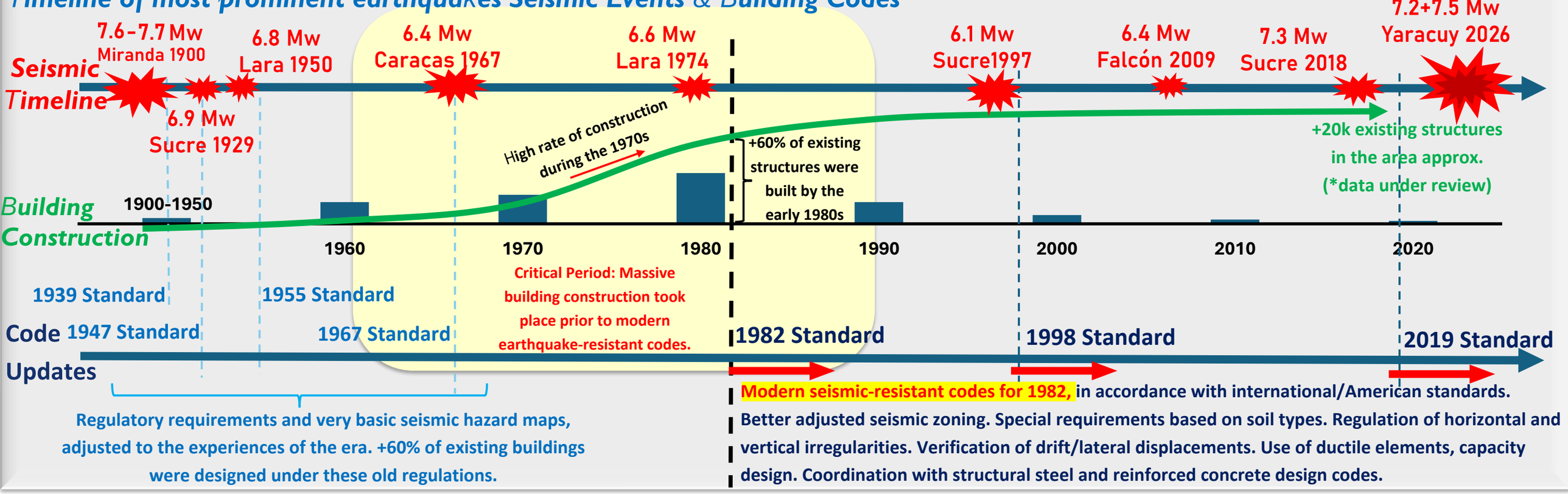
Sediment fan before and after the Vargas tragedy 1999 (Source: JL López)





Caracas: Densely populated sectors with soft soil deposits tending to cause seismic amplification.

Timeline of most prominent earthquakes Seismic Events & Building Codes



Preliminary Findings

- The earthquake generated **exceptionally high seismic demand levels**, particularly in the Central Coastline and parts of Caracas.
- Caracas and the Central Coastline experienced **local soft soil effects** that significantly amplified ground motion. **Soil liquefaction phenomena** were observed in some sectors.
- **An estimated 60% of buildings** over three stories high were constructed **before the first modern earthquake-resistant design code**, meaning they were designed using outdated criteria.
- **the Central Coastline concentrated the highest level of damage**, due to a combination of high seismic demand, unfavorable soils, and greater structural vulnerability.
- It is estimated that between **10% and 20% of buildings** sustained **some level of damage**, with higher percentages in the most affected zones of the Litoral Central.
- T**he most severe damage was primarily concentrated in older structures**, though some cases were recorded in more recent builds.
- The **total collapse** of medium and high-rise buildings is estimated at approximately **1% to 2%** of the exposed inventory, though final assessments are ongoing.
- Buildings designed under **modern codes** generally displayed **better structural performance** in line with regulatory expectations, prioritizing the prevention of total collapse.