



# The *SAFRR* Tsunami Scenario

In partnership with CGS, Cal OES, NOAA and others,  
a product of the USGS SAFRR Project

*The Tsunami Scenario in  
Los Angeles and Orange Counties*

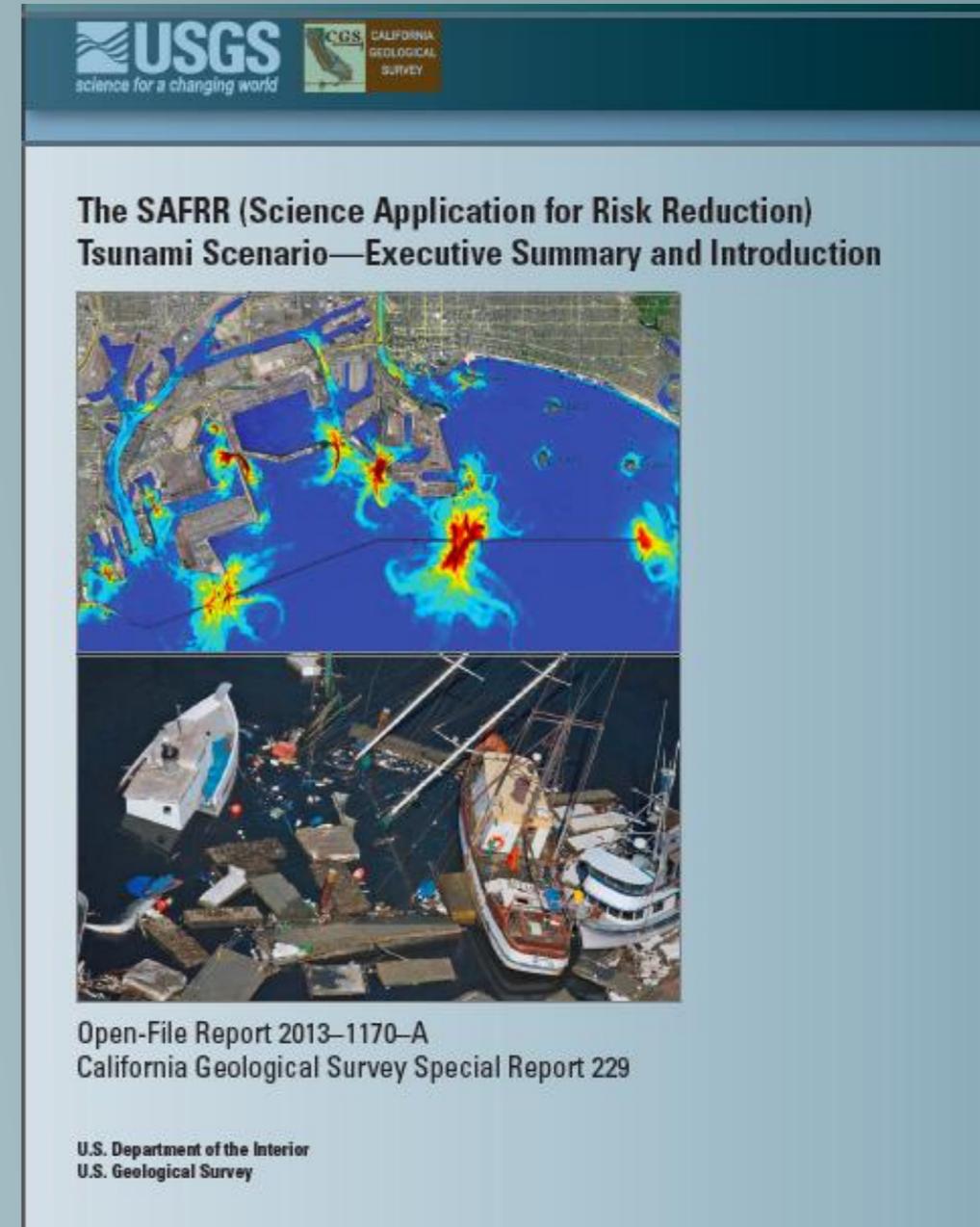
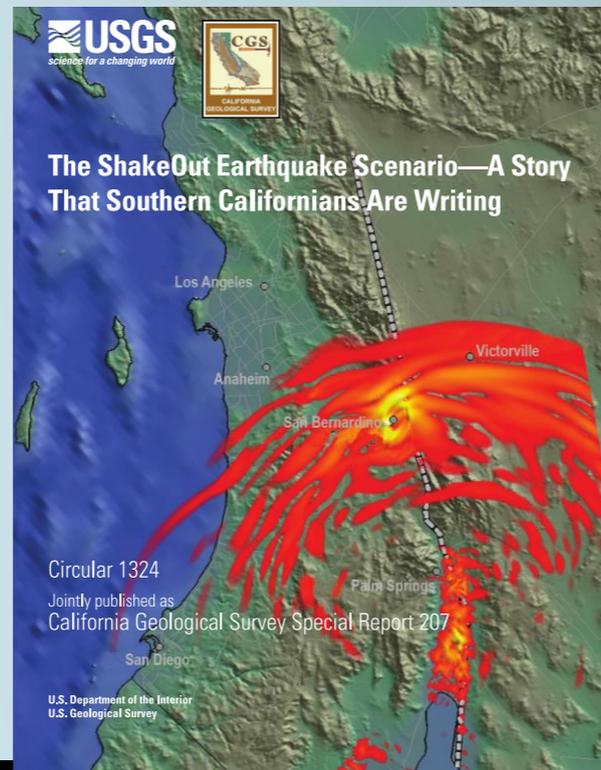
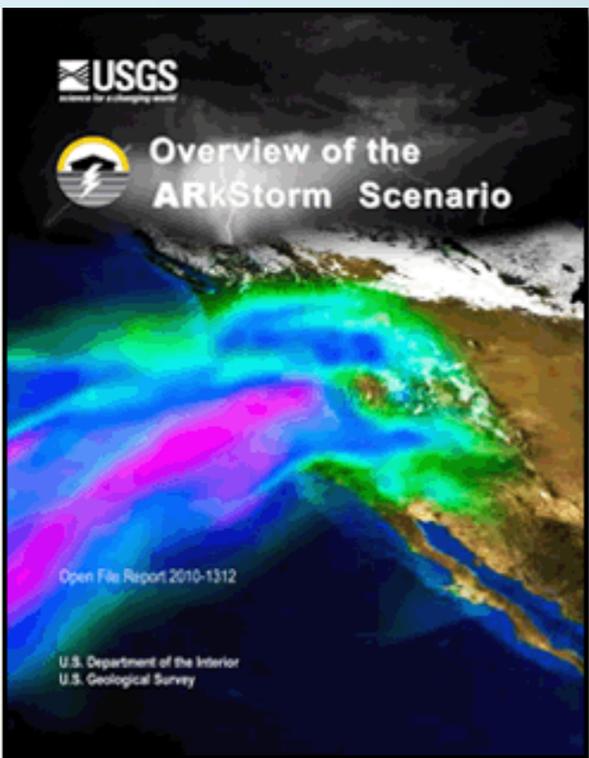
Los Angeles and  
Orange Counties 9/4/13

**Natural Hazards:** Earthquake • Volcanic Eruption • Landslide • Flood • Geomagnetic Storm • Wildfire • Tsunami • Coastal Erosion

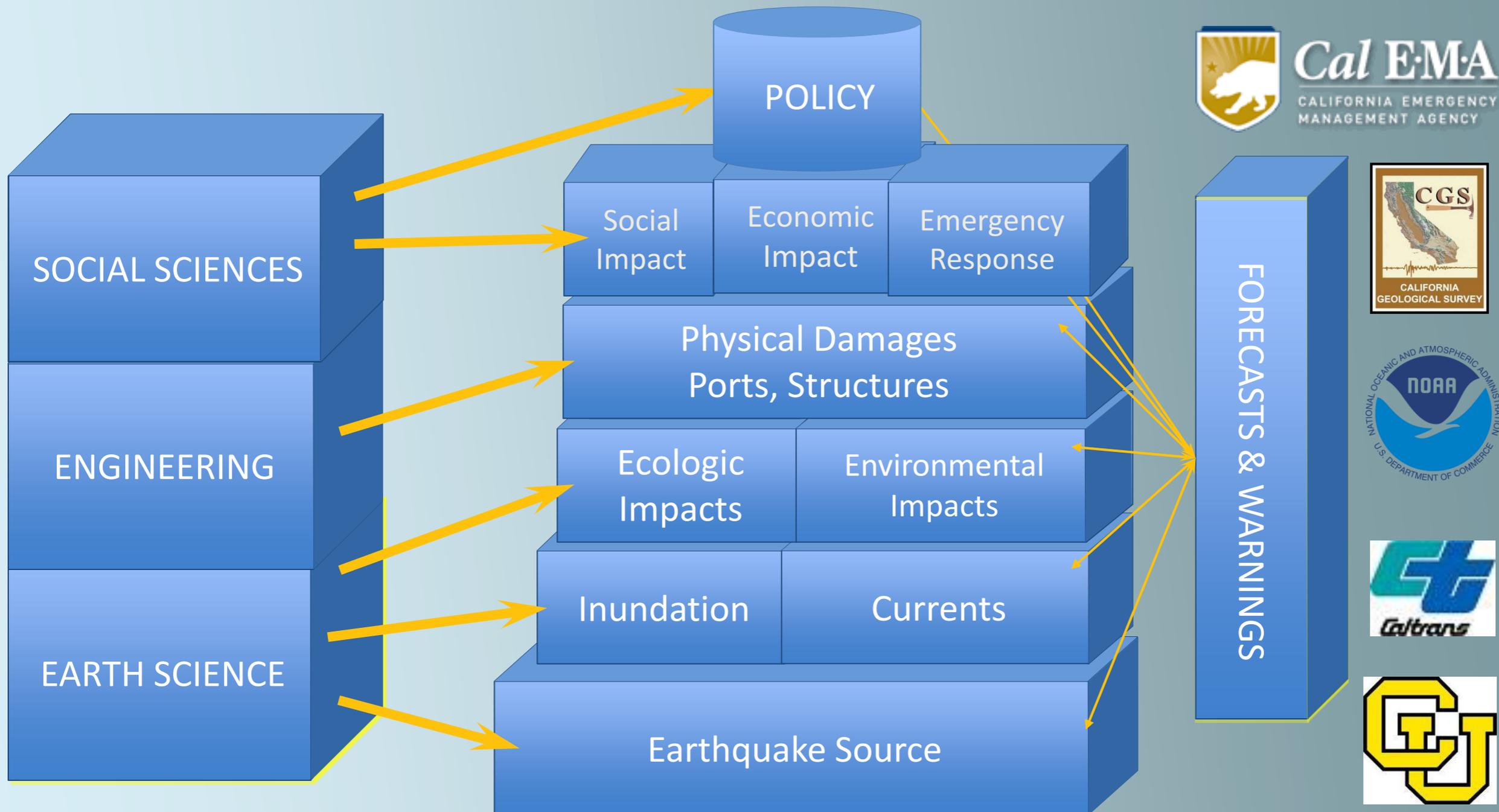


# SAFRR Scenario principles

- A single, large but plausible event
- An event we need to be ready for
- Craft study with community partners
- Consensus among leading experts



# The Tsunami Scenario



# Mw9.1 offshore of Alaska Peninsula

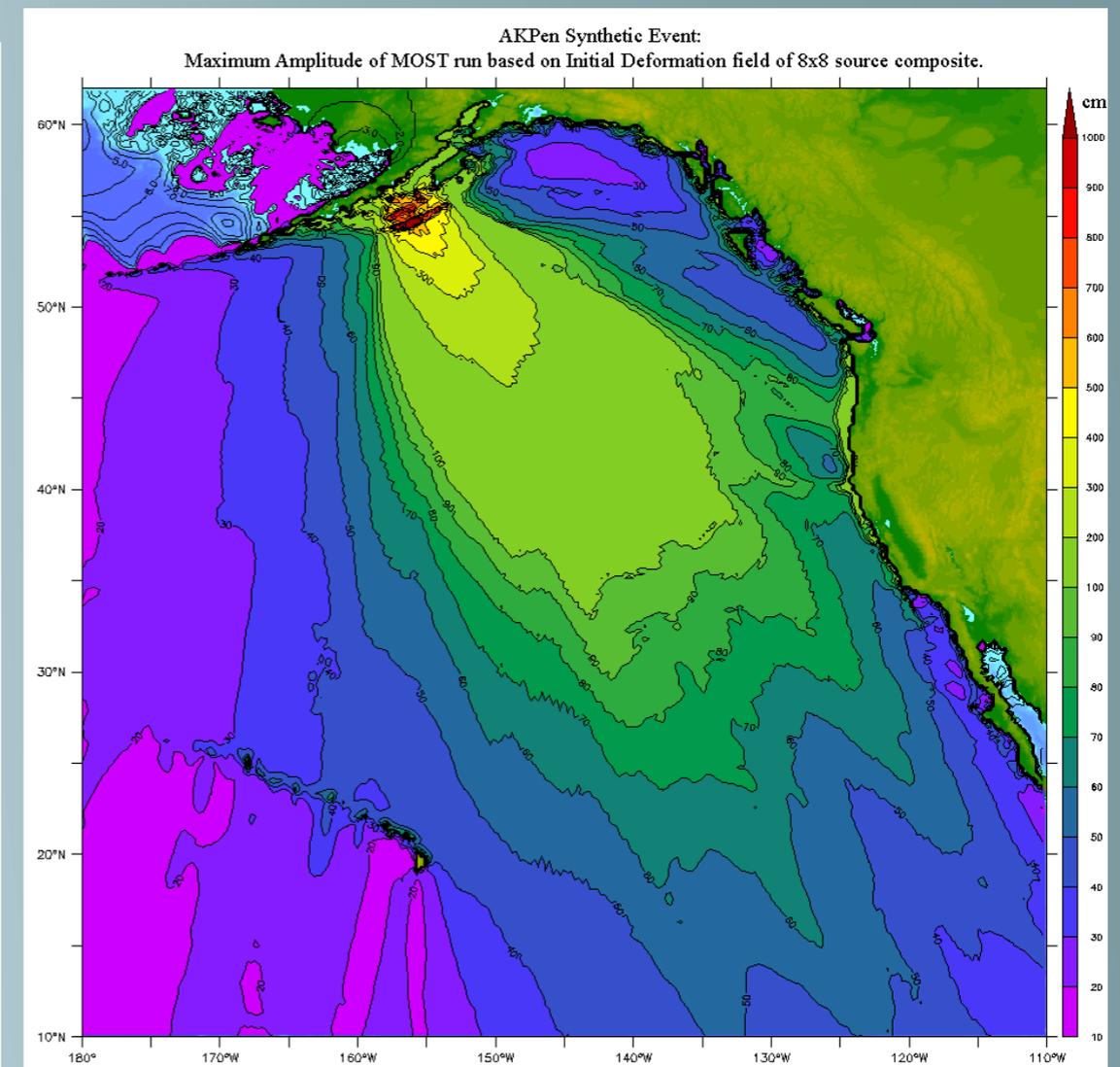
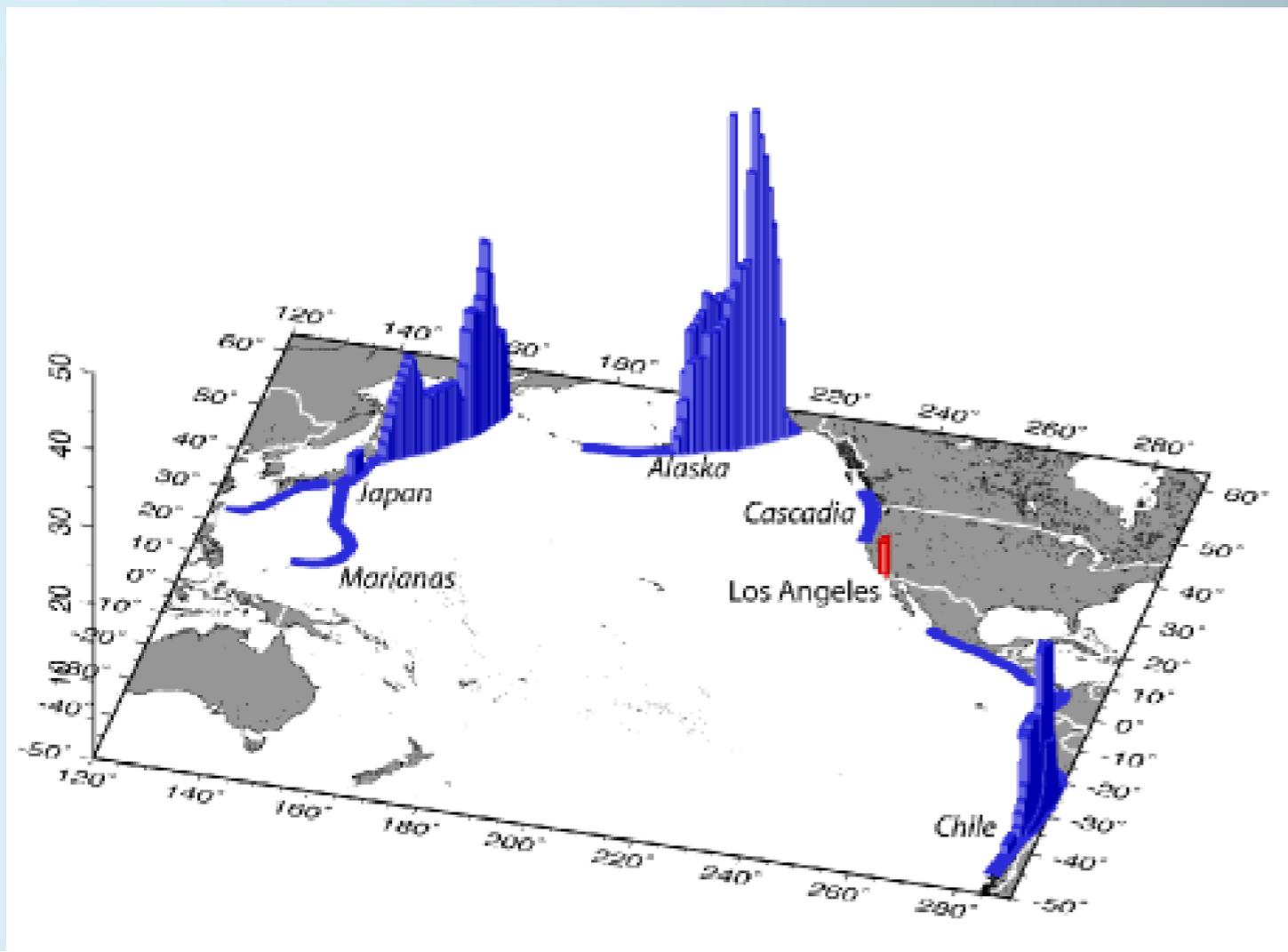
Like Tohoku

Between 1946 and 1964 sources

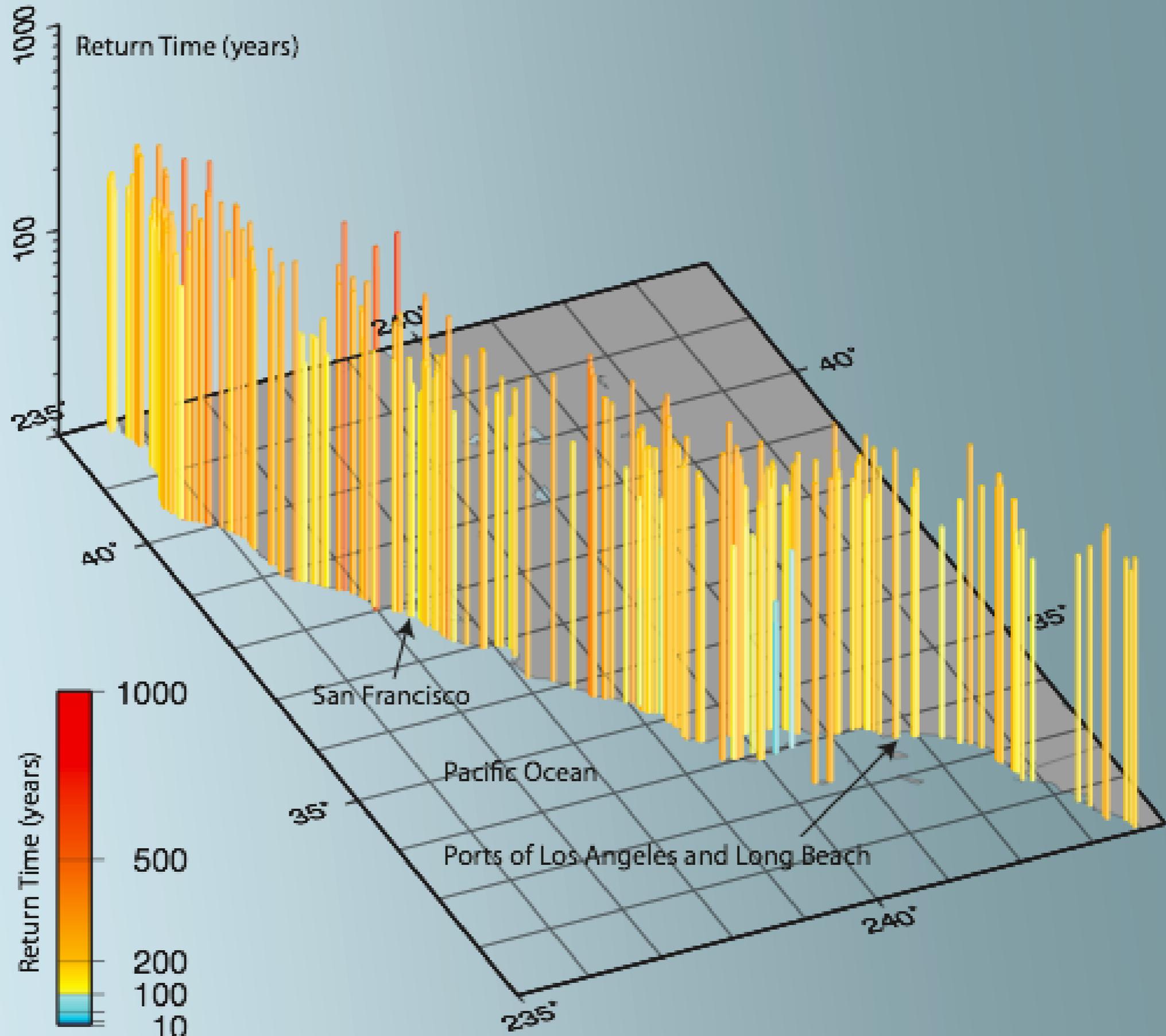
Biggest contribution to LA's tsunami hazard

Does not exceed county tsunami evacuation zones

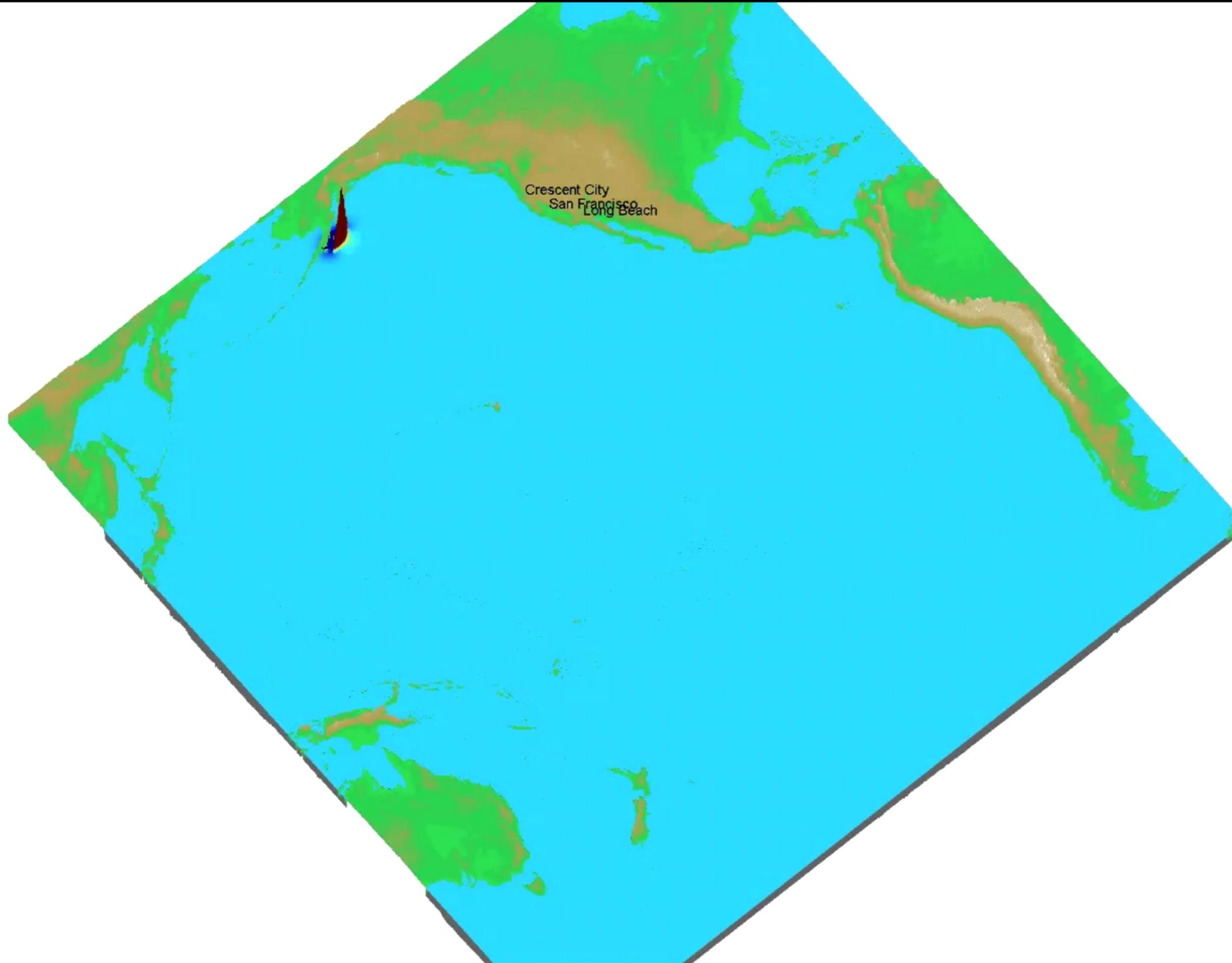
Close to maximum in southern California



How likely is it?

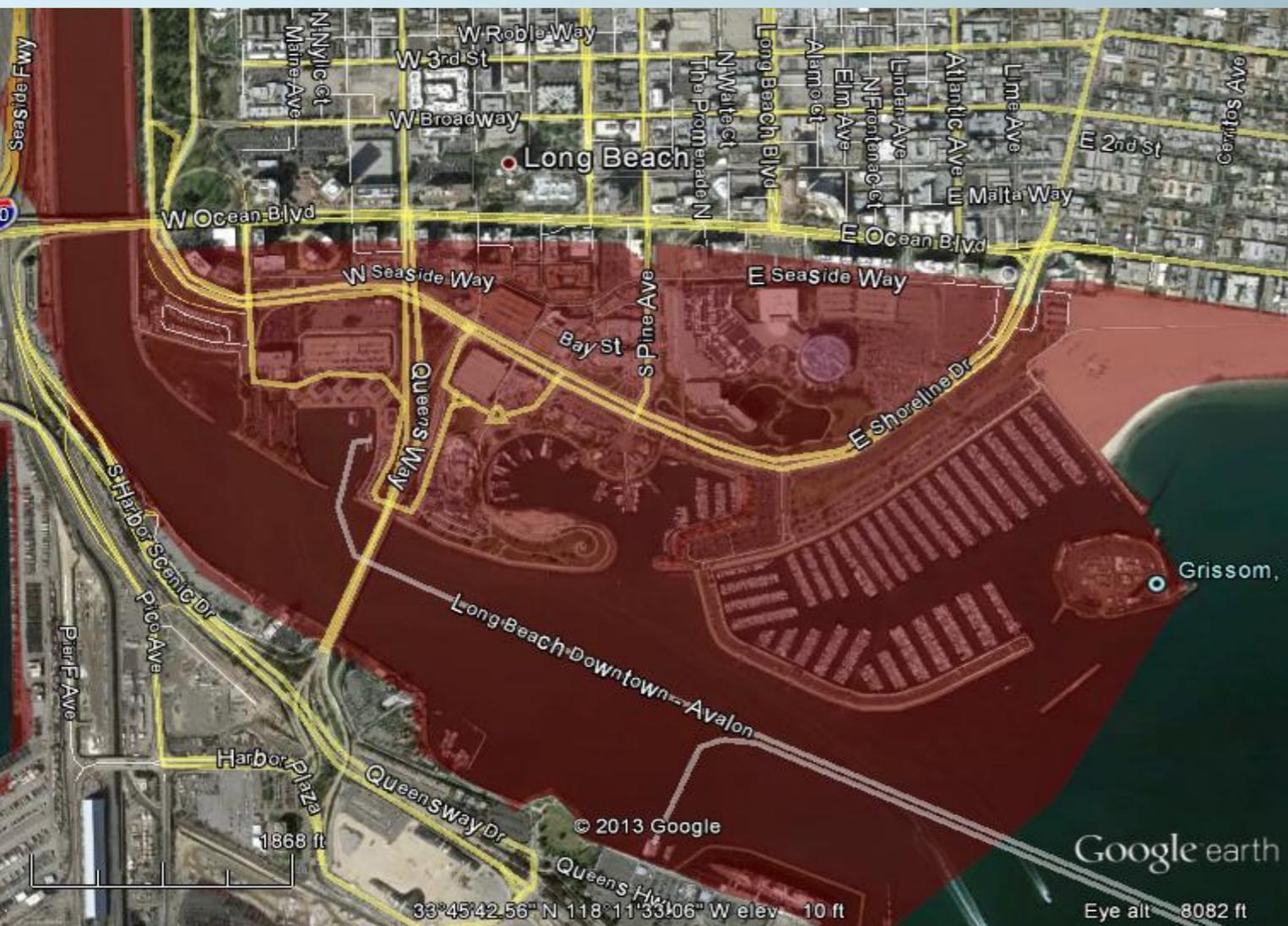


# SAFRR: Science Application for Risk Reduction



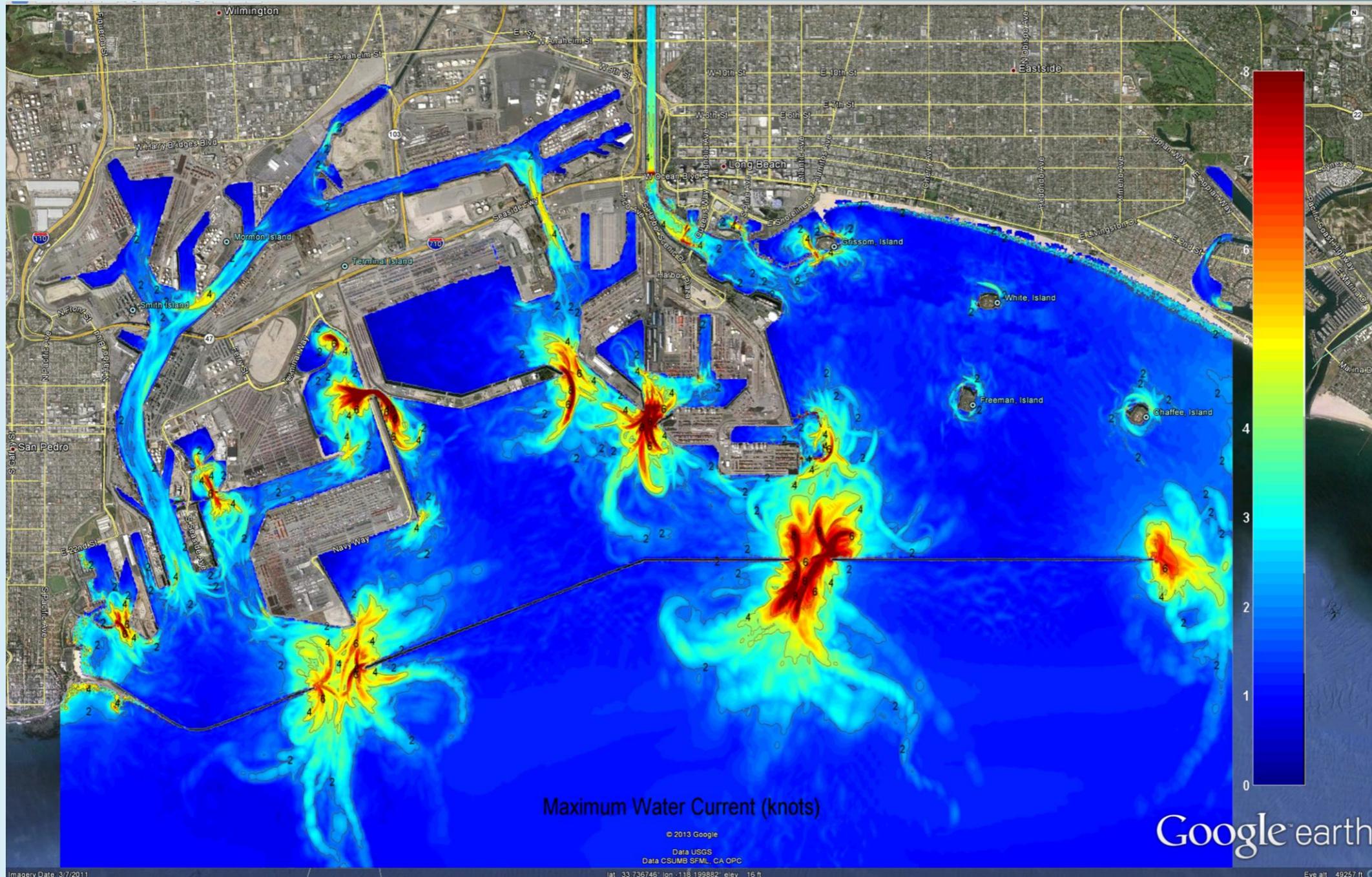
# Inundation maps

Orange County – Huntington Beach:  
Flooding overtops some levees and floods areas inland.

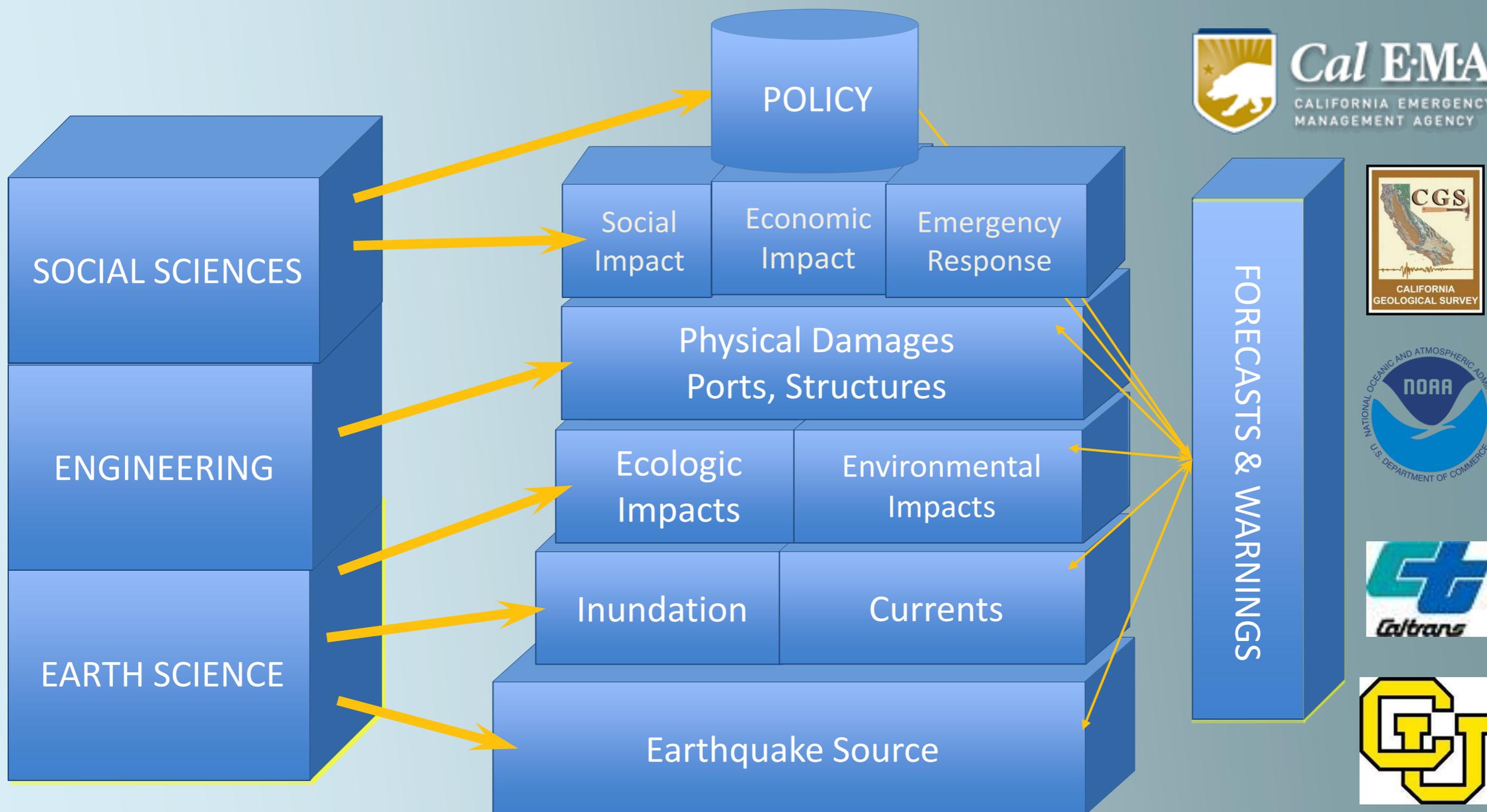


Los Angeles County – Long Beach: Flooding of downtown area occurs where many businesses and convention center are located.

# Maximum Currents at Ports of Los Angeles and Long Beach



# The Tsunami Scenario





# What matters?

- **Tides Matter:** We've been lucky in previous tsunamis coming in at low tide
- **Location Matters:**
  - Southern California has lower wave heights than the central and north coasts
  - Some areas are completely submerged
  - Cliffs can protect us
- **Currents Matter:** Currents can be more important than inundation
- **People Matter:** Will trigger evacuation of three-quarters of a million people
- **Time Matters:** Short time frame for decisions; evacuate based on state lines
- **Response matters:** You control the bottom line

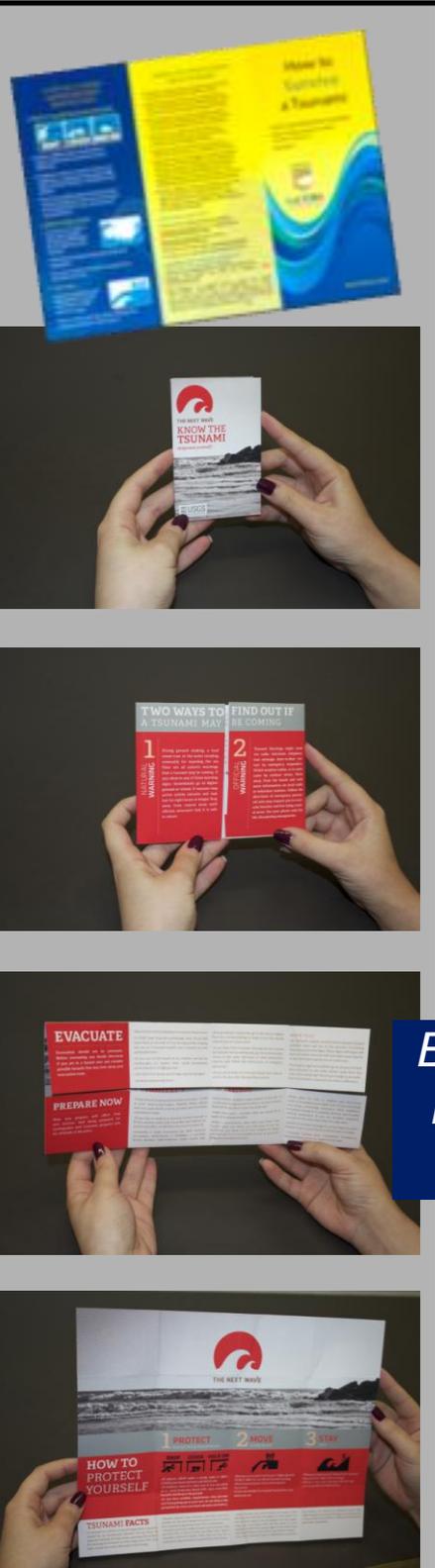
# The Bottom Line

- \$5-10 billion statewide loss
  - marinas, ports, coastal property, roads and bridges, business interruption
- Exact number will depend on your action and preparation
- Recovery depends on planning
- Planning matters...

# Looking Forward

- Policy implications - what can you do with this?
- 2014 Fiftieth anniversary of 1964 Good Friday earthquake and tsunami
  - Opportunity for exercises and public awareness
  - Communication products
- Working with the State tsunami program

# Prototype Messaging Products



Brochure & Tote Bag reconfigure existing products



Awareness Campaign including Social Media, Game App, Day-Long Public Event w Geocache, Athletic Contests, Safety Walk, Music Festival

