



## Southern California Catastrophic Earthquake Plan, October 2022

### Overview

The 2022 Southern California Catastrophic Earthquake Plan (SCCEP) updates California's ongoing earthquake planning efforts. This plan is the result of collaborative efforts of over 1,500 emergency management subject matter experts from the private sector, non-governmental organizations, and local, state, tribal, and federal partners to mitigate the effects of a Magnitude (M)7.8 earthquake on the Southern San Andreas Fault (SSAF). The scenario and impacts reflect in-depth analysis of models and tools such as the Uniform California Earthquake Rupture Forecast 3, 2011 Shakeout exercise, and the Federal Emergency Management Agency standardized system for estimating risk from disasters (HAZUS).

This SCCEP builds on existing federal, state, and local plans and is not intended to be a comprehensive response plan for state and local jurisdictions nor delineate all actions to be taken. This plan outlines state and federal coordination processes and provides details on the deployment and integration of state and federal resources.

The SCCEP Base Plan provides an overview of key actions in initial emergency management phases: Phase 2a (Immediate Response) through Phase 3a (Short-term Recovery).

### Impacted Counties

Imperial, Inyo, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, Tulare, and Ventura.

### Scenario

The response capabilities described in the SCCEP are based on modeled impacts of a M7.8 earthquake on the southernmost 300 kilometers (200 miles) of the SSAF, between the Salton Sea in Imperial County and Lake Hughes in Los Angeles (LA) County.



## Threat

The scenario model used for the SCCEP is based on a risk assessment of 21 major fault rupture zones in Southern California. While a M7.8 is not the largest earthquake that the SSAF can produce nor is the San Andreas Fault the only fault to threaten the populated areas of southern California, it is the largest potential catastrophic earthquake due to its overdue recurrence interval. That risk includes:

- A 99.7% chance of a M6.7 or larger earthquake in CA in the next 30 years.
- A 17% chance of a M7.7 or larger on the SSAF in the next 30 years.

## Planning Factors

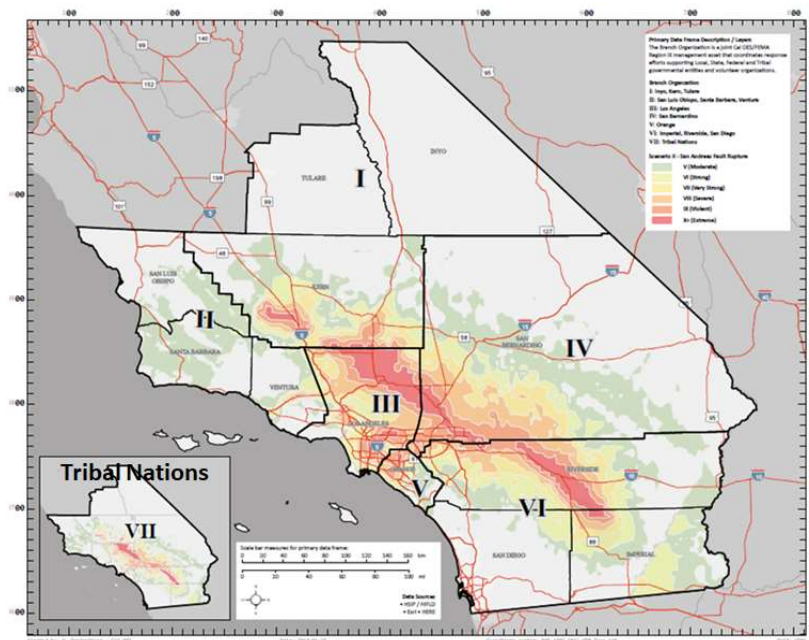
A catastrophic earthquake will cause massive damage to and disrupt the critical infrastructure systems that Southern California relies on for its economy and quality of life. These systems include power, communications, water, fuels, and critical transportation corridors.

Impact estimates include:

- Damaged buildings: 1,046,534.
- Essential facilities reduced to less than 50% functionality on Day 1: 325 hospitals, 7,952 schools, 112 Emergency Operation Centers, 405 police stations, 1,299 fire stations.
- Debris removal totaling an estimated 80,207,500 tons requiring 3,208,300 truckloads (at 25 tons per truck): 29,676,775 tons of brick/wood and 50,530,725 tons of reinforced concrete/steel.

Emergency response relies on interconnected services to perform lifesaving and life-sustaining operations. Stabilizing and restoring these infrastructure components are key to sustaining life, restoring the economy, and facilitating faster transition towards recovery. Many critical services are provided by the private sector, so it is imperative that all levels of government work closely with the private sector to facilitate repair efforts and ensure restoration of services to the hardest hit areas with the most at-risk populations.

A M7.8 earthquake would have regional and national implications because of Southern California's important role in moving goods through its ports, energy production and transfer, and large population centers. The social and economic impact estimates contained in this



Map of Branch Organizational Structure and Shake Intensity

## Fact Sheet: Southern California Catastrophic Earthquake Plan

plan were produced using HAZUS loss-estimation software. Planning Factors used in the SCCEP include:

- Population total: 24,345,027, directly impacted: 19,273,222.
- Native American population total: 792,012, directly impacted: 515,222.
- Daily commuting: 11,660,385, tourist daily average: 633,462.
- Displaced population: 2,250,000, seeking shelter: 225,000, including:
  - 56,250 with Access and Functional Needs, and over 15,750 toddlers and infants.
  - 104,955 homeless in directly impacted counties.
  - Displaced pets: 580,000 with 58,000 needing shelter.
- Rescues: 45,000, surviving injured: 177,858, total casualties: 12,750.
- Initial economic impact estimates \$232 billion (\$68 billion business interruption, \$51 billion lost economic activity and \$113 billion in property damage across eight counties).

### Plan Structure

The SCCEP outlines goals and strategies in a Concept of Operations (CONOPS) for achieving desired results based on existing capabilities. This plan calls for the coordination of state, federal, non-governmental organizations and private sector partnerships, assistance to local/tribal governments for gaining access to affected areas, and the execution of response and recovery strategies. The successful implementation of this plan requires decisive action on the part of emergency managers and senior state and federal leaders to:

- Coordinate and direct the actions of subordinate organizations.
- Develop an access strategy and a temporary supply chain into affected areas.
- Provide initial response personnel and equipment.
- Conduct “movement coordination”; directing transportation of people and goods in support of evacuation, response, recovery, and shelter operations.
- Deploy needed resources throughout the affected area.

The plan is organized so that users can readily locate response or recovery-specific topics and remove sections that provide them with organized and complete guidance related to their role in state-level emergency management support of a catastrophic earthquake in Southern California.

**For more information, please visit:**

<https://www.caloes.ca.gov/office-of-the-director/operations/planning-preparedness-prevention/planning-preparedness/catastrophic-planning/>