California Geological Survey

CALIFORNIA STRONG MOTION INSTRUMENTATION PROGRAM NETWORK STATIONS

February 2024

The California Strong Motion Instrumentation Program (CSMIP) provides an extensive network of state-of-the-art strong-motion seismic instruments that record the shaking response of the ground, buildings, and infrastructure during earthquakes. The data collected by these instruments are used during earthquakes for earthquake early warning, allowing people to take protective action, and, immediately after earthquakes to produce maps of shaking intensity in support of emergency response. The instruments communicate earthquake data to the California Integrated Seismic Network and the Advanced National Seismic System. After earthquakes the data are used by scientists and engineers to further our understanding of ground shaking and building response, and to improve seismic design and construction.

Since it was established in 1972, CSMIP has been installing strong-motion instruments in many types of geologic settings and building types, including fire stations, schools, hospitals, bridges, dams, utilities and industrial facilities. Currently, there are more than 1380 total stations across the state, including 940 ground-response stations, and instruments in 270 buildings, 26 dams and 82 bridges. Sites are selected by an instrumentation advisory committee and based on other state partner needs.

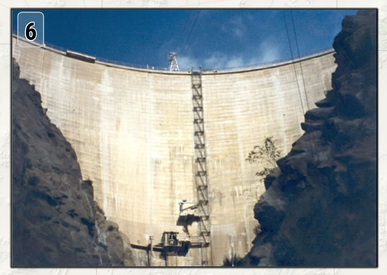
Shasta Lake Bridge on Interstate Highway 5

Golden Gate Bridge

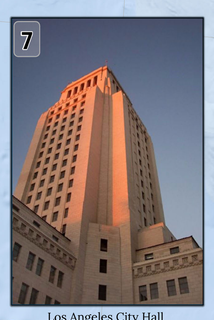
One Rincon Hill Tower

University of California San Francisco Mission Bay Hospital

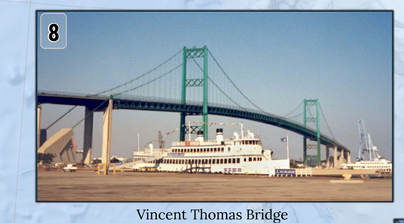
Livermore Fire Station



Pacoima Dam



Los Angeles City Hall



Vincent Thomas Bridge

University of California Irvine Engineering Building

Typical free field station (San Jacinto)

STATION TYPE
- Building
- Bridge or Dam
- Ground

FAULTS
- Historic
- Holocene
- Late Quaternary

Base Layers
- US Highway
- Interstate Highway
- State Highway
- County boundary
- Stream

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SCALE 1:900,000

0 10 20 40 60 80 100 Miles

0 10 20 40 60 80 100 Kilometers

North American Datum of 1927 (NAD27)
Projection: Teale Albers
2/9/2024

DATA SOURCES
Seismic station locations: CGS (SMIP station list 2024)
Faults: CGS (Jennings, v2.0)
Base Layers: ESRI; GEBCO,Garmin, NatureVue