



Bridging the Gap

Your Connection to Engineering Services

April 2025

2024 Caltrans Seismic Safety Award Winners Announced

California generally experiences two or three earthquakes of magnitudes 5.5 or higher annually, which are large enough to cause moderate damage to structures. Each year, Caltrans highlights the best of its work and the work of its partners through a variety of annual award programs. The Caltrans Seismic Safety Award is a stand-alone award that honors the best of California's transportation projects from across the State, emphasizing seismic safety.

The Caltrans Seismic Advisory Board (Board) was created in 1989 to provide advice on seismic safety policy as it applies to the design of transportation structures in California. The Board is an independent body whose role is to advise Caltrans on seismic policy and technical practices to enhance the seismic safety and functionality of California's transportation structures.

In 2015, the Board became the panel tasked to review nominations from the Seismic Advisory Board. Each year, Board members donate their time to review projects and provide Caltrans with recommendations for projects that should be recognized with this distinguished award. The Caltrans Seismic Safety Award is open to Caltrans districts, local and public transportation agencies, and private engineering and consulting firms.

In November 2024, the Board received nomination packages and recommended two projects for recognition. At the January 2025 Winter Board meeting, Chief Engineer Donna Berry and Board Chair Dr. Ian Buckle presented the Seismic Safety Award to the Sixth Street Viaduct and Panther Creek Bridge project teams.

The Panther Creek Bridge is a new 168-ft. hybrid steel-tied arch bridge in District 1 on Highway 101 in Del Norte County. The bridge crosses Panther Pond, a critical salmon habitat on Yurok tribal land. For its seismic design, the unbraced through the arch is classified as a nonstandard bridge. The design team developed project-specific design criteria to document and authorize unconventional earthquake engineering features, including:

- A combination of steel, concrete, and precast concrete design criteria.

- An earthquake-resisting system that directs damage to a yielding rib anchorage.
- Anchor rods that can be replaced after yielding in an earthquake.
- A multi-component precast concrete abutment in liquefiable soil.
- Caltrans' first application of the Recovery Bridge designation.
- Caltrans' first application of its tsunami design process.

The Los Angeles Bureau of Engineering's Sixth Street Viaduct Replacement Project sets a new threshold for seismic safety and expands the utility of urban bridges. The groundbreaking viaduct replaced a beloved double steel arch landmark with 10 pairs of sculptural arches unspooling 3,060 feet across an industrial lowland. The structure advances the field of seismic bridge engineering with the following innovations:

- Designed for seismic events with a 1,000-year return period.
- World's longest, seismically isolated concrete tied arch bridge.
- First U.S. application of seismic isolators in the verticality of the bridge supports.
- World's first next-generation triple-pendulum friction bearings.
- First U.S. bridge to use DSI-manufactured multistrand post-tension couplers.
- First use of Grade 80 Bar Reinforcing Steel (Concrete) in California

