



## **Frequently Asked Questions – CalTrans Public Relations Document**

---

### **What is happening on the Bay Bridge and why?**

A: The Bay Bridge is undergoing a major seismic retrofit, which will also bring it up to current transportation standards, where feasible. Following the 1989 Loma Prieta Earthquake, which damaged a section of the East Span, extensive studies were undertaken to determine whether the state's largest bridges were seismically safe.

As a result of these studies, it was determined that the entire bridge required seismic safety improvements. The San Francisco side of the Bay Bridge (West Span), required seismic retrofit work; for the Oakland side of the bridge (East Span) the most cost-effective solution requires the complete replacement of the existing span. Seismic safety work on the West Approach to the bridge in San Francisco involved completely removing and replacing a one-mile stretch of Interstate 80 and three on- and three off-ramps.

### **How much will the new East Span cost?**

A: The estimated cost for the new Bay Bridge (East Span), is \$6.416 billion. This amount does not include program contingencies. Project costs are evaluated quarterly.

### **How is the new Bay Bridge being financed?**

A: Assembly Bill (AB) 144, which was signed into law by Governor Schwarzenegger on July 18, 2005, provides a comprehensive financial plan for the Toll Bridge Seismic Retrofit Program, including the consolidation and financial management of all toll revenues collected on state-owned bridges in the San Francisco Bay Area under the jurisdiction of the Bay Area Toll Authority (BATA).

### **When will the new Bay Bridge be complete?**

A: The seismic retrofit work on the Bay Bridge is being performed through a series of complex projects. Several of these projects have already been completed, including the

seismic retrofit of the bridge's West Span, between San Francisco and Yerba Buena Island. The East Span is being entirely replaced. The estimated date opening the new bridge to traffic in both directions is Labor Day 2013.

## **Why is it taking so long to finish the seismic safety work?**

A: The seismic safety work on the Bay Bridge encompasses multiple projects. Each one of these projects is extremely complex. Seismic safety work on the West Span of the bridge has already been completed, as has work on the West Approach, the 1-mile stretch of interstate highway connecting San Francisco to the bridge. The East Span of the bridge will be seismically upgraded through the complete replacement of the existing span. This involves multiple projects, including the construction of a 1.2-mile Skyway, which is completed; a Self-Anchored Suspension span consisting of a 525-foot tower supporting a bridge deck connecting the Skyway to the Yerba Buena Island Transition Structure on Yerba Buena Island (YBI); and the Oakland Touchdown, the east end of the bridge connecting to the toll plaza.

One of the greatest challenges in performing any seismic safety work on the Bay Bridge is that traffic must be kept moving. This has required the construction of temporary structures, and shifting of traffic from the existing bridge to the temporary structures. Major construction and demolition work is often scheduled during nights and weekends in order to minimize disruption to commute-hour traffic. This elaborate scheduling has extended the length of time that it takes to complete the seismic safety work.

## **Why is the bridge going to continue to feature double decks on the West Span (between San Francisco and YBI), but be reconfigured on the East Span (between YBI and Oakland) to feature side-by-side decks?**

A: When it became evident that a new East Span was required, following the 1989 Loma Prieta Earthquake, the community indicated that it preferred a bridge that provided more expansive views and a more open feeling. The available right-of-way (space in which to build) in San Francisco limits the options for the West Span to a double-deck structure. Both decks of the West Span have been heavily reinforced, and an independent column was added to support each deck on the West Approach.

## **Will the bridge be safe during an earthquake?**

A: The criteria for building a new East Span of the bridge is that following a major earthquake, the bridge can quickly reopen to traffic. The Bay Bridge is designated as an emergency "lifeline" route to be used in disaster response activities.

When engineers design structures to resist earthquakes, they use "rock motions" to help them calculate the maximum seismic forces that the structure may experience; they then

design the structure to resist these forces. Rock motions are the vibrations that travel through the bedrock caused by the slipping of an earthquake fault.

Seismologists develop the rock motions based on the structures location in relation to earthquake faults and historical and geotechnical site data. The "new" East Span has been designed to withstand rare seismic events. Specifically, the span has a 1,500-year return period. This is defined as the largest rock motions expected to occur at the bridge site once every 1,500 years.

## **Will the Bay Bridge remain open during all of the seismic safety work?**

A: Every effort is being made to keep 280,000 vehicles a day safely moving across the bridge. In fact, bridge builders are going to extreme lengths to perform work during non-commute hours, and to limit closures to designated lanes. However, to help ensure public and worker safety, the entire bridge may close to traffic during several major construction and demolition phases of the project. These closures will be scheduled during off-peak hours, and alternative transportation methods will be recommended. Please visit the home page for closure and detour updates.

## **Is the Bay Bridge the only Bay Area bridge that is undergoing a seismic retrofit?**

A: The California Department of Transportation has completed retrofits on four other major Bay Area bridges: the San Mateo-Hayward Bridge, the Richmond-San Rafael Bridge, the Carquinez Bridge, and the Benicia-Martinez Bridge, as well as numerous, smaller state-owned overcrossings, undercrossings and interchanges that comprise the highway network. Caltrans is currently retrofitting the Antioch Bridge and the Dumbarton Bridge. The Golden Gate Bridge is also undergoing a seismic retrofit, which is being managed by the Golden Gate Highway, Bridge and Transportation District.



*Labor Day Weekend--2009 –Detour Span Placement*