SEAWALL PROGRAM FUNDING

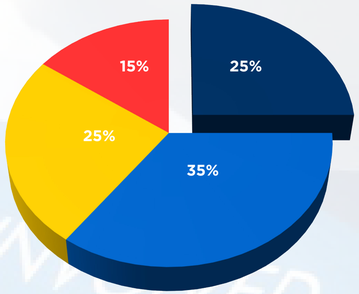
Thank you San Francisco!

Thanks to San Francisco voters, a $425 million General Obligation Bond for the Program passed with 82% of the vote in the November 2018 election.

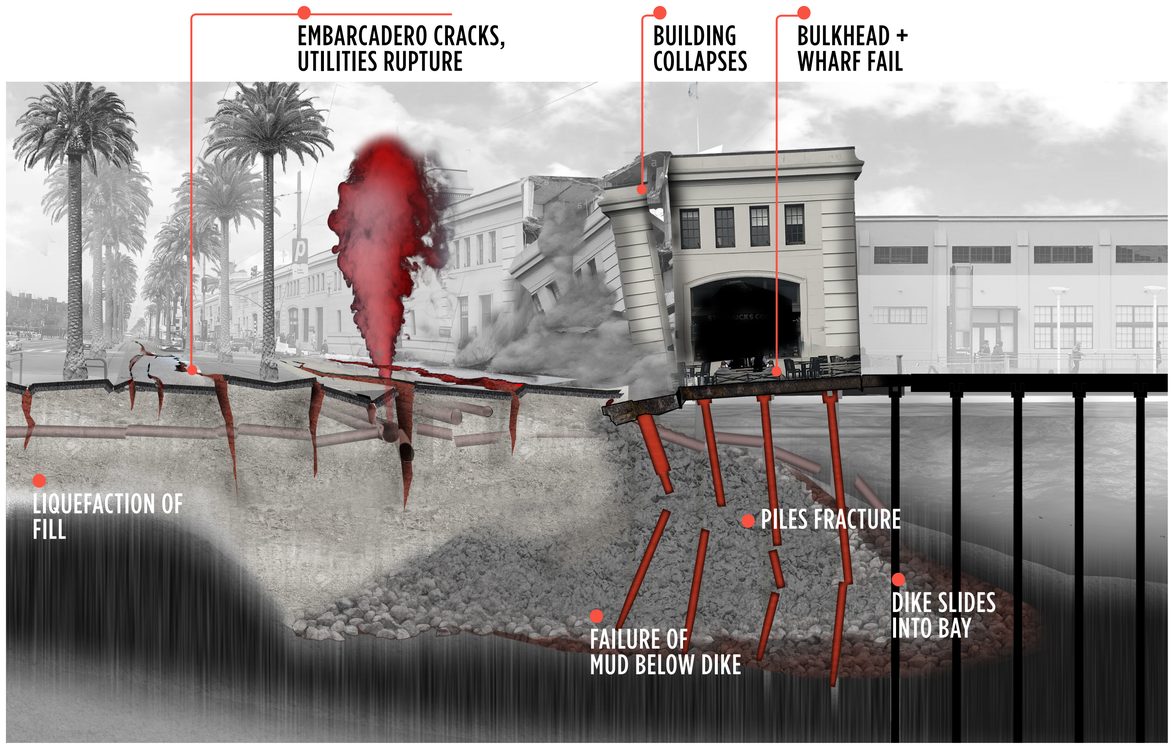
To date, the Port has secured $440 million for urgently needed immediate life safety improvements, and is currently pursuing local, state, federal, and private funding sources to fully fund infrastructure improvements anticipated to cost up to $5 billion.

Full infrastructure improvements are anticipated to cost up to $5 billion

- **Local** (City GO Bond Program)
- **Federal** (Water Resources, Transportation)
- **State** (Cap and Trade, State Share of Tax Increments)
- **Private** (Waterfront Development Project and Businesses)



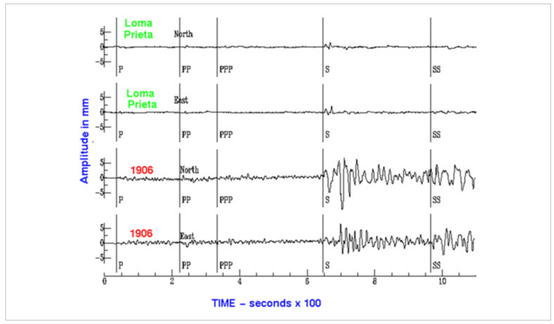
THE EMBARCADERO SEAWALL FACES URGENT SEISMIC RISKS



Rendering of the Embarcadero Seawall during a major earthquake

THE EMBARCADERO SEAWALL was built over 100 years ago and in the heart of earthquake country without being engineered for seismic activity. Recent engineering analysis revealed that the Seawall is highly vulnerable to earthquake damage, including threats from liquefaction, lateral spreading, and settlement. Together, the Port of San Francisco and the City are working to proactively prepare for a major earthquake. One of the most important actions we can take now is to strengthen the Embarcadero Seawall.

Aftermath of the 1906 earthquake in San Francisco



Comparison of 1906 and Loma Prieta records at Gottingen, Germany

If the Embarcadero Seawall survived 1906 and 1989, why are we so worried?

THE 1906 EARTHQUAKE was a major earthquake, with an epicenter just two miles away and nearly 60 seconds of strong ground shaking. Most of the Embarcadero Seawall and the infrastructure it protects did not exist in 1906, and of the portions that did exist, evidence indicates that the Seawall settled and moved several feet toward the Bay. An earthquake similar to 1906 poses a high risk to the Seawall and historic piers with the potential for structure collapse and infrastructure damage.

By comparison, the **1989 Loma Prieta Earthquake** was significant but categorized as a minor event with an epicenter 60 miles away from downtown San Francisco. Even so, it damaged portions of the Seawall and caused some liquefaction along the Embarcadero roadway, but ground shaking was not strong enough to cause Seawall failure.

The United States Geological Survey now estimates that there is a 72% chance of a major earthquake between now and 2043 with the potential to shake San Francisco at levels not seen for over 110 years.

THE EMBARCADERO SEAWALL AND SEA LEVEL RISE

Up to 6 feet of water from sea level rise will result in daily flooding and extend into downtown.

As part of the Seawall Program, the Port is developing an inundation analysis to better understand future water levels and the effects on waterfront assets and services.

Rendering of the Embarcadero Seawall during flooding due to sea level rise.

Today, San Francisco’s Waterfront is subject to flooding.

The Port of San Francisco understands that sea level rise poses a significant and increasing threat to San Francisco’s communities, businesses, environmental resources, and infrastructure. In recognition of this threat, the City adopted the **SEA LEVEL RISE ACTION PLAN** and the Port has been a strong partner in implementing the actions recommended by the Plan.

Sections of the Embarcadero Seawall account for some of our shoreline’s lowest elevations and most significant community and business assets. The City, acting through the Port, launched the **EMBARCADERO SEAWALL PROGRAM** to improve seismic performance, provide near-term flood protection improvements, and plan for long-term resilience and sea level rise adaptation.

TODAY, THE EMBARCADERO FLOODS intermittently, requiring Embarcadero Promenade and roadway closures. A 100-year flood event would send the Bay over the Embarcadero Seawall and into the BART and Muni tunnels, disrupting transit and the regional economy. The Bay is expected to rise up to 6 feet by 2100, which would result in daily flooding downtown.