

THE PORT OF SAN FRANCISCO

EMBARCADERO EARLY PROJECTS



EMBARCADERO EARLY PROJECTS address the areas of highest earthquake and sea level rise risks along the Embarcadero waterfront. They are near-term actions, focused on improving life safety and citywide disaster response capabilities, and are the first step toward building long-term, waterfront-wide resilience.

The Port has identified 23 Embarcadero Early Projects based on its extensive risk assessment work, including the Embarcadero Seawall Multi-Hazard Risk Assessment and the joint Disaster Response Exercise conducted with the Department of Emergency Management.

These projects were evaluated and prioritized using criteria developed with community input. Embarcadero Early Projects respond to community priorities by:

- **Prioritizing** life safety and emergency response.
- **Enhancing** and sustaining economic and ecological opportunities.
- **Supporting** an adaptable and equitable waterfront.
- **Ensuring** public access to the waterfront and historic places.
- **Protecting** and preserving historic and maritime resources.

The Port is recommending 16 Embarcadero Early Projects to advance through Proposition A General Obligation Bond, with plans to advance the remaining projects through additional funding sources and partnerships.





(ABOVE) The waterfront locations for Embarcadero Early Projects

EMBARCADERO EARLY PROJECTS LIST

AS PART OF its identification and evaluation for Embarcadero Early Projects, the Port is recommending advancing 23 projects:

- **5 projects** through geographic development for the stretch between Piers 19 and 41, allowing for multiple sources of funding to improve an area with high occupancy and critical City & Port infrastructure;
- **11 projects** straight to predesign through Proposition A funding; and
- **7 projects** through coordination with Port tenants, capital programs, and City agency coordination.

A full list of projects follows:

1. Joint Operations Security Center and Fuel Dock Reliability Project
2. Wharf J9 Replacement and Resilient Shoreline Project
3. Taylor Street Seawall Earthquake Stabilization Project
4. Pier 45 Apron Earthquake Safety Retrofit and Interim Flood Risk Reduction Project
5. Pier 43-1/2 Seawall and Wharf Earthquake Safety Project
6. Pier 41 Seawall Earthquake Stabilization and Wharf Substructure Retrofit Project
7. Pier 39 Seawall Earthquake Stabilization & Wharf Substructure Retrofit Project
8. Pier 33 to Pier 35 Seawall and Wharf Substructure Earthquake Reliability Project
9. Pier 31-1/2 Bulkhead Wall and Wharf Substructure Earthquake Safety Retrofit Project
10. Pier 27 Seawall and Wharf Substructure Earthquake Reliability Project
11. Pier 15 Bulkhead Wall and Wharf Substructure Earthquake Safety Retrofit Project
12. Pier 9 Bulkhead Wall and Wharf Substructure Earthquake Safety Retrofit Project
13. Pier 9 Historic Shed Building Earthquake Safety Retrofit Project
14. Pier 1 Bulkhead Wall and Wharf Substructure Earthquake Reliability Project
15. Ferry Building Seawall & Substructure Earthquake Reliability Project
16. Agriculture Building Bulkhead Wall and Wharf Substructure Earthquake Safety Retrofit Project

17. Pier 5 to Pier 22-1/2 Near-Term Coastal Flood Risk Reduction Project
18. Pier 24 to Pier 28-1/2 Bulkhead Wall and Wharf Substructure Earthquake Safety Retrofit Project
19. Emergency Firefighting Water System, Intake Tunnel #1 Earthquake Reliability Project
20. Seals Plaza / South Beach Harbor Seawall Earthquake Stabilization Project
21. Pier Fire Suppression & Waterside Evacuation Improvement Projects
22. Emergency Firefighting Water System, Fireboat Manifold Earthquake Reliability Projects
23. Pier & Wharf Utility Connection Earthquake Retrofits Project

EMBARCADERO SEAWALL ZONE RISKS

THE WATERFRONT AREAS supported by the Embarcadero Seawall are in need of repair and are vulnerable to urgent seismic risks and increasing flood risks. While a remarkable engineering feat at the time, the Seawall was built in earthquake country without today's seismic standards and atop "young bay mud," a soft, weak mud that can amplify earthquake shaking. The Embarcadero Seawall zone includes the three miles of waterfront supported by the Seawall, the foundation for the thriving waterfront we know and love today and the backbone for over \$100 billion in assets and annual economic activity. The Embarcadero Seawall zone supports key utility, transportation infrastructure, and emergency assets crucial to the operation of the entire city of San Francisco.

Since 1906, the Bay Area has enjoyed a historically quiet period of seismic activity, but the U.S. Geological Survey estimates a 72% chance of a major earthquake happening between now and 2043. Today, the Embarcadero Promenade floods intermittently. As sea levels continue to rise, there will be additional flooding risks to the BART Transbay Tube, Muni light rail, key utility infrastructure, and waterfront businesses and neighborhoods. The entire Embarcadero faces significant flood risk between 1-2 feet of sea level rise.



(ABOVE) The Seawall created over 500 acres of new land
 (RIGHT) The Seawall transformed what was once tidal mudflats along San Francisco's shoreline

A DOWN PAYMENT ON RESILIENCE

INITIAL COST ESTIMATES for delivering all 23 Embarcadero Early Projects range from \$650 million to \$3 billion. Project budgets will be developed as projects advance through pre-design. The current overall budget forecast for all Embarcadero Early Projects far exceeds available Proposition A funding. By advancing projects through multiple funding streams, including Proposition A, the Port can better position Embarcadero Early Projects to receive state and federal funding as well as partnerships with long-term tenants, private stakeholders, and city partners.

Embarcadero Early Projects include efforts to strengthen the Embarcadero Seawall in targeted areas. In some cases, these are interim fixes and in others they are a first step toward future adaptation. Creating a resilient Embarcadero will take several decades, but these projects are an important first step as the Port develops resilience strategies for the entire 7.5 miles of waterfront.

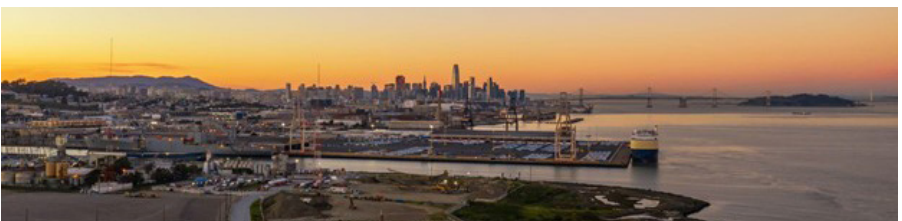


(ABOVE) Embarcadero Early Projects focus on improving life safety and citywide disaster response capabilities along the Embarcadero waterfront.

RESILIENCE EFFORTS ALONG THE ENTIRE WATERFRONT

ALONGSIDE IDENTIFICATION OF Embarcadero Early Projects to address the areas of highest earthquake and sea level rise risks along the Embarcadero waterfront, the Port continues to advance work to reduce risk in the central and southern waterfront. These efforts include partnerships with the U.S. Army Corps of Engineers San Francisco Waterfront Coastal Flood Study, Islais Creek Southeast Mobility Adaptation Strategy, and the Southern Waterfront Seismic Vulnerability Assessment.

The process for Embarcadero Early Projects will inform further development of resilience plans to reduce risks along the Port's entire jurisdiction from Aquatic Park to Heron's Head Park.



(ABOVE) The Port's resilience planning for Islais Creek / Bayview and Mission Creek / Mission Bay is underway.