Table of Contents

Executive Summary

On November 6, 2018, the citizens of San Francisco passed Proposition A with 82.7% voter approval, authorizing a $425 million General Obligation Bond known as the Embarcadero Seawall Earthquake Safety Bond (Seawall Bond) to support the Waterfront Resilience Program (Resilience Program; WRP)[1].

The WRP has a total estimated cost of $10-20 billion with a 30-year implementation timeline. The $425 million Seawall Bond will partially fund the WRP, including funding improvements for earthquake safety of the Embarcadero Seawall, near-term flood protection improvements, and planning for additional long-term resilience.

Prior to the approval of the Seawall Bond, in June 2018, the United Stated Army Corps of Engineers (USACE) awarded San Francisco a “new start” study appropriation to commence a General Investigation feasibility study, which would consider and recommend potential project alternatives to reduce coastal flood risk along the San Francisco waterfront (the Flood Resiliency Study). A waiver was approved in November 2021, increasing the study time from 36 to 86 months and increased the study cost from $6 million to $16 million. In February 2025, the agreement was amended again to increase the study an additional 12 months and increase the study cost from $16 million to $19.2 million.

The bond authorization amount for the Seawall Bond Program is $425 million. There have been three bond sales (June 2020, April 2023, January 2025) totaling $209.9 million.

Please refer to the following report for further details. Visit the Waterfront Resilience Program website at https://sfport.com/wrp for a link to this Annual Report and future reports.

Waterfront Resilience Program Summary

The State of California constructed the Embarcadero Seawall a century ago to create a deep-water port in San Francisco. Construction of the Seawall included landside fill that created over 500 acres of new land between San Francisco Bay and 1st Street. The Seawall sustains three miles of San Francisco waterfront, stretching from Fisherman's Wharf to Mission Creek and supports historic piers, wharves, and buildings, including the Ferry Building. It underpins the historic Embarcadero Promenade, iconic tourist destinations, recreation and park facilities, restaurants, and local businesses, bringing an estimated 24 million people to the waterfront annually. The Seawall also supports key utility networks and infrastructure for the BART, Muni, and ferry transportation networks. Additionally, the Seawall serves as a critical area for emergency response and recovery and provides flood protection to downtown San Francisco. All told, the Seawall enables $24.6 billion in economic activity and protects $102.1 billion of property value.

In 2019, the Port established the Waterfront Resilience Program to ensure that the entire 7½ mile waterfront, and its important regional and citywide assets, are resilient in the face of hazards such as earthquakes, flooding, and sea level rise due to climate change. The Resilience Program includes several initiatives to increase the resilience of the waterfront:

- **Embarcadero Seawall Program:** A City sponsored effort, that the Port is entrusted to implement, to reduce seismic and flood risk along the waterfront from Fisherman's Wharf to Mission Creek. In November 2018, voters of the City and County of San Francisco voted overwhelmingly to support Proposition A, the San Francisco bond initiative to provide $425 million to upgrade and repair a portion of the 100-year-old Embarcadero Seawall. The Seawall Bond continues to fund the planning and design phases of Early Projects.
- **USACE / Port of San Francisco San Francisco Waterfront Coastal Flood Study ("Flood Study"):** USACE awarded the Port of San Francisco a "New Start" in 2018 which authorized a General Investigation of flood risk along the San Francisco Bay waterfront. As a result, the Port and USACE have studied flood risk along San Francisco's bayside shoreline, from Aquatic Park to Heron's Head Park. The approximately seven-year USACE Flood Study has identified vulnerabilities and are completing a report to recommend strategies to reduce current and future flood risks for consideration for federal investment and implementation at a funding ratio of 2/3 federal, 1/3 local.
- **Waterfront Adaptation Strategies:** The WRP developed Draft Waterfront Adaptation Strategies in partnership with multiple City departments (Office of Resilience and Capital Planning, San Francisco Municipal Transportation Agency, San Francisco Planning Department, San Francisco Public Utilities Commission, and San Francisco Public Works) and with the USACE. The Draft

Waterfront Adaptation Strategies provide a range of options for the City to create a resilient, sustainable, and equitable waterfront for the next 100 years. The Strategies are options to reduce flood and seismic risk along the Port's entire waterfront jurisdiction, from Heron's Head Park to Fisherman's Wharf, through a combination of phased large and small projects, new policies, such as flood defenses, structure elevation, floodproofing, city infrastructure adaptations (e.g., wastewater and stormwater management, transportation system), flood-resilient building codes, and land use changes. The Draft Strategies were released to the public in October 2022 and were used to create the Draft Plan and Recommended Plan.

- **Draft Plan and Recommended Plan:** Building off the Draft Waterfront Adaptation Strategies, the WRP and USACE developed a Draft Plan for coastal flood defenses for the 7.5 miles of Port property which was released for public review in 2024 along with the release of Flood Study. Based on public comment, comments from resource and regulatory agencies and internal USACE reviews, the WRP and USACE have developed a recommended plan for coastal flood defenses ("Recommended Plan"). The Recommended Plan is slated for public release in 2026 along with the Final San Francisco Waterfront Flood Study. The Recommended Plan proposes actions to defend the shoreline against rising sea levels and presents an environmental analysis of those actions and indicates where to build coastal flood defenses and how much sea level rise future coastal flood defenses will manage before they need to be adapted to higher water levels.

Other resilience work: In addition to these efforts, the WRP has supported other areas of work to make the 7 ½ mile waterfront more resilient:

- A Floodproofing the Piers study assessed the options available to adapt the piers to be resilient to elevated sea levels.
- The Southern Waterfront Seismic Vulnerability Study will use existing geotechnical information in the Port's Southern Waterfront to assess earthquake risk to Port facilities in the area.
- The Islais Creek Adaptation Study, a joint effort by the Port, the San Francisco Municipal Transportation Agency and City Planning, examined sea level rise and flood risk in the Islais Creek/Bayview neighborhood, with a focus on transportation assets.
- The Resilience Program also represents the Port with participation in citywide and regional adaptation and resilience efforts led by others.
- Engineering with Nature remains a priority for the WRP. The Port of San Francisco, in collaboration with the Smithsonian Environmental Research Center, completed the active monitoring of the Living Seawall Pilot Project.
- The WRP is now working with the California Coastal Conservancy to develop designs for Engineering with Nature on 3 shoreline segments along the Port's waterfront: Rincon Park, Pier 70 and the Pier 94 wetlands. This effort is part of the Regionally Advancing Living Shorelines project sponsored by the Coastal Conservancy.

The Port has appropriated non-bond funding to support work in areas beyond the scope of the Embarcadero Seawall and the USACE Flood Resiliency Study.

Waterfront Resilience Program Status

The Waterfront Resilience Program is currently in its Preliminary Design phase with RFPs for three projects issued December 2024. Contracts for the South Beach Coastal Resilience Project, Seawall Earthquake Safety Retrofits, and Fisherman's Wharf Forward at Taylor Street were signed in late 2025 and early 2026. These initial projects prioritize urgent seismic and flood risk using a people-first approach to support the Port as it makes critical life-safety and disaster response decisions

In 2025, the Port and USACE continued to advance the San Francisco Waterfront Flood study to develop a Recommended Plan for future coastal flood defenses that protect multiple, interdependent critical infrastructure systems from earthquakes and flooding.

The Port will advertise a pre-construction, engineering, and design services RFP ($115M) in spring 2026 to advance potential project sites identified by the Recommended Plan. The Port has signed a Section 221 Agreement with the USACE, wherein local sponsors advance preconstruction engineering and design activities and construction activities using local funds. This agreement allows the Port to apply for credit towards future Federal funding local match requirements once the Recommended Plan is submitted to and approved by Congress.

Early Projects

From strategies devised for the Northern Waterfront (South Beach, Ferry Building, Northeast Waterfront, Fisherman's Wharf), the Program team is advancing seven projects through varying levels of design and construction.

The projects advancing include:

- Fisherman's Wharf Forward (Taylor Street)
- Wharf J9 Replacement & Resilient Shoreline Project
- Pier 15 Seawall Earthquake Safety Project
- Pier 9 Seawall Earthquake Safety Project
- Downtown Coastal Resilience Project (between Pier 9 and the Bay Bridge)
- South Beach Resilience Project (between the Bay Bridge and Pier 40)
- Pier 50 Earthquake Improvement Project

These projects were identified through a northern waterfront adaptation strategy planning process over the course of 2020-21 and through the Flood Study; the Early Projects were developed to respond to the unique conditions and analysis of earthquake and flood hazards analysis in each of the areas that define the Northern Waterfront.

- Fisherman's Wharf Forward: Fisherman's Wharf Forward is a major investment strategy aimed at reinvigorating the heart of Fisherman's Wharf, among the City's most visited neighborhoods, with resilience improvements and the creation of a new destination in the area. The shoreline surrounding the Inner Lagoon in Fisherman's Wharf between Taylor Street and Jones Street was

identified in the WRP's Multi-hazard Risk Assessment (MHRA) as one of the most seismically vulnerable locations along with the waterfront, given the soil conditions, aging timber structures and high number of visitors to the area. The Fisherman's Wharf Forward project is multi-phase, and the first phase is currently underway with demolition of select seismically vulnerable structures and creation of interim activations. In design now, the future phases will provide seismic and sea level rise protections along with new public spaces to ensure the historic area around the Inner Lagoon remains a vibrant destination for decades to come. The project is funded with 2018 bond funds and a combination of other Port sources.

- Wharf J9 Replacement & Resilient Shoreline Project: This project, located in the outer lagoon section of Fisherman's Wharf, will replace a failing wharf and seawall with a new earthquake resilient and adaptable structure. This new seawall and wharf structure will provide berthing for the fishing industry, including ADA accessible off the boat fish sales, and provide earthquake and flood protection for adjacent buildings and infrastructure located near the shoreline. The Project will be delivered in phases, with Phase 1 to install the gloat & gangway completed in 2024, and Phase 2 will replace the Seawall and Wharf. Due to its proximity to the Fisherman's Wharf Forward project at Taylor Street, this project has been put on hold until the project at Taylor Street is completed.

- Pier 15 Bulkhead Wall & Wharf Earthquake Safety Retrofit Project: This project, located at Pier 15 which is home to the Exploratorium, is intended to improve earthquake safety by retrofitting the at-risk bulkhead wall and wharf. The rock seawall here, which sits over thick bay mud and retains liquefiable fill in The Embarcadero, is likely to shift bayward in an earthquake risking the bulkhead structure that sits over it. Strengthening the ground below and behind the rock seawall is a major undertaking that is expected to be a part of an area wide future adaptation move. This project improves earthquake safety by retrofitting the existing bulkhead to better ride out these movements and provide safe egress to and from the Pier. The Port is working with the Exploratorium as the Exploratorium advances its facility master plan to determine the appropriate timing of this effort.

- Pier 9 Bulkhead Wall & Wharf Earthquake Safety Retrofit Project: This project, located at Pier 9 which is home to Autdesk and the SF Bar Pilots, is intended to improve earthquake safety by retrofitting the at-risk bulkhead wall and wharf. The rock seawall here, which sits over thick bay mud and retains liquefiable fill in The Embarcadero, is likely to shift bayward in an earthquake risking the bulkhead structure that sits over it. Strengthening the ground below and behind the rock seawall is a major undertaking that is expected to be a part of an area wide future adaptation move. This project improves earthquake safety by retrofitting the existing bulkhead to better ride out these movements and provide safe egress to and from the Pier. The WRP is collaborating with the Port's Real Estate Division to evaluate future uses of Pier 9 so this project can support and respond to those uses.

- Downtown Coastal Resilience Project (between Pier 9 and the Bay Bridge)): This project will improve flood protection along an at-risk section of waterfront between Broadway and Harrison Streets. This ¾-mile stretch, adjacent to Downtown, is the former Yerba Buena Cove, an area of thick bay mud that has settled over the years and is now experiencing overtopping of the seawall in King Tides and storms. Important transit assets, including BART and MUNI light rail, pass through this zone and are

at risk from extreme storm coastal flooding today. The project is exploring a range of flood defense alignments and systems along with targeting seismic strengthening and opportunities to improve public realm and habitat including living seawall treatments. A contract to advance this project will be executed in summer 2026.

- South Beach Resilience Project (between the Bay Bridge and Pier 40): This Project will advance waterfront resilience along the Embarcadero between Harrison and Townsend Streets. This area faces high seismic risk, is home to some of the oldest wharves, is a vital transportation link, and has two major development projects pending at Pier 30/32 and Pier 38/40. The Project will develop the conceptual design and support delivery of a major resilience project between Pier 22.5 and Pier 40 in coordination with the Port's major pier development partners. The project will replace an aging, seismically vulnerable seawall and wharves with modern, earthquake stable seawall and wharves, while enhancing the public promenade for recreation and mobility. A contract to advance this Project was executed in October 2025.

- Pier 50 Improvement Project: This project at Pier 50 in the Southern Waterfront is not funded by the 2018 bond; it uses American Rescue Plan Act (ARPA) funding. The project completed an earthquake risk assessment of Pier 50 and the Port Maintenance facility that utilizes the pier. The facility faces earthquake risks associated with liquefiable soils and piers and sheds designed prior to adoption of proper seismic detailing requirements. Anticipated seismic damage at this facility impacts disaster response of the entire waterfront because the Port's Maintenance Division is headquartered on Pier 50 and they are needed for repairs immediately after an earthquake. Predesign of a resilient Port Maintenance facility is expected to be completed in Fall 2026, and the Port then plans to pursue additional funding for detailed design and construction.

Early Projects include efforts to strengthen the Embarcadero Seawall and implement the Recommended Plan 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 decades, but these projects are an important first step as the Port develops resilience strategies for the entire 7 ½ miles of waterfront.

Community and Stakeholder Engagement

The San Francisco Waterfront Flood Study builds off several years of public outreach and engagement. Since 2017, the Port has connected with tens of thousands of people through robust community and stakeholder engagement efforts to advance work on the Embarcadero Seawall Program and Waterfront Resilience Program. This engagement has included outreach to community members, businesses and merchants, advisory committees, Community-Based Organizations, and others. Community input has helped the WRP develop its guiding vision, principles, goals, evaluation criteria, and project formulation. The community has also shared what waterfront assets are key priorities as the WRP takes action to reduce seismic and flood risks.

Most recently, public outreach and engagement on the San Francisco Waterfront Flood Study Draft Plan included more than 70 public engagement events with over 900 participants, 16,100 webpage views between our Storymaps and webpages who viewed content related to the Draft Plan, and over 940,000 social media ad impressions. Broad citywide outreach was effective, resulting in over 270 attendees for

in-person community workshops, over 120 attendees for the in-language workshops, 130 attendees for walking tours, and almost 400 people attending public webinars, CBO presentations, and other advisory committees and briefings throughout San Francisco.

Flood Study

In January 2024, the Port and USACE published the Draft Integrated Feasibility Report and Environmental Impact Statement. This publication consisted of coastal flood defenses, floodproofing, and water management features to adapt the Port's 7 ½ mile bayside waterfront to sea level rise over time, with subsequent adaptation actions to respond to higher future water levels. The proposed solutions are estimated to cost $13.5 billion plus inflation. Cost estimates are preliminary, high-level, and subject to change.

- After the Draft Integrated Feasibility Report and Environmental Impact Statement were released to the public, there was a formal 60-day comment period. The Port conducted additional public outreach and engagement along with the formal required outreach. Following robust public engagement and review of public, City agency, resource agency and USACE comments, the Port and USACE continue working to complete the Flood Study and a Recommended Plan by end of 2026. The Recommended Plan will include an Implementation Strategy that will identify how the plan can be built in phases as funding becomes available over time, including identifying potential early implementation actions. Once submitted to Congress, and if approved, the Federal government may pay up to 65% of the construction cost. The Port of San Francisco is currently working with USACE and our congressional delegation to pursue plan approval and authorization to be included in WRDA 2026 (bi-annual Federal water resources authorization ill). We anticipate an update on WRDA 2026 by the end of this year.

Budget, Funding, Expenditures

The Seawall Bond 2018 budget is $425,000,000 and the total appropriation through December 2025 is $209,900,000. The following is a summary of the budget and appropriation per component:

Components	Budget*	General Obligation Bond**			
		Appropriations	Expenditures	Encumbrances	Balance
Seawall Program Labor	16,000,000	12,000,000	10,300,000		1,700,000
Program Advisory Services	35,000,000	50,000,000	15,000,000		35,000,000
United States Army Corps of Engineers (Flood Study / Recommended Plan)	12,000,000	42,000,000	11,500,000		30,500,000
Planning / Engineering / Preliminary Design	61,000,000	31,000,000	29,400,000	350,000	1,250,000
Detailed Design (Early Projects)	162,000,000	64,000,000	2,200,000	7,900,000	53,900,000
Other City Depts / Gov Agencies	2,000,000	4,000,000	900,000		3,100,000
Pilot Projects	1,000,000	900,000	700,000		200,000
Construction (Early Projects)	136,000,000	3,500,000	2,400,000	600,000	500,000
Oversight, Accountability & Cost of Issuance	-	2,500,000	2,500,000		0
TOTAL	425,000,000	209,900,000	74,900,000	8,850,000	126,150,000

* Subject to change based on program schedule and needs

** Appropriations, Expenditures, Encumbrances and Balance are based on F$P amounts through December 2025.

The Accountability reports for the bond sales will be available on the Waterfront Resilience Program website at https://sfport.com/wrp/library

Expenditures and Encumbrances

As of December 2025, the Seawall Bond 2018 expenditures and encumbrances are $74,900,000 and $8,850,000, respectively. The expenditures represent 35.7% of the total current appropriations.

Attachment 1 – Contact Information

Contact	Title	Contact No.	E-mail
Brad Benson	Program Director	415-274-0498	brad.benson@sfport.com
Steven Reel	Deputy Program Manager, Engineering & Project Management	415-274-0574	steven.reel@sfport.com
Adam Varat	Deputy Program Manager, Planning	415-274-0594	adam.varat@sfport.com
Luiz Barata	Planner	415-274-5643	luiz.barata@sfport.com
Christopher Horiuchi	Project Manager	415-274-0536	christopher.horiuchi@sfport.com
Kelley Capone	Project Manager	415-274-0355	kelley.capone@sfport.com
Matthew Wickens	Project Manager	415-274-0573	matthew.wickens@sfport.com
Carlos Colón	Contracts Manager	415-274-0616	carlos.colon@sfport.com

Attachment 2 – Schedule