



Youth Engagement with SFUSD and the Exploratorium

The Port teamed with the San Francisco Unified School District (SFUSD) and Exploratorium to develop new youth engagement for high school students. The team developed 5 "in-classroom" sessions with Abraham Lincoln High School and The Academy High School to teach students about climate change, sea-level-rise, flooding, and adaptation strategies for the San Francisco waterfront. On January 20, students met at the Port and Exploratorium, for a co-hosted field trip, in celebration of the king tides happening that day.



The field trip started with a walking tour of the Embarcadero Waterfront; then students used stencils to map locations throughout the downtown to mark the extent of potential flooding and expected height of projected sea level rise for the years of 2040 and 2090. Working in small groups, students brainstormed ways to reimagine and adapt the northern waterfront. Exhibits and special activities at the Exploratorium wrapped up the day. For a more detailed account of the experience, take a look at the on the ground coverage from [SFUSD News](#)

On February 16, the Port teamed with teachers and students from Phillip and Sala Burton Academic High School to have a similar field trip to map locations throughout the downtown to mark the extent of potential flooding from sea level rise. Students also played the Game of Hazards to better understand the earthquake and flood risks to the waterfront.

For youth-focused resources for learning about resilience and family-friendly activities, visit sfport.com/wrp/family.

Resilience in the News

Resilience has been in the news this winter, from the King Tides of December 22-23, 2022, and January 21-22, 2023, to the storms that brought record rainfall to the state causing flooding around the Bay Area.



The Port joined the Exploratorium for its January King Tides walking tours and led its own waterfront walking tours, with one in Islais Creek Bayview on January 21 and one in Embarcadero on February 4.

These events are opportunities to witness the potential flood effects to the waterfront from sea level rise and climate change. King Tides are the highest tides of the year and are considered an indicator of the future shoreline. For more on the January King Tides, read the [San Francisco Chronicle article](#).

We Hear You: Draft Waterfront Adaptation Strategies

In October 2022, the Port, in partnership with the U.S. Army Corps of Engineers and San Francisco city agencies shared Draft Waterfront Adaptation Strategies. Based on over five years of community feedback, the Draft Waterfront Adaptation Strategies are different ways for the City to create a resilient, sustainable and equitable waterfront for the next 100 years.



Feedback on the Draft Strategies gathered from the 16 public in-person and online events hosted by the Port between October and December 2022 is available in the following engagement summary. Learn more by reading the [Community Engagement Summary](#).

Comments are informing development of the Draft Waterfront Adaptation Plan (Tentatively Selected Plan), which is under development through Summer 2023. The Port will continue to engage and seek community input on this important work for the City of San Francisco.

Media Corner: Living Seawall Pilot Explainer Video

View the new [Living Seawall Pilot](#) explainer video to learn more about this innovative two-year study. Led by the Port and Smithsonian Environmental Research Center (SERC), the Living Seawall Pilot was launched in Spring 2022.



The Pilot is testing and evaluating engineering with nature concepts from around the world — from Seattle to Sydney — to learn how we can make San Francisco's seawall more ecologically friendly in the future. The video was produced with [BAYCAT Studios](#), a nonprofit media organization for young women and people of color whose work highlights social impact projects.

Honoring Black History Month

The Port celebrates Black History Month, an annual celebration of African Americans' achievements and significant contributions to U.S. history.



The Port aspires to make equity, diversity, and inclusion a part of all WRP work — not just for a month but throughout the year — as we build a waterfront that is inviting for all. That's why the WRP planning team is working with an Equity Working Group made up of public agency equity practitioners to ensure that planning for the waterfront engages residents, addresses their concerns, and puts forward ideas that prioritize benefits for the communities along the waterfront.

The WRP is also developing a program-wide Equity Implementation Plan that will look across multiple areas such as workforce development, as well as monitoring and outreach to help track how the WRP is responding to and working with communities.

Honoring Lunar New Year

The Port honors and embraces Lunar New Year, held this year January 22 to February 1, as deeply rooted in history and celebratory tradition, symbolizing a new start or a refresh in one's life with hope for prosperity, wealth, and happiness.



In this Year of the Rabbit, known as the "luckiest of all animals in China," we reflect on its symbolism of peace, elegance, and contemplation. Special Lunar New Year events on the waterfront included personalized red paper scroll creation and lion dance performances.

Visit the Port's [Twitter](#), [Facebook](#), and [Instagram](#) for stories and highlights shared throughout the month.

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Remembering the 1906 Earthquake

April 18 marked the 117th anniversary of the 1906 earthquake in San Francisco. The 1906 earthquake, caused by a rupture along the San Andreas Fault, was centered just three miles from the Embarcadero Seawall. Much of the City burned following the 1906 earthquake, which ruptured water pipes, leaving firefighters with little choice but to create fire breaks by demolishing buildings. Afterward, the City installed the largest dedicated high-pressure water system ever built with pump stations, fireboats, and waterfront manifolds as supply sources.



Today's waterfront is a vital area in coordinating the City's and Bay Area's emergency response, one of the many reasons the resilience planning along our waterfront is so important. Additional events this month for reflecting on the past, present, and future resilience of the waterfront include Earth Day on April 22 and [Climate Action Month](#) activities organized through the San Francisco Department of the Environment.

Dive In: Embarcadero Early Projects

The Port continues to advance [Embarcadero Early Projects](#) – near-term actions focused on improving life safety and citywide disaster response capabilities in the areas of highest earthquake and sea level rise risks along the Embarcadero waterfront. These projects are the first step toward building long-term, waterfront-wide resilience and will be built on as the Port develops a Waterfront Adaptation Plan for the entire 7.5 miles of waterfront. Learn more about six of these projects currently in the alternatives analysis phase with their fact sheets below:

- Wharf J9 Replacement and Resilient Shoreline Project - [Fact Sheet](#)
- Pier 15 Bulkhead Wall and Wharf Substructure Earthquake Safety Retrofit Project - [Fact Sheet](#)
- Pier 9 Bulkhead Wall and Wharf Substructure Earthquake Safety Retrofit Project - [Fact Sheet](#)
- Ferry Building Seawall and Substructure Earthquake Reliability Project - [Fact Sheet](#)
- Downtown Coastal Resilience Project - [Fact Sheet](#)
- Pier 24- 1/2 to Pier 28-1/2 Bulkhead Wall and Wharf Substructure Earthquake Safety Retrofit Project - [Fact Sheet](#)



These Embarcadero Early Projects include opportunities for Local Business Enterprises (LBEs) and Workforce Contractors to prepare to submit bids for work. Learn more and sign up to receive updates at the [WRP LBE webpage](#).

Continuing Youth Waterfront Walking Tours

On April 1, more than fifty middle school and high school students and guardians joined Port staff and the Exploratorium on a waterfront walking tour in the Islais Creek / Bayview neighborhood. Participants worked in small groups to mark areas showing expected flooding from sea level rise after learning about Waterfront Resilience Program efforts. Several community based organizations serving Bayview youth promoted the event, and sent youth representatives to participate.



This event builds on [previous youth focused events](#) organized in partnership with the San Francisco Unified School District and the Exploratorium in the fall and winter of 2023.

Update: Draft Adaptation Strategies

Following the public engagement on the seven Draft Adaptation Strategies in October 2022 - February 2023, the WRP team in collaboration with the US Army Corps of Engineers (USACE) have been busy compiling the feedback received from the public and integrating comments for analysis. The WRP and USACE are also performing further economic, feasibility, transportation, and equity analyses that will inform the next steps of the Draft Waterfront Adaptation Plan (Tentatively Selected Plan).



Stay tuned for more information on the plan's development. To learn more about the seven strategies, visit the [Draft Waterfront Adaptation Strategies](#) webpage.

Update: Living Seawall Pilot

We are excited to report the Living Seawall Pilot's experimental tiles have come to life after just two months, with visible growth of native species such as sea lettuce (*Ulva*), Turkish washcloth (*Mastocarpus*), Olympia oysters, and the beautiful red seaweed *Polynura latissima*.



This innovative two-year study is testing and evaluating engineering with nature concepts from around the world - from Seattle to Sydney - to learn how we can make San Francisco's seawalls more ecologically friendly in the future. The Living Seawall Pilot is the product of an ongoing partnership between the Port of San Francisco and the Smithsonian Environmental Research Center (SERC).

Studies like these will help inform the concepts of engineering with nature, as well as work to improve the biodiversity and sustainability of our Bay. To learn more about the study, visit the [Living Seawall Pilot](#) webpage.

ICYMI: Learn more with the [Living Seawall Pilot Explainer Video](#) and [SFist](#) feature.

We Hear You: Frequently Asked Questions

How is the Port engaging young people, future stewards of the waterfront, in the Waterfront Resilience Program?

The Port knows that today's San Francisco youth will be stewards of the waterfront in the future. Since 2017, the team has engaged youth through age-appropriate outreach activities and has partnered with the Exploratorium and the California Academy of Sciences.



In 2020, the WRP team worked with 826 Valencia's Mission Bay Center to host a virtual field trip and writing exercise on Mission Creek resilience. Earlier this year, the Port partnered with San Francisco Unified School District on youth focused events. You can check out the WRP's family page [here](#).

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Issue No. 53

Port Joins Resilient Cities Network Events

Port Executive Director Elaine Forbes and WRP staff joined fellow City staff as San Francisco hosted the **Resilient Cities Network** event on May 4. Director Elaine Forbes, City Administrator Carmen Chu, and Chief Resilience Officer Brian Strong spoke at a press conference, which featured Chief Resilience Officers and representatives from 18 member cities across the United States and Canada, as part of a North America gathering for the global network of cities committed to resilience practices.



After the press conference, WRP staff led a waterfront walking tour in the Embarcadero focused on the ways San Francisco is planning for the risks and impacts of earthquake, flooding, and sea level rise.

Pop-ups on the Plaza: Juneteenth on the Waterfront

The Port celebrated Black-owned businesses at the 3rd annual Juneteenth on the Waterfront on Saturday, June 10, 9 AM – 2 PM. Juneteenth on the Waterfront is part of Pop-Ups on the Plaza, a series of events celebrating Bay Area Black-owned food businesses. Juneteenth on the Waterfront is a Port-sponsored event with **Foodwise** and **MegaBlack SF**.



The City also hosted the first Juneteenth Parade on the same day from 11 AM – 2 PM. It started at Civic Center and ended at the Ferry Building. See photos and check out more events scheduled on the **Port's Facebook**.

The Port Celebrates: Pride

The Port of San Francisco proudly supports our LGBTQIA+ community this June. Pride month is a time that inspires events around the world calling for greater unity, visibility, and equality for the LGBTQIA+ community. The Pride Parade will be on June 25th, starting at the Embarcadero waterfront moving toward the main celebration at Civic Center.



All along the Embarcadero, the waterfront is Pride ready! Check out the Port's social media accounts on **Facebook**, **Twitter**, and **Instagram** for posts celebrating #Pride2023.

Collaborating with Our Partners

WRP continues to work with federal, state, and local partners to plan for impacts from sea level rise, flooding, and reduce risk from seismic activity. In February, members of the U.S. Army Corps of Engineers (USACE) joined the WRP team in San Francisco for a full week of in-person working sessions on the **San Francisco Waterfront Coastal Flood Study**. USACE team members returned in early June for another four days of workshops. In April, the WRP team hosted a series of workshops with City Champions – representatives from San Francisco city agencies. Each workshop focused on adapting one of the three geographies along the waterfront (Islais Creek/Bayview, Mission Bay/Mission Creek, Embarcadero) working towards a Draft Waterfront Adaptation Plan for the 7.5 miles of waterfront within the Port's jurisdiction.



Spotlight on Embarcadero Early Projects: Wharf J9 Replacement and Resilient Shoreline Project

Embarcadero Early Projects address areas of high 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.



Wharf J9 Replacement and Resilient Shoreline Project is one of seven projects anticipated to move into final design and construction. Wharf J9 forms part of the shoreline of the Outer Lagoon area of Fisherman's Wharf. This protected harbor has been home to the local fishing industry since the 1900s, with J9 providing public access and berthing for the working boats. The proposed project is an opportunity to revitalize the Outer Lagoon by creating a new resilient seawall and wharf that is stable in earthquakes, increases flood defenses, and better connects San Franciscans and visitors to the unique working fishing industry. The new bulkhead and wharf are expected to start construction in 2026, and the new accessible float is expected to be installed in 2024 that will support the fishing industry and disaster response. Read more about **Embarcadero Early Projects here**.

Stay Connected!

Keep up with Waterfront Resilience Program this summer by following the Port on **Facebook**, **Twitter**, and **Instagram** for content featuring the work of WRP, and the efforts our City takes in ensuring a resilient, safe, and equitable waterfront for the future.



New! Connect with WRP staff directly through email: **WRP@sfport.com**

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Issue No. 54

Remembering Loma Prieta

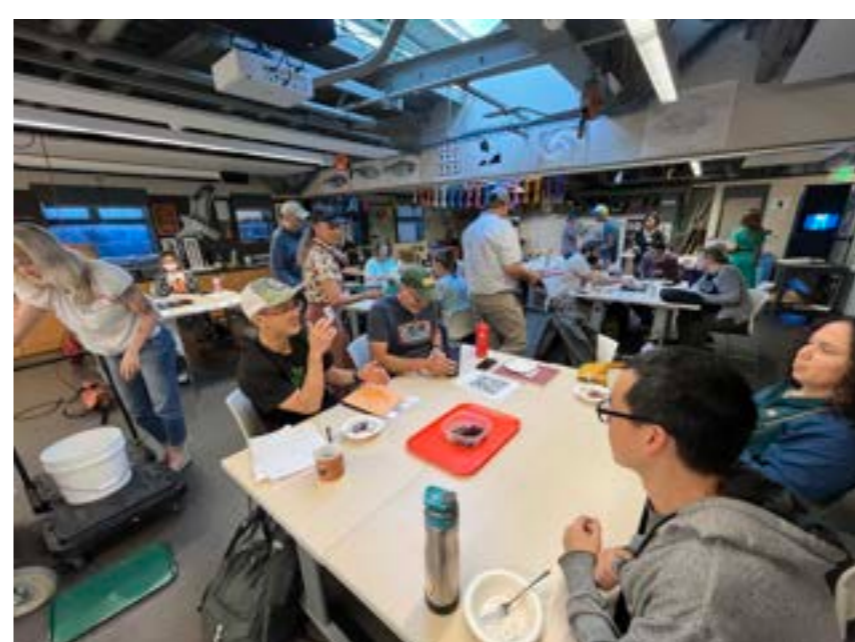
October 17 marks the 33-year anniversary of the Loma Prieta earthquake. Centered about 60 miles from the Embarcadero Seawall along the San Andreas Fault to the south near Santa Cruz, the 6.9 magnitude earthquake was smaller than the 1906 earthquake. Effects were seen in the East Bay and in the nearshore areas of Monterey Bay. Following the damage from the earthquake, the City was prompted to take down the Embarcadero freeway, which reinvigorated the relationship between San Franciscans and their waterfront. As always at this time of year, we reflect on the indelible changes from the earthquake and the Port's commitment to working with City partners to continue to improve earthquake safety, emergency response, and recovery.



Learn more about seismic risk at sfport.com/wrp/seismic-flood-101.

Teacher Institute Workshop with the Exploratorium

WRP staff participated in an Exploratorium Teacher Institute Workshop to discuss the Living Seawall Pilot project and the Port's waterfront Adaptation Strategies. Teachers from around the Bay Area learned about the structure and history of San Francisco's seawall and partook in a hands-on activity to explore how various shoreline stabilization measures can address shoreline protection and the benefits of nature-based solutions.



WRP staff highlighted the range of Adaptation Strategies currently being considered by the Port for the 7.5 miles of waterfront. In preparation for the workshop, Exploratorium staff installed Living Seawall Pilot test tiles on an outdoor exhibit which is now accessible to the public for free along the waterfront at Pier 15.

Other Community Engagement Events

The WRP continues to collaborate with other organizations by participating in events to promote awareness of the waterfront adaptation planning at the Port. Some of the events that the Port attended in the past months included:



- American Indian Cultural District (AICD) Cultural Heritage Housing Economic Sustainability Strategies (CHHESS) Focus Group on Climate Resilience and Land Use (9/14/2023)
- BaySpark 2023: Igniting Youth Action for Climate and Environmental Justice (9/23/2023)
- India Basin Fall Festival - community event to celebrate the opening of the Community Innovation Lab (10/15/2023)

Fleet Week Comes to The Port

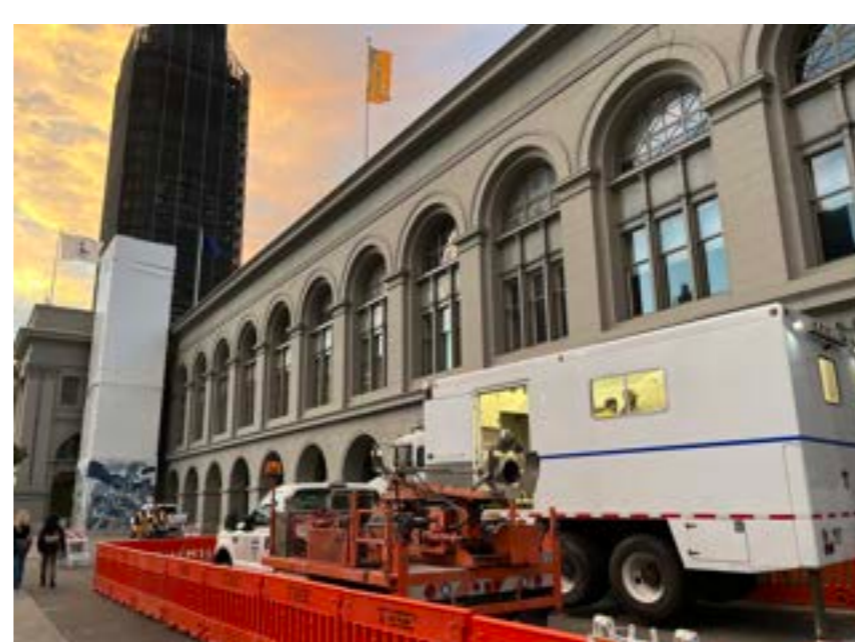
Fleet Week returned to San Francisco's waterfront on October 2 to October 10. San Francisco Fleet Week, established in 1981 under the leadership of then-Mayor Dianne Feinstein, has evolved into a cherished annual tradition. Fleet Week celebrates America's maritime services and is a tribute to the brave men and women of the US Armed Forces.



To learn more about the event, visit fleetweksf.org

Ferry Building Geotechnical Investigation in Progress

The Waterfront Resilience Program team conducted a geotechnical investigation at the Ferry Building in late August through September to gather critical information about the state of the Seawall beneath this beloved building. The team is now analyzing the geotechnical data which will support engineering and planning work to defend the Ferry Building from risks of earthquakes and flooding.



Questions or comments? Email wrp@sfport.com to get in touch with us.

Research Update: Living Seawall Pilot

October marks the one-year anniversary of the Living Seawall pilot tile installation. In July, the second phase of monitoring for the Living Seawall Pilot was conducted, and the tiles showed notable growth, which included a thriving presence of colonial tunicates, bryozoans, and hydroids, along with the discovery of caprellids, gammarids, crab, and shrimp.



Led by the Port in partnership with the Smithsonian Environmental Research Center (SERC), the Living Seawall Pilot represents a two-year study aimed at assessing how specialized textured concrete tiles affixed to the Embarcadero Seawall can effectively foster biodiversity and support native species. To learn more about the pilot, visit the WRP's [Living Seawall webpage](#).

For a more in-depth look at the findings from the July monitoring, check out the coverage in the [KneeDeep Times](#).

Media Corner: WRP Videos and Headlines

The Waterfront Resilience Program has been featured recently in headlines. Catch up with the latest coverage:

- [NPR's, All Things Considered](#)

August 8 Port Commission Update

The Waterfront Resilience Program gave an update to the Port Commission on August 8. View a copy of the presentation, as well as past Port Commission presentations at sfport.com/wrp/library.

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We Want to Hear from You in 2024!

In January 2024, the Port of San Francisco, in partnership with the U.S. Army Corps of Engineers and San Francisco city agencies, will reach an important milestone in the San Francisco Coastal Waterfront Flood Study (Flood Study).

The Army Corps and the Port will publish the Draft Integrated Feasibility Report and Environmental Impact Statement (Draft Report) to address the urgent flood and earthquake risks facing the waterfront - and we want to hear from you!

Look for additional information in early 2024 about community workshops and online tools for learning more about this momentous moment for the city.



Royal Tides Coming Soon

This winter's Royal Tides (also called King Tides) are expected January 11-12 and February 9 in 2024. Royal Tides help us visualize sea level rise by observing the highest tides of today.

Watch for upcoming notifications about related events with the Port, such as waterfront walking tours.

Visit the California Coast Commission's **California King Tides website** to learn more about the locations and times for this season's Royal Tides and to view and share photos.



Embarcadero Early Projects

Alternatives Analysis Reports are expected to be complete in early 2024 for the following **Embarcadero Early Projects**: Wharf J9 Replacement and Resilient Shoreline Project, Pier 15 Bulkhead Wall and Wharf Substructure Earthquake Safety Retrofit Project, Pier 9 Bulkhead Wall and Wharf Substructure Earthquake Safety Retrofit Project, Ferry Building Seawall and Substructure Earthquake Reliability Project, Downtown Coastal Resilience Project, Pier 24 to Pier 28-1/2 Bulkhead Wall and Wharf Substructure Earthquake Safety Retrofit Project.

The Port expects to advertise for new consultant contracts to complete conceptual and detailed design services for these projects in January 2024.



Resilient Bayview Community Climate Change Summit

On December 5th, 2023, the Waterfront Resilience Program joined A. Philip Randolph Institute SF, Resilient Bayview, the Walter & Elise Haas Fund, and the San Francisco Department of Public Health for the Resilient Bayview 10th Anniversary celebration and the Resilient Bayview Community Climate Change Summit at the Southeast Community Center's Alex Pitcher Pavilion.

The summit was an opportunity for city departments doing environmental justice, climate change, or resilience-related work to share their projects with the Bayview-Hunters Point community.



Living Seawall Pilot Update

In November, the Port and members of the Smithsonian Environmental Research Center (SERC) working on the **Living Seawall Pilot** held another round of monitoring at the three installation sites.

Launched in April 2022, the Living Seawall Pilot is two-year study to test the use of textured tiles made with special materials designed to promote biodiversity. The 90 one-foot-square tiles and six large tiles have been installed at Pier 45 Breakwater, Agricultural Building Seawall, and South Beach Harbor East Breakwater and may also benefit native species and help improve habitats along San Francisco's bay waterfront. (Photo credit: Jessika De Jesus, SERC)



A Look Back at APEC

The Port led several tours for APEC media as San Francisco hosted the Asia-Pacific Economic Cooperation Leaders' Week 2023 from November 11 to 17.

The waterfront and boat tours for media highlighted the waterfront's history and resilience efforts as one of most diverse ports in the nation. They were well suited for the event's theme of "Creating a Resilient and Sustainable Future for All" and an opportunity to show how the Port envisions preserving and protecting our city's critical assets.



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