



## MEMORANDUM

August 4, 2023

**TO:** MEMBERS, PORT COMMISSION  
Hon. Kimberly Brandon, President  
Hon. Willie Adams, Vice President  
Hon. Gail Gilman  
Hon. Ed Harrington  
Hon. Steven Lee

**FROM:** Elaine Forbes  
Executive Director

**SUBJECT:** Informational presentation on the San Francisco Waterfront Coastal Flood Study.

**DIRECTOR'S RECOMMENDATION:** Information Only – No Action Required

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### EXECUTIVE SUMMARY

The Port of San Francisco is leading an effort to defend one of the most densely developed and unique urban ports in the State of California. The Port's jurisdiction stretches from Heron's head park in the south to Hyde Street pier in the north. Protecting the San Francisco waterfront is a citywide effort that includes a key federal partner, the United States Army Corps of Engineers (USACE).

The goal of this work is to prepare for sea level rise while addressing current-day flood and seismic risks. The program will be implemented through multiple capital projects that defend the San Francisco waterfront from the flood risks the city faces. The projects will be implemented in phases over decades.

San Francisco's waterfront faces risks from sea level rise today which will increase because of climate change. Parts of San Francisco's waterfront currently flood at high tides and during storms. As climate change causes storms to become more extreme and sea levels to rise, these risks will increase and affect the entire waterfront, causing

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damage and impacts to buildings and open spaces, small businesses, light industry, jobs, disaster response facilities, transportation networks, Port maritime facilities, and over \$100 billion in assets and annual economic activity.

The Port is working with City partner agencies and USACE to defend the city and its waterfront from flooding through the San Francisco Waterfront Coastal Flood Study (Flood Study). Through the Flood Study, the Port, City, and USACE are developing a Draft Waterfront Adaptation Plan (Draft Plan) to defend the 7.5 miles of waterfront from flood risks from Heron's Head Park to Aquatic Park. The San Francisco Waterfront Coastal Flood Study is one of the several coordinated waterfront resilience activities being undertaken in partnership with federal, state, and local agencies to plan for anticipated seismic activity, flooding, and sea level rise.

The Flood Study team developed seven Draft Waterfront Adaptation Strategies (Draft Strategies), based on over five years of public engagement. Port staff presented the Draft Strategies at the October 11, 2022, Port Commission hearing, followed by three months of robust and inclusive public outreach and engagement on the Draft Strategies. From the Draft Strategies, the Flood Study team is working to recommend a Draft Plan. The Plan will be ready for public review in fall 2023.

San Francisco's waterfront faces high earthquake risk from aging infrastructure. In addition to the Flood Study, the Port is making important progress to address the high priority areas of near-term earthquake and flood risks. The Port conducted a Multi-Hazard Risk Assessment<sup>1</sup> for the Embarcadero and a Southern Waterfront Earthquake Assessment.<sup>2</sup> Using funding from the Proposition A Seawall Bond and other sources, the Port is advancing the Embarcadero and Southern Waterfront Early Projects (Early Projects).<sup>3</sup> The Early Projects are an important step to reduce the most critical and immediate seismic and flood conditions.

Today's presentation will provide an update on the Flood Study, review the Draft Strategies, summarize public outreach and engagement efforts and public feedback on the Draft Strategies, describe the technical evaluation process through the Flood Study, and outline the next steps to reach a Draft Plan.

## **STRATEGIC OBJECTIVES**

The WRP supports the goals of the Port's Strategic Plan as follows:

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<sup>1</sup> <https://sfport.com/wrp/mhra>

<sup>2</sup> [https://sfport.com/files/2022-09/922\\_9a\\_initial\\_southern\\_waterfront\\_eq\\_assessment\\_final.pdf](https://sfport.com/files/2022-09/922_9a_initial_southern_waterfront_eq_assessment_final.pdf)

<sup>3</sup> <https://sfport.com/wrp/embarcadero-early-projects>

### Engagement

By leading an inclusive stakeholder process to develop a shared vision, principles, and goals for the WRP and Flood Study and using multiple avenues for public involvement in the development and evaluation of Draft Strategies and review of the Draft Plan.

### Equity

By developing a program-wide equity strategy that is integrated into the Port's Racial Equity Action Plan, and evaluating Draft Strategies and the Draft Plan through an equity lens to ensure that benefits accrue to, and burdens are minimized for Black, Indigenous, and People of Color (BIPOC) communities, and by increasing the proportion of funds spent on contract services performed by LBE firms. The Flood Study analyzes social impacts and disproportionate impacts to vulnerable communities in the evaluation of the Draft Strategies and development and selection of a Draft Plan.

### Resiliency

By leading the City's efforts to address threats from earthquakes and flood risk through research and infrastructure improvements to the entire Port shoreline and adjoining buildings and other infrastructure.

### Evolution

By developing adaptation options with a long-time horizon as well as near-term actions, developing strategies to adapt the waterfront and its uses over time, and recognizing that decisions made today influence the options available to future generations who will be addressing different environmental and social conditions.

### Sustainability

By incorporating nature-based features into the Draft Strategies to enhance the quality of the Bay water and habitat with the improvements and conducting an Environmental Quality analysis that considers environmental benefits and impacts in the evaluation of the Draft Strategies and development and selection of a Draft Plan.

### Productivity and Economic Recovery

Through the wise investment of Proposition A Seawall Earthquake Safety Bonds and other Port and public funding sources, and by developing strategies to defend or floodproof Port maritime and industrial facilities to extend their useful life and reduce their risk from coastal flooding and sea level rise.

## **WATERFRONT HAZARDS**

San Francisco faces earthquake and coastal flood risks today. These risks will increase in the future as sea levels rise and extreme storms become more frequent, threatening buildings, small businesses, popular attractions and open spaces, jobs, and critical services such as BART, Muni, and the wastewater system. To defend San Francisco from current and future flood risks, there is a need to adapt the shoreline to address from 3.5 to 7 feet of sea level rise by 2100.

In addition to coastal flooding, waterfront and inland areas also face stormwater and emergent groundwater hazards that threaten public infrastructure and private homes and businesses. The Draft Strategies consider these inland flood sources along with coastal flooding.

San Francisco is also susceptible to seismic hazards. A major earthquake can strike at any time. Aging infrastructure along the waterfront is susceptible to ground shaking, liquefaction, and lateral spreading, which could cause significant damage to buildings and infrastructure and impact life safety.

## **SAN FRANCISCO WATERFRONT COASTAL FLOOD STUDY**

The Port is collaborating with USACE on the San Francisco Waterfront Coastal Flood Study (Flood Study), a general investigation of flood risks to the Port's entire 7½ mile jurisdiction. The study will identify vulnerabilities and recommend strategies to reduce current and future flood risks for consideration for federal investment and implementation along the Port's entire 7.5 mile jurisdiction.

The Flood Study is a planning-level feasibility study that will analyze coastal flood risk through 2140, identify and evaluate adaptation strategies, conduct robust public engagement to inform the development of a Draft Waterfront Adaptation Plan and recommend a Final Plan informed by qualitative and quantitative criteria and public feedback by 2025.

On August 14, 2018, the Port Commission approved a Feasibility Cost Sharing Agreement (FCSA) for the Flood Study. On May 26, 2020 the Commission authorized staff to enter amendments to the FCSA to extend the period to perform the Flood Study and increase the budget, including the Port's 50% match.

The Flood Study's goals are to better understand current and future flood risks, identify flood protection solutions, engage the public to identify priorities and create opportunities for funding for flood risk reduction projects. The Flood Study assesses the benefits and costs of various alternatives to determine the best plan, considering economic, social, and environmental benefits and impacts.

Federal funding for flood risk mitigation is administered through USACE, making them an important partner for local and regional resilience planning. General investigations are the tool that USACE uses to determine where to invest in Federal flood risk reduction funding authorized through the Water Resources Development Act and appropriated by Congress.

## **FLOOD STUDY PROCESS**

USACE has established a schedule with key milestones to achieve a Chief's report to Congress by late 2025 which will enable Congress to consider and potentially authorize a flood risk reduction project for the San Francisco shoreline in 2026.

Under this schedule, the Port-USACE team is currently evaluating the Draft Strategies and developing a Draft Plan through the following steps (see Figure 1: Draft Strategies Development Schedule):

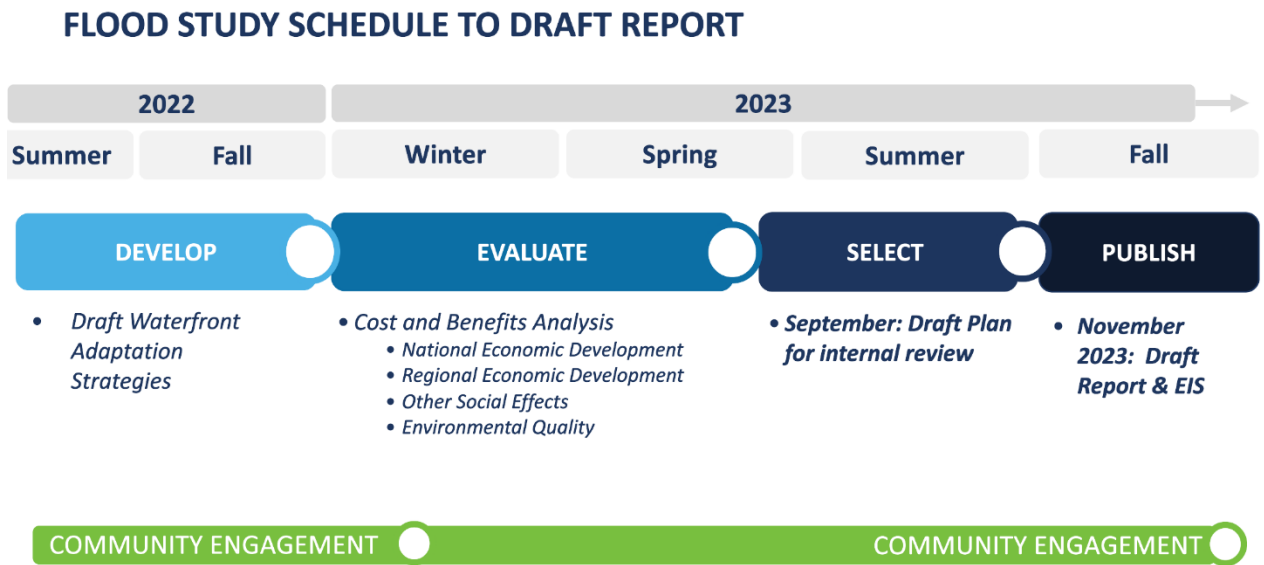
1. **Develop Strategies (Spring – Fall 2022):** Develop Draft Strategies to bring to public and stakeholder engagement in fall 2022 – *completed*.
2. **Evaluate and Select (Fall 2022 – Fall 2023):** Conduct robust public outreach and engagement to get public feedback on the Draft Strategies. Evaluate the Draft Strategies through qualitative and quantitative tools. Based on public feedback and technical evaluation, develop a Draft Plan, Feasibility Report, and Environmental Impact Statement (EIS) to bring to public and stakeholder engagement in fall 2023 – *in progress*.
3. **Refine and Endorse (Fall 2023 – Spring 2024):** Conduct robust and inclusive public outreach and engagement on the Draft Plan, including formal comments on the Draft Feasibility Report and EIS. Based on public feedback and continued technical review by the City and USACE, develop a revised plan for potential local endorsement in spring 2024.

Following the endorsement of the revised Draft Plan, we will continue to revise the plan based on local and federal reviews and approvals and will create a Final Waterfront Adaptation Plan (Final Plan) by Flood Study completion at the end of 2025.

## **KEY FLOOD STUDY MILESTONES**

- November 2021: Updated Feasibility Cost Sharing Agreement
- October 2022: Release of Draft Strategies
- November 2023: Draft Plan and Environmental Impact Statement public release
- Spring 2024: USACE and City endorsement of Draft Plan
- End of 2025: Final Plan for submittal to U.S. Congress

**Figure 1: Flood Study Schedule through Draft Report**



USACE will present the Final Plan to the U.S. Congress for potential federal funding in late 2025. The plan must meet federal requirements that the plan’s benefits justify its costs. If Congress approves the Final Plan, the federal government will fund up to 65% of the resulting project, providing potentially billions of dollars in federal investment in coastal flood defenses and related benefits along San Francisco’s waterfront.

**DRAFT WATERFRONT ADAPTATION STRATEGIES**

The Flood Study team developed seven Draft Strategies based on over five years of public engagement. The Port presented the Draft Strategies at the October 11, 2022 Port Commission hearing, followed by three months of robust and inclusive public outreach and engagement on the Draft Strategies.

The Draft Strategies are different ways for the City to reduce flood risk along the Port’s entire waterfront jurisdiction, from Heron’s Head Park to Fisherman’s Wharf. The Draft Strategies guide decisions about:

- Where, when, and how high to build flood defenses
- How and when to adapt key buildings and infrastructure to ensure continued operations of City services
- How to incorporate nature-based and ecological features

The Draft Strategies include a combination of coastal flood defense measures (such as seawalls, levees, berms, and natural features) to build a continuous coastal flood defense system along the Port shoreline. They also include adaptations to buildings and infrastructure in the coastal flood zone (such as floodproofing or relocating structures).

Each strategy varies in how it is applied to different parts of the waterfront. Each strategy was formulated for a mid-century adaptation (2040) and an end-of-century adaptation (2090). The team will develop a more nuanced phasing strategy as the Study progresses.

The Draft Strategies include:

- **Strategy A NO ACTION:** Takes no actions to reduce flood risks beyond projects that are already approved.
- **Strategy B NONSTRUCTURAL OPTION:** Moves people and assets away from the risk, uses nonstructural measures (such as floodproofing) to reduce risks, and allows water to go where it wants rather than constructing traditional structural solutions.
- **Strategy C LOWER SEA LEVEL RISE:** Adapts the shoreline to withstand 1.5' of sea level rise by 2040 using a combination of structural and nonstructural measures.
- **Strategy D LOWER SEA LEVEL RISE - ADAPTABLE:** Adapts the shoreline to withstand 1.5' of sea level rise by 2040, with the possibility of building higher by 2090.
- **Strategy E HOLD THE LINE:** Preserves a waterfront that looks and functions much as it does today by adapting the shoreline.
- **Strategy F MANAGE THE WATER:** Creates an active system for managing flooding by heavily relying on machinery.
- **Strategy G ALIGN WITH WATERSHEDS:** Advances shoreline adaptation while working with natural inland flooding patterns to floodproof some buildings and infrastructure and move others away from highest-risk areas.

See the Port's Waterfront Resilience Program website for full descriptions of the Draft Strategies<sup>4</sup>.

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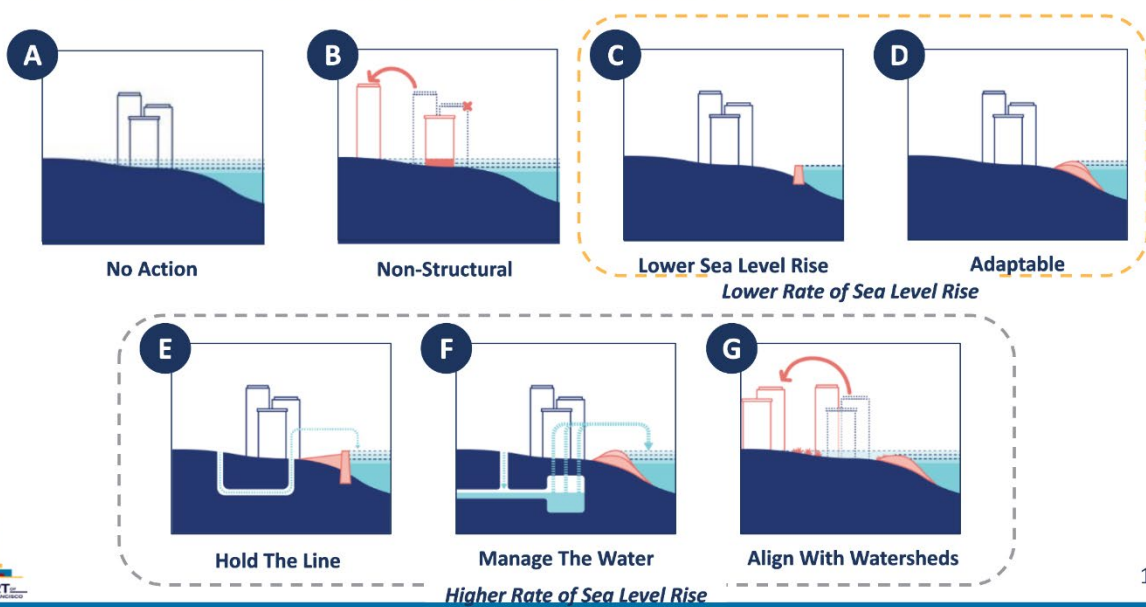
<sup>4</sup> <https://sfport.com/wrp/waterfront-adaptation>

**Figure 2. Sea Level Rise Adaptation Level by Strategy**

Strategies		Sea Level Rise (SLR) Level		
		+1.5'	+3.5'	+7'
Strategy A	No Action			
Strategy B	Nonstructural Option	✓	✓	✓
Strategy C	Lower Projected Sea Level Rise	✓		
Strategy D		✓	✓	
Strategy E	Higher Projected Sea Level Rise	✓	✓	✓
Strategy F		✓	✓	✓
Strategy G		✓	✓	✓

**Figure 3. Draft Waterfront Adaptation Strategies**

**DRAFT WATERFRONT ADAPTATION STRATEGIES**



**COMMUNITY ENGAGEMENT**

The Draft Strategies development process builds off over five years of public outreach and engagement. Since 2017, the WRP has connected with tens of thousands of San Franciscans through community meetings, event tabling, waterfront boat, bike, and walking tours, mixers, online engagement like surveys and mapping exercises, and more. Community input has helped the WRP develop its guiding vision, principles, goals, and evaluation criteria. The community has also shared what waterfront assets are key priorities as the WRP takes action to reduce seismic and flood risks.

Community feedback has strongly affirmed the Port’s key focus on life safety and disaster response, with a focus on putting people first. People prioritized assets and services most



important to them, including: housing, disaster recovery facilities, utilities, and businesses. Community members also shared a key focus on protecting transportation assets.

Public outreach and engagement on the Draft Strategies was conducted from mid-October to early December 2022, with a total of 16 public engagement events with over 500 participants, 3,000 webpage views, and over 170,000 people who viewed content related to the Draft Strategies, including social media ads.

Outreach focused on ensuring Southern Waterfront residents were aware of and in attendance at events. Broad citywide outreach was effective, resulting in 41% of registered participants to events coming from non-Port-waterfront adjacent neighborhoods throughout San Francisco. People identifying as Black/African American represented 14% of registered participants and people identifying as Asian/Pacific Islander represented 18%. The percentage of people identifying as Latino/a who registered for events (3%) was lower than engagement in previous rounds.

We heard the following general comments and feedback:

- Flooding around homes and work, impacts to community safety, and disruption to transportation or waterfront access were top concerns.
- Community members support a strategy that defends against higher projected rates of sea level rise.
- Nature-based approaches and improved public access to the waterfront are a high priority.
- Overall, there was no strong preference for any one strategy over another.
- Common concerns included concerns about equity and environmental justice, technical practicalities, and questions about cost and feasibility.

See Exhibit C for more detail on public feedback by event type and by geography.

## **EQUITY**

The Port is working to ensure that all resilience strategies developed create opportunities for San Francisco's historically underserved communities to engage in decision-making and benefit directly through inclusive public engagement, job opportunities, and community improvements such as new open space, waterfront access, and improved mobility. Historically underserved communities, particularly in the southeast, are most impacted by climate hazards such as storm and coastal flooding, impacting jobs, housing, and access to and from the community.

The WRP team convened an Equity Working Group through the WRP to inform the development and assessment of the Draft Strategies. The Equity Working Group was made up of equity practitioners from City agencies who met several times to help define an equity evaluation framework (Equity Framework) to help evaluate the Draft Strategies from an equity perspective. The WRP team also held a series of focus groups with community-based organization leaders to help inform the Equity Framework.

The Equity Framework is a series of step-by-step questions to support an equity-focused evaluation of the Draft Strategies. This evaluation tool is intended to be supportive of the policies being developed by the Port and City of San Francisco to advance racial and social equity by helping to foreground equity considerations and identify ways that these policies and programs can be leveraged to actively advance community benefits. These questions rely on a combination of data-driven and qualitative approaches to help identify equity considerations. The Framework provides an organized approach to evaluate the Strategies and informs how they can be mixed and matched to reach a Draft Plan that maximizes equitable outcomes.

The Equity Framework was applied to the USACE cost and benefit analysis. This helped to identify key demographics to measure social vulnerability and disproportionate impact from flooding (what populations are exposed to flooding over time, e.g., race, income, linguistic isolation) and key metrics to inform decision-making (e.g. transportation disruption, businesses, and jobs exposed, contaminated site health impacts, displaced population). This data helps identify which strategies perform better from an equity standpoint and informs Draft Plan selection.

**Figure 5. Equity Framework**



**FLOOD STUDY TECHNICAL EVALUATION**

The Port and USACE Flood Study team is evaluating metrics across four benefits categories, including:

- National Economic Development (NED)
- Regional Economic Development (RED)
- Other Social Effects (OSE), and
- Environmental Quality (EQ)

Each benefit category evaluates several metrics, shown in Figure 6.

**Figure 6. Flood Study Benefit Categories**

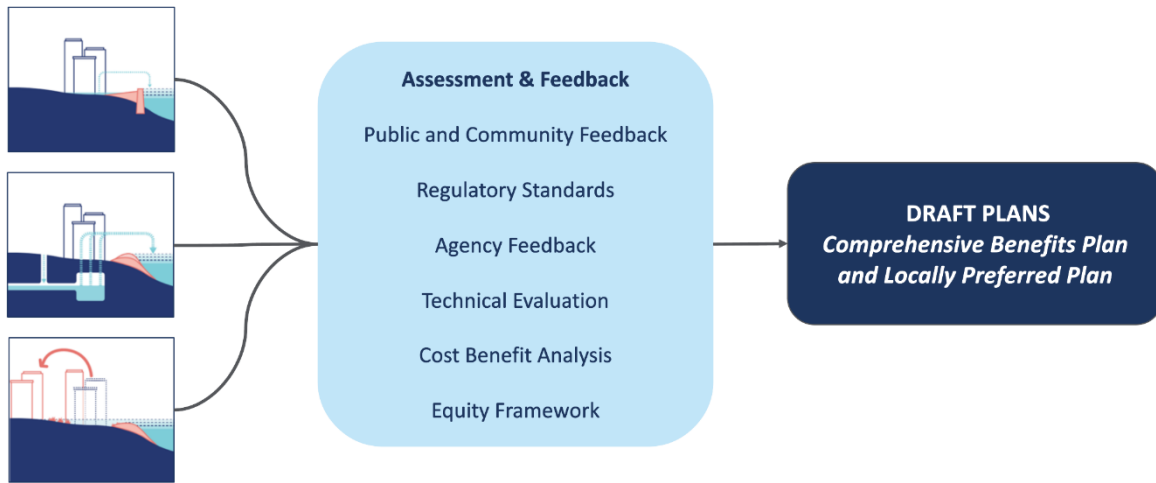
National Economic Development (NED)	Regional Economic Development (RED)	Other Social Effects (OSE)	Environmental Quality (EQ)
<p>Total Project Cost</p> <p>Physical Damages</p> <ul style="list-style-type: none"> <li>• Structure Damage</li> <li>• Content Damage</li> <li>• Asset Condemnation Loss</li> <li>• Critical Infrastructure Damage</li> </ul> <p>Non-Physical Damages</p> <ul style="list-style-type: none"> <li>• Land Loss (Intensification)</li> <li>• Critical Service Disruptions</li> <li>• Recreation Value Loss</li> <li>• Transportation Delay Loss</li> <li>• Recovery and Cleanup Costs after Disaster</li> </ul>	<p>Business Economic Disruptions</p> <ul style="list-style-type: none"> <li>• Changes in production / expenditures by producers / consumers</li> <li>• Changes in B 2 B purchases in supply chains</li> <li>• Downstream change in household spending</li> </ul> <p>Population Economic Impacts</p> <ul style="list-style-type: none"> <li>• Labor employment loss</li> <li>• Revenue Impacts</li> <li>• Recology, BART, SFMTA, SFBR, Ferry, SFPUC, etc.</li> </ul>	<p>Health and Safety</p> <ul style="list-style-type: none"> <li>• Life Safety Risk</li> <li>• Exposed Population</li> <li>• Evacuation Routes</li> <li>• Contaminated Sites</li> <li>• Displaced Population</li> <li>• Shelter Needs</li> <li>• Utility Health Impacts</li> </ul> <p>Economic Vitality</p> <ul style="list-style-type: none"> <li>• Home Ownership vs Renter</li> <li>• Housing Affordability</li> </ul> <p>Social Connectedness</p> <ul style="list-style-type: none"> <li>• Transit corridor and recreation exposure</li> <li>• Mental Stress and Anxiety</li> <li>• Lost Productivity</li> </ul> <p>Community Identity</p> <ul style="list-style-type: none"> <li>• Community Services</li> <li>• Cultural / Historic Assets</li> <li>• Community Access to Services</li> </ul> <p>Social Vulnerability and Resilience</p> <ul style="list-style-type: none"> <li>• Underserved communities</li> </ul> <p>Disproportionate effects</p>	<p>Physical Environment</p> <ul style="list-style-type: none"> <li>• Sediment beneficial reuse</li> <li>• Flood storage</li> <li>• HTRW (contaminated sites)</li> <li>• Water Quality</li> <li>• Wave Attenuation</li> <li>• Carbon Sequestration</li> </ul> <p>Biological Environment</p> <ul style="list-style-type: none"> <li>• Subtidal Habitat</li> <li>• Intertidal Habitat / Wetlands</li> <li>• Habitat Connectivity</li> <li>• Threatened and Endangered Species</li> </ul>

The Port is working closely with USACE to develop high-level cost estimates and evaluate the metrics under the four benefits categories for the Draft Strategies. Using this information, the Port and USACE will develop and select a Comprehensive Benefits Plan (CBP) that maximizes benefits across the four categories. The Port may also request a Locally Preferred Plan (LPP) that includes additional items not included in the CBP.

The CBP and LPP (Draft Plans) will mix and match the best elements from the Draft Strategies to increase economic, social, and environmental benefits, reduce project costs, and reduce impacts, to arrive at a cost-effective plan that delivers multiple benefits to San Francisco, our people, and our communities. They will look at initial actions and subsequent actions as sea levels continue to rise. The Draft Plans will be included in the Draft Report and further refined based on additional public feedback and technical evaluation.

Figure 7: Process to Get to Draft Waterfront Adaptation Plan

**GETTING TO DRAFT WATERFRONT ADAPTATION PLANS**  
**Mix and Match Best Elements of Each Strategy**



The Flood Study team is developing phasing concepts to implement the plan over time. Phasing concepts will consider initial actions in many locations that are built to a lower cost and scale, and future actions that are more comprehensive and include seismic improvements and capital replacements of flood defenses such as seawalls, wharves, and berms. The phasing plan will be designed to be flexible and adaptable to changing rates of sea level rise over time and planned infrastructure or development activities within the footprint of future flood defenses.

The Draft Plan will likely involve several billion or more in costs for the design and construction of flood and seismic improvements. Costs will be shared between the Federal government and San Francisco at a 65/35 ratio. Items in a Locally Preferred Plan that are not in the Flood Study’s Final Recommended Plan to U.S. Congress will be paid for 100% by the local sponsor.

**NEXT STEPS**

The Flood Study team is working to develop a Draft Plan, Draft Integrated Feasibility Report and Environmental Impact Statement (EIS), a combined document that describes the planning process and why the Tentatively Selected Plan was selected, including cost-benefit analysis, and program-level impact analysis under NEPA. The Draft Report will be shared with the public for feedback in November 2023.

After the Draft Report and EIS are released to the public, there will be a formal 60-day comment period. The City will conduct additional public outreach and engagement along with the formal required outreach. The City will also commence programmatic CEQA in September to enable future City actions related to the Draft Plan.

After robust public engagement starting in November and review of public, City agency, resource agency and USACE comments, there is an Agency Decision Milestone in Spring of 2023, which represents the USACE decision to prepare a recommendation for Congress on the recommended plan. This milestone may be an opportunity to seek formal City endorsement (e.g., by the Mayor and Board of Supervisors, or other Boards and Commissions).

Today staff seeks to inform the Port Commission about the Draft Strategies, public feedback, and USACE evaluation process. We are excited to work with our City and Federal partners towards a Draft Plan for release in fall 2023, to meet the Port Commission's goals under the Port's Strategic Plan and to ensure the waterfront is resilient to flood and other hazards.

Prepared for: Brad Benson, Waterfront Resilience Director

Prepared by: Adam Varat, Waterfront Resilience Deputy Program Manager, Planning

Attachments: Exhibit A – Waterfront Resilience Program Background and Work to Date  
Exhibit B – Summary of Public Outreach  
Exhibit C – Glossary of Terms

## **Exhibit A: Waterfront Resilience Program Background and Work to Date**

The Port of San Francisco's treasured waterfront is vulnerable to hazards, including urgent seismic risk and increasing flood risks from sea level rise. To protect this resource - from the iconic landmarks, cultural and art destinations, and beautiful open spaces connected to the Bay, to the diverse maritime industries and businesses, and key emergency, transportation, and utility infrastructure, the Port has established the Waterfront Resilience Program ("Program" or "WRP"). The Program works to ensure the waterfront, and its critical regional and citywide assets, are resilient to hazards - and increasingly accessible to everyone it serves.

In 2018, the San Francisco Board of Supervisors proposed Proposition A Seawall Earthquake Safety Bonds. San Francisco voters approved this bond with a margin of 83-17% at the November 6, 2018 election. At the time, the Port and the City acknowledged that Proposition A was a vital down payment to address seismic and flood risks along the waterfront.

In 2020, the Port released the results of the Embarcadero Seawall Multi-Hazard Risk Assessment (MHRA) to examine the impacts on Port, City, regional and privately-owned assets and infrastructure from a variety of potential seismic and flood events for the 3 miles of Embarcadero Seawall, from Fisherman's Wharf to Mission Creek. The MHRA was presented to the Port Commission on September 22, 2020<sup>5</sup>.

The WRP has developed 23 early projects to address the most urgent earthquake safety, disaster response, and coastal flood risks within the Embarcadero Seawall portion of the waterfront. The program team present these early projects to the Port Commission on December 14, 2021<sup>6</sup>. These early projects are near-term investments such as seismic retrofits, improvements to disaster response facilities, shoreline stability, and near-term flood risk reduction projects. Early projects can be delivered with Proposition A funding, federal and state grants, investments by long-term tenants or through public-private partnerships, City agencies' capital programs, and the Port through its Capital Improvement Program.

WRP staff presented an update on Embarcadero Early Projects at the September 13, 2022, Port Commission meeting. Six projects have completed Needs Assessment Reports and are starting Alternatives Analysis, the second of three pre-design steps used in the Program. Recommendations to advance first projects into detailed design are expected in 2023 and construction is expected to start before the end of 2024.

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<sup>5</sup> September 22, 2020 Staff Report:

<https://sfport.com/meetings/san-francisco-port-commission-september-22-2020>

<sup>6</sup> December 14, 2021 Staff Report:

<https://sfport.com/meetings/san-francisco-port-commission-december-14-2021>

The Port completed an Initial Southern Waterfront Earthquake Assessment, which compiled existing information, highlighted information gaps, and identified potential seismic hazards and vulnerabilities based upon limited analysis and professional judgment. The findings of the Initial Southern Waterfront Earthquake Assessment were presented to the Port Commission in September 2022, along with the next steps which include two projects that begin to address seismic hazards in the southern waterfront. Findings from this assessment have also informed the development of Adaptation Strategies on the southern waterfront.

## **Exhibit B: Community Engagement**

The Draft Waterfront Adaptation Strategies development process builds off 5+ years of public outreach and engagement. Since 2017, the WRP has connected with tens of thousands of San Franciscans through community meetings, event tabling, waterfront boat, bike, and walking tours, mixers, online engagement like surveys and mapping exercises, and much more. Community input has helped the WRP develop its guiding vision, principles, goals, and evaluation criteria. The community has also shared what waterfront assets are key priorities as the WRP takes action to reduce seismic and flood risks.

Community feedback has strongly affirmed the Port's key focus on life safety and disaster response. The WRP heard "put people first" loud and clear. The assets and services most prioritized: housing, disaster recovery facilities, utilities, and businesses. Community members also shared a key focus on protecting transportation assets.

Public outreach and engagement on the Draft Waterfront Adaptation Strategies were conducted from mid-October to early December 2022. This outreach introduced the Draft Strategies, shared how they were informed by previous community feedback, and sought to understand public sentiment and priorities in response to the Draft Strategies.

Engagement and outreach included eight online community meetings, two in-person events in the Southern Waterfront, a series of walking tours in each waterfront geography (Embarcadero, Mission Bay/Mission Creek, and Islais Creek/Bayview), focus groups, presentations to targeted Community Based Organizations, and presentations to Community Advisory Committees. There was a total of 16 public engagement events with over 500 participants, 3,000 webpage views, and over 170,000 people who viewed content related to the Draft Strategies, including social media ads.

### **DEMOGRAPHIC BREAKDOWN OF COMMUNITY ENGAGEMENT**

Outreach focused on ensuring Southern Waterfront residents were aware of and in attendance at events. In addition to the two virtual community meetings and two walking tours that were hosted in each geography, the Port hosted two in-person events in the Southern Waterfront providing additional engagement opportunities for community members in this geography. This is reflected by the higher percentage of registered participants from the Southern Waterfront (24%) as compared to the Central and Northern Waterfront combined (17%).

Broad citywide outreach was effective, resulting in 41% of registered participants to events coming from non-Port-waterfront adjacent neighborhoods throughout San Francisco. A large percentage of registered participants (18%) live outside the City despite no dedicated outreach to these areas. This indicates an interest in the WRP from the broader Bay Area, likely due to working or frequently visiting the San Francisco waterfront.

Phase B outreach for events resulted in higher percentages of engagement from some priority populations than in the previous round of engagement for the Program (Phase A



Summer Survey). People identifying as Black/African American represented 14% of registered participants and people identifying as Asian/Pacific Islander represented 18%. The percentage of people identifying as Latino/a who registered for events (3%) was lower than engagement in previous rounds but higher for interest in participating in focus groups (16%).

The data below is pulled from Eventbrite registration data. It shows who registered to attend events, not necessarily who attended. It does not include participants who attended events without registering or attendees at non-public facing events (Focus Groups, CBO share-out presentations, CAC meetings).

**Figure 4. Demographic Breakdown of Registered Participants to Public Events**

<b>What Neighborhood Do You Live In?</b>			
	Count	Total	
Northern Waterfront	46	548	8%
Southern Waterfront	141	548	24%
Central Waterfront	49	548	9%
Other SF Neighborhoods	216	548	41%
East Bay, North Bay, Peninsula	96	548	18%

<b>What Is Your Race or Ethnicity?</b>					
	<b>Count</b>	<b>Total</b>	<b>Phase B Events</b>	<b>Phase B Focus Group Interest</b>	<b>Phase A Survey (Summer 2022)</b>
American Indian/Native Alaskan	2	548	< 1%	<1%	<1%
Asian/Pacific Islander	97	548	18%	26%	16%
Black/African American	76	548	14%	10%	3%
Latino/a	19	548	3%	16%	6%
White/Caucasian	218	548	40%	34%	63%
Multiple Ethnicities	34	548	6%	5%	4%
Other/Prefer Not to Say	102	548	19%	<1%	7%

## **WHAT WE HEARD**

We heard the following general comments and feedback:

- Waterfront-wide, community members indicated that flooding around where they live and work, impacts to community safety, and disruption to transportation or waterfront access are their top sea level rise-related concerns.
- Community members support a strategy that defends against higher projected rates of sea level rise.
- Nature-based approaches and improved public access to the waterfront remain a high priority for community members, no matter the strategy.
- Overall, there was no strong preference for any one strategy over another among the strategies that address a higher rate of sea level rise, though participants identified pros and cons for each of the strategies.
- Community members raised many concerns in response to the draft strategies. Common concerns included concerns about equity and environmental justice, technical practicalities, and questions about cost and feasibility.

## Exhibit C: Glossary of Terms

**National Economic Development (NED) Plan:** USACE term for the plan alternative that maximizes Federal economic interest – conventional USACE approach

**Comprehensive Benefits Plan (CBP):** USACE term for the plan alternative that maximizes economic, social, and environmental benefits across four categories: National Economic Development, Regional Economic Development, Environmental Quality, and Other Social Effects

**Locally Preferred Plan (LPP):** USACE term for a local vision that may include additions and differences from the NED plan or CBP

**Tentatively Selected Plan (TSP):** USACE term for the Draft Waterfront Adaptation Plan that would be the basis of congressional funding request – may be selected from the NED Plan, CBP, or LPP

**Draft Waterfront Adaptation Strategies (Draft Strategies):** Alternatives that describe different approaches to adapting the San Francisco waterfront to coastal and inland flooding and seismic hazards. Will be used to develop and identify the Draft Waterfront Adaptation Plan.

**Draft Waterfront Adaptation Plan (Draft Plan):** Local term for the draft preferred plan or plans, including the TSP and LPP, identified and developed from the Draft Waterfront Adaptation Strategies.

**NEPA:** National Economic Policy Act, required Federal environmental review

**Draft Integrated Feasibility Report and EIS:** Report that will be released for public feedback that will describe the TSP, project costs, project benefits, and environmental impacts

**EIS:** Environmental Impact Statement – accounting of environmental impacts under NEPA

**United States Army Corps of Engineers (USACE):** Federal agency responsible for flood management projects

**Waterfront Resilience Program (WRP):** Port of San Francisco program to take action to address take actions to reduce seismic and climate change risks that support a safe, equitable, sustainable, and vibrant waterfront

**San Francisco Waterfront Coastal Flood Study (Flood Study):** A partnership between USACE and the Port of San Francisco to develop a feasibility analysis of flood hazards and potential actions to address flood and seismic damages, which will result in a recommendation for funding to U.S. Congress

**Embarcadero and Southern Waterfront Early Projects:** Early actions to address the areas of highest earthquake and sea level rise risks along the Embarcadero and Southern 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.