

Waterfront Resilience Program Alternatives Development Strategy & Decision Framework

San Francisco Port Commission Agenda Item #12A

November 8, 2020



AGENDA

Presentation Overview



- WRP Goal & Principles
- Alternatives Development – Example Alternatives
- Evaluation Criteria
- Seismic and Flood Standards
- Proposed Proposition A Funding Guidelines
- Adapt Plan and Adaptation Design Guidelines
- Community & Stakeholder Engagement
- Key Considerations for Port Commission
- Next Steps

WRP Draft Goal Statement and Draft Principles



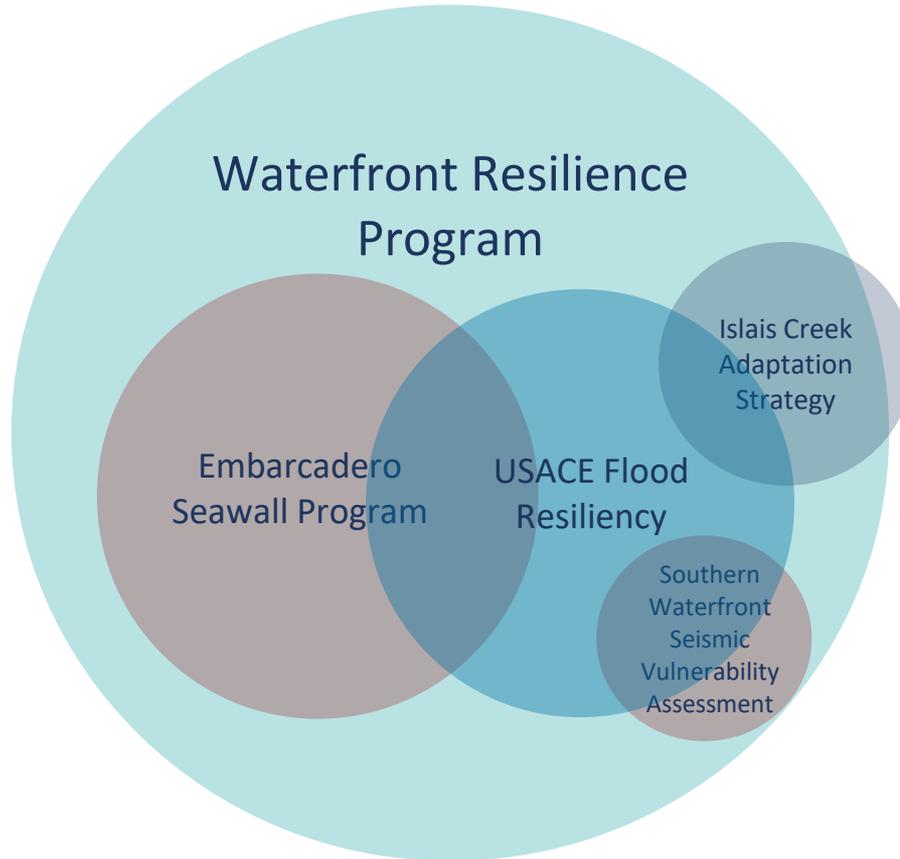
Waterfront Resilience Program

WATERFRONT RESILIENCE PROGRAM EFFORTS

Presentation Focus: WRP Goal, Principles, Community Feedback, Alternatives, Evaluation Criteria and More



WATERFRONT RESILIENCE PROGRAM EFFORTS



WATERFRONT RESILIENCE PROGRAM DRAFT GOAL STATEMENT

Affirmed through robust community engagement



The Port's Waterfront Resilience Program will take actions to **reduce seismic and climate change risks** that support a safe, equitable, sustainable, and vibrant waterfront.

WATERFRONT RESILIENCE PROGRAM DRAFT PRINCIPLES

Affirmed through robust community engagement

- **Prioritize** life safety and emergency response
- **Advance** equity throughout the Waterfront Resilience Program, including through community and stakeholder engagement, planning, contracting, jobs and decision-making
- **Enhance** and sustain economic and ecological opportunities
- **Inspire** an adaptable waterfront that:
 - Improves the health of the Bay
 - Ensures public access to the waterfront and historic places and an inviting waterfront for all
 - Protects and preserves historic and maritime resources
 - Provides opportunities for diverse families, businesses, and neighborhoods to thrive
- **Lead** a transparent, innovative, collaborative, and adaptive Resilience Program



COMMUNITY FEEDBACK

Affirmed the Port's Goal Statement and Draft Principles

Program Goal Statement

In addition to affirming the current draft, the public encouraged the Port to:

- Continue to be transparent and accountable
- Continue to engage communities
- Prioritize life safety and emergency response
- Prioritize sustainable and nature-based alternatives where possible
- Prioritize assets most loved by the community and most important to the city
- Prioritize projects that use tax dollars effectively and responsibly

Program Principles

Community feedback strongly affirmed the Port's focus on life safety and emergency response. Program staff heard great ideas for evolving how to understand and expand what it means to "inspire an adaptable waterfront," including:

- Connecting the city with the waterfront by providing public space and an accessible waterfront
- Protecting commercial centers that support jobs
- Ensuring the health and ecology of the Bay and Islais and Mission Creeks
- Protecting housing, including senior housing
- Protecting schools and youth facilities



Alternatives Development



ALTERNATIVES DEFINITION AND ATTRIBUTES

Overview



WHAT IS AN ALTERNATIVE?

An alternative a set of actions and approaches **designed to reduce the risks** and consequences in a way that is **consistent with stakeholder and community input** and the goal statement and principles.



ALTERNATIVES INCLUDE ACTIONS AT VARIOUS SCALES

Actions and alternatives include **a range of time and geographic scales**, including asset, system, geography (neighborhood, subarea, reach, waterfront wide), and near, medium and long term.



ACTIONS AND PATHWAYS

Alternatives are often made up of actions that are **implemented over time and space in phases**. **Adaptation pathways** are a way to communicate a set of actions that will be implemented and adapted over long timeframes. 10

ALTERNATIVES DEVELOPMENT

Overview



SUBAREA MATERIAL AND MEASURES

Includes information critical to alternatives development, including Problems and Objectives, Flood and Seismic Hazards, Stakeholder Input, Applicable Measures and Unique Characteristics of a subarea

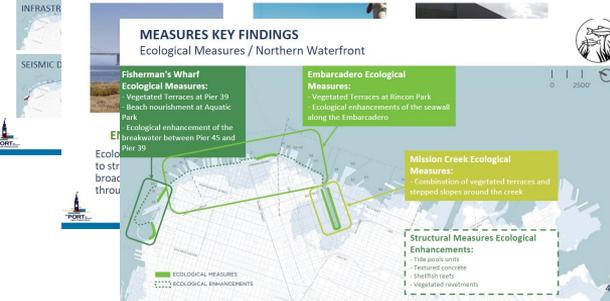
FOCUSED ARRAY THEMES

Introduction and Overview by Measure Classes

ECOLOGICAL ASSETS AND SERVICES HISTORICAL AND CULTURAL

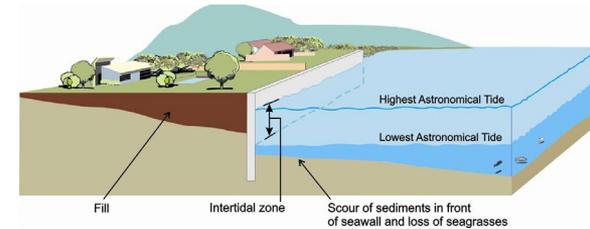
• A theme is a planning tool to

OVERALL KEY FINDINGS FROM FOCUSED ARRAY DEVELOPMENT



FOCUSED ARRAY

Flood and seismic measures used to create thematic alternatives that resulted in a wide range of approaches to reduce risk. Process provided the team with information about applicable approaches and trade-offs along the entire waterfront.



ALTERNATIVES AND ACTIONS

Based on the key findings, four concept alternatives and associated actions were identified for further development, refinement, consideration of phasing, and preliminary evaluation.

OTHER CONSIDERATIONS FOR ALTERNATIVES

DECISION-MAKER ENGAGEMENT

Program and Port staff are developing a range of alternatives for consideration by decision-makers.

RELATIONSHIP TO USACE FINAL ARRAY

Work underway in the Embarcadero Seawall to support Proposition A funding decisions and will continue in the Southern Waterfront to support Port Commission input and direction to the USACE Final Array of Alternatives.

SUBAREA-SCALE ALTERNATIVES

Staff is developing alternatives for specific geographies such as Fisherman's Wharf and the Ferry Building area.

INITIAL INVESTMENT

Decision-makers will be able to focus initial investments on projects drawn from multiple alternatives.

PROPOSITION A FUNDING

With Proposition A bond funding, initial investment will be focused on the highest priority risks.

EXAMPLE DRAFT ALTERNATIVES

Draft Concepts and Primary Objectives

RESILIENT WHARVES

- Reduce lateral spread and ground shaking risks to wharves and buildings on top of the wharves.
- Reduce flood risk to City and Port, elevating wharf zone.
- Reduce bay impacts.
- Opportunities to include utility improvements.



EXAMPLE DRAFT ALTERNATIVES

Draft Concepts and Primary Objectives

RESILIENT EMBARCADERO CORRIDOR

- Create a stable shoreline that reduces seismic and flood risk to Port, City, and transportation and utility infrastructure.
- Increases adaptation space to gain elevation and adapt to sea level rise.
- Provides opportunity for non-vehicular mobility, access, connectivity, and bike/ped safety.
- Allows space for green infrastructure and utility improvements.



Porto Alegre, Brazil

EXAMPLE DRAFT ALTERNATIVES

Draft Concepts and Primary Objectives

BAYWARD SEAWALL

- Reduce seismic and flood risks to both the Port and City.
- Modify bayside structures to increase resilience, reduce (but not eliminate) roadway damages and provide for sea level rise adaptation.
- Provides opportunities for improvements to mobility, ecological enhancements as part of the Bay fill
- Opportunities for utility improvements.



EXAMPLE DRAFT ALTERNATIVES

Draft Concepts and Primary Objectives

TACTICAL LIFE SAFETY

- Prioritize site specific strategies only at high-occupancy life safety and emergency response locations.
- Prioritize high consequence seismic risks. Consider near term or opportunistic flood risk reduction.
- Lower cost, limited disruption.





Evaluation Criteria

WRP EVALUATION CRITERIA

Why are they important?

- Ensure that **decision making** considers goal statement, principles, and objectives as developed with stakeholders
- Provide stakeholders with **direct input** into decision-making process
- Create a **transparent and accountable approach** to decision-making
- Clearly identify **trade-offs** or additional **benefits**
- Provide clear ways to **improve approach** to projects and actions
- Allow Port team to **compare alternatives in a given geography and to recommend preferred alternatives**



**Feasibility &
Performance**



**Society &
Equity**



Economic



Environment

WRP EVALUATION CRITERIA

Categories and Definitions



FEASIBILITY & PERFORMANCE

Ability to construct resilience improvement, effectiveness of actions in reducing risk, adaptability, and partnerships.



SOCIETY + EQUITY

Effect on communities and services on which they rely, with a focus on disproportionate impacts due to existing inequalities



ECONOMIC

Economic value that may be affected such as costs of infrastructure damages or lost revenues during periods of recovery, impacts to jobs and local businesses.



ENVIRONMENT

Environmental values that may be affected, such as species biodiversity and ecosystem functions and services

WRP EVALUATION CRITERIA

Categories and Criteria



FEASIBILITY & PERFORMANCE

Feasibility

Performance

Construction

Adaptability

Partnerships

Utilities



SOCIETY + EQUITY

Life Safety

Emergency Response

Mobility

Urban Design

Historic character

Social Cohesion and

Community Resilience

Equitable investments

Equitable outcomes



ECONOMIC

Direct Physical Damage

Avoided

Disruption Avoided

Economic Resilience

Capital Costs

Lifecycle Considerations

Number of jobs

Diversity of jobs



ENVIRONMENT

Environmental Risks

Environmental

Opportunities

Seismic and Flood Standards



PERFORMANCE STANDARDS

For Seismic and Flood Risk Reduction Alternatives

WHAT ARE PERFORMANCE STANDARDS?

Performance standards describe the engineering performance of buildings and infrastructure as compared to seismic and flood hazards.

HOW ARE PERFORMANCE STANDARDS USED?

Performance standards are used to evaluate how existing assets and systems are anticipated to perform in different hazard events.

Performance standards are used to develop engineering design criteria.

HOW ARE THEY DEVELOPED?

Coastal Flood Risk Management Standard for the City – consultation with the City departments and policymakers

Seismic Performance – Port Chief Harbor Engineer in consultation with the Seismic Peer Review Panel

PERFORMANCE STANDARDS

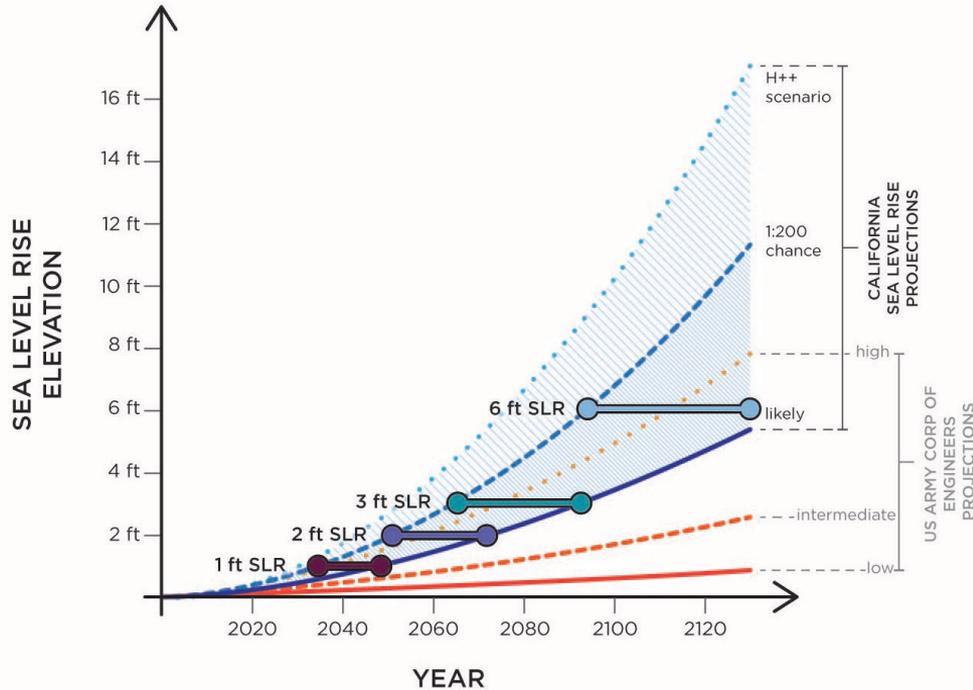
Seismic Performance Standards



- The Port's Building Code does not address performance standards for shoreline stability; this is a unique problem not typically addressed in building codes.
- The Port's Chief Harbor Engineer issued prior guidance requiring new projects that overlap the Seawall to address lateral spreading (shoreline instability) risks.
- The Chief Harbor Engineer may publish new or revised guidance to improve life safety as our understanding of lateral spreading and shoreline instability advance.

COASTAL FLOOD RISK MANAGEMENT STANDARD

Engagement with City Departments and Policymakers



State of CA – Updated 2018; USACE – Updated 2013

Factors

- A design elevation of City flood risk reduction projects (which can be achieved through adaptive management over time)
- Which sea level rise projections the City prefers to inform the design of coastal flood risk reduction projects
- A flood risk reduction standard (the national standard is the 100-year flood, or a flooding event that has a 1% chance of occurrence each year)
- Any freeboard (additional safety margin) that the City prefers

Draft Proposition A Funding Guidelines



DRAFT PROPOSITION A FUNDING GUIDELINES

Introduction

1 Life Safety & Disaster Response

2 Sufficient Funding/More Analysis or Planning Needed

3 Partnership Opportunities

4 Equity

5 Proposition A Schedule & Program

6 Planned Rehabilitation

7 Lease Extension

- The Program team will develop project alternatives for entire waterfront including Seawall area, and evaluation criteria will enable decision-makers to select a preferred alternatives for each location.
- Funding guidelines help to determine **specific assets and locations** for first investment.

DRAFT PROPOSITION A FUNDING GUIDELINES

Funding guidelines help to determine **specific assets and locations** for first investment

1

LIFE SAFETY & DISASTER RESPONSE

- Which assets and locations are subject to the highest lateral spread risk that could pose a risk to life safety?
- Where are the highest concentrations of people?
- Where are critical disaster response assets?
- Are there relatively **low-cost improvements that are relatively easy to implement and less disruptive** in an area that can improve life safety?



DRAFT PROPOSITION A FUNDING GUIDELINES

Funding guidelines help to determine **specific assets and locations** for first investment

2

SUFFICIENT FUNDING/MORE ANALYSIS or PLANNING NEEDED

- Do we have sufficient Proposition A funding available to fund selected alternatives?
- Is further planning, stakeholder alignment and/or analysis required to undertake projects in the area?
- If yes, seek other funding (grants, etc.) or dedicate a part of Proposition A funding to complete planning and studies to advance action in these areas?



DRAFT PROPOSITION A FUNDING GUIDELINES

Funding guidelines help to determine **specific assets and locations** for first investment

3 PARTNERSHIP OPPORTUNITIES

- Are works planned by other City agencies that would allow efficient delivery in partnership?
- Does the alternative provide an opportunity to build private for-profit or nonprofit partnerships?
- Have we effectively identified regional, state and federal partners? Grant opportunities?



DRAFT PROPOSITION A FUNDING GUIDELINES

Funding guidelines help to determine **specific assets and locations** for first investment

4

EQUITY

- Is investment prioritized for improvements that benefit the **entire city**?
- Are risks being addressed across the Embarcadero Seawall area in an equitable way?
- Are resilience alternatives informed by a broad range of stakeholders who reflect San Francisco?
- Are the economic benefits (e.g. jobs, local businesses, community projects) **putting equity first**?



DRAFT PROPOSITION A FUNDING GUIDELINES

Funding guidelines help to determine **specific assets and locations** for first investment

5 PROPOSITION A SCHEDULE & PROGRAM

- Can priority projects be delivered within the timescales identified in the Proposition A bond report?
- Does the program of first projects allow efficient delivery?



DRAFT PROPOSITION A FUNDING GUIDELINES

Funding guidelines help to determine **specific assets and locations** for first investment

6

PLANNED REHABILITATION

- Is there **planned development** in the area?
- Is there **another source** – private equity or infrastructure financing district/community facilities district proceeds – that can pay for required improvements?
- If yes, is **additional subsidy** needed to ensure financially-feasible historic rehabilitation?



DRAFT PROPOSITION A FUNDING GUIDELINES (cont.)

Funding guidelines help to determine **specific assets and locations** for first investment

7

LEASE EXTENSION

- Is there an **existing** long-term lease in the area? Is the tenant interested in a lease extension?
- Is there **another source** – private equity or infrastructure financing district/community facilities district proceeds – that can pay for required improvements?
- If yes, is **additional subsidy** needed to ensure financially-feasible historic rehabilitation?

Note:

Some Seawall alternatives under consideration are not appropriate for delivery by a development partner (e.g., ground improvement in the Embarcadero).

Other alternatives – such as New Resilient Wharf – are appropriate for delivery by a development partner.

Adapt Plan and Adaptation Design Guidelines



ADAPT PLAN

Overview and Key Highlights



- **Project Area:** Fisherman's Wharf to Heron's Head Park
- **Timing:** Mid-2021
- **Focus:** Guide action to reduce seismic and climate change risks that supports a safe, equitable, sustainable and vibrant waterfront and includes recommendations for Proposition A projects, the USACE Flood Resiliency Study alternatives and the other resilience and adaptation actions and alternatives necessary to achieve the Program goal statement.

ADAPT PLAN

Objectives

1 TRANSPARENT

Provides a document for the Port to integrate WRP findings and recommendations with Port near, mid and long-term strategic objectives.

2 ACCESSIBLE

Provide the Port a place to tell the story of how risks will be reduced over time, being clear about what risk remains and documenting increased resilience. **"Be translatable."**

3 TIMELY

Allow the Port to take action now to reduce life-safety and emergency response risks by advancing the Proposition A bond project(s) while identifying adaptation pathways and alternatives and actions for the USACE Flood Resiliency Study and other long, mid and long term resilience actions.

4 LASTING

Support and advance the Port's resilience work over many years.

Integrate with other Port planning instruments in a way that supports implementation over time.

5 ADAPTIVE

Clearly describe adaptation and implementation pathways to demonstrate the programmatic approach to resilience to funders, tenants, prospective developers and resource and regulatory agencies.

ADAPT PLAN

Chapter Abstract Overview

Chapter Abstract Overview

01

WRP Goal Statement, Principles, and Geographic Goals

- ▶ Articulate the Waterfront Resilient Program's goal statement, principles, and geographic goals, within the context of the other City and federal efforts.
- ▶ Establish a basis for developing screening and evaluation criteria for measures and projects.

02

Scope and Scale of Waterfront Resilience Program

- ▶ Describe waterfront-wide, geographic, system, and asset level considerations and approaches

03

Summary of Engagement & Communications Approach and Activities

- ▶ Summary of philosophy and approach
- ▶ Summary of engagement tools
- ▶ Summary of engagement (who, types of events, number of tours, etc.)
- ▶ Summary of input received and how it shaped outcomes

04

Hazards Science and Scenarios

- ▶ Maps of hazards (mapbook)
- ▶ Summary of seismic and flood scenarios selected and why
- ▶ Overview of seismic and flood methodology/models used
- ▶ Summary of nearshore environment
- ▶ Summary of level of confidence/probabilities
- ▶ Key findings identified

05

Vulnerability, Risks, and Consequences

- ▶ Description of assets in study area
- ▶ Description of asset categories affected by each hazard scenario
- ▶ Summary of findings of MHRA and Flood Study

06

Development of Performance Standards, Evaluation Criteria, and Metrics

- ▶ Process and considerations used to develop performance standards, evaluation criteria and metrics
- ▶ How stakeholder input was used
- ▶ How these tools are used in the planning process

07

Framework for Decision Making

- ▶ Context for near-term, mid-term, and long-term decision making

08

Design Guidelines

- ▶ Context in relation to existing Port and City guidelines
- ▶ Guidance on elevations, design approaches for resilience

09

Measures and Approaches

- ▶ Lay out the various measures approaches Flood management measures developed by USACE
- ▶ Seismic measures in Seawall reach developed under Strengthen
- ▶ Conceptual seismic measures for Southern Waterfront developed through the Southern Waterfront Vulnerability Assessment

10

Alternatives Formulation

- ▶ Summary of the process of developing, evaluating, refining, and recommending alternatives.
- ▶ Depiction of alternatives and description of their performance against evaluation criteria.

11

Resource and Regulatory Considerations for the Adapt Plan

- ▶ 5 to 7 pages on the regulatory and resource agency policy and legal landscape and the approach the Program took to coordinate with these agencies
- ▶ Draft Adapt Plan Chapter
- ▶ Updated Permitting Roadmap

12

Funding and Financing of Adapt Plan Recommendations

- ▶ Funding and financing strategies developed through Seawall Financing Working Group
- ▶ Relation of the Adapt Plan to the Port 10-year capital
- ▶ Identify existing and potential future sources of funding to implement resilience actions

13

Envision Element

- ▶ Findings of the Envision work, including how it informs near term actions and adaptation pathways for mid-term actions
- ▶ Reflection of community input into visions for the long-term future of a waterfront resilient to 2100 water levels

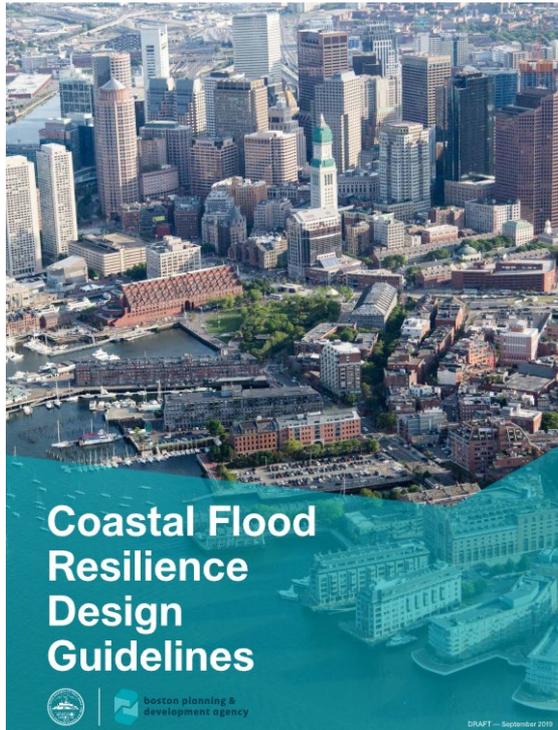
14

Recommended Actions, Adaptation Pathways and Implementation Pathways

- ▶ Draft Recommendation Actions Chapter of the Adapt Plan to include:
 - ▶ Types of actions
 - ▶ Scope and Scale for each action
 - ▶ Implementation Pathways
 - ▶ Adaptation Pathways
 - ▶ Suite of actions for implementation

ADAPT PLAN: ADAPTATION DESIGN GUIDELINES

Design Guidelines Overview



- Builds upon existing design guidelines, provides guidance on elevations, design approaches for resilience actions that will result in a consistent, functional and desirable waterfront
- Provides a framework for adapting the waterfront over time
- Outlines adaptation pathways for spaces along the waterfront
- Includes standards and guidelines for all Port property regarding adaptation
- Complements existing Port design guidelines

Boston Planning & Development Agency



Community and Stakeholder Engagement

A community-driven process



CITY DEPARTMENT ENGAGEMENT

Engagement planned before the end of 2020 and early 2021



- Ongoing engagement with City Department staff on MHRA results, Program Elements, Alternatives Development and Envision Process
- Meetings with SFPUC, SFMTA, Capital Planning, SFO and Public Works planned

UPCOMING COMMUNITY ENGAGEMENT

Engagement planned before the end of 2020 and early 2021



- Meetings co-hosted with community-based organizations in Islais Creek / Bayview and Mission Creek / Mission Bay
- Ongoing digital engagement, including feedback on waterfront-wide measures and Waterfront Resilience Story Maps
- Ongoing tenant engagement
- Youth engagement with youth-serving organizations that serve citywide youth

An aerial photograph of a port facility. In the center, a tall, narrow concrete building is covered in a vibrant, multi-colored mural featuring geometric patterns and abstract shapes in red, blue, yellow, and green. To the left, a large body of water is visible with several ships and cranes. To the right, there are industrial buildings, including one with the name 'MEERS' on its side, and a large area of sand or gravel. The sky is clear and blue.

Key Considerations for Port Commission Input

KEY CONSIDERATIONS FOR PORT COMMISSION INPUT

Goal Statement and Principles



- Does the draft goal statement reflect Port Commission values and the role the Port and its resilience work plays in Citywide resilience?
- Do the draft principles reflect the Port Commission's values and priorities for the Waterfront Resilience Program and the role that it and the Port plays in Citywide resilience?

KEY CONSIDERATIONS FOR PORT COMMISSION INPUT

Evaluation Criteria



- Do the evaluation criteria in Exhibit A address the right set of considerations for review and comparison of alternatives?
- Is the Commission comfortable that staff will analyze and compare alternatives but not produce total scores?

KEY CONSIDERATIONS FOR PORT COMMISSION INPUT

Seismic and Flood Standards



- Are there any issues that Program staff and Port leadership should keep in mind as we engage the City on critical topic of Coastal Flood Risk Reduction Standards?

KEY CONSIDERATIONS FOR PORT COMMISSION INPUT

Prop A Funding Guidelines



- Draft Proposition A Funding Guidelines focused on:
- **Transparency** – Will Port stakeholders and City leaders understand and support decision-making for first Proposition A investments based on these guidelines?
- **Equity** – Are we prioritizing equity in decision-making?
- **Opportunity** – Does the Commission support WRP alignment with other Port strategic efforts, including finger pier rehabilitation and long-term lease extensions?

DECEMBER 2020 WRP PORT COMMISSION PRESENTATION

Planned WRP Presentation for Consideration and Decision-Making



Engaging Decision-Makers –
Program Decision-Making
Framework

Includes feedback on:

- Goal Statement and Principles
- Evaluation Criteria for screening and recommending alternatives
- Proposition A Funding Guidelines
- Adapt Plan Structure and Adaptation Design Guidelines

A photograph of two children riding bicycles on a dirt path. The child in the foreground is wearing a red and white jersey and a yellow helmet. The child in the background is wearing a dark jersey with the number 30 and a dark helmet. In the background, a large ship is docked at a pier, and there are some trees and a clear blue sky.

Thank You!

Brad Benson and Lindy Lowe
Port of San Francisco

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