



WATERFRONT RESILIENCE PROGRAM UPDATE

Port Commission Agenda Item #11

June 14, 2022



AGENDA

- Draft Waterfront Adaptation Strategies development process
- Community-driven resilience
- Adaptation approaches
- Next steps

WATERFRONT RESILIENCE PROGRAM VISION STATEMENT

Affirmed through Robust Community Engagement

WATERFRONT RESILIENCE PROGRAM EFFORTS

Program and City Resilience Projects and Efforts

1

2

3

1

2

3

STRATEGIC OBJECTIVES

The Waterfront Resilience Program Supports the Goals of the Port's Strategic Plan

- Engagement
- Equity
- Resiliency
- Evolution
- Sustainability
- Productivity and Economic Recovery

WATERFRONT WIDE FLOOD HAZARDS

Coastal Flood Risk - 2100



+ 100 YR FLOOD
Sea Level Rise
Sea Level Rise
Sea Level Rise

WATERFRONT WIDE FLOOD HAZARDS

Coastal Flood Risk - 2150



+ 100 YR FLOOD
Sea Level Rise
Sea Level Rise
Sea Level Rise

PLANNING FOR SEA LEVEL RISE

RISING TO THE CHALLENGE

San Francisco faces urgent seismic and increasing coastal flood risks today

San Francisco, 1906



The Embarcadero

Pier 94-96

Market Street, 1906



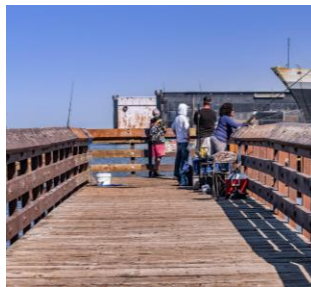
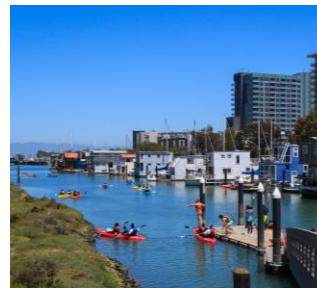
Marina, 1989

Recology

Islais Creek outfall
and Marin St.

RISING TO THE CHALLENGE

Adaptation should preserve and reimagine San Francisco's waterfront



Draft Waterfront Adaptation Strategies Development Process



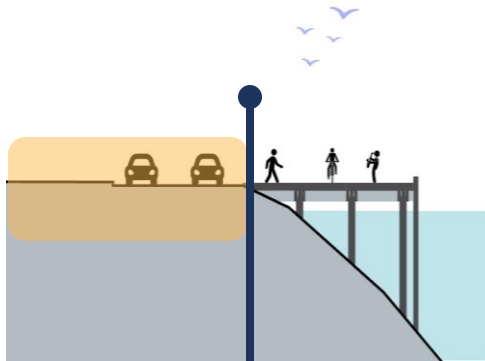
DRAFT WATERFRONT ADAPTATION STRATEGIES

A key part of the WRP's work

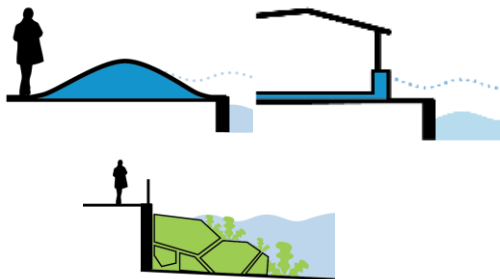


DRAFT WATERFRONT ADAPTATION STRATEGIES

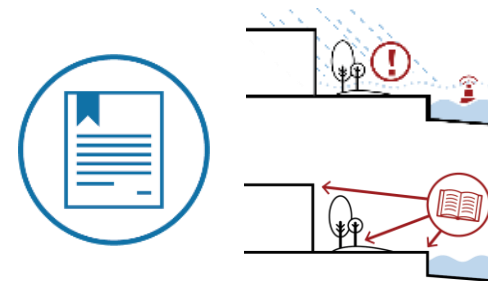
Key Components



Coastal Flood Defense
Location + Height
And area of elevation change



Physical Changes
Such as earthquake-resilient berms, floodproofing, and nature-based features



Policy Changes
Such as resilient codes, warning systems, and land use changes

PHASING

Implementation over time, building on previous investments

Early Projects

Focus of Draft Waterfront Adaptation Strategies

Mid-Term
Adaptations

Long-Term Adaptations

Future
Adaptations

...

Today

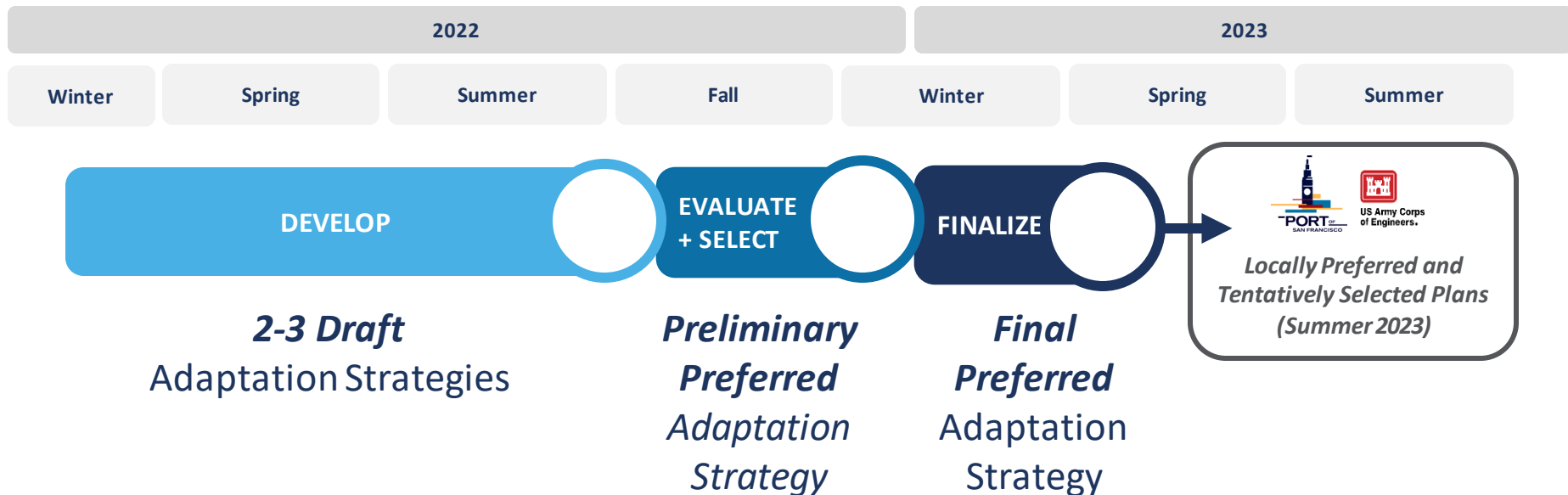
2050

2100

2150

sea level rise

DRAFT WATERFRONT ADAPTATION STRATEGIES DEVELOPMENT SCHEDULE



ONGOING CITY ENGAGEMENT

What We've Heard – Key Themes

- Importance of **maintaining functioning assets** and connections to system-wide networks
- Understand and design for **implications to stormwater system** in relation to the coastal flood defenses
- Develop and promote projects with **multiple benefits**, such as jobs, open space, mobility, habitat/ecology, and access to the waterfront
- Flood defense infrastructure enhances **seismic reliability** and **disaster response**



Community-Driven Resilience



WRP COMMUNITY AND STAKEHOLDER ENGAGEMENT

Community / Advisory Group Engagement

COMMUNITY GROUPS

Coordinated over 150+ community and stakeholder group presentations

WATERFRONT-WIDE

Presentations to people along the entire waterfront, including Embarcadero, Mission Creek / Mission Bay, Islais Creek / Bayview

ADVISORY GROUPS

The Port continues to collaborate with Port advisory groups, including regular presentations and opportunities for input

WRP COMMUNITY AND STAKEHOLDER ENGAGEMENT

Community Event Outreach

STREET TEAM OUTREACH

Grassroots outreach at 100+ local events continues to be an integral part of introducing residents to the WRP

KEY PARTNERSHIPS

Partnerships with dozens of groups, including Rec & Park, Cal Academy, WorldWideWomen Girls' Festival, and more

HOSTED EVENTS

The Port has hosted a series of walking tours along Islais Creek, and is planning walking tours for Mission Bay and along the Embarcadero

WRP COMMUNITY AND STAKEHOLDER ENGAGEMENT

Digital Engagement

ASSET MAPPING

We asked the public what they value most along the waterfront to inform how we prioritize and define projects

ONGOING FEEDBACK

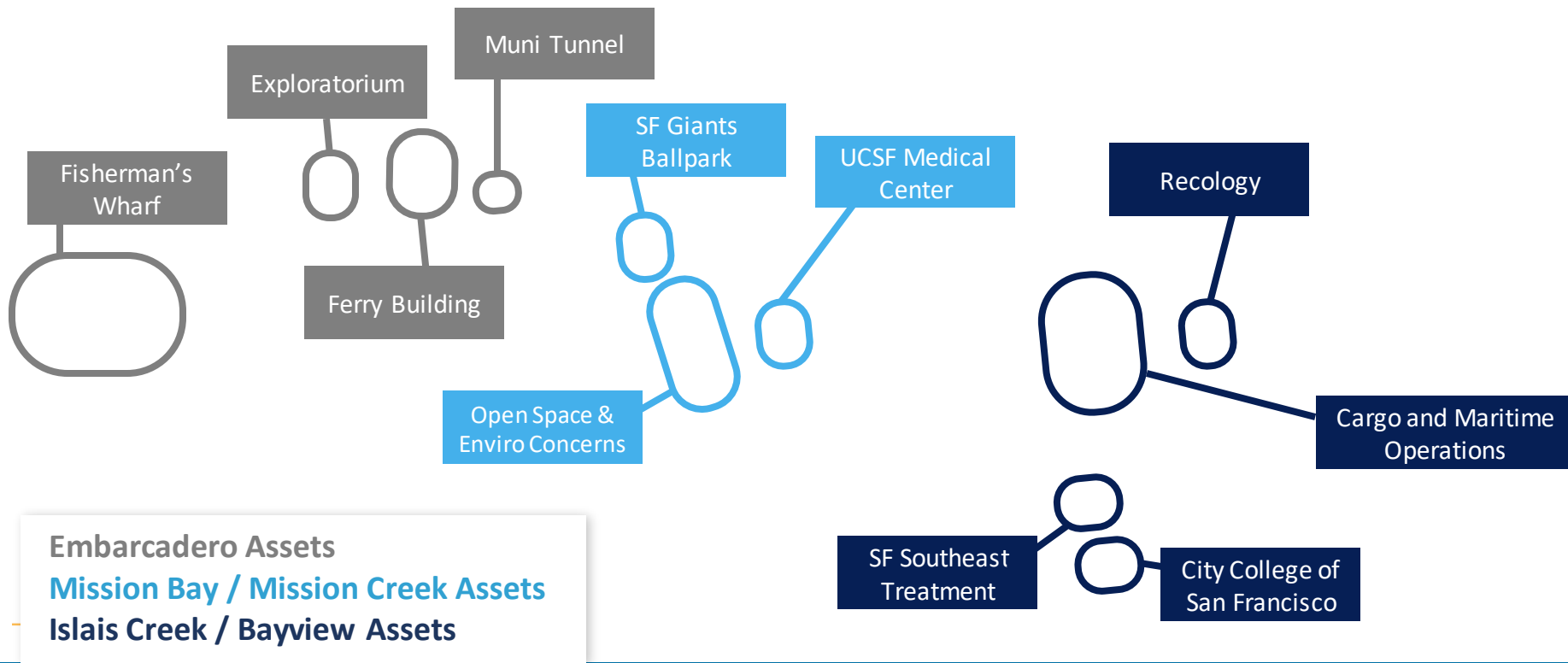
We asked what the public thinks about draft WRP Values, Goals and Evaluation Criteria language in English, Spanish, and Chinese

VISIONING

We asked what the public wants to see along the waterfront in the future...

WRP COMMUNITY AND STAKEHOLDER ENGAGEMENT

Assets Communities Want to Protect



WATERFRONT FUTURE VISIONS – WHAT WE’VE HEARD



Regional partnerships and solutions

More/better transportation options

Connected city, bay, and region

Bring people and nature to the waterfront

Protect homes in place, prioritize low-income and affordable housing

Preserve and enhance equity and diversity of jobs Equitable opportunities

Social and economic sustainability

Achieve the future we envision

WATERFRONT FUTURE VISIONS – WHAT WE’VE HEARD

Ecological adaptation measures

Cleaner and greener

Connect people to nature

Healthy ecosystems and open space



Ferry Building



Embarcadero
Promenade



Fisherman's
Wharf



Mission Creek



Pier 94 Wetlands

Continuous, accessible waterfront for all people

A vibrant public waterfront

Equitable, direct access to water and open space

Integrate the historic and maritime waterfront with new public space

DRAFT WATERFRONT RESILIENCE PROGRAM GOALS

Affirmed through Robust Community Engagement



Goal 1

Improve life safety and disaster response and recovery capabilities



Goal 2

Increase seismic resilience



Goal 3

Increase resilience to current and future sea level rise



Goal 4

Protect the Port's Public Trust and Cultural Resources



Goal 5

Reduce risks to utility and transportation systems



Goal 6

Improve the environment



Goal 7

Achieve equity and increase benefits to the community



Goal 8

Improve economic opportunities and financial stability

Adaptation Approaches



ADAPTATION APPROACHES



DEFEND

Keep coastal water out,
stay in place



ACCOMMODATE

Let coastal water in,
stay in place



RETREAT

Move out of the area
over time

DEFEND

Keep coastal water out, stay in place

Defend against floods by raising the shoreline to keep the coastal water out



Elevated seawall and new public promenade in Auckland, NZ

ACCOMMODATE

Let coastal water in, stay in place

Accommodate flooding by letting the water in, adapting buildings and infrastructure in place

Elevated buildings, floodproofed lower levels, and floodable spaces in Hamburg, Germany

RETREAT

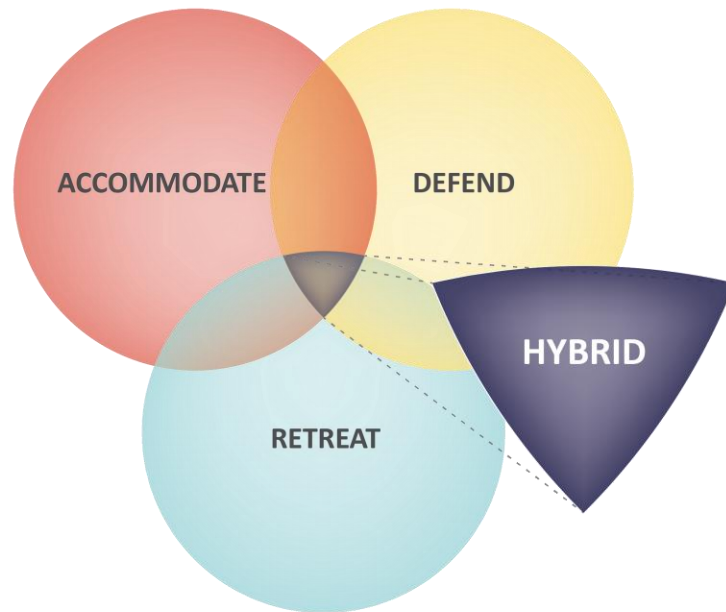
Move out of the area over time

Retreat from the current shoreline by moving buildings and infrastructure inland



*Repurposed land for public parks
after an earthquake in Christchurch,
New Zealand*

ADAPTATION APPROACHES



NATURE-BASED SOLUTIONS



Citywide survey results

- Survey presented 5 examples of how other cities made changes and asked respondents to consider for San Francisco's waterfront:
- **Defend** – feels familiar, minimizes changes ... blocks views, costly, construction
- **Accommodate** – practical, reasonable, flexible ... construction, costly, need more info
- **Retreat** – proactive, open space ... displacement, unrealistic, who gets moved?

NEXT STEPS

Upcoming Waterfront Resilience Program Activities

- 2-3 Draft Waterfront Adaptation Strategies will be ready this fall, followed by robust community engagement
- Embarcadero early projects are in predesign
- Living Seawall Pilot underway
- Engineering with Nature and historic preservation experts, regulatory agencies, equity practitioners, and community based organizations to inform Adaptation Strategies

Thank You!

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Waterfront Resilience Program

