



US Army Corps
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Embarcadero Community Meeting #4
Port of San Francisco
June 27, 2019

WELCOME

Welcome to the Embarcadero Community Meeting #4 for the Port's Waterfront Resilience Program. Thank you for joining us! Tonight we will:

- 1 Present a Waterfront Resilience Program Overview
- 2 Provide Updates on Multi-hazard Risk Assessment Work
- 3 Introduce draft Vision, Principles and Evaluation Criteria
- 4 Present tonight's activity on decision-making and criteria
- 5 Engage in a small group activity and report back



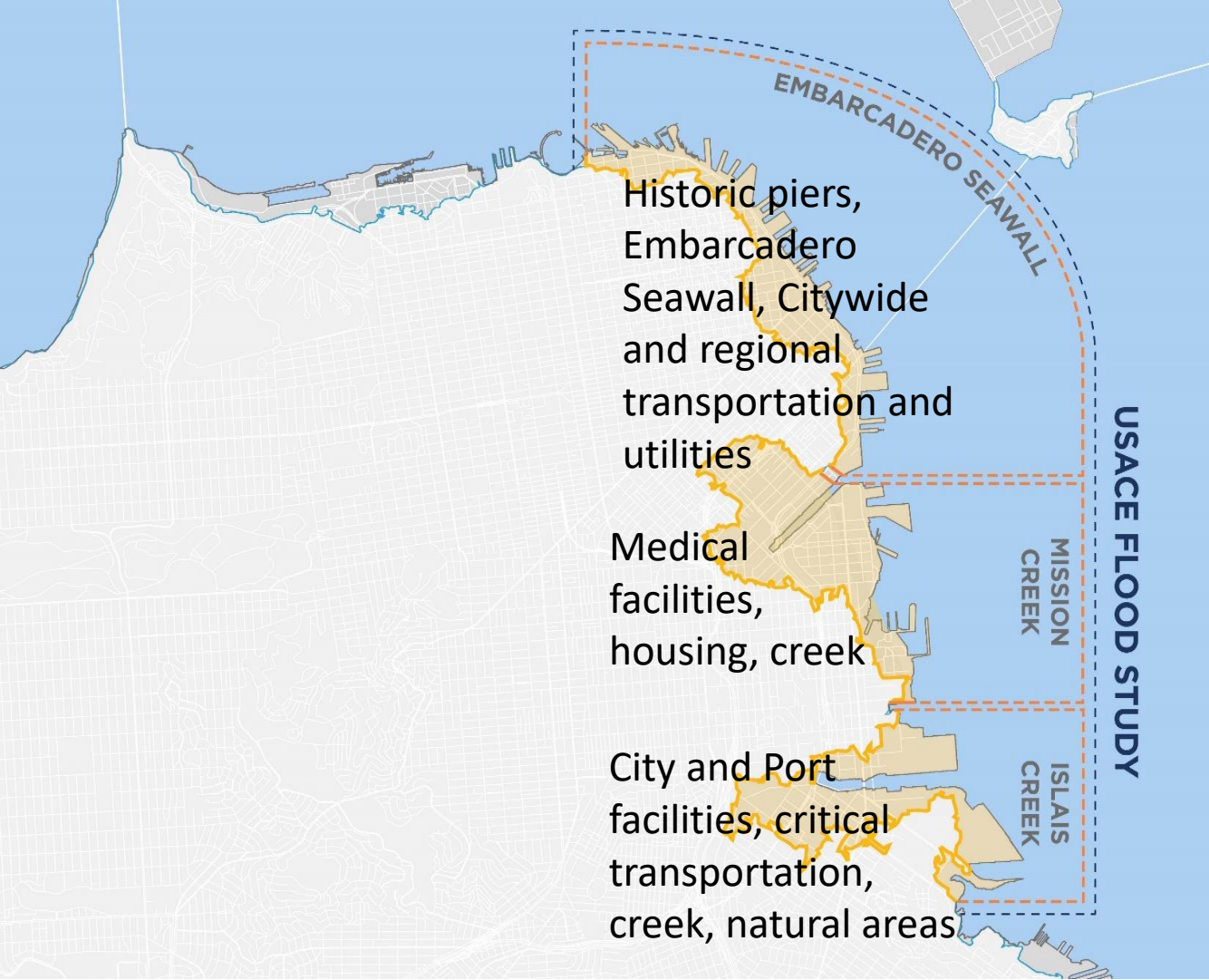
PORT'S WATERFRONT RESILIENCE PROGRAM



THE WATERFRONT RESILIENCE PROGRAM IS FOCUSED ON REDUCING SEISMIC AND FLOOD RISKS TO ENSURE A RESILIENT AND THRIVING PORT



WATERFRONT RESILIENCE PROGRAM STUDY AREAS

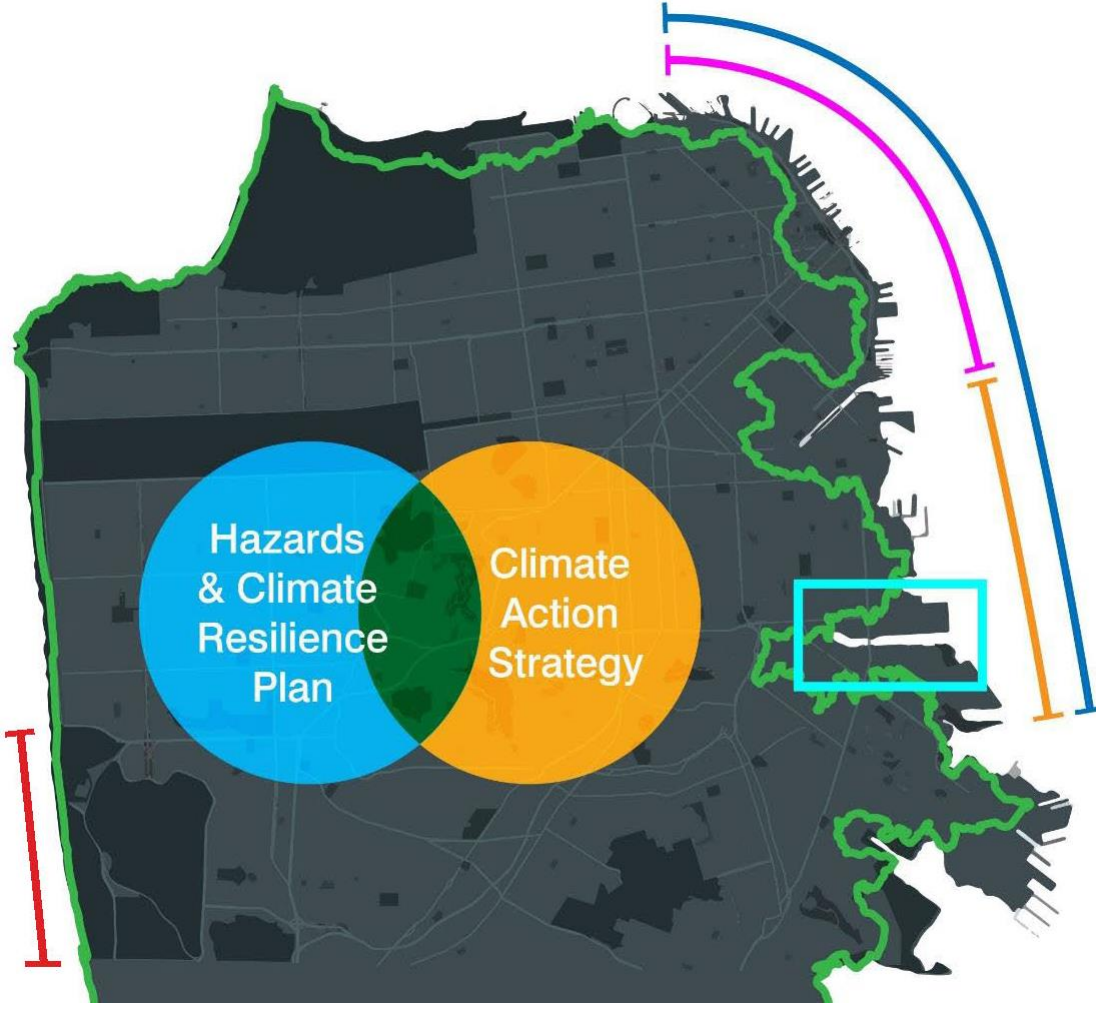


WHY THREE STUDY AREAS?

- Different risks and consequences
- Different assets and services
- Alternatives to reduce risk will be based on risks, consequences and what will work in each study area
- Provides opportunity for focused engagement and participation with adjacent communities and businesses and reflect local priorities, as well as Port and City considerations



CITYWIDE RESILIENCE EFFORTS



CITYWIDE PLANS AND STRATEGIES

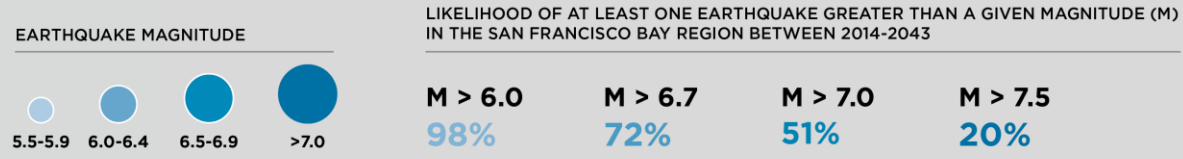
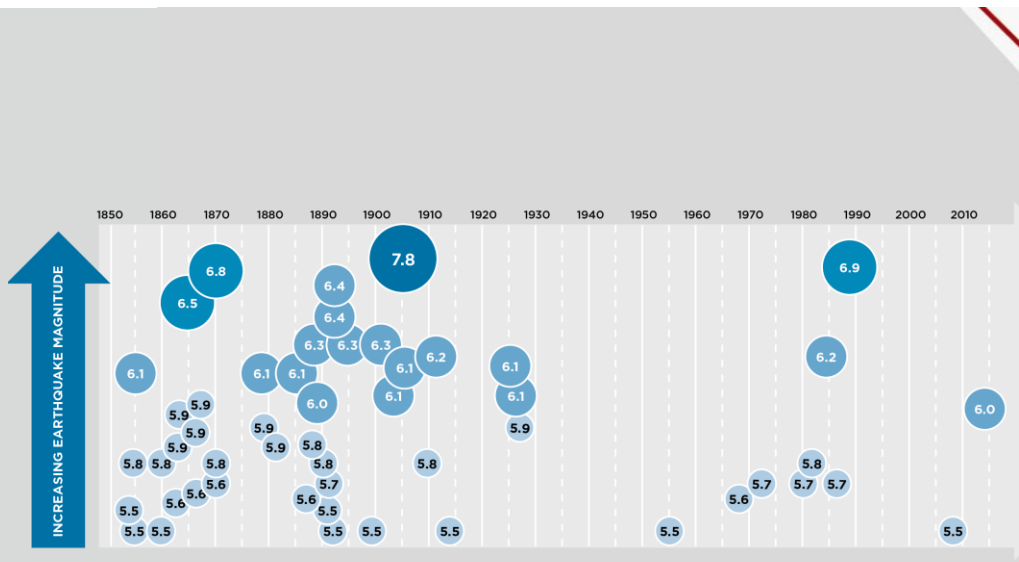
- Sea Level Rise Action Plan (Vulnerability & Consequence Analysis)
- Hazards & Climate Resilience Plan
- Climate Action Strategy

SHORELINE ASSESSMENTS AND PROJECTS

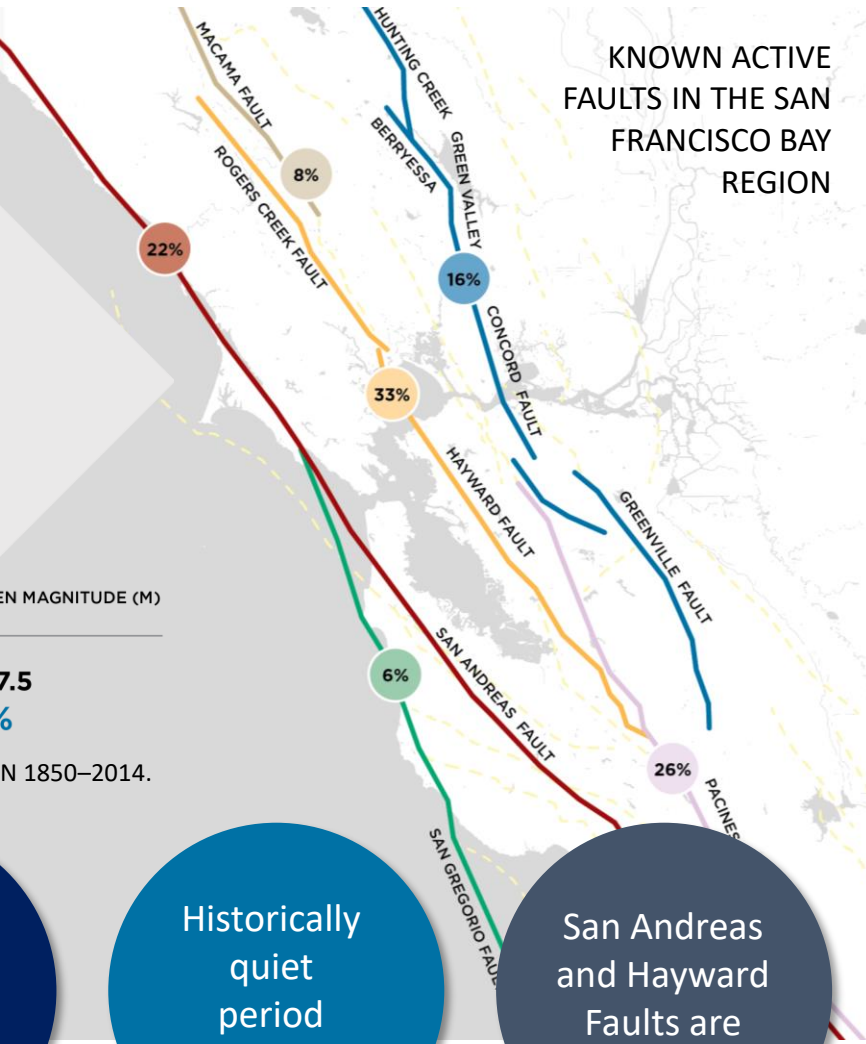
- Southern Waterfront Assessment
- Embarcadero Seawall Program
- USACE/Port Flood Study
- Islais/Southeast Mobility Adaptation Strategy
- Ocean Beach Implementation



WATERFRONT RESILIENCE PROGRAM: EARTHQUAKE RISK



TIMELINE OF MAGNITUDE 5.5 AND GREATER EARTHQUAKES IN THE SAN FRANCISCO BAY REGION 1850–2014.



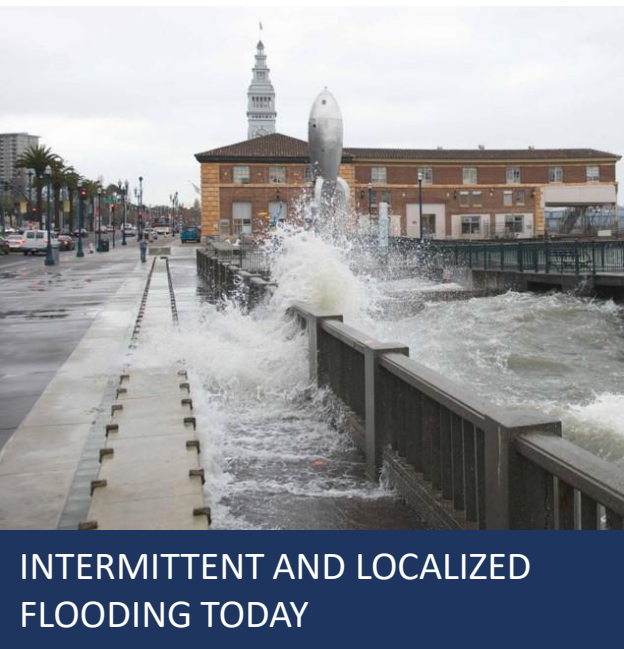
KNOWN ACTIVE FAULTS IN THE SAN FRANCISCO BAY REGION

72% likelihood of a major earthquake by 2043

Historically quiet period since 1906

San Andreas and Hayward Faults are highest risks

WATERFRONT RESILIENCE PROGRAM: FLOOD RISK



- San Francisco faces increasing flood risk
- Some shoreline areas already experience flooding
- 100 year flood event would create significant disruption to critical assets and services
- San Francisco’s shoreline will flood more frequently and new areas will begin to experience flooding in the coming decades

WATERFRONT RESILIENCE PROGRAM: ADAPTATION FRAMEWORK



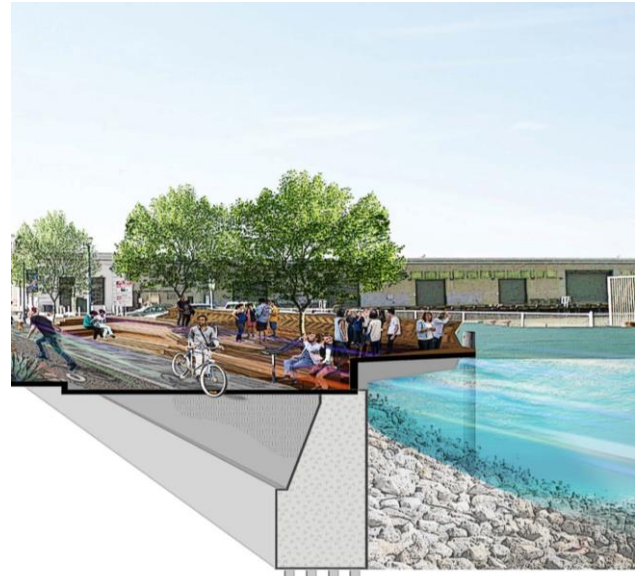
STRENGTHEN ELEMENT

Objective: Immediately implement highest priority disaster response and life safety projects along the Embarcadero Seawall.



ADAPT ELEMENT

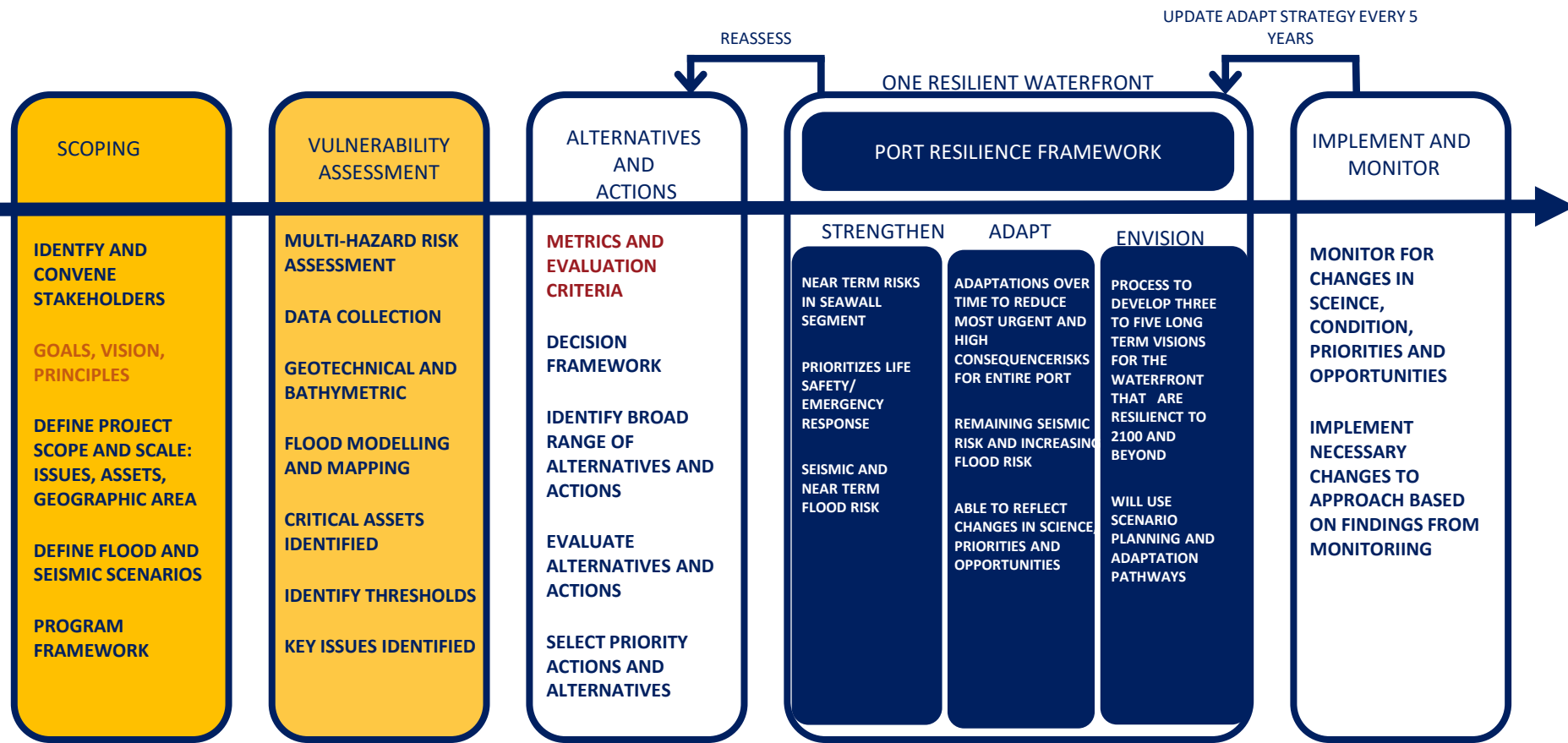
Objective: A plan that is updated every five years and includes policies and projects to reduce remaining seismic and increasing flood risks, that can respond to changing priorities and will provide a framework for the Port to adapt over time.



ENVISION ELEMENT

Objective: Develop visions that can respond to higher water levels, changes in priorities and science and result in a waterfront that is resilient to 2100 and beyond.

WATERFRONT RESILIENCE PROGRAM STEPS



Community and Stakeholder Engagement

RELATED PORTWIDE WORK: WATERFRONT PLAN UPDATE

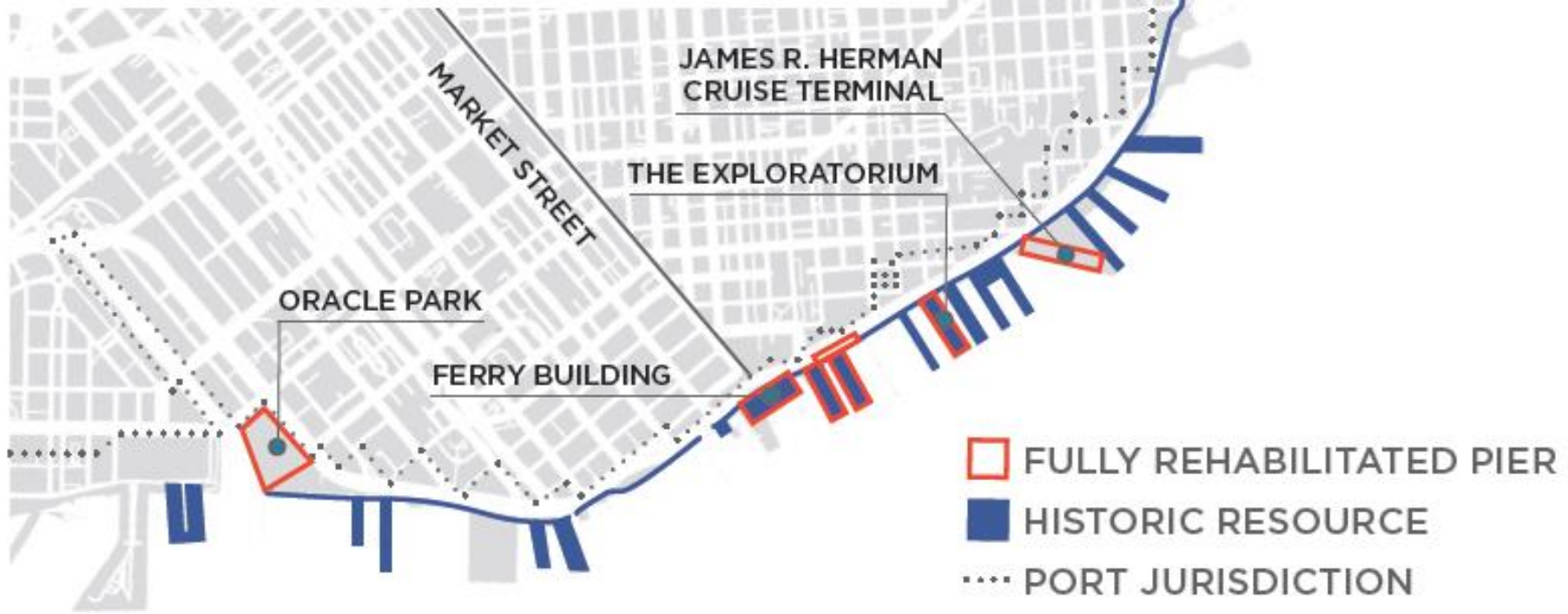
WATERFRONT PLAN

The Port of San Francisco's Waterfront Plan update will guide the Port's land use and improvements. The update includes:

- **Nine goals** including economic and environmental sustainability, resilience and historic and maritime preservation
- An updated Waterfront Plan to be **adopted in Winter 2020**
- Includes a framework for improving historic piers
- **Plan supports enhancement and preservation of existing uses**



RELATED SEAWALL SEGMENT WORK: HISTORIC PIER REHABILITATION PROGRAM



A primary initiative of the Waterfront Plan update

Critical effort for the resilience of the Embarcadero Historic District

RFP process to pursue ideas for improvements that include economic, cultural and public improvements

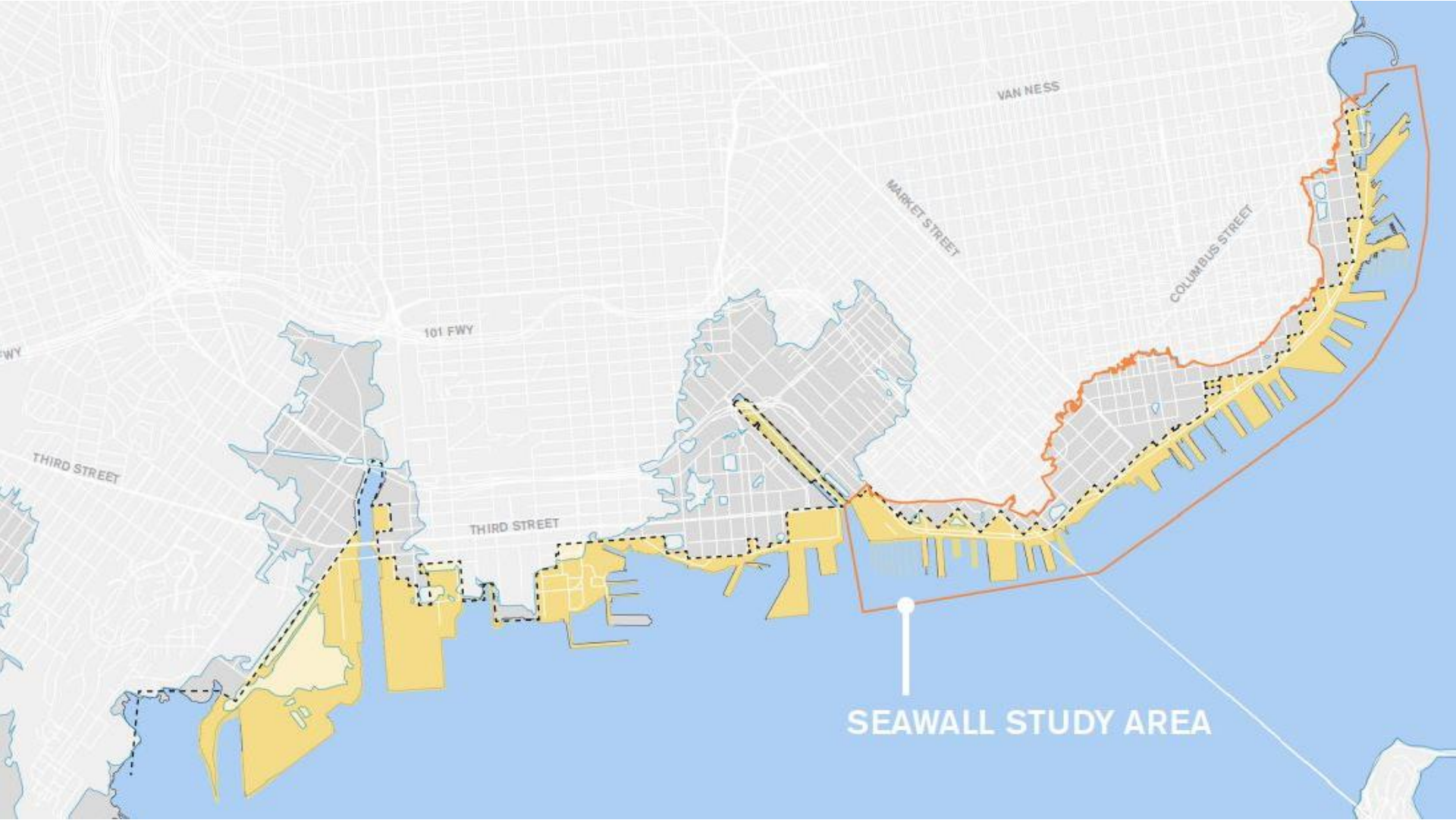
Pier 45
(Fisherman's Warf) to Pier 48
(China Basin)

6 successful historic rehabilitation projects

16 facilities yet to be repaired and improved



TONIGHT'S FOCUS: EMBARCADERO SEAWALL STUDY AREA



WATERFRONT RESILIENCE PROGRAM: EMBARCADERO SEAWALL PROGRAM

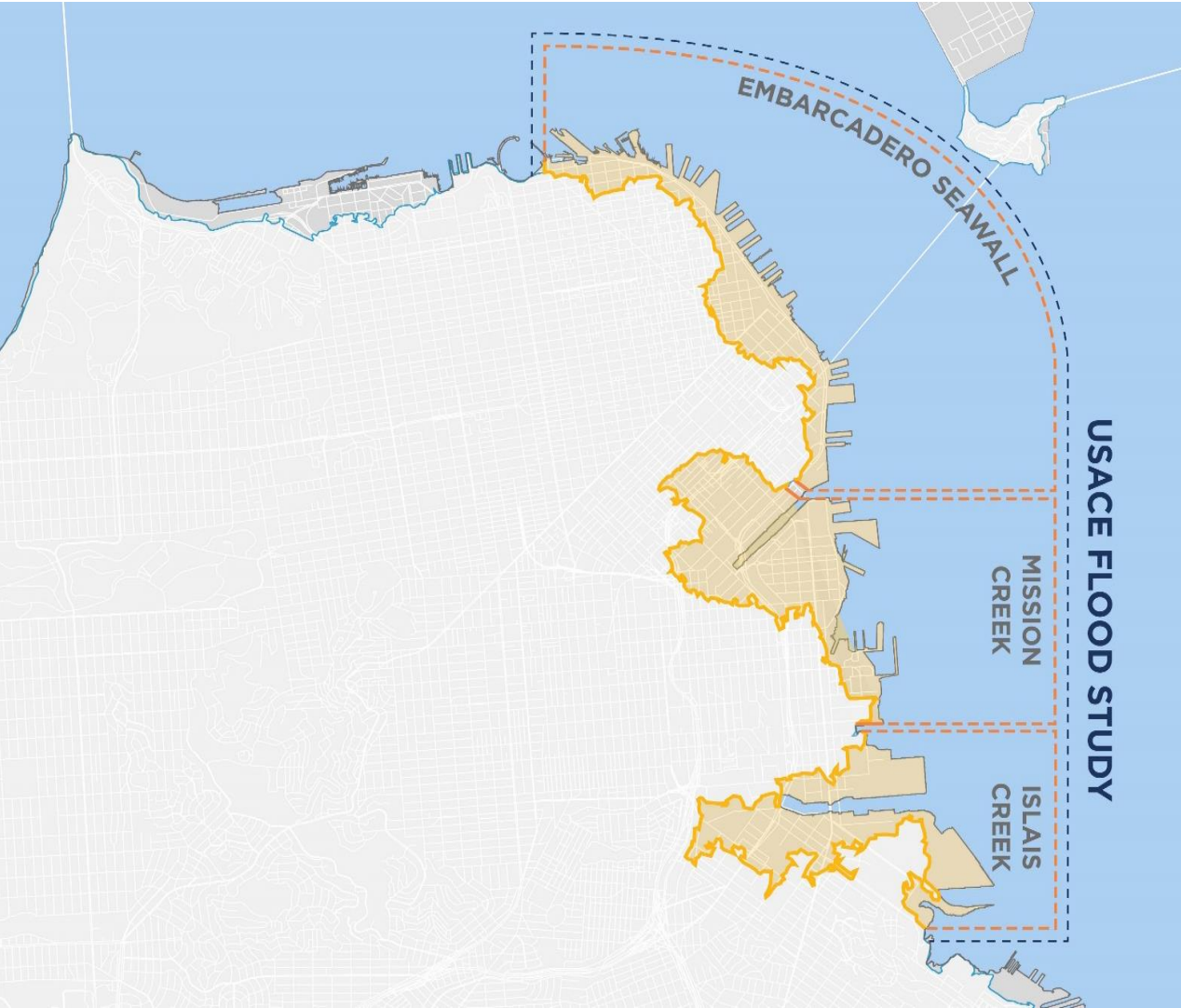


SEAWALL PROGRAM OVERVIEW

- First priority is to protect **life safety** and **emergency response** from seismic events
- Approximately \$5 billion over 30+ years
- Funding and financing from **City, state, federal and private**
- Will address as much flood risk as possible and **create a foundation** for addressing flood risk
- **Robust engagement and outreach**



WATERFRONT RESILIENCE PROGRAM: EMBARCADERO SEAWALL USACE/PORT FLOOD RESILIENCY STUDY



HIGHLIGHTS

- Federal funding, expertise, partnership
- Port is the local sponsor, seeking assistance since 2012
- Flood Study is entire Port jurisdiction + Aquatic Park
- ~3-5 years, ~\$10M, 50/50 cost share

STUDY OVERVIEW

- Evaluate flood risk to entire Port, develop and assess a wide range of alternatives
- Culminates in a recommendation to Congress of selected plan
- Design/construction of federal plan cost shared 65% fed / 35% local
- Locally preferred plan can be selected, sponsor pays extra cost



Waterfront Resilience Program



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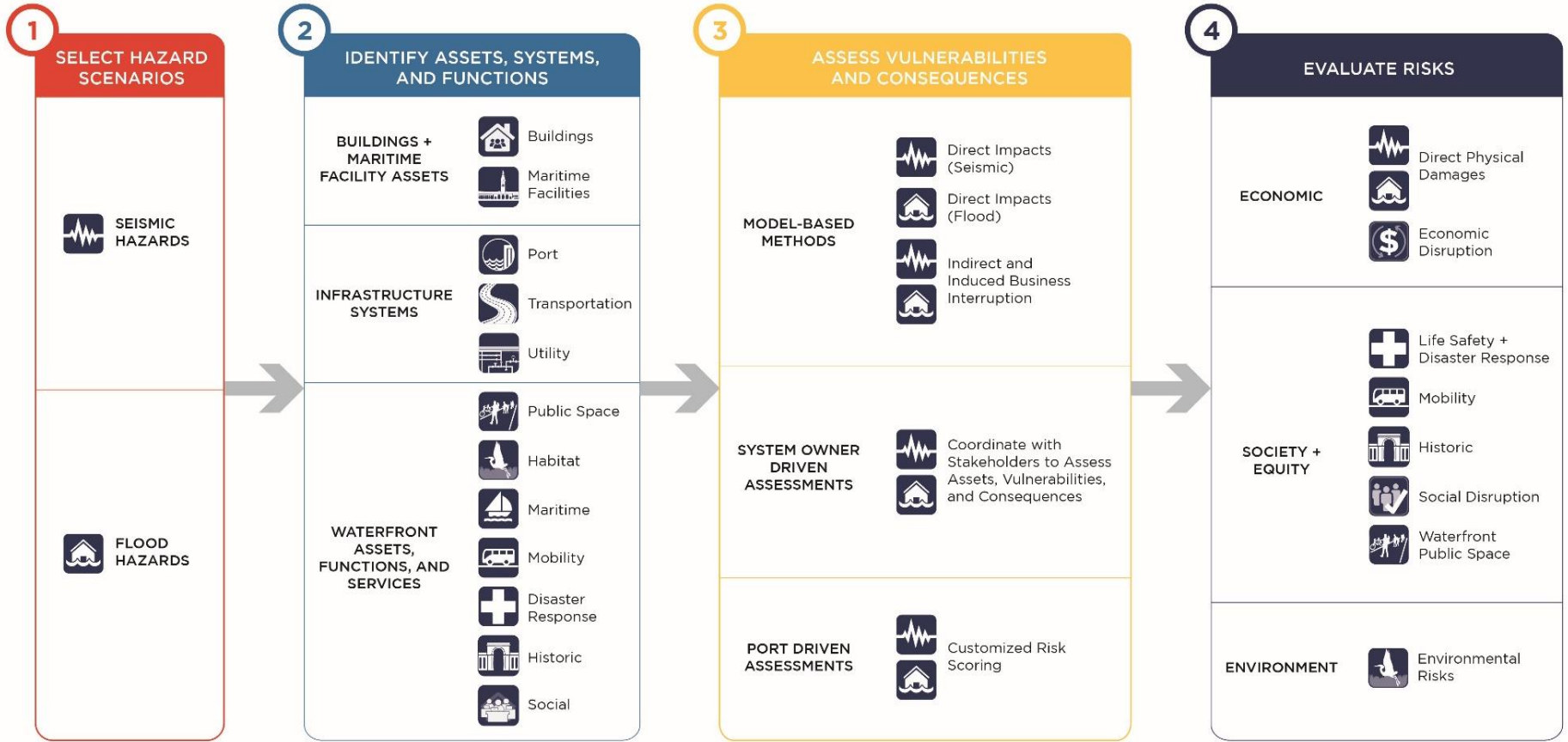
MULTIHAZARD RISK ASSESSEMENT METHODOLOGY

What are the hazards?

What's at stake?

How will we measure?

Why does it matter?



COMMUNITY MEETING SERIES: EMBARCADERO SEAWALL

EMBARCADERO SEAWALL PROGRAM

1

June 2018

Introduction:
The Seawall Program

2

Sept. 2018

Assets & Risks:
What's Out There and What's At Stake

3

Jan. 2019

Goals & Tradeoffs:
Balancing Priorities & Resources

4

June 2019

Framework & Vision,
Principles, Evaluation Criteria

5

Fall 2019

Early MHRA Findings, Measures, Alternatives & Actions

6

Spring 2020

MHRA Findings, Recommended Alternatives and Actions



COMMUNITY MEETING SERIES: 2018 – WINTER 2021

Spring 2018	Summer / Fall 2018	Winter 2018 / Spring 2019	Summer 2019	Fall 2019	Winter 2019 / Spring 2020	Summer 2020	Fall 2020	Winter 2020	Spring 2021	Summer 2021	Fall 2021	Winter 2021
EMBARCADERO SEAWALL PROGRAM												
Intro Seawall	Priorities	Goals & Tradeoffs	Framework & Vision, Principles, Evaluation Criteria	Measures, Alternatives & Other Efforts	MHRA Findings, & Other Efforts	Strengthen Projects ADAPT #1*	CEQA / NEPA ADAPT #2*	Project Selection? ADAPT #3*	Construction Impacts ADAPT #4*	Construction Impacts ADAPT #5*	Construction Impacts ADAPT #6*	Construction Impacts ADAPT #7*
MISSION CREEK												
		Intro Flood Study & Priorities	ongoing engagement	Goals, Tradeoffs	Framework & Vision, Principles, Evaluation Criteria	Measures, Alternatives & Other Efforts	ADAPT #1* & MHRA	ADAPT #2 & 3*	ADAPT #4*	ADAPT #5*	ADAPT #6*	ADAPT #7*
ISLAIS CREEK												
		Intro Flood Study & Islais Creek Flood Study & Priorities	ongoing engagement	Goals, Tradeoffs	Framework & Vision, Principles, Evaluation Criteria	Measures, Alternatives & Other Efforts	ADAPT #1* & MHRA	ADAPT #2 & 3*	ADAPT #4*	ADAPT #5*	ADAPT #6*	ADAPT #7*



COMMUNITY MEETING SERIES



COMMUNITY MEETING #1

- Introduced the Embarcadero Seawall Program
- Information Boards:
 - Seismic Risk
 - Flood Risk
 - Adaptive Framework
 - Waterfront Plan Update
 - Stakeholder Engagement
- Waterfront Vision Exercise



FEEDBACK ON VISION EXERCISE

- The most popular inputs were:
 - “Nature in the city”
 - “Getting around”
 - “People places”
 - Art
 - Recreation
- Ongoing outreach continues this visioning conversation. We often hear from residents:
 - “Nature in the city”
 - Bike path and bike parking
 - Better transportation to get to the waterfront
 - Affordable places to eat
 - More outdoor space




COMMUNITY MEETING SERIES





COMMUNITY MEETING #2

Assets & Risks: What's Out There and What's At Stake

After the presentations, attendees joined Port staff for an exercise to identify priorities and concerns.

 What do you love most about the waterfront?

 What assets are the most important to the city?

 If disaster strikes, what is of the most concern?



FEEDBACK ON PRIORITIES AND VALUES



Bay Bridge lights
Dining
Embarcadero Promenade
Exploratorium
The Ferry Building
Marine life
Muni
Open space
Public space
Views



Businesses
Disaster recovery
Economy
The Ferry Building
Housing
Open space
Piers
Tourism
Transit
Utilities



Emergency Response and
Evacuation
Fire
Housing
Lifeline Infrastructure
Shelter
Staging Areas
Transportation
Utilities
Water Supply

FEEDBACK ON PRIORITIES AND VALUES

It's Your Turn: Map Your Priorities Along the Waterfront

Help us lay a foundation for the future by mapping our city's important assets along the waterfront. Your insights and feedback are invaluable as we work together to strengthen the waterfront for generations to come.

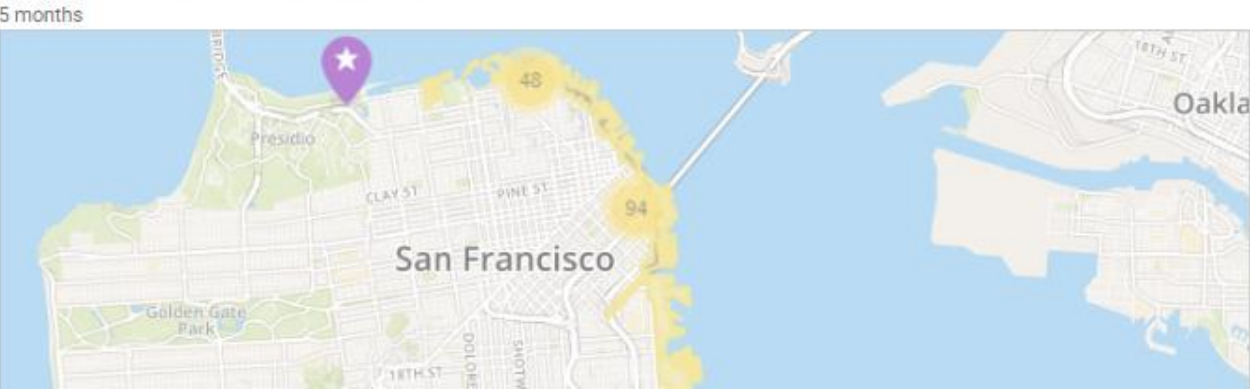
This mapping exercise is modified from a table-top activity at Seawall Community Meeting #2 in September 2018 and two USACE/Port Flood Study Meetings in March 2019. Couldn't attend but want to learn more? View the Seawall Community Meeting presentations [here](#) or the Embarcadero Seawall "[learn more](#)" page. View the USACE/Port Flood Study presentations and other materials [here](#).

Map your priorities by identifying which assets are most important to inform how we prioritize and define projects.

Thanks for participating!

MAP YOUR PRIORITIES ALONG THE WATERFRONT:

Waterfront Assets Mapping Exercise



ONLINE ENGAGEMENT TOOL

- Biking trails
- Opportunities to do activities on the water
- 3rd Street Corridor
- Activities for kids
- Economic development and water taxis
- Evacuation areas
- Dog parks



COMMUNITY MEETING SERIES

COMMUNITY MEETING #3

- **Tradeoffs and Adaptive Planning:** Balancing Priorities & Resources and adapting over time
- Shared the Seawall Program Framework and why we're phasing the work ahead
- Shared Seawall Program goals and received feedback
- Community members used the Strengthen, Adapt and Envision Elements to prioritize action over time

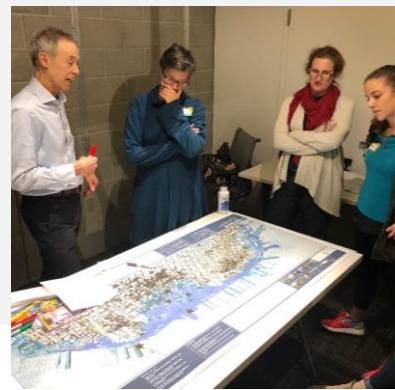


FEEDBACK ON PROGRAM GOALS

- “Public money should be spent only on public assets not private”
- “Who benefits v. who pays”
- “Should include the 500-year event for risk management”
- “Utilities”
- “Recycling, sorting facilities; transport/access to work; jobs along waterfront”
- “Think of new coastline as an asset rather than a detriment”
- “Resilience will cost money – how do we cover cost?”
- Prioritize permanent residences over commercial/tourism

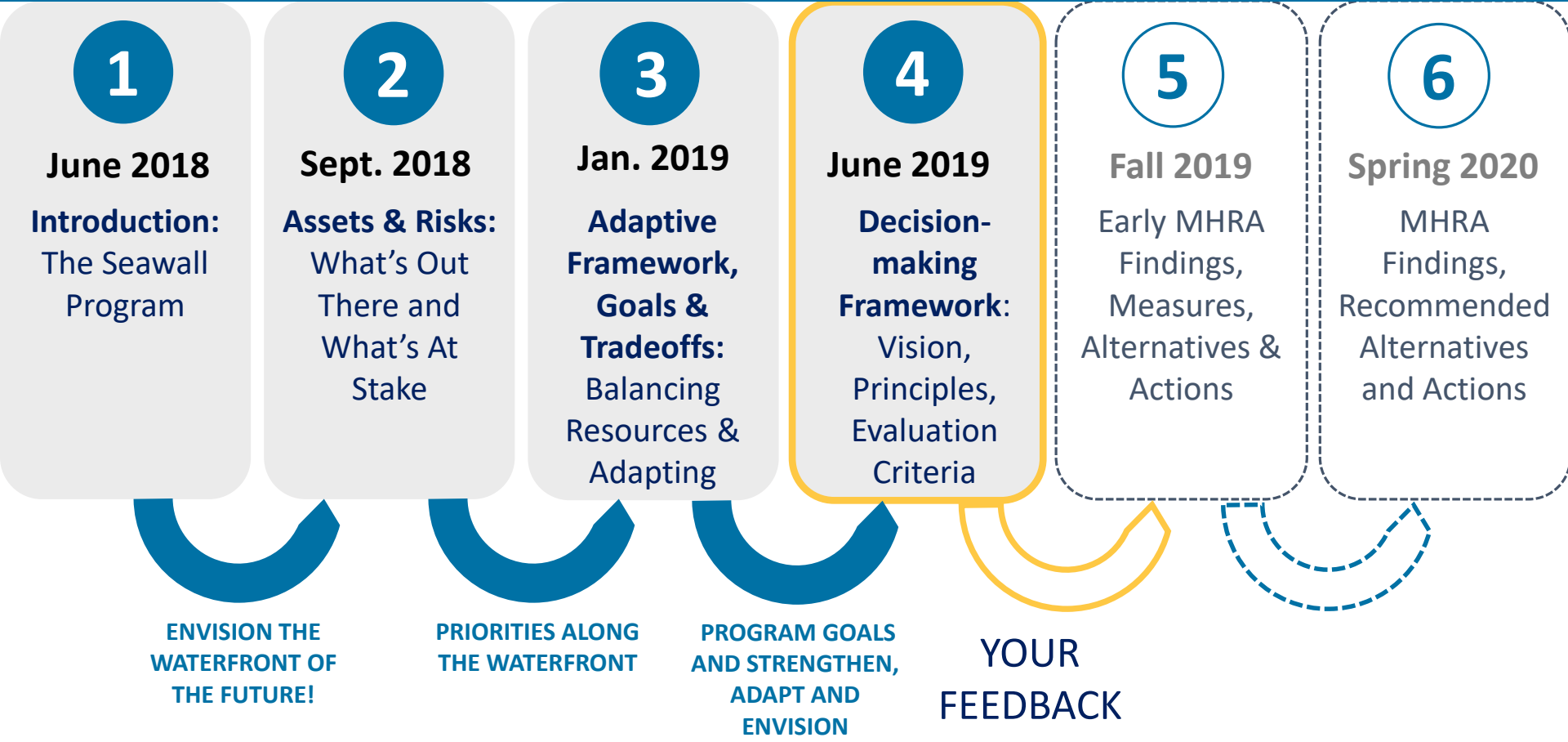
Online feedback on Program goals to date includes:

- “Consider issues on sewage treatment and energy creation along with transit and access”
- Provide adequate EQUITABLE redevelopment of the seawall”
- “Improve Transit all the way along the waterfront”



COMMUNITY FEEDBACK SO FAR

EMBARCADERO SEAWALL PROGRAM



WATERFRONT RESILIENCE DRAFT VISION

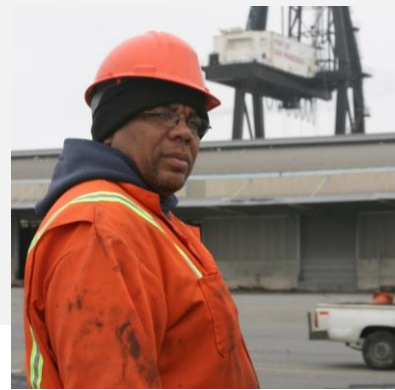
DRAFT VISION STATEMENT

A safe, equitable, sustainable, and inspiring waterfront.



WATERFRONT RESILIENCE DRAFT PRINCIPLES

- 1. **Prioritize** life safety and emergency response
- 2. **Advance** equity in inclusive engagement, planning, and decision-making
- 3. **Enhance** and sustain economic and ecological opportunities
- 4. **Inspire** an adaptable waterfront that:
 - Improves the health of the Bay
 - Ensures access to the waterfront and historic places
 - Protects and preserves historic resources
 - Provides opportunities for families, businesses, and neighborhoods to thrive
- 5. **Lead** a transparent, innovative, collaborative, and adaptive resilience program



WHAT ARE EVALUATION CRITERIA?

Why are evaluation criteria important?

- Ensures that decision making considers visions, principles, goals and objectives as developed with stakeholders
- Provides stakeholders with direct input into decision-making process
- Creates a transparent and accountable approach to decision-making
- Clearly identifies trade-offs or additional benefits
- Provides clear ways to improve approach to projects and actions

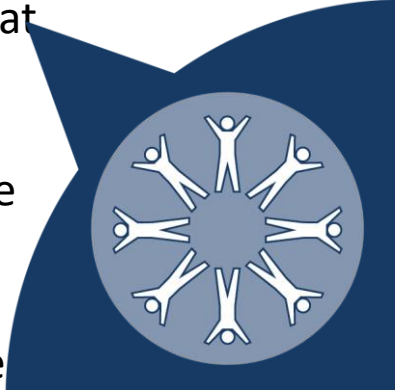
This evening, we will not be evaluating alternatives, we will review the evaluation criteria that will be used to evaluate alternatives and actions.



WATERFRONT RESILIENCE DRAFT GOALS

SOCIETY & EQUITY

- Communities and what they rely on
- People near the Port
- Preserve and enhance historic resources
- Advance equity and environmental justice



ENVIRONMENT

- Habitat, water and air quality
- Natural approaches to risk reduction wherever possible
- Enhance ecology



ECONOMY

- Economic vitality and access to employment
- Regional connectedness
- Local businesses and communities to thrive



GOVERNANCE

- Build capacity and partnerships among a broad range of stakeholders



WATERFRONT RESILIENCE DRAFT EVALUATION CRITERIA



FEASIBILITY & PERFORMANCE

Feasibility

- Possible with current funding
- Consistent with existing operations
- Technically possible
- Legal and permissible

Performance

- Addresses flood risk to X water level
- Addresses flood risk to X assets
- Addresses seismic risk X earthquake
- Designed for X lifecycle

WATERFRONT RESILIENCE DRAFT EVALUATION CRITERIA



SOCIETY AND EQUITY

Life Safety and Emergency Response	Direct Casualties and Injuries Disaster Response
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Mobility	Mobility Disruptions Mobility Opportunities
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Historic	Historic Assets Historic District
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Social Disruption	Community Sustainability People Impacted Jobs Impacted
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Waterfront Public Space	Critical/Unique Assets Aesthetics / Urban Design Align with Objectives of the Waterfront Land Use Plan
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Waterfront Resilience Program

WATERFRONT RESILIENCE DRAFT EVALUATION CRITERIA



Direct Physical Damage	Buildings Transportation Infrastructure Maritime Facilities Utilities
Economic Disruption	Business Interruption Transportation Loss of Service Utilities Loss of Service Maritime Loss of Function
Economic Opportunities	Port and City Revenue- Generating Opportunities
Construction Costs	Cost of Construction, Upkeep, and Maintenance



WATERFRONT RESILIENCE DRAFT EVALUATION CRITERIA



ENVIRONMENT

Environmental Risks

Hazardous Materials

Environmental Opportunities

- Habitat and Biodiversity
- Bay Ecology and Sustainability
- Promotes grey to green/nature based approaches
- Reduces GHG emissions
- Maintains or improves water quality



UPCOMING OPPORTUNITIES TO ENGAGE

OPPORTUNITIES TO ENGAGE

- Map our waterfront assets on sfseawall.com
- Attend upcoming community meetings
- Sign up for waterfront walking, boat and bike tours
- Request a presentation at your community group
- Fall speaker series
- Webinars
- Connect online



RESILIENCE EXERCISE

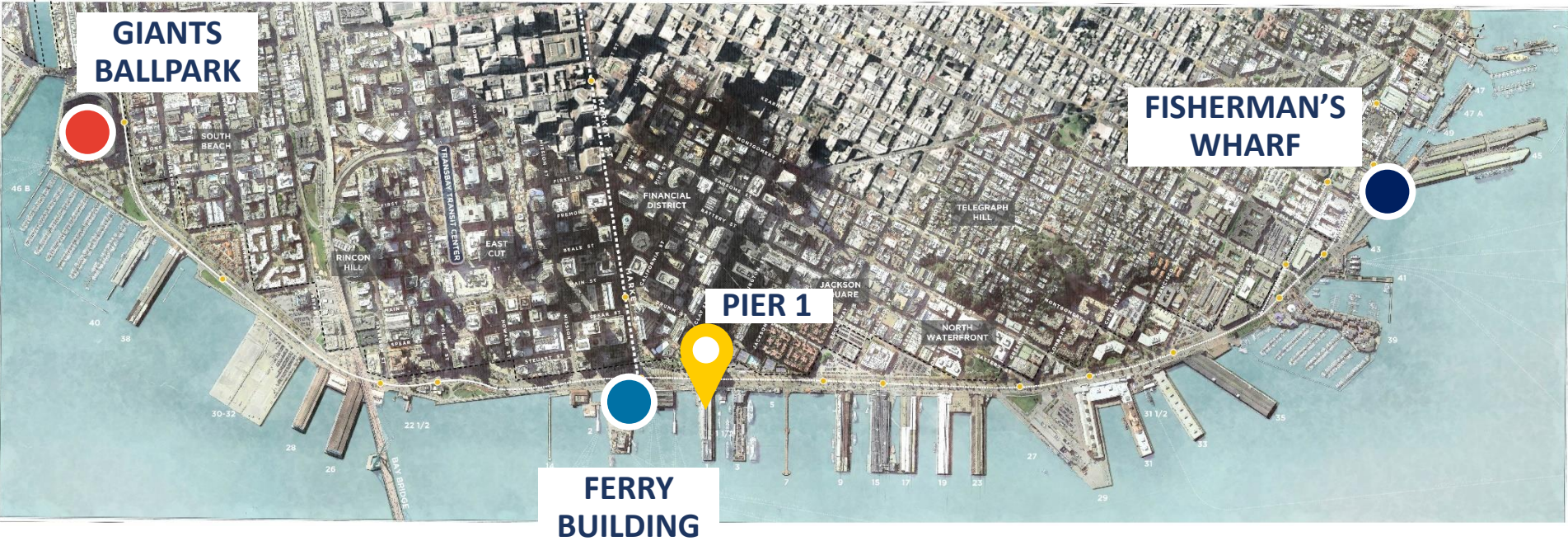
WATERFRONT GAME OF HAZARDS part III



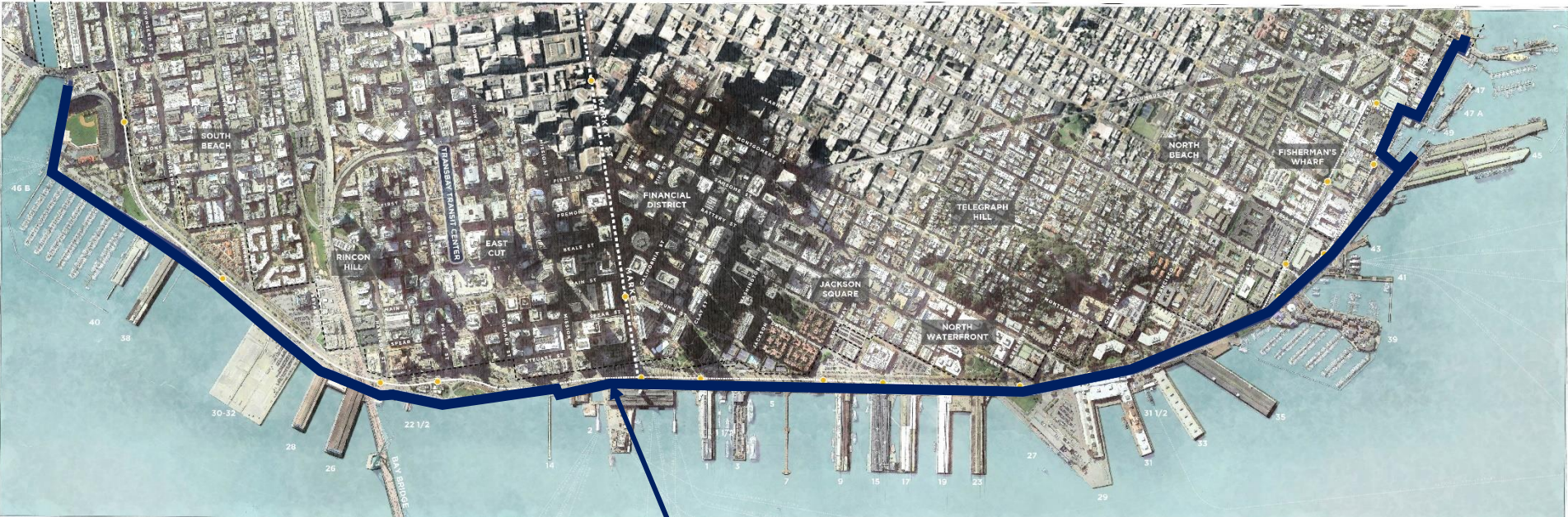
EVALUATION & PRIORITIZATION

- WHAT IS MOST IMPORTANT?
- HOW DO WE CHOOSE?
- WHAT DO WE DO FIRST?

GAME BOARD



GAME BOARD



SEAWALL



GAME BOARD



SEISMIC HAZARD ZONE



GAME BOARD

TIME FRAME	AMOUNT OF SEA LEVEL RISE	TYPE OF FLOOD
NEAR (2030 - 2050)	1 FT. OF SLR	100 YEAR FLOOD 1% CHANCE PER YEAR
MID (2050 - 2100)	3 FT. OF SLR	100 YEAR FLOOD 1% CHANCE PER YEAR
LONG (2100 - 2140)	5.5 FT. OF SLR	100 YEAR FLOOD 1% CHANCE PER YEAR
H++ SCENARIO	10.2 FT. OF SLR	100 YEAR FLOOD 1% CHANCE PER YEAR



FLOODING FROM SEA LEVEL RISE



GAME BOARD

INFRASTRUCTURE



URBAN AND CULTURAL



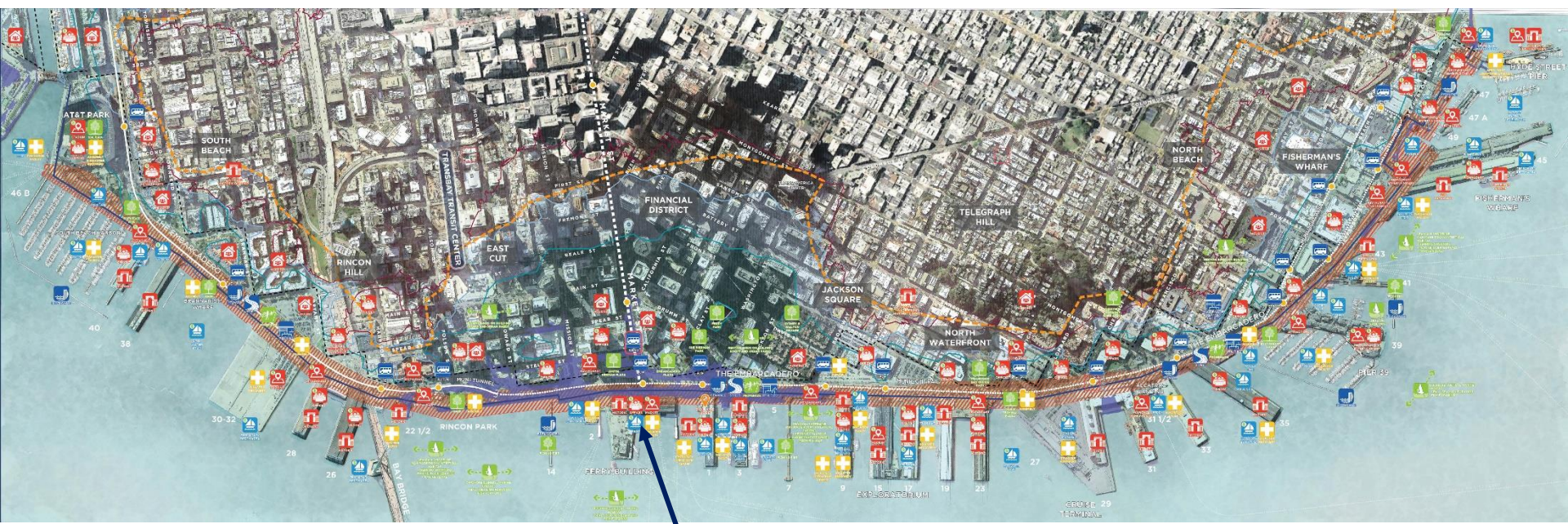
PARKS AND ECOSYSTEMS



MARITIME



DISASTER RESPONSE



ASSETS



HIGH PRIORITY COMMUNITY ASSETS



GAME BOARD



HIGH PRIORITY COMMUNITY ASSETS



GAME BOARD

SEAWALL GAME OF HAZARDS

THE MISSION OF THE PORT OF SAN FRANCISCO'S WATERFRONT RESILIENCE PROGRAM IS TO ENSURE THE WATERFRONT IS **SAFE, EQUITABLE, SUSTAINABLE, AND AWESOME.**

LEGEND

SEAWALL HAZARDS

SEA LEVEL RISE HAZARDS

SEDPIC HAZARDS

SEA LEVEL RISE HAZARDS

SEAWALL GAME OF HAZARDS

THE MISSION OF THE PORT OF SAN FRANCISCO'S WATERFRONT RESILIENCE PROGRAM IS TO ENSURE THE WATERFRONT IS **SAFE, EQUITABLE, SUSTAINABLE, AND AWESOME.**

LEGEND

SEAWALL HAZARDS

SEA LEVEL RISE HAZARDS

SEDPIC HAZARDS

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SEAWALL GAME OF HAZARDS

THE MISSION OF THE PORT OF SAN FRANCISCO'S WATERFRONT RESILIENCE PROGRAM IS TO ENSURE THE WATERFRONT IS **SAFE, EQUITABLE, SUSTAINABLE, AND AWESOME.**

LEGEND

SEAWALL HAZARDS

SEA LEVEL RISE HAZARDS

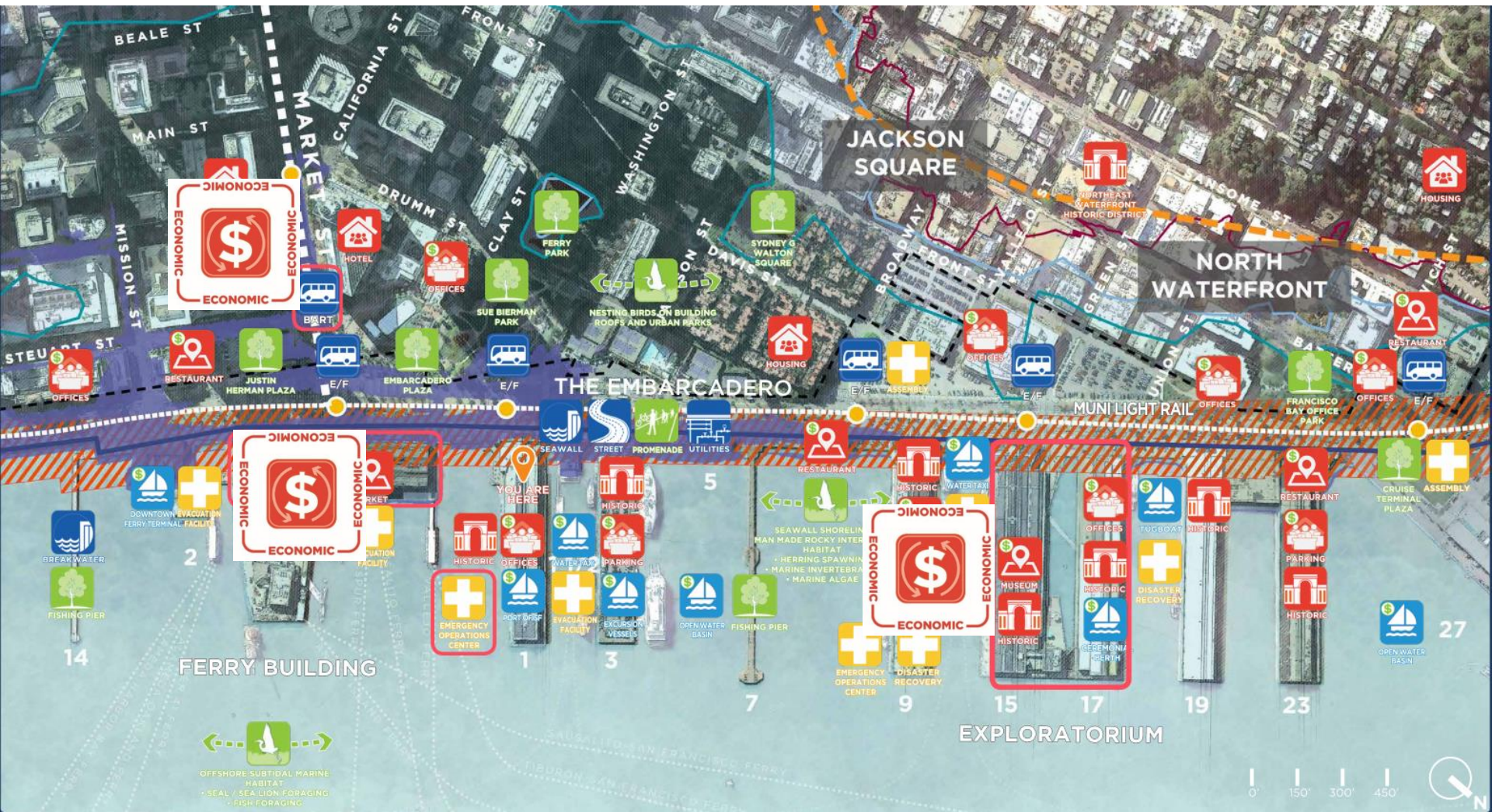
SEDPIC HAZARDS

SEA LEVEL RISE HAZARDS

EVALUATION CRITERIA



EVALUATION CRITERIA



EVALUATION CRITERIA



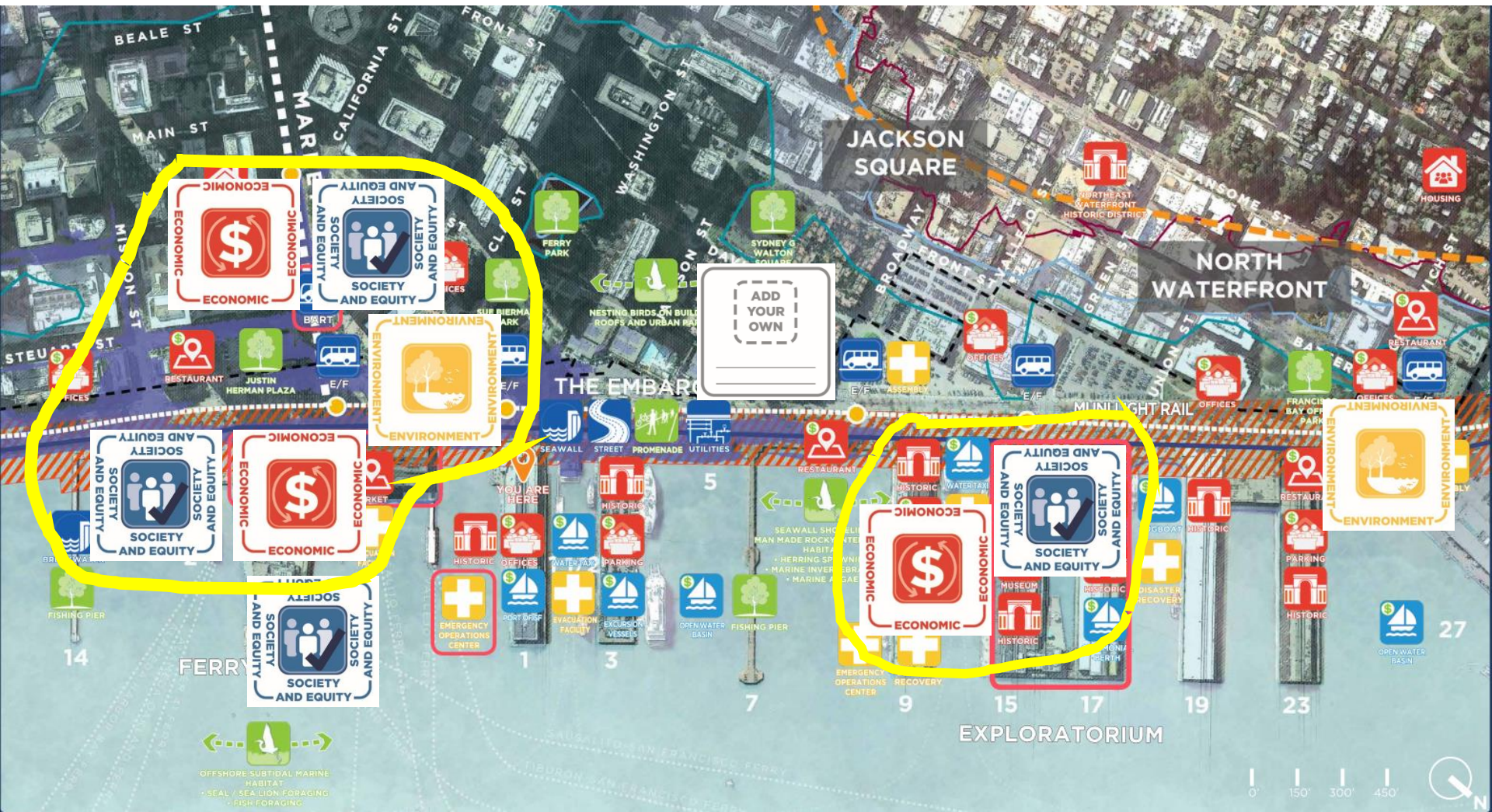
EVALUATION CRITERIA



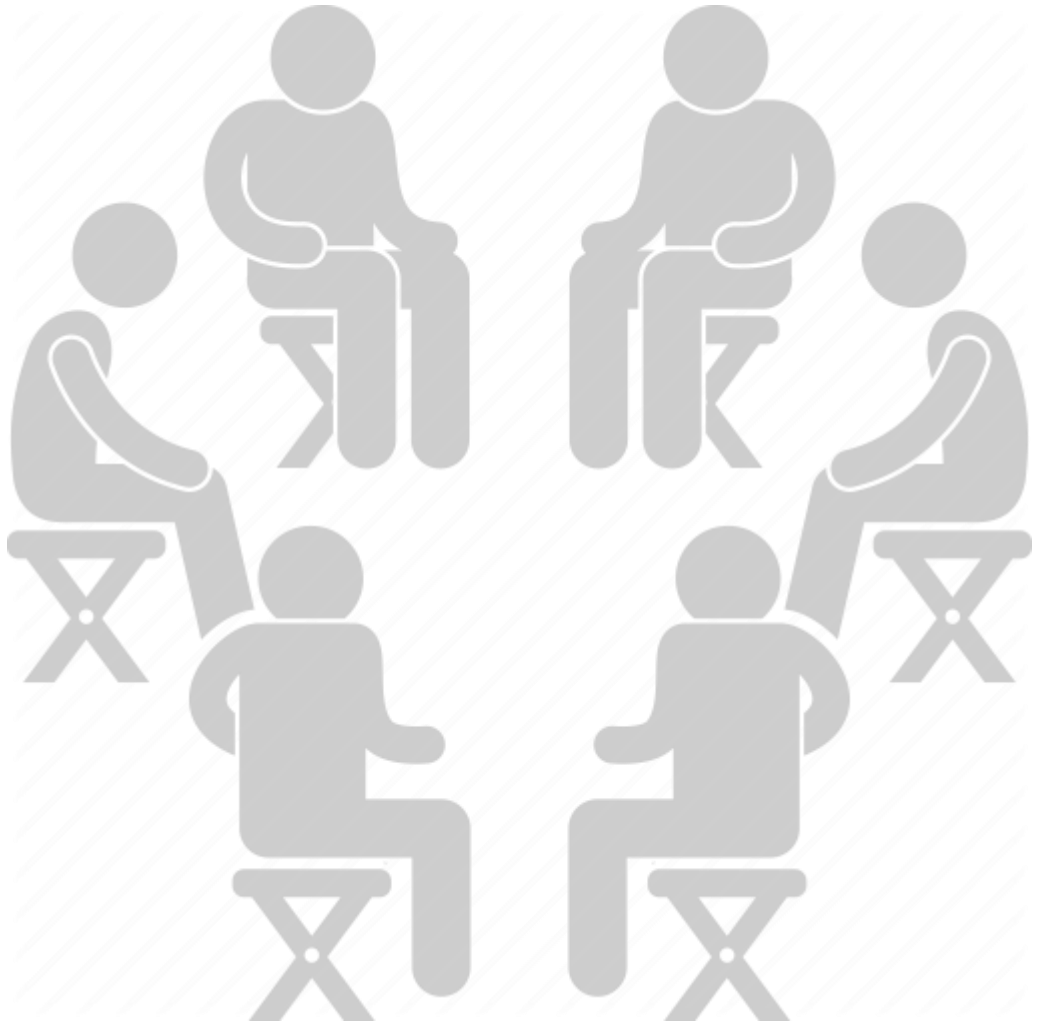
EVALUATION CRITERIA



PRIORITIZE



DISCUSS



COME TOGETHER!



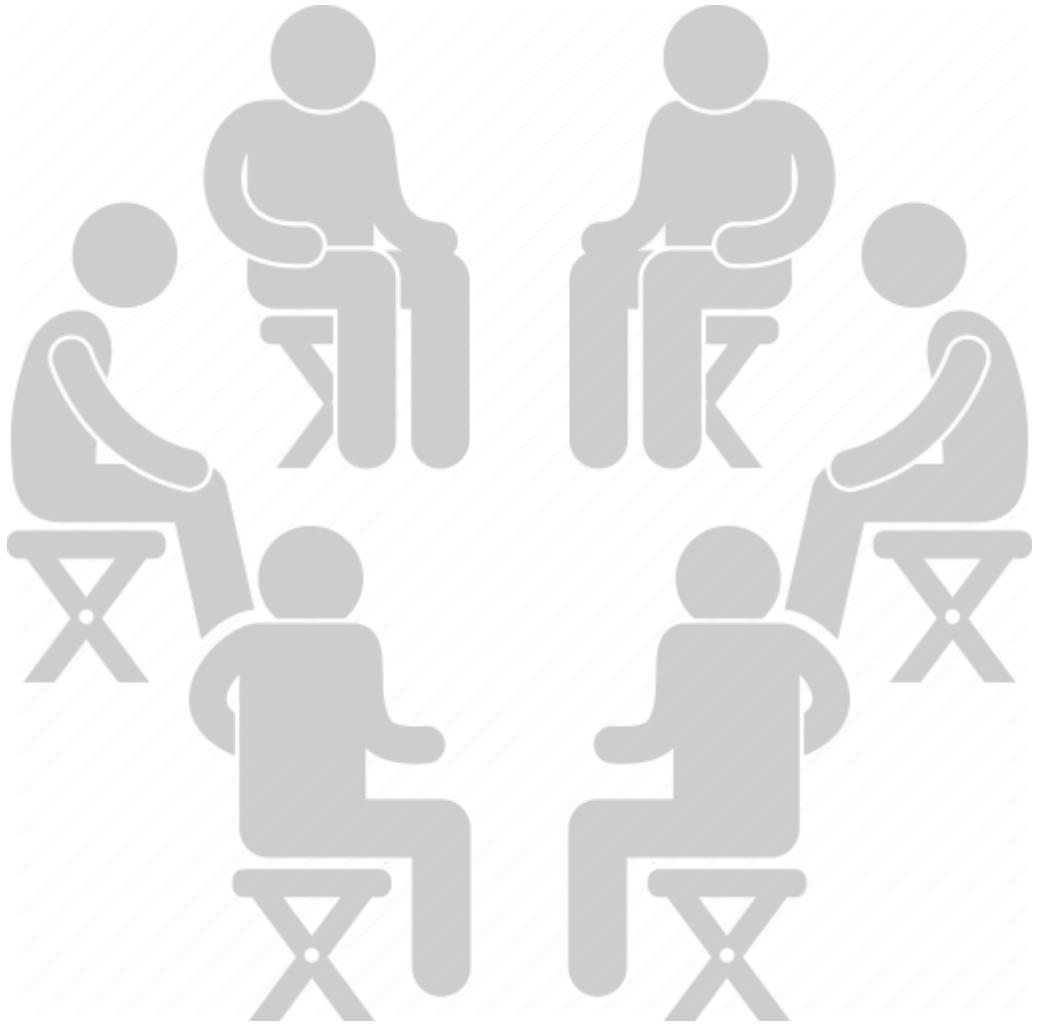
PRIORITIZE



PRIORITIZE



REPORT OUT



HEARING FROM YOU

PORT OF SAN FRANCISCO
WATERFRONT RESILIENCE PROGRAM



WE WOULD LIKE TO HEAR FROM YOU!

DRAFT VISION STATEMENT

The Port of San Francisco's Waterfront Resilience Program will create a **safe, equitable, sustainable, and inspiring waterfront.**


SHARE YOUR FEEDBACK ON THE DRAFT VISION STATEMENT

DRAFT PRINCIPLES

- Prioritize** life safety and emergency response
- Advance** equity in inclusive engagement, planning, and decision-making
- Enhance** and sustain economic and ecological opportunities
- Inspire** an adaptable waterfront that:
 - Improves the health of the Bay
 - Ensures access to the waterfront and historic places
 - Protects and preserves historic resources
 - Provides opportunities for families, businesses, and neighborhoods to thrive
- Lead** a transparent, innovative, collaborative, and adaptive resilience program

SHARE YOUR FEEDBACK ON THE DRAFT PRINCIPLES

Stay up to date on the Waterfront Resilience Program at sfseawall.com/waterfront-resilience-program


[sfport.com](https://www.portofsanfrancisco.com)
[@portofsanfrancisco](https://www.facebook.com/portofsanfrancisco)
[@sfport](https://twitter.com/sfport)
[@sf_port](https://www.instagram.com/portofsanfrancisco)



DRAFT EVALUATION CRITERIA

SOCIETY AND EQUITY



SHARE YOUR FEEDBACK ON THE DRAFT EVALUATION CRITERIA

LIFE SAFETY AND DISASTER RESPONSE	<ul style="list-style-type: none"> Direct Casualties and Injuries Disaster Response
MOBILITY	<ul style="list-style-type: none"> Mobility Disruptions Mobility Opportunities
HISTORIC	<ul style="list-style-type: none"> Historic Assets
SOCIAL DISRUPTION	<ul style="list-style-type: none"> Community Sustainability People Impacted Jobs Impacted
WATERFRONT PUBLIC SPACE	<ul style="list-style-type: none"> Critical/Unique Assets Aesthetics / Urban Design Align with Objectives of the Waterfront Land Use Plan

ENVIRONMENT



SHARE YOUR FEEDBACK ON THE DRAFT EVALUATION CRITERIA

ENVIRONMENTAL RISKS	<ul style="list-style-type: none"> Hazardous Materials
ENVIRONMENTAL OPPORTUNITIES	<ul style="list-style-type: none"> Habitat and Biodiversity Bay Ecology and Sustainability Promotes grey to green/nature based approaches Reduces GHG emissions Maintains or improves water quality

ECONOMIC



SHARE YOUR FEEDBACK ON THE DRAFT EVALUATION CRITERIA

DIRECT PHYSICAL DAMAGE	<ul style="list-style-type: none"> Buildings Transportation Infrastructure Maritime Facilities Utilities
ECONOMIC DISRUPTION	<ul style="list-style-type: none"> Business Interruption Transportation Loss of Service Utilities Loss of Service Maritime Loss of Function
ECONOMIC OPPORTUNITIES	<ul style="list-style-type: none"> Port and City Revenue-Generating Opportunities
CONSTRUCTION COSTS	<ul style="list-style-type: none"> Cost of construction, upkeep, and maintenance

FEASIBILITY AND PERFORMANCE



SHARE YOUR FEEDBACK ON THE DRAFT EVALUATION CRITERIA

FEASIBILITY	<ul style="list-style-type: none"> Possible with current funding Consistent with existing operations Technically possible Legal and permitable
PERFORMANCE	<ul style="list-style-type: none"> Addresses flood risk to X water level Addresses flood risk to X assets Addresses seismic risk X earthquake Designed for X lifecycle



RULES OF THE GAME

- Be a polite fellow citizen and listener
- Recognize that this is a game
- Follow the instructions and guidance of your facilitator
- Have fun!



TIME TO FORM GROUPS

Hello
my name is

AWESOME!



Waterfront Resilience Program

Waterfront Resilience Program | Community Meeting #4 | June 27, 2019

THANK YOU!



Lindy Lowe
Port Resilience Officer
Port of San Francisco

lindy.lowe@sfport.org
sfport.com



Waterfront Resilience Program

Waterfront Resilience Program | Community Meeting #4 | June 27, 2019