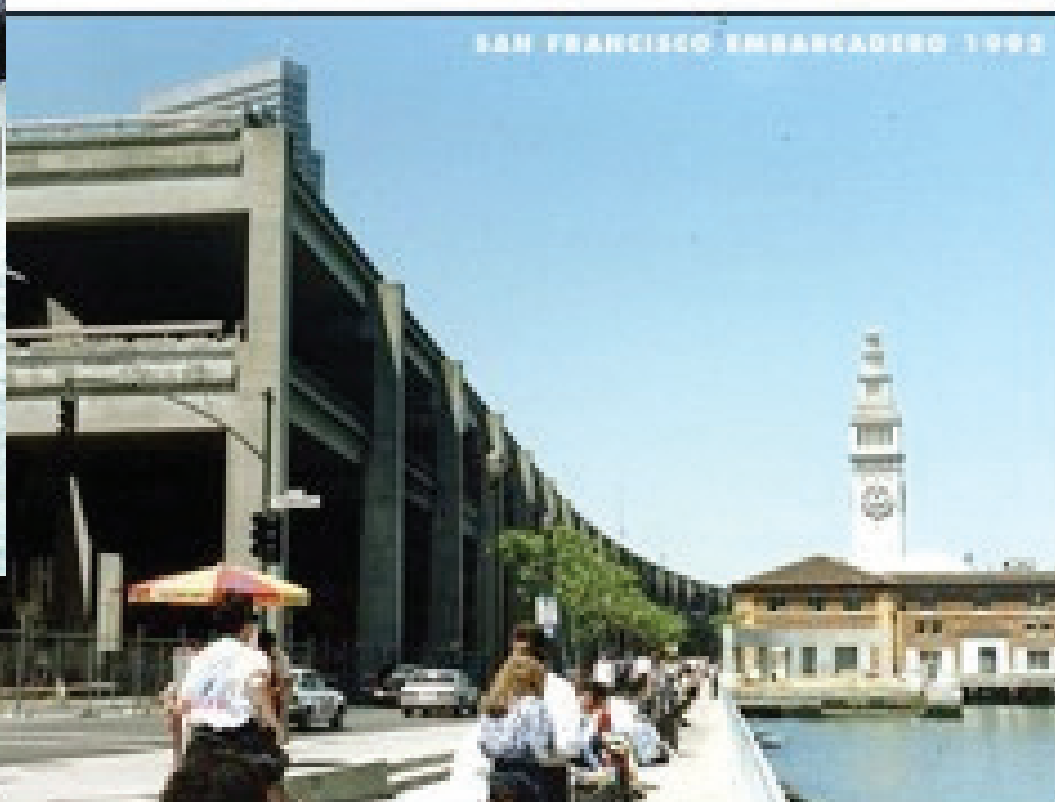
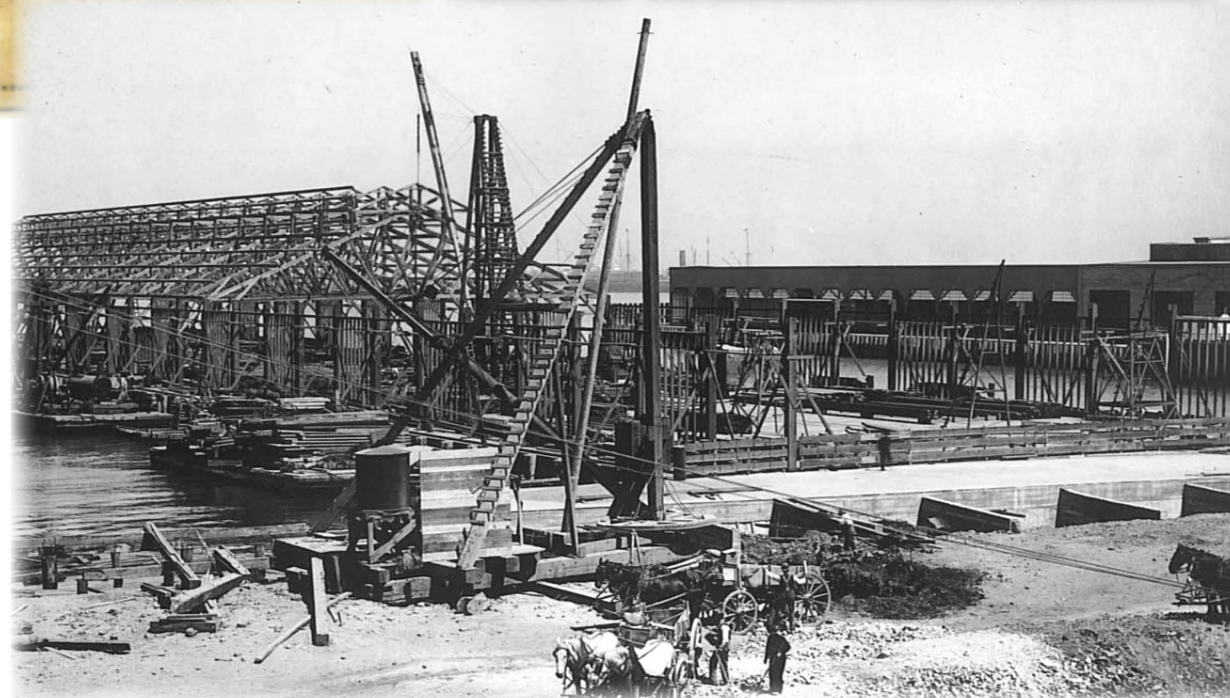
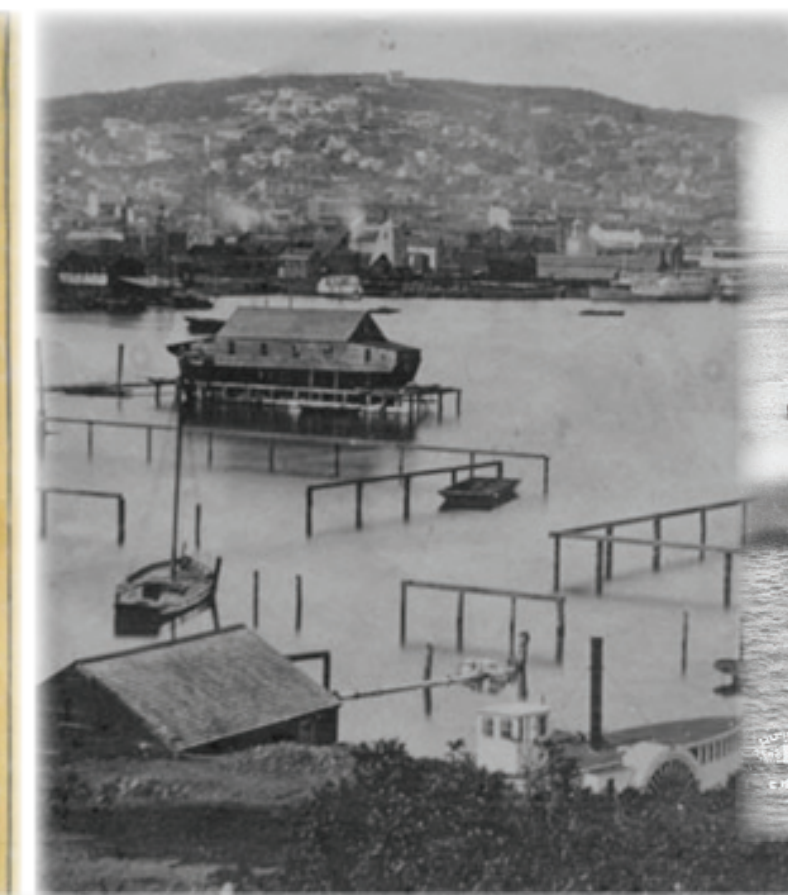


SAN FRANCISCO'S WATERFRONT



SEAWALL PROGRAM APPROACH



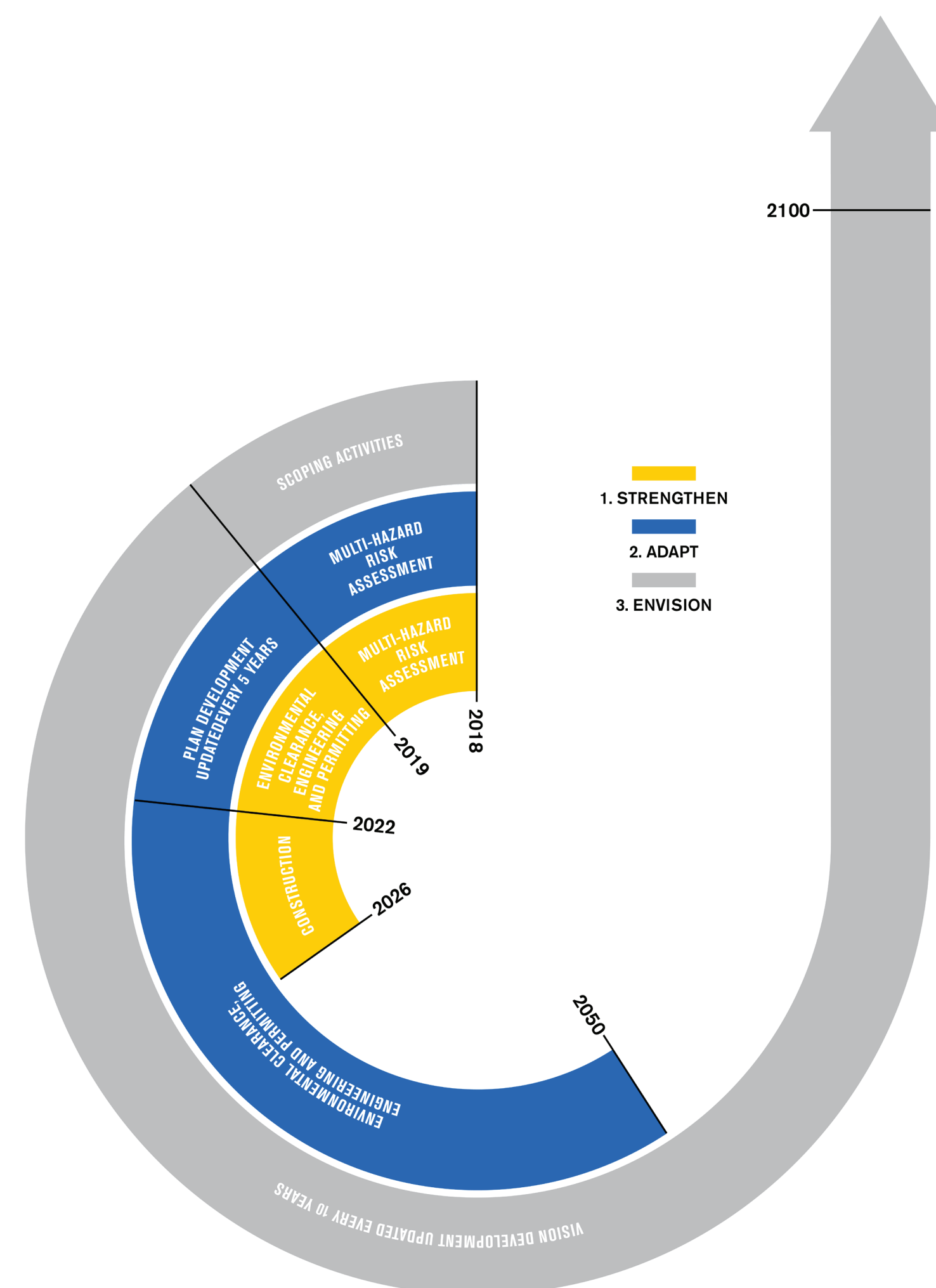
Faced with both an urgent seismic risk and an increasing flood risk, the Port is developing a program to ensure the safety and security of the San Francisco Waterfront from urgent seismic and current flood risk and establish a foundation for addressing increasing flood risk associated with sea level rise. The Seawall Program, led by the Port in coordination with the City, will provide the Port and the City with the tools to address current and future risks over time. There are three elements to the Program—Strengthen, Adapt and Envision—which allow the Port to respond to risks and conditions in a way that is transparent and accountable.

Seawall Program Planning Framework

STRENGTHEN.
ADAPT.
ENVISION.

SEAWALL PROGRAM FRAMEWORK

<p>1</p> <p>STRENGTHEN ELEMENT</p> <p>STRENGTHEN THE SEAWALL FOR PUBLIC SAFETY</p> <p>Objective: Immediately implement highest priority Disaster Response and Life Safety Projects along the Embarcadero Seawall.</p> <p>Planning and Implementation Horizon: 2018-2026</p> <p>Priorities: Current Seismic & Flood Risk</p> <p>Geographic Focus: Embarcadero Seawall</p>	<p>2</p> <p>ADAPT ELEMENT</p> <p>ADAPT TO MID-CENTURY RISKS</p> <p>Objective: Identify policies and projects that will result in a Port that is resilient to seismic and increasing flood risks and that can respond to changing priorities. Projects will be integrated into city, regional and private actions, resulting in coordinated implementation to increase waterfront resilience.</p> <p>Planning and Implementation Horizon: 2020-2050, Plan updated every five years</p> <p>Priorities: Seismic Risk and Future Flood Risk</p> <p>Geographic Focus: Entire Port Jurisdiction</p>	<p>3</p> <p>ENVISION ELEMENT</p> <p>ENVISION THE WATERFRONT IN 2100</p> <p>Objective: Develop visions that can respond to remaining seismic risk and increasing flood risks and have an ongoing public conversation about the trade-offs of different options.</p> <p>Planning and Implementation Horizon: 2050-2100, Vision Element updated every 10 years</p> <p>Priorities: Seismic Risk and Future Flood Risk</p> <p>Geographic Focus: Entire Port Jurisdiction</p>
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Why are there three elements?

The three elements of the Seawall Program create an adaptive framework for the Port and the City to respond to the most urgent risks to the most critical assets, while creating a plan to address additional seismic risk and increasing flood risk in a way that uses resources responsibly and responds to changing priorities.

What about community input?

The Seawall Program Framework includes a process to work with the community and other stakeholders to help ensure consideration of issues of public safety, society and equity, environment, and economy. The Seawall Program includes engagement and collaboration with community, other City departments, policy and technical experts and regional agencies.

What about other resilience efforts?

The Seawall Program Framework is designed to be able to respond to, and be aligned with, other resilience efforts being conducted by other City departments and work and guidance from the region and state. The Seawall Program will be leveraging best practices from the work of others and providing an example of a multi-hazard assessment that others can learn from.

THE EMBARCADERO SEAWALL FACES URGENT SEISMIC RISKS



Seismic hazards are a major concern for the Embarcadero Seawall. It was designed and built before scientists and engineers understood how to build structures in earthquake country. Recent engineering analysis has revealed significant vulnerabilities including liquefaction, lateral spreading, settlement, and a high risk of collapse. Since the Great 1906 Earthquake, the Bay Area has experienced a historic lull in seismic activity. The USGS now estimates that there is a 72% chance of a major earthquake by 2044 with the potential to shake San Francisco at levels not seen for over 110 years.



The seismic solutions will be subject to a Peer Review by a panel of external seismic and geotechnical experts to assess their seismic performance and applicability. These methods will be evaluated to assess their effectiveness at reducing risk, costs, level of construction disruption, and co-benefits. This process will be conducted with input from the public and regulators.

Seismic Peer Review Chairman

Shahriar Vahdani, Ph.D., P.E., G.E., GTC

Seismic Peer Review Vice-Chairman

Stephen Dickenson, Ph.D., P.E., D. PE
New Albion Geotechnical, Inc.

Seismic Peer Review Members At-Large

Jonathan Bray, Ph.D., P.E., NAE U.C. Berkeley

Daryl English, P.E., S.E., Berger-Abam

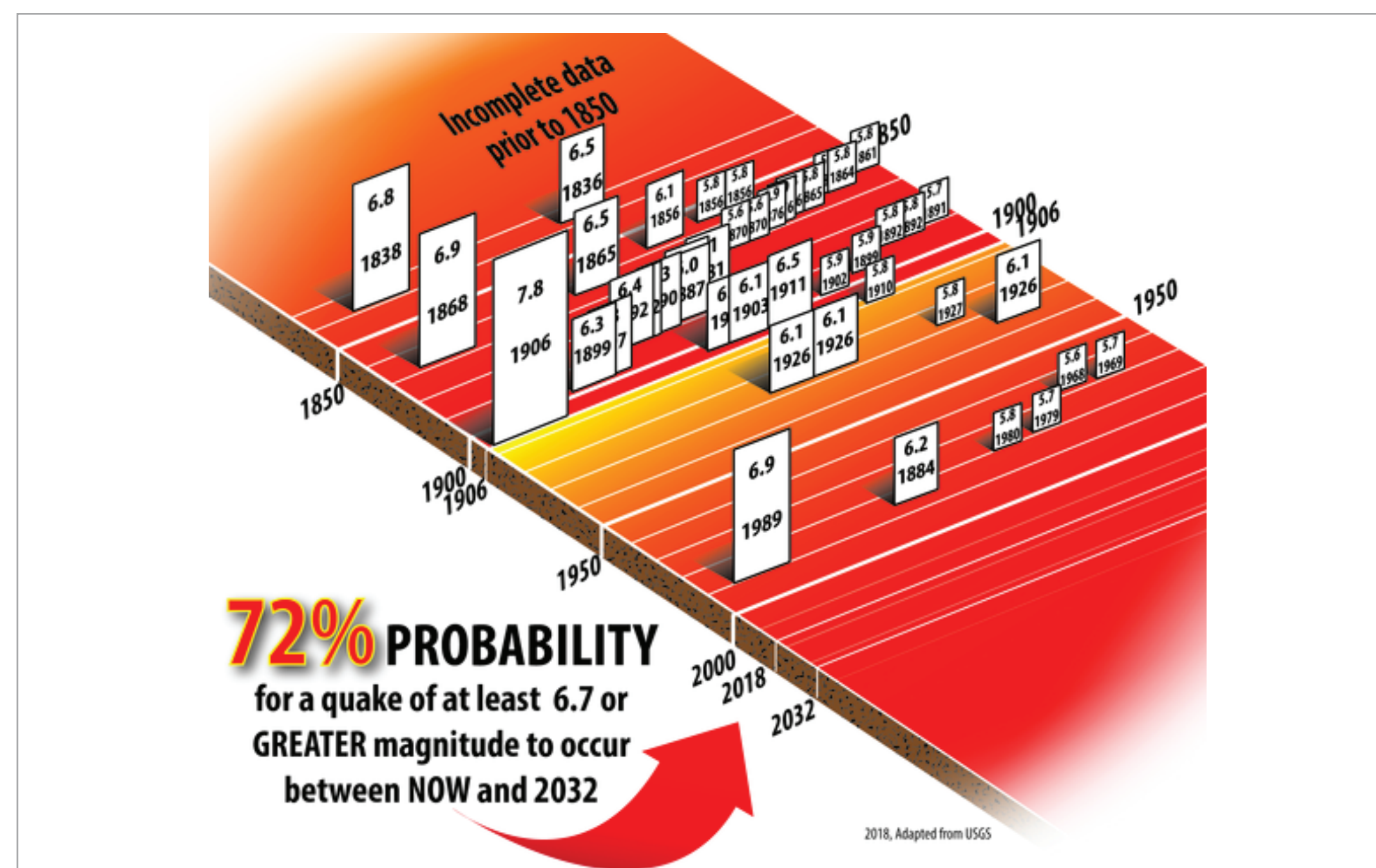
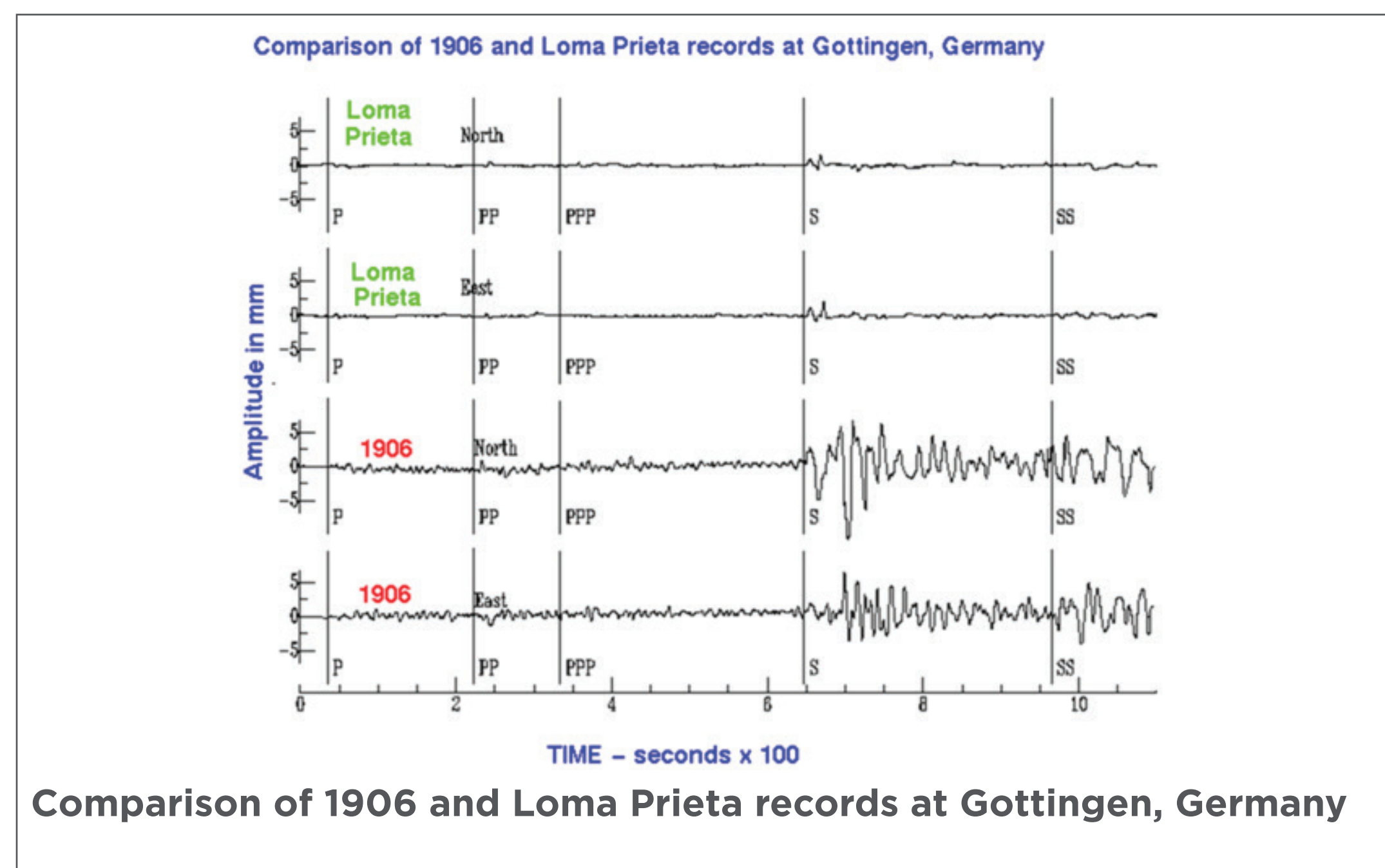
Mark Salmon, S.E.

BART Earthquake Safety Program

Seismic Peer Review Liaison with the Project Design Team

Don Anderson, Ph.D., P.E. CH2M

Nason McCullough, Ph.D., P.E. CH2M



THE SEAWALL PROGRAM AND COMMUNITY ENGAGEMENT



We Heard You!

Over the past year, we've conducted nearly 50 community events and connected with approximately 11,000 people across San Francisco.

We've joined over 50 community groups and shared presentations about the Embarcadero Seawall.

We've created outreach partnerships with the California Academy of Sciences, Port tenants including the Aquarium of the Bay at the Eco Center and the Exploratorium, and transportation partners including BART, SFMTA, Golden Gate Ferry, and Water Emergency Transportation Agency, and local San Francisco small businesses such as Ritual Coffee to ensure broad reach.

Thank you for your early engagement with the Seawall Program.

We have appreciated sharing information on the key role the Embarcadero Seawall plays in protecting our city and our region — and hearing your questions, feedback, and priorities.

Get Involved!

Follow the Port on social media—we post fun Seawall facts and a lot of pretty pictures!

Sign up for our monthly Seawall eNewsletter to stay up-to-date on all things Seawall.

Join us at one of our monthly Seawall Walking Tours. Check out sfseawall.com for more information.

Want the Port to join your community group to share information about the Seawall Program? **Just ask us!**

What's Next

Quarterly Seawall Program Meetings

The Port will hold quarterly Seawall Program Meetings to engage with and hear from a broad range of community members and other stakeholders. The meetings will provide an introduction to the Seawall Program, existing conditions and approaching seismic and flood risk, impacts to waterfront assets and services, prioritization of actions, development of Adapt Plan and selection of Strengthen Alternatives and program implementation.

Policy and Technical Advisory Committee

The Seawall Program is a complex undertaking designed to reduce risks posed by multiple hazards to be expected in the next century. There is a significant amount of policy and technical expertise in the region related to the topics and issues that will need to be addressed in the Seawall Program, including historic preservation, the ecology of the Bay estuary, mobility, adaptation and resilience planning, financing and funding, implementation of large and complex projects, equity and community concerns, and regulatory and resource requirements. In recognition of this expertise, the Port of San Francisco is convening a group to serve on the Seawall Program Policy and Technical Advisory Committee. This committee will meet on a quarterly basis. The committee will provide input and guidance to the Port related to the Seawall Program and members will have the opportunity to participate in one of the most complex adaptation and resilience projects in the region.

Resource Agency Working Group

The Regulatory Agency Working Group (RAWG) for the Seawall Program will consist of representatives of state and federal regulatory agencies with regulatory authority over aspects of the Program and from whom the Port will need to seek permit and consultation approval. The regulatory agencies include the U.S. Army Corps of Engineers (USACE); U.S. Environmental Protection Agency (EPA); National Marine Fisheries Service (NMFS); U.S. Fish and Wildlife Service (USFWS); San Francisco Bay Conservation and Development Commission (BCDC); Regional Water Quality Control Board, San Francisco Region (RWQCB); California Department of Fish and Wildlife (CDFW), and California State Lands Commission (SLC).

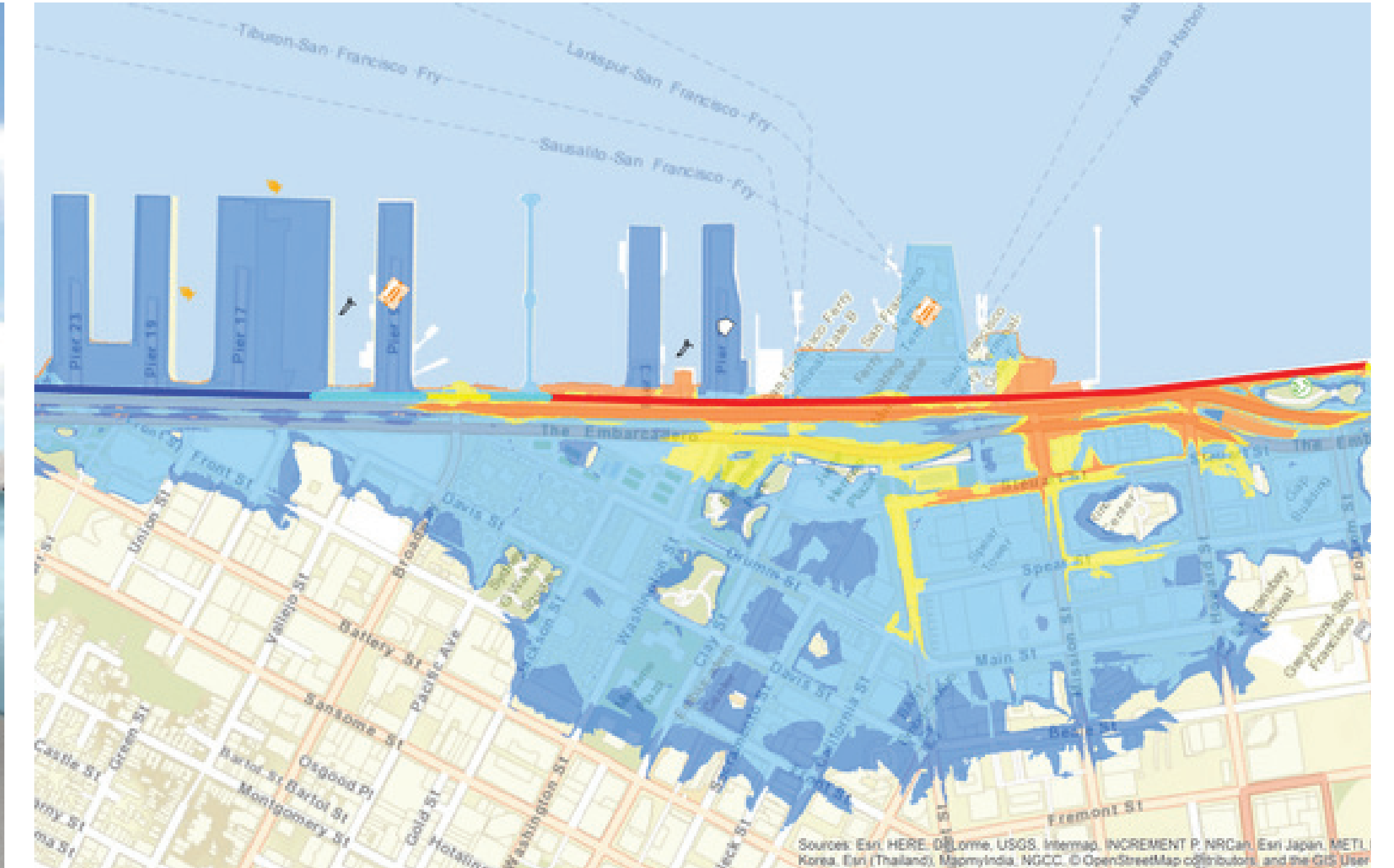
THE EMBARCADERO SEAWALL AND SEA LEVEL RISE



Today, San Francisco's Waterfront is subject to intermittent, localized flooding.

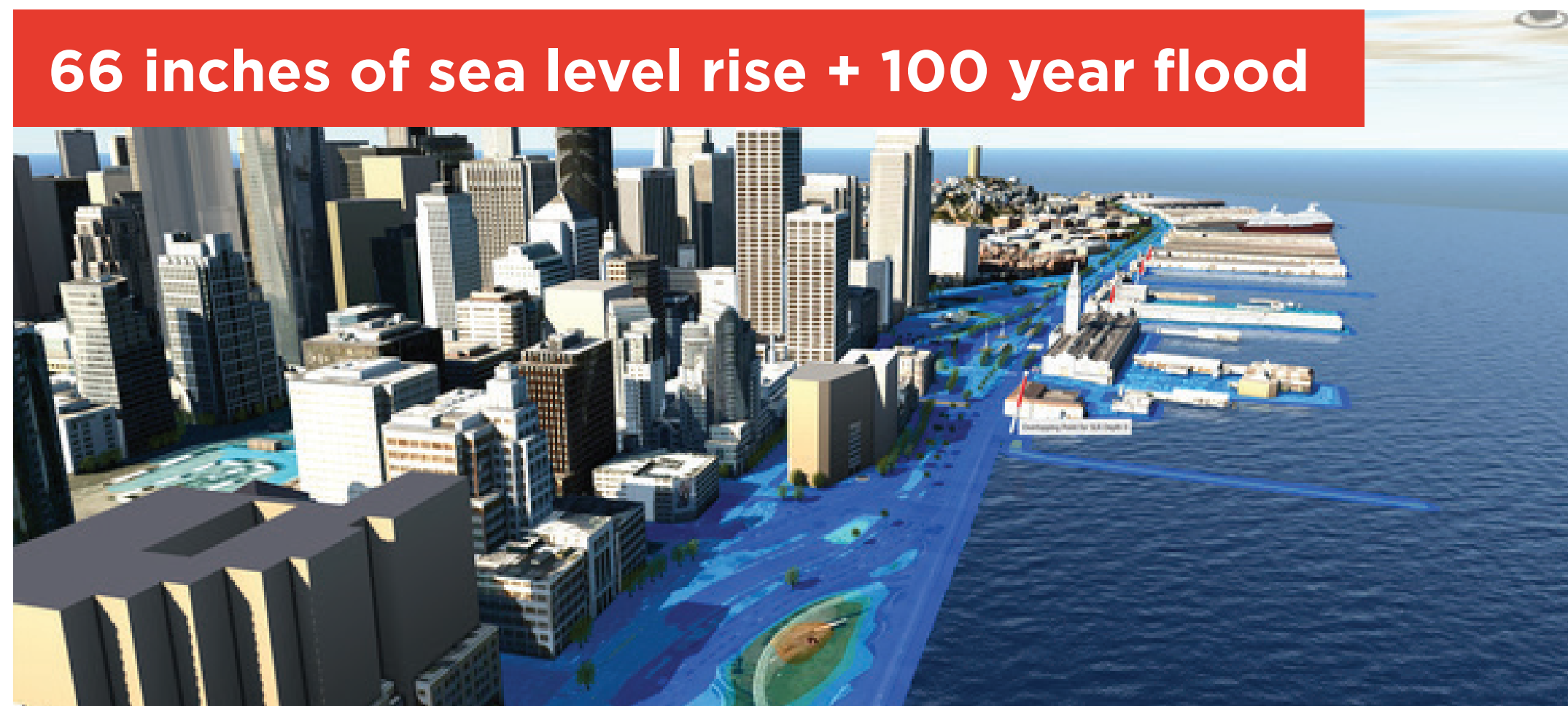


Experts predict San Francisco may see 12"-24" of sea level rise by 2050 and up to 66" by 2100.

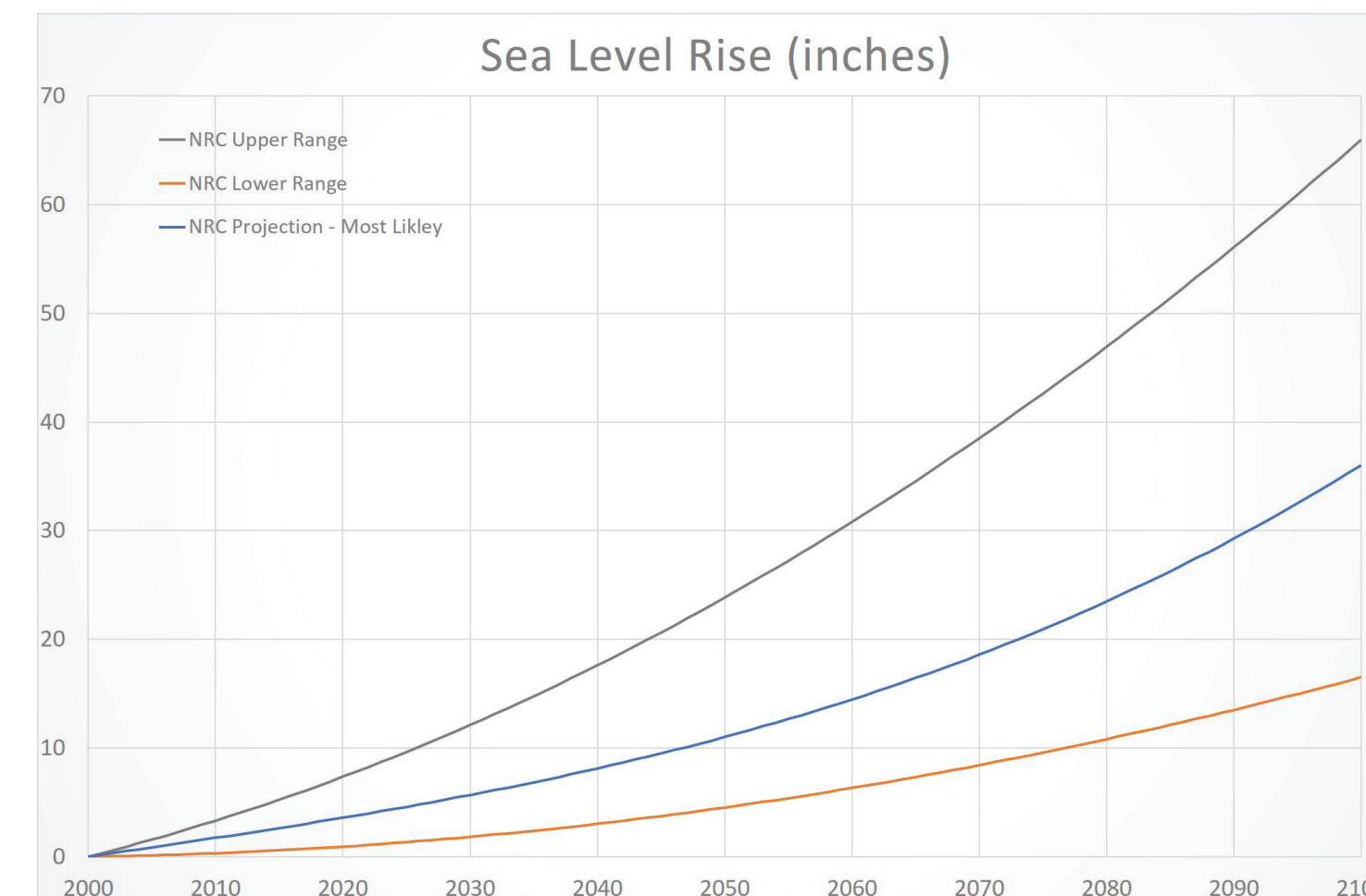


Sea level rise is currently a localized hazard, with increasing urgency over the coming decades

66 inches of sea level rise + 100 year flood



The refined flood assessment accounts for total water levels to account for wave run-up which builds upon stillwater inundation mapping recently completed by others.



National Research Council's sea level rise projections for San Francisco, CA through 2100

Seawall Program Approach to Current and Future Flood Risk

The Port understands the risk that sea level rise poses to the San Francisco waterfront and that the risk is increasing over time. The Seawall Program is designed as an adaptive planning and implementation framework with three elements - Strengthen, Adapt and Envision. The Strengthen Element focuses on protecting life safety and emergency response access due to seismic activity and includes current and near term flood risk considerations. The Adapt and Envision Elements consider higher water levels and provide an opportunity to create a resilient waterfront up to 2050, and envisions the waterfront in 2100 and beyond while addressing the risk of future flooding.

The Seawall Program is developing a Stillwater inundation analysis that includes a flood extent that combines a 500-year flood event with 66 inches of sea level rise. Additionally, it will conduct a wind wave, wave run-up, and overtopping assessment with new bathymetry and additional analysis of the Embarcadero Seawall to help us better understand future water levels and the affects to waterfront assets and services.

NOW
Intermittent, localized flooding

12" SLR
Sustained, localized flooding

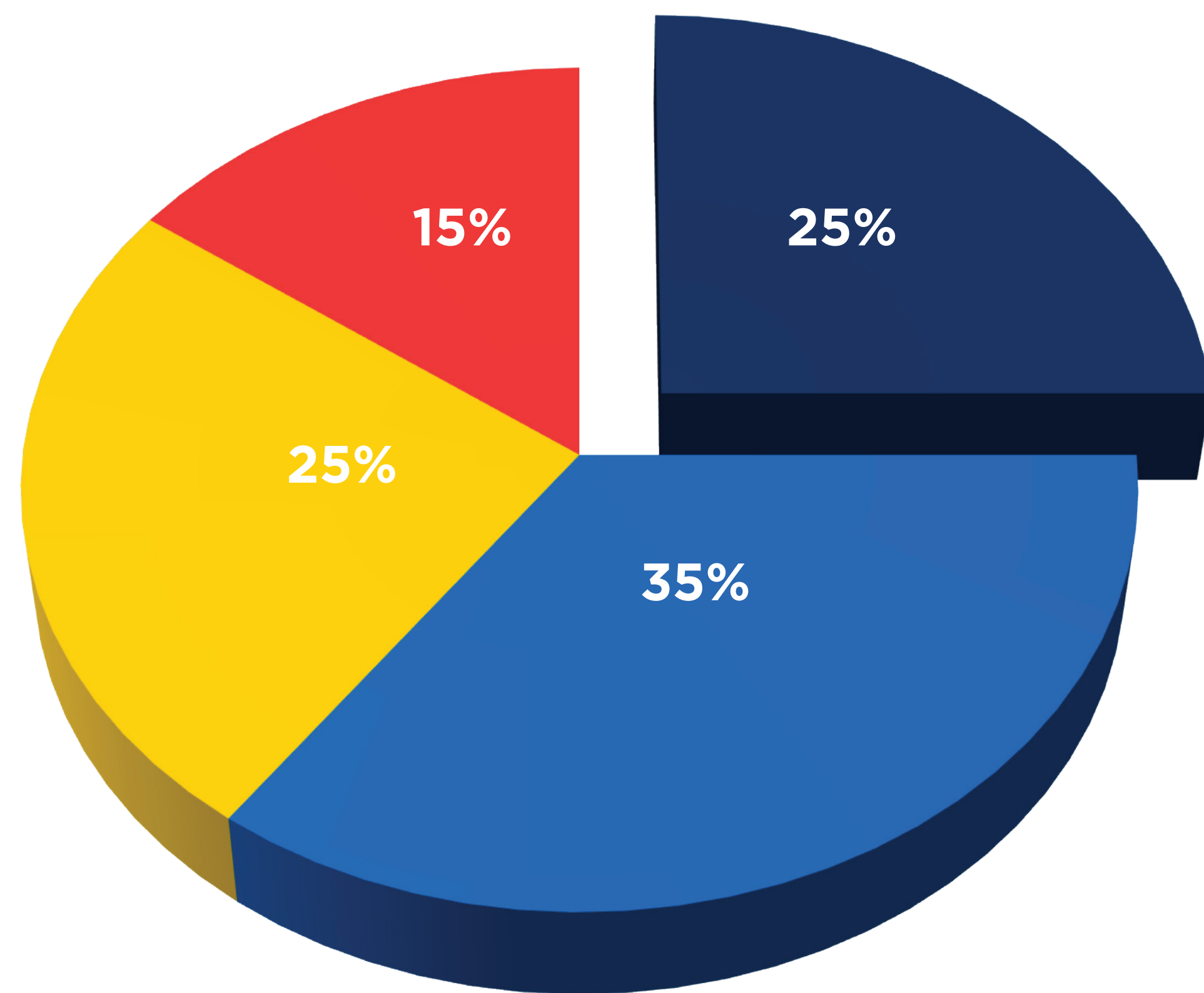
24" SLR
Larger extent of sustained, localized flooding

>36" SLR
Landscape-scale challenges

Sources of Guidance:

- IPCC
- USACE (2013/2017)
- State of California (2018)
- City & County of San Francisco (2014/2016)

SEAWALL PROGRAM FUNDING STRATEGY



Full infrastructure improvements are anticipated to cost up to \$5 billion

- Local (City GO Bond Program)
- Federal (Water Resources, Transportation)
- State (Cap and Trade, State Share of Tax Increments)
- Private (Waterfront Development Project and Businesses)

The Port has identified potential sources for Phase I (\$500 million) to address immediate life safety improvements including:

- \$425 million City GO Bond Program
- \$55 million State
- \$10 million Federal
- \$8 million Port of San Francisco
- \$2 million San Francisco Municipal Transportation Agency and the Planning Department

Seawall Finance Working Group:

11 Members – 8 City Departments and 1 External Member
48 Local, Regional, State, and Federal funding options analyzed

Primary

- General Obligation (G.O.) Bonds
- Community Facilities District (CFD)
- Local Share of Property Tax Increment Revenue from IFDs
- State Share of Property Tax Increment Revenue from IFDs
- State Resilience G.O. Bond
- U.S. Army Corps of Engineers Federal Fund



WATERFRONT PLAN UPDATE



PUBLIC PROCESS

Part 1: Port Orientation

Part 2: Portwide Land Use, Transportation & Resilience Recommendations

Part 3: Embarcadero Public Realm, Northeast & South Beach waterfront areas

NEXT STEPS (FROM SUMMER 2018):

- Prepare Draft Waterfront Plan amendments & update
- BCDC Coordination
- Public comment & review
- CEQA environmental review & Public approval process (2019-2020)

EMBARCADERO HISTORIC DISTRICT

PUBLIC-ORIENTED USES REQUEST FOR INTEREST (RFI) - JULY 2018



Goal: To explore reopening additional Embarcadero Historic District Pier structures & meet public trust objectives

Public Trust Objectives

- Historic preservation
- Seismic/life safety
- Maritime operations
 - Public access
- Resources for Port capital improvements
- Public-oriented uses

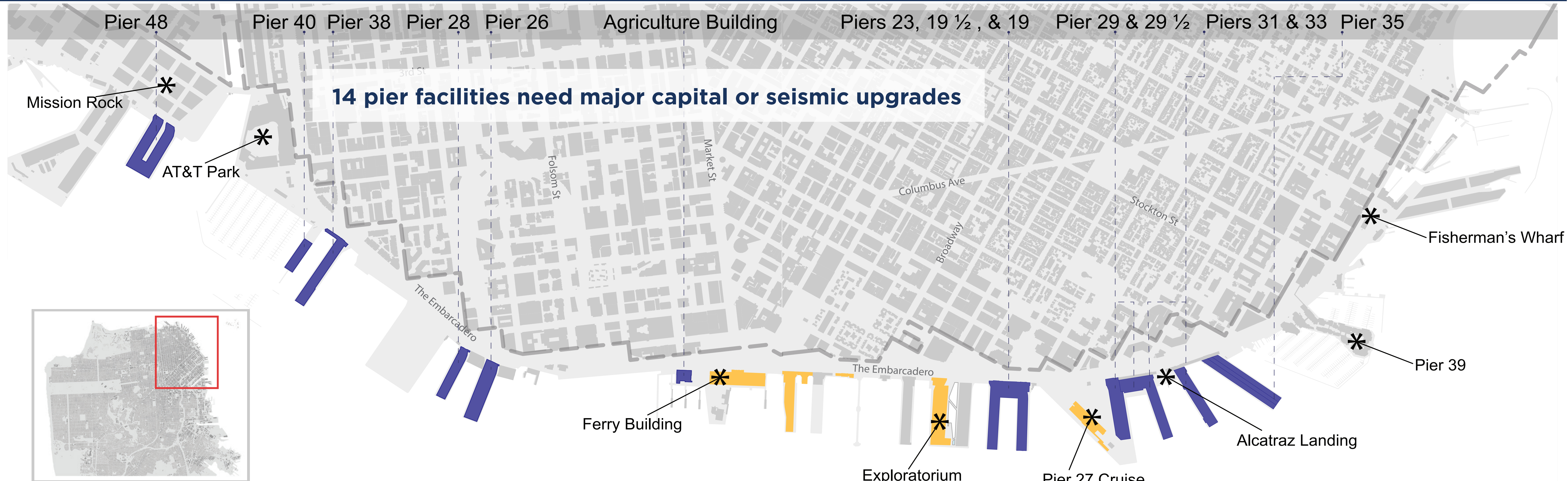
Financially Feasible Projects with

- Seismic upgrades
- Historic rehabilitation
- Trust and public-oriented uses
- Revenue generating uses

The RFI Process:

- To be issued on July 2018
- Invite statements of interest from:
 - Public-oriented uses (e.g. arts, entertainment recreation, cultural/museums, makers, education entities)
 - Large operators & developers who can finance full pier rehabilitation projects
 - Small operators seeking smaller tenancies
- RFI to test market interest
- RFI responses will inform Port Commission on possible future RFPs for pier rehabilitation development solicitations

REQUEST FOR INTEREST: EMBARCADERO HISTORIC DISTRICT



Request for Interest Locations:

- Pier 35 (maintaining secondary cruise terminal and special event operations)
- Pier 33 (portions of bulkhead and shed)
- Pier 31 (portions of bulkhead and shed)
- Pier 29 & 29 1/2
- Pier 23
- Pier 19 & 19 1/2
- Agriculture Building
- Pier 26
- Pier 28
- Pier 38
- Pier 40 (maintaining water recreation uses)
- Pier 48 (in connection with Mission Rock Project)