

SAN FRANCISCO WATERFRONT FLOOD STUDY

Capital Planning Committee

March 18, 2024



Waterfront Resilience Program



US Army Corps
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WHAT IS THE FLOOD STUDY?

- The **Flood Study** analyzes **coastal flood risk** and the effects of **sea level rise** to the San Francisco waterfront along the Port's 7.5-mile jurisdiction over the next 100 years.
- The **Draft Plan** will inform subsequent stages of funding and design in order to develop targeted construction projects.
- The proposed solutions are estimated to cost **\$13.5 billion** (high-level, preliminary cost estimate) and, if approved by Congress, the Federal government may pay **65% of the cost**.
- The Flood Study is led by the **U.S. Army Corps of Engineers** (USACE) in collaboration with the **City of San Francisco**.



YOUR FEEDBACK IS IMPORTANT TO US AND THE PROCESS

USACE and the City are seeking public comment on the Draft Integrated Feasibility Report and Environmental Impact Statement through **March 29, 2024**.

Provide written comments:

- Email: SFWFRS@usace.army.mil
- Mail: U.S. Army Corps of Engineers, Tulsa District ATTN: RPEC-SFWS, 2488 E 81st St., Tulsa, OK 74137
- Online: sfport.com/wrp

AGENDA

- 1 Waterfront Risks and Hazards**
- 2 San Francisco Waterfront Flood Study & Draft Plan**
- 3 Developing a Local Match Strategy**
- 4 Next Steps**



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1 Waterfront Risks and Hazards



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WHAT'S AT RISK?

Potential Sea Level Rise by 2100

San Francisco's waterfront location makes it ***vulnerable to coastal flooding*** due to ***sea level rise***


Without a Federal project, modeling shows:

- By 2050, ***100 to 500 structures*** and ***assets*** will be vulnerable to flooding
- By 2140, damages could amount up to ***\$23 billion***



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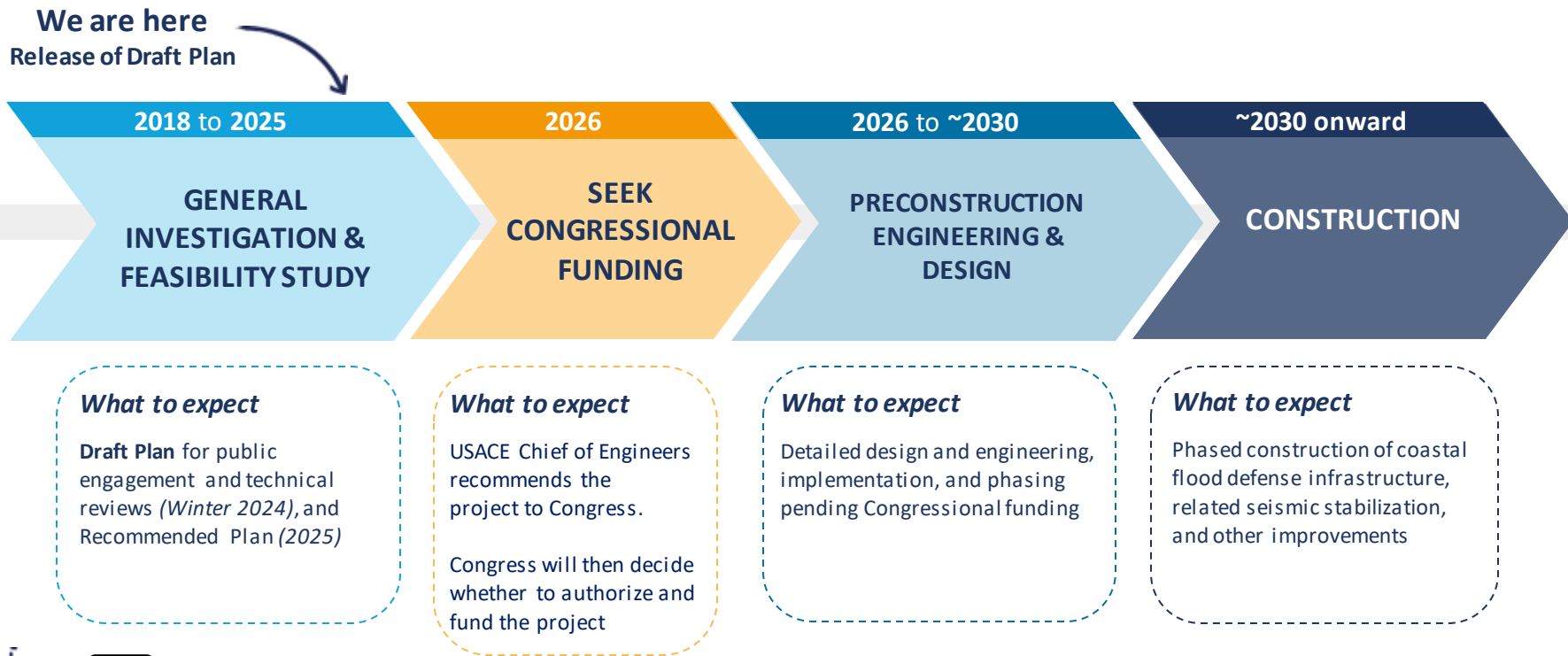
An aerial photograph of the San Francisco waterfront. In the foreground, a long wooden pier extends into the water, with a small boat docked at its end. Several large ferries are moored at a nearby dock. The background features the dense San Francisco skyline, including the Transamerica Pyramid and the San Francisco Ferry Building. A dark blue semi-transparent box is overlaid on the left side of the image, containing the title text.

2 San Francisco Waterfront Flood Study & Draft Plan



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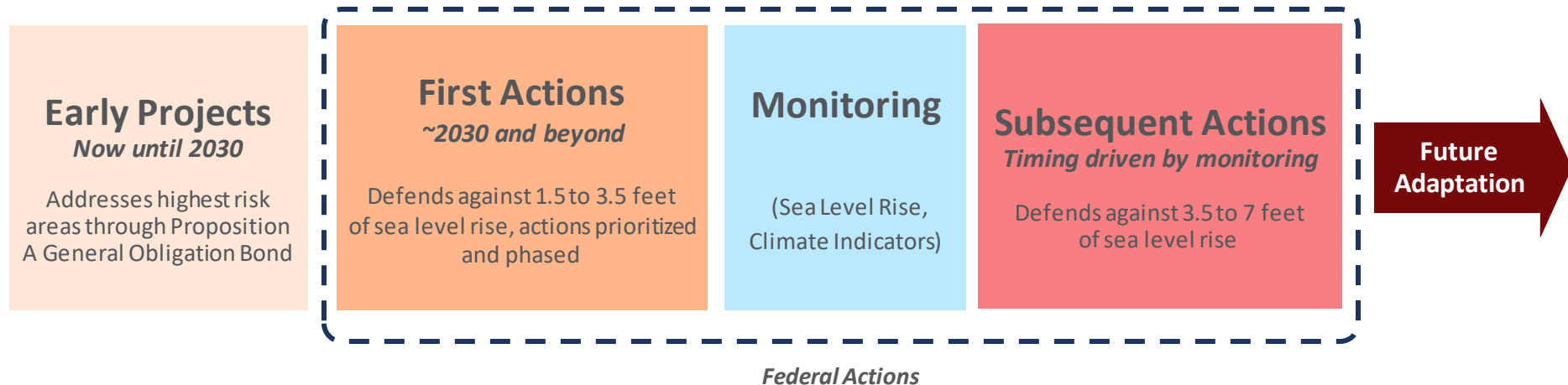
WHERE ARE WE IN THE FLOOD STUDY PROCESS?



Note: Dates are approximate and subject to change. Projects will occur in phases which will extend over decades.

MONITORING AND ADAPTATION ACTIONS OVER TIME

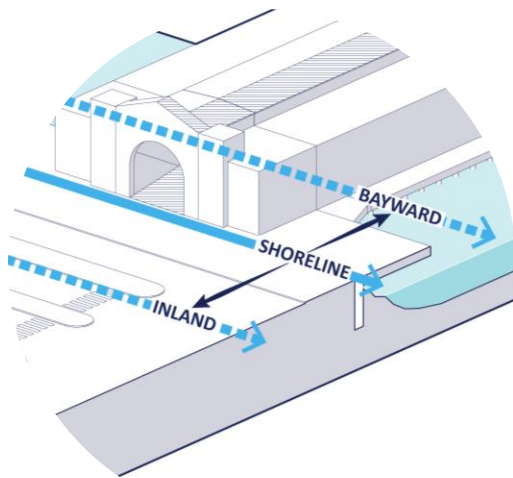
The Draft Plan



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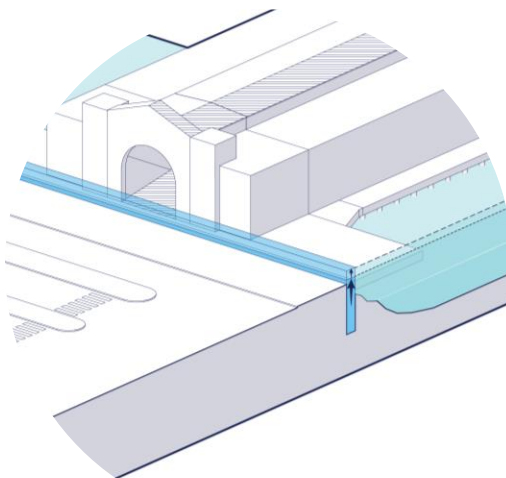
WHAT IS IN THE DRAFT PLAN?

Where to build flood defenses



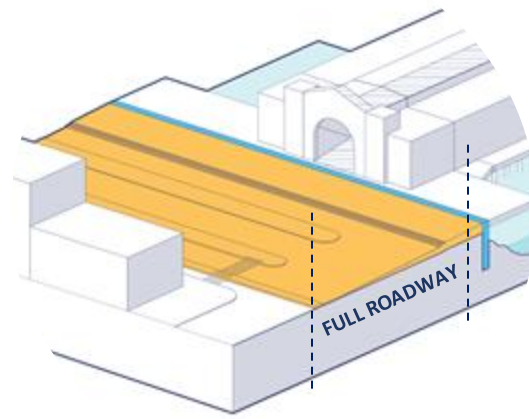
Have we located the flood defenses in the right place?

How high to build flood defenses



Should we invest in higher levels of flood defense first, or adapt in multiple phases?

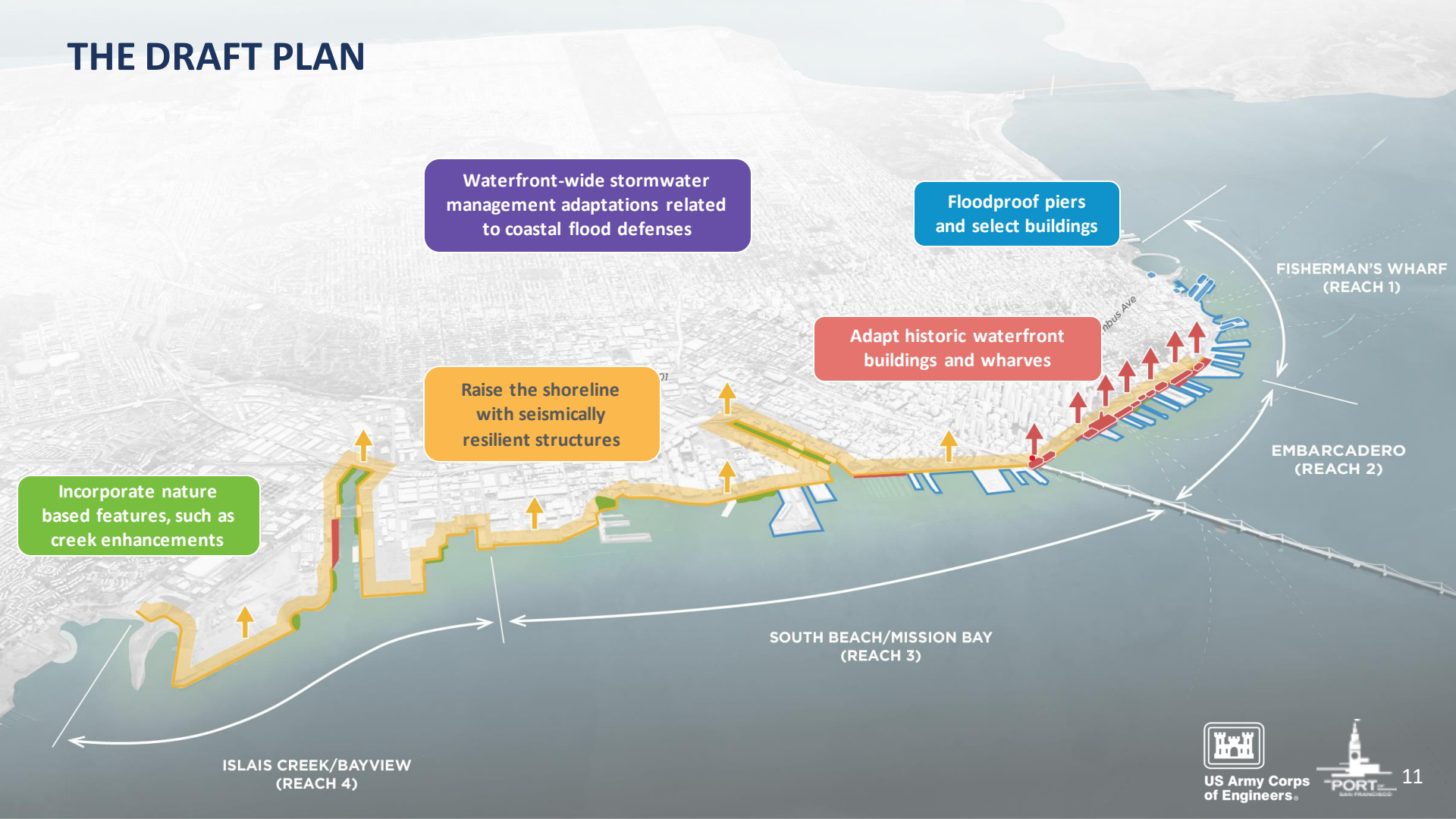
How much space to use



More space provides more flexibility but is associated with more disruption. Less space means more abrupt grade changes.

*...and How flood defenses can **be adapted** in the future*

THE DRAFT PLAN



Waterfront-wide stormwater management adaptations related to coastal flood defenses

Floodproof piers and select buildings

Adapt historic waterfront buildings and wharves

Raise the shoreline with seismically resilient structures

Incorporate nature based features, such as creek enhancements

FISHERMAN'S WHARF
(REACH 1)

EMBARCADERO
(REACH 2)

SOUTH BEACH/MISSION BAY
(REACH 3)

ISLAIS CREEK/BAYVIEW
(REACH 4)



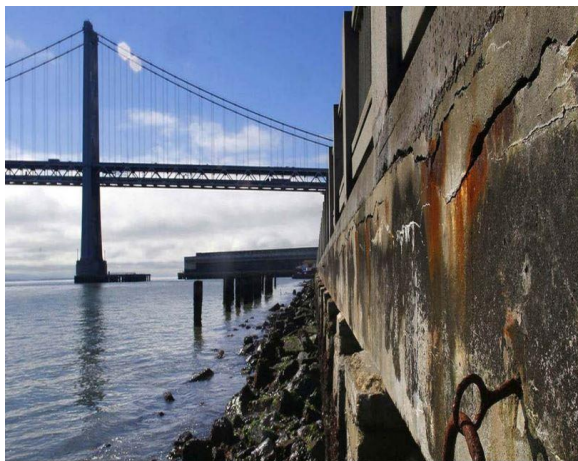
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3 Developing a 35% Local Match Strategy ~ \$5B over Decades



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Fortifying San Francisco's Great Seawall:
Strategies for Funding the Seawall Resiliency Project

July 2017

A report to the Capital Planning Committee and the Seawall
Executive Steering Committee by the Seawall Finance Work Group



ONESF
Building Our Future



Assumptions:

- \$2-5 billion plan to replace 3½ mile Embarcadero Seawall
- \$500 million 1st Phase (2015-2026)
- Up to \$5 billion 2nd Phase (2026-2046)

Methodology:

- 48 local, regional, state, and federal sources analyzed over 8 months by interdisciplinary team
- **Key criteria bolded:** New source, **revenue potential**, cost of funds, sustainability, flexibility, **time to implement**, tradeoff w/other City needs, **political feasibility**, **administrative complexity**, **equity/cost burden**
- Heat-mapping (green, yellow, red) to develop 17 recommended sources, 10 with significant revenue potential

Primary Recommendation		Follow Up
General Obligation Bonds	→	- Proposition A \$425 Million Seawall Bond - Proposed 2028 Resilience Bond (\$250 Million)
Army Corps (USACE) General Investigation	→	SF Waterfront Coastal Flood Study (~\$13 Billion recommendation; 65% federal/35% local match)
Community Facilities District	→	- Pier 70 & SWL 337 Shoreline Special Taxes - Downtown CFD – not recommended at this time
Local Share – IFD Tax Increment	→	Piers 30-32, Seawall Lot 330 Term Sheet
State Share – IFD Tax Increment	→	- AB 2578 (Chiu), 2018), not adopted - Possible to pursue again
State Resilience Bond	→	2024 Climate Bond

Project Timeline

- Study Period – 2008 to 2011
- Chief's Report – 2011
- WRDA Authorization - 2014
- Partnership Agreement – 2016, 2019
- Construction Start - 2017

Cost & Allocation

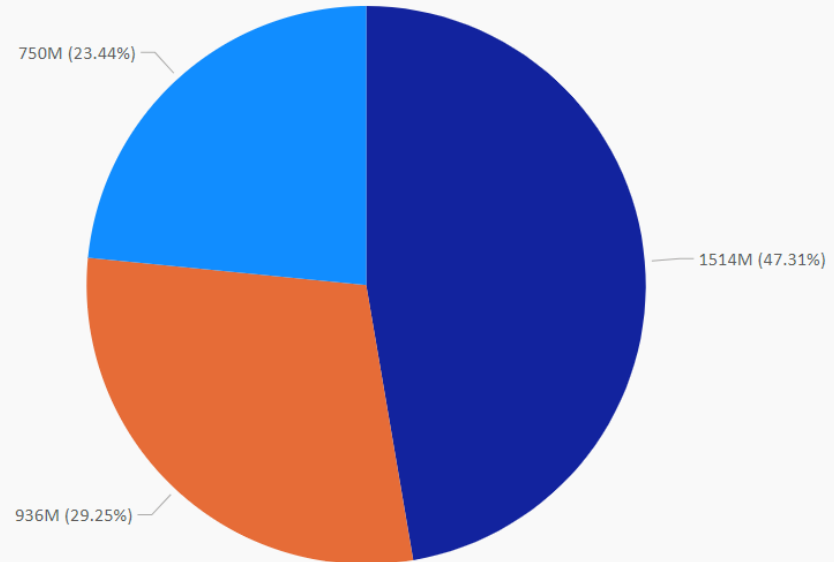
- Initial Agreement (2011) – \$1.8B Total (45% Federal)
- Revised Agreement (2019) - \$2.8B Total (27% Federal)

Lessons to Learn

- Messaging to support funding requests: generational investment
- Split Project Delivery
- P3 Financing (NFS share)
- High NFS share used to prioritize project at OMB

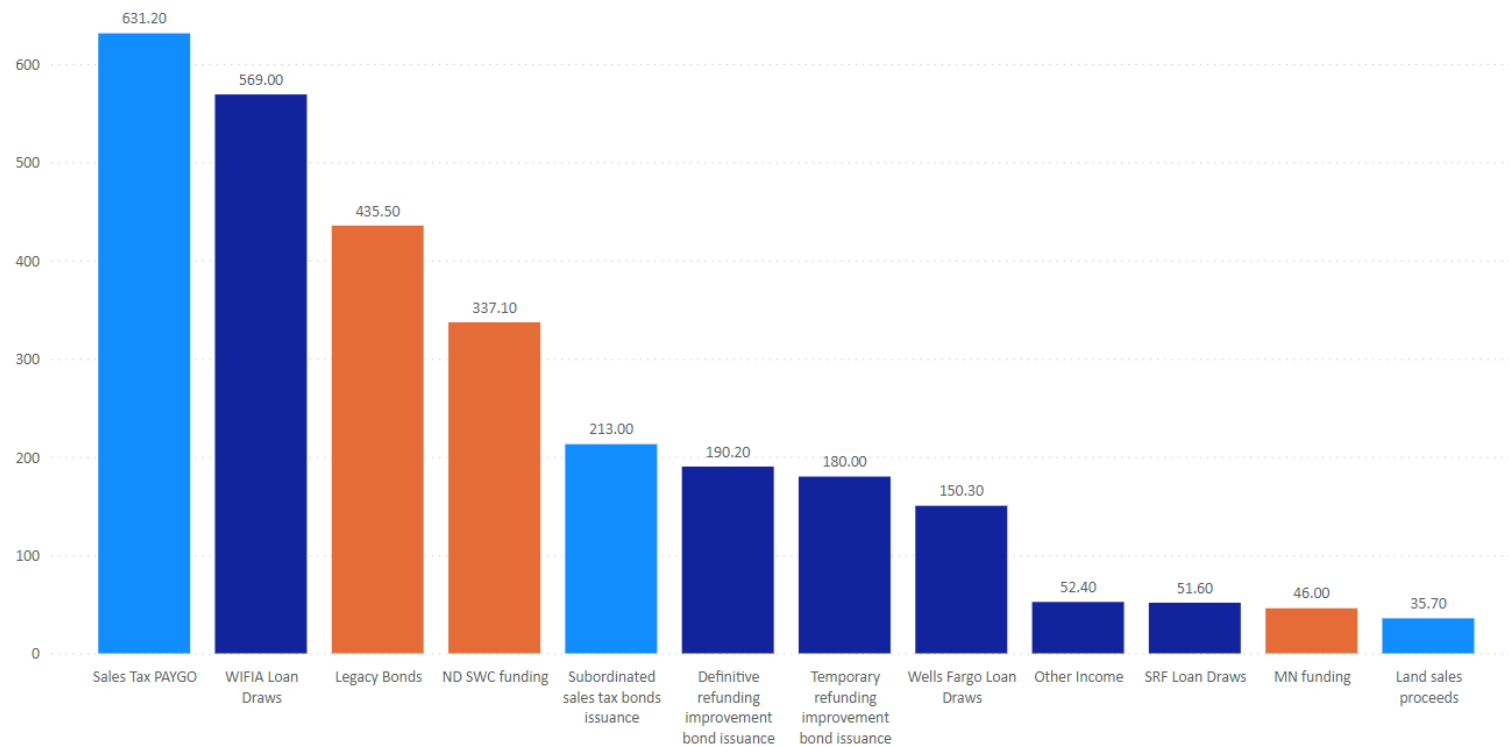
Funding Sources

Local State Federal



Funding Sources (Millions)

● Local ● N/A ● State



Embarcadero Early Projects were identified before the USACE Draft Plan was identified, **but they respond to the same risks and shoreline conditions.**

Early Projects include actions that are:

- **Not part of the Draft Plan**, like Pier 9 & Pier 15 Seawall EQ Safety Retrofits, which invest in structures that will be replaced in the Plan.
- **Build a piece of the USACE 1st Action**, like Southern Embarcadero Coastal Resilience Project, which we could capitalize on through a Section 221 agreement.
- **Include components of the USACE 1st Action**, like pier floodwalls in the Downtown Coastal Resilience Project or foundational improvements to the Ferry Building, which we could explore for credit.

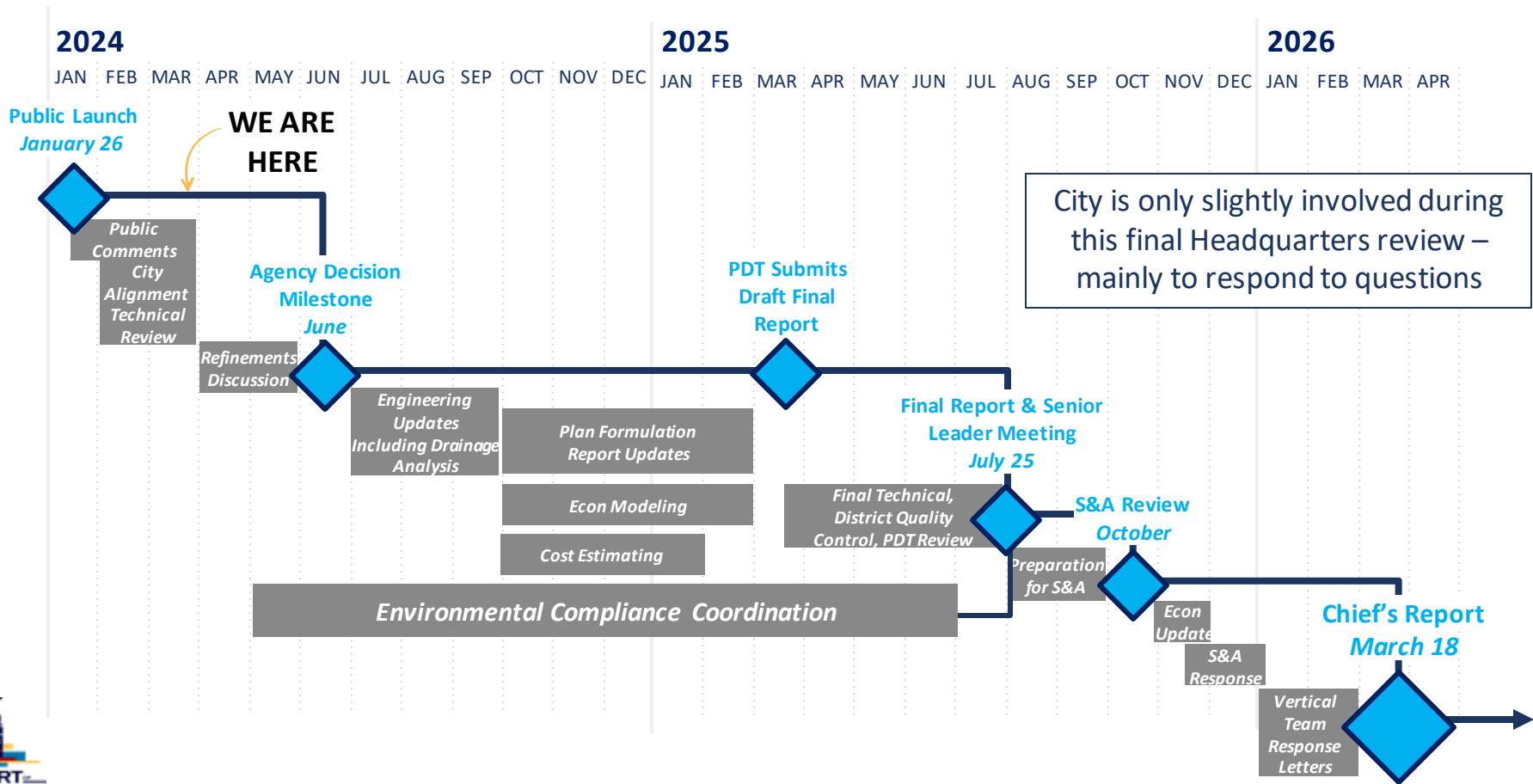
Action	Description
Climate Directors	Advance planning with finance staff in ClimateSF departments
Phasing Plan	Develop a preliminary phasing plan to show how costs can be spread out over time
City Finance Leaders	Meet with City Finance leaders to develop a Local Match funding strategy
Climate Bond	Meet with delegation to make the case for the bond and City resilience needs

4 Next Steps



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DRAFT SCHEDULE TO COMPLETE SF FLOOD STUDY



A CATALYST FOR A MORE RESILIENT SAN FRANCISCO

This is a once-in-a-century opportunity to:



Defend communities,
assets, and
infrastructure
equitably against
coastal flooding



Improve
earthquake safety
related to flood
defense projects



Invest in a **great**
public waterfront
along with flood
defense projects



Safeguard resilient
transit and utility
networks



Secure funding
through
collaboration with the
Federal government



Adapt **historic and**
cultural resources to
climate change



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Thank you

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Port of SF Waterfront Resilience Program | wrp@sfport.com



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