

A stylized graphic on the right side of the slide. It features a yellow silhouette of the San Francisco skyline against a blue background. Below the skyline, several yellow and blue rectangular blocks are arranged in a perspective view, representing a seawall or piers extending into the water.

PROTECT THE CITY:
STRENGTHEN
THE SEAWALL

Seawall Earthquake Safety Bond Presentation Capital Planning Committee

April 16, 2018



SEAWALL EARTHQUAKE SAFETY PROGRAM BOND REPORT

April 2018



sfseawall.com



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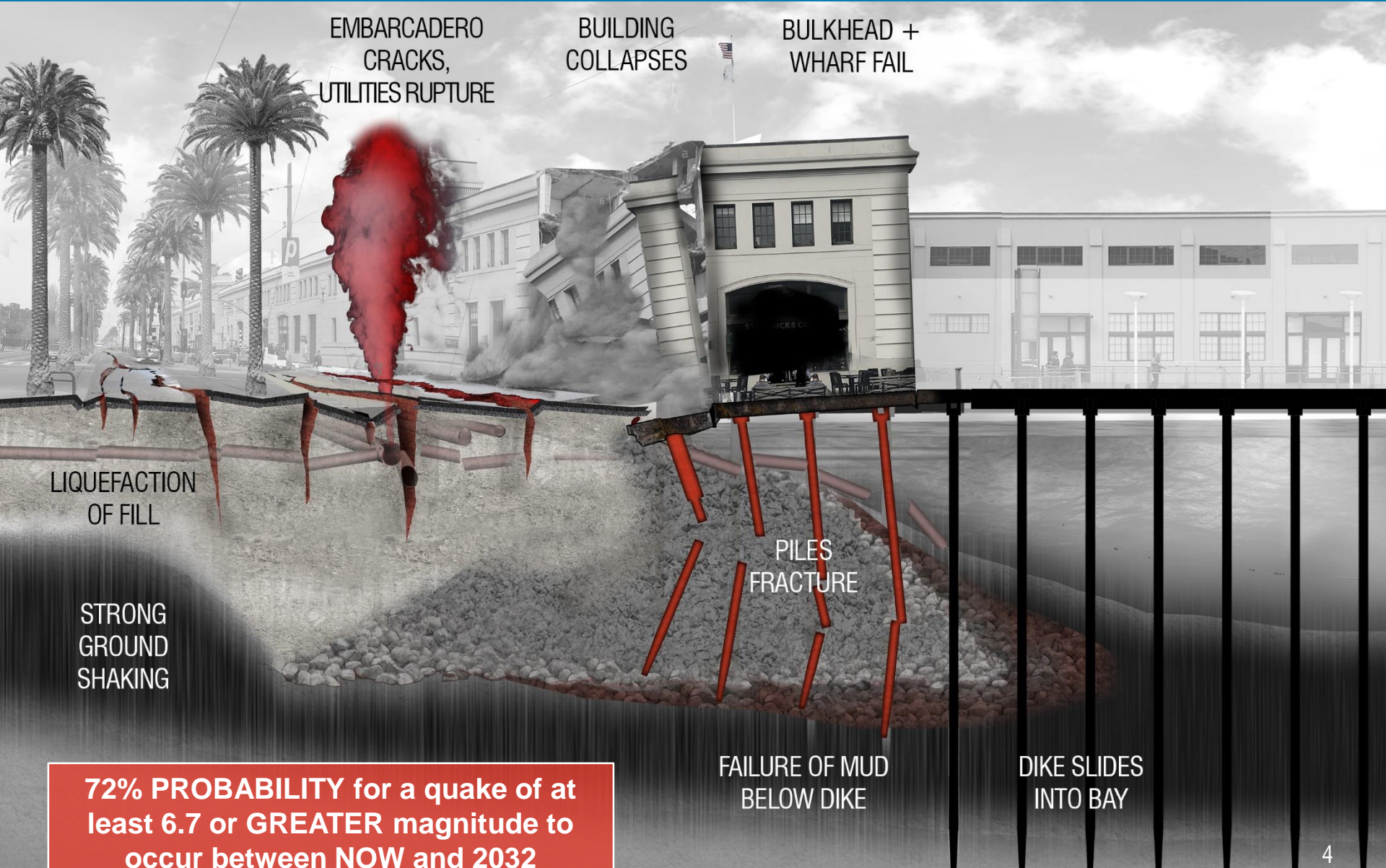
SEAWALL EARTHQUAKE SAFETY & DISASTER PREVENTION PROGRAM

The City and County of San Francisco is proposing a \$425 million bond for the November 2018 ballot to fund improvements to the Embarcadero Seawall that will reduce the significant life safety seismic risk, improve current flood protection and provide a stable foundation for future adaptation to sea level rise.

SAN FRANCISCO'S INVISIBLE SUPPORT



CRITICAL RISK: EARTHQUAKE SAFETY



Current Condition



Future SLR Risk



CRITICAL RISK: CURRENT AND FUTURE FLOODING

- Seawall supports the Embarcadero and provides flood protection
- Current Embarcadero closures during king tide flooding
- Muni and BART tunnels subject to flood risk
- CCSF sea level rise guidance:

12"-24" by 2050

36"-66" by 2100

WHAT IS AT RISK?

THE SEAWALL IS A CRITICAL PART OF THE CITY'S NETWORK OF EMERGENCY RESPONSE

In the event of a major earthquake, the waterfront must be available for emergency response access. Ensuring the seismic reliability of the Seawall will allow the City to respond to a major disaster.



THE SEAWALL IS KEY TO REGIONAL TRANSPORTATION



440,000

people arrive daily by boat at the Ferry Building or through the Transbay Tube on BART

In addition, the Muni Metro system registers over **half a million** daily boardings on routes that terminate downtown.

THE SEAWALL SUPPORTS AND PROTECTS IMPORTANT UTILITY INFRASTRUCTURE

This includes major wastewater, water, auxiliary water system, and power utilities.



\$24.6B OF TOTAL ECONOMIC ACTIVITY AND \$102.1B OF PROPERTY VALUE IS AT RISK FROM FAILURE OF THE SEAWALL

The value of assets at risk is

10–40x greater

than the investment needed to strengthen the Seawall.



WHAT WILL THIS BOND FUND?

Address the most significant seismic and near-term flood risks to the most critical assets.

INVESTMENT CATEGORY	EXAMPLE MEASURES TO BE INCLUDED AND EVALUATED
Project Implementation	<ul style="list-style-type: none">• Program Development, Planning & Pre-Design• Design, Engineering & Other Soft Costs• Construction Management
Earthquake Improvements	<ul style="list-style-type: none">• Ground Strengthening & Liquefaction Remediation• Bulkhead Wall, Wharf & Pier Retrofits & Replacements• Bulkhead Building Retrofits and Seismic Joints• Pier Building Retrofits• Critical Facility Retrofits & Replacements• Utility Replacements, Relocations & Bypasses• Matching Funds for Public & Private sources• Other Life Safety Improvements
Flood Protection Measures	<ul style="list-style-type: none">• Flood Walls & Barriers• Surface Grade Changes• Flood Proofing• Planning for Future Adaptation• Enhanced Foundation for Future Adaptation• Other Flood Control Improvements
Mitigation & Enhancement	<ul style="list-style-type: none">• Public Access Enhancements• Transportation/Mobility Improvements• Environmental Benefits• Other Public Benefits

EARTHQUAKE RETROFIT CONCEPTS

OPTION 1 GROUND IMPROVEMENT



OPTION 2 GROUND IMPROVEMENT UNDER SEAWALL



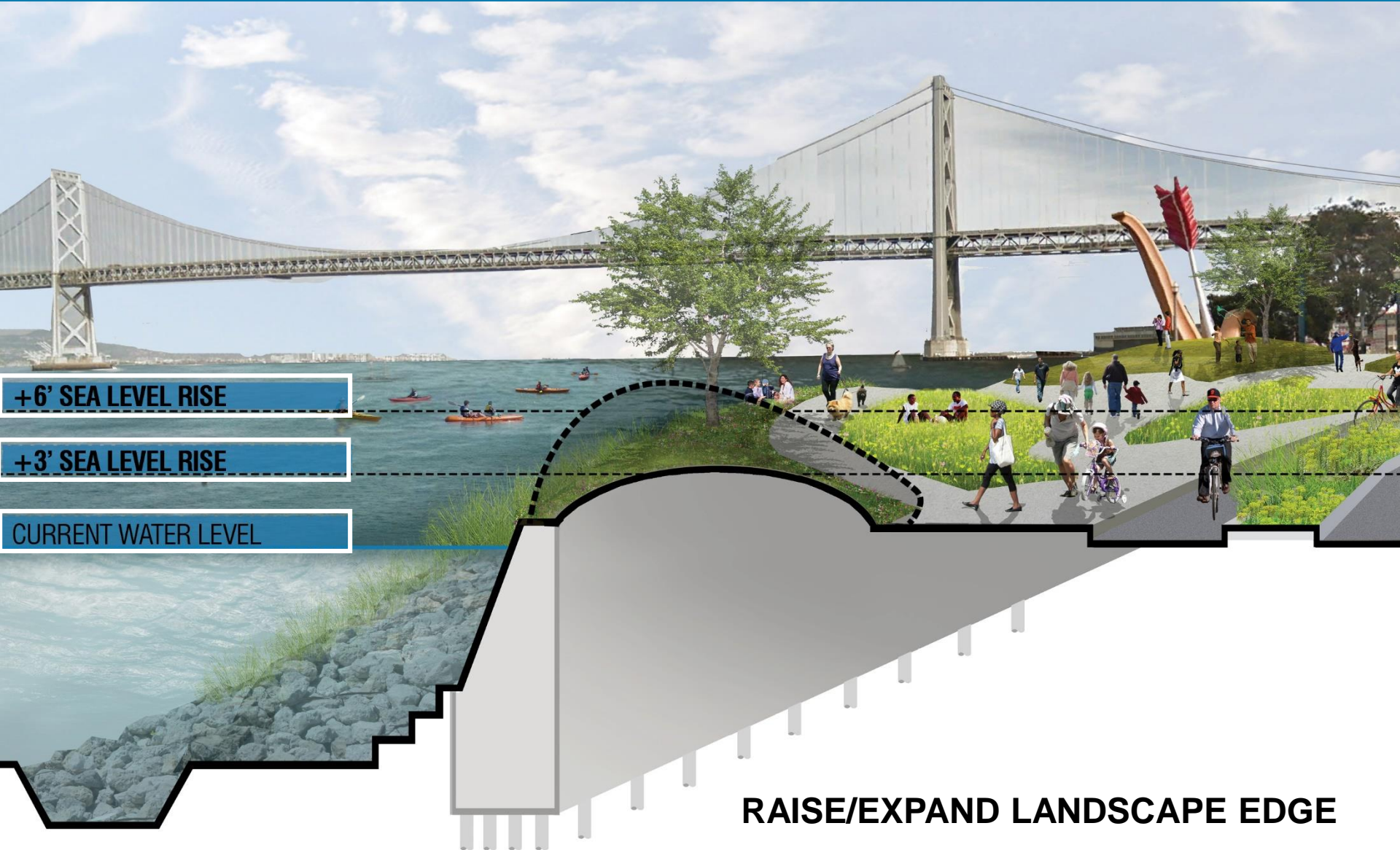
OPTION 3 BULKHEAD REPLACEMENT



OPTION 4 NEW BAYWARD SEAWALL



POTENTIAL SEA LEVEL RISE SOLUTIONS



SAMPLE EVALUATION CRITERIA

Life Safety

Emergency Response

**Implementation
Timeframe**

Risk Avoided

**Community and
Social Benefits**

**Environmental
Benefits**

Minimize Disruption and Construction Impacts

PHASING THE SEAWALL PROGRAM



Phase I – Strengthen the Seawall for Public Safety

- Near-term actions to address life-safety and emergency response and recovery. Planning and actions taken 2017-2026.



Phase II – Adapt to Mid-Century Risks

- Mid-range plans to advance seismic and flood projects to provide greater reliability and stability to the waterfront. Actions estimated between 2026-2050.

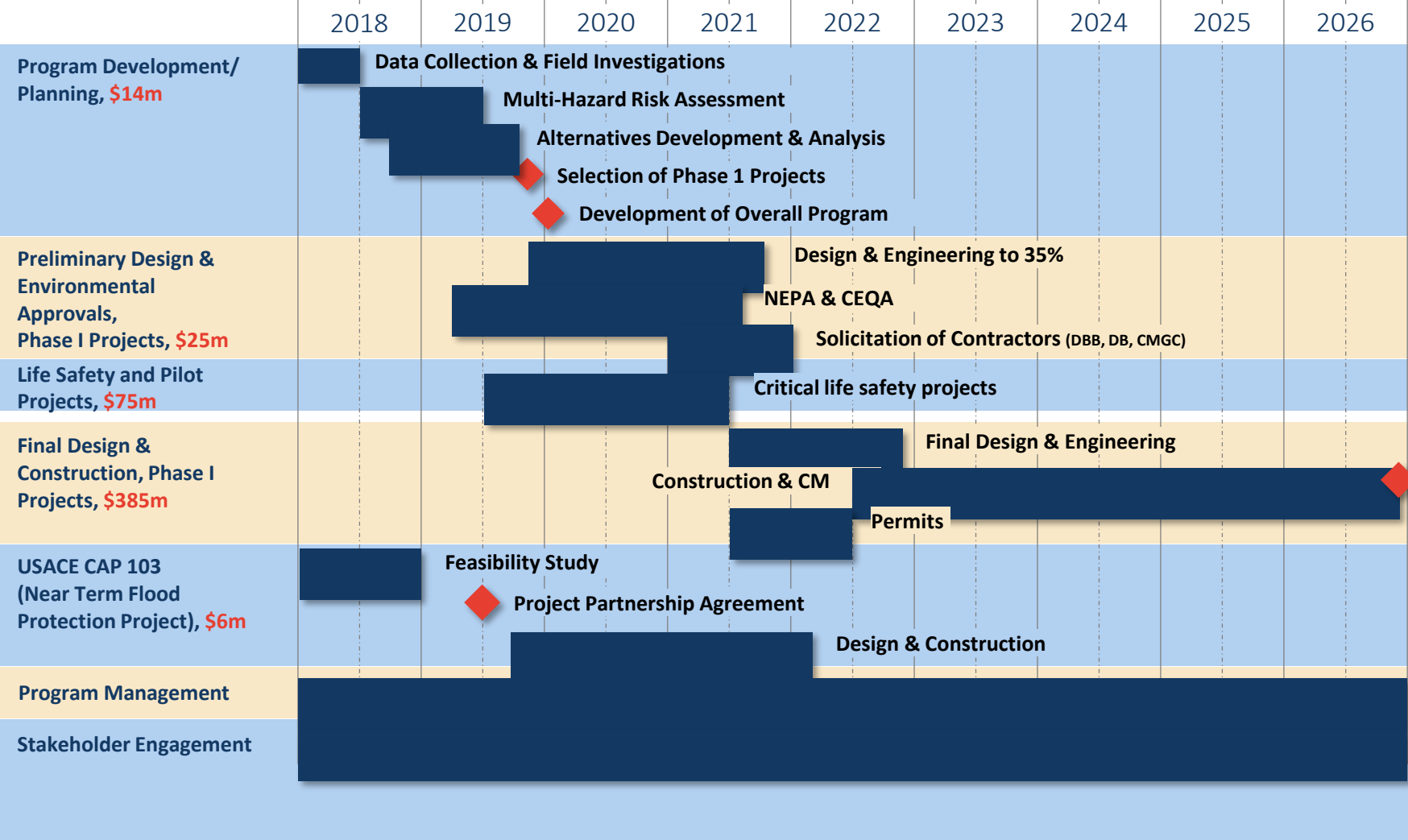


Phase III – Envision the Waterfront 2100

- Long-term vision. Actions estimated between 2050-2100.

PHASE I DETAILED SCHEDULE

PHASE I DETAILED SCHEDULE



PROJECTED PHASE I FUNDING - \$500 MILLION

FUNDING SOURCES	FISCAL YEAR (\$ in millions)										
	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Port Capital	\$2.9		\$1.1					\$2.0	\$2.0		
City Revolving Fund	\$1.0	\$3.0	\$5.0	(\$9.0)							
SFMTA Contribution	\$0.5	\$0.5									
Planning Department Contribution	\$0.5	\$0.3	\$0.3								
2018 General Obligation Bond				\$110.0			\$190.0		\$125.0		
USACE			\$3.0	\$6.0	\$1.0						
State Sources										\$55.0*	
Total Planned Sources	\$4.9	\$3.8	\$9.4	\$107.0	\$1.0	\$0.0	\$190.0	\$2.0	\$127.0	\$55.0	\$0.0
Cumulative Sources	\$4.9	\$8.7	\$18.1	\$125.1	\$126.1	\$126.1	\$316.1	\$318.1	\$445.1	\$500.0	\$500.0

*pending legislative action

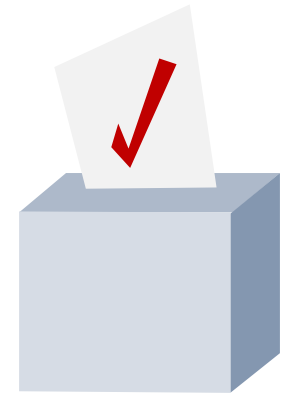
PROJECT SCHEDULE, PHASES & FUNDING

PROGRAM PHASE	PHASE YEARS (FY)	PLANNED ACTIVITIES	FY SPENDING (\$ in millions)	CUMULATIVE COST (\$ in millions)
Vulnerability Study	15/16	Vulnerability Study	\$0.0	\$0.0
Planning	16/17	Project Management & Stakeholder Engagement Planning Services USACE CAP 103	\$0.3	\$0.3
	17/18		\$6.7	\$7.0
	18/19		\$8.9	\$15.9
Preliminary Design	19/20	Project Management & Stakeholder Engagement Environmental Approvals Preliminary Design USACE CAP 103	\$12.5	\$28.4
	20/21		\$13.0	\$41.4
	21/22		\$72.8	\$114.2
Final Design and Construction	22/23	Project Management & Stakeholder Engagement Final Design Design Support Services Construction Management Construction	\$90.5	\$204.6
	23/24		\$90.5	\$295.1
	24/25		\$90.4	\$385.5
	25/26		\$90.4	\$475.9
	26/27		\$24.1	\$500.0

PROPOSED BOND ISSUANCE

		ISSUANCE #1	ISSUANCE #2	ISSUANCE #3	TOTAL
Sources:	Par Amount	\$110,000,000	\$190,000,000	\$125,000,000	\$425,000,000
Total Sources:		\$110,000,000	\$190,000,000	\$125,000,000	\$425,000,000
Uses:	Project Fund Deposits:				
	• Project Fund	\$107,774,451	\$186,736,527	\$122,579,840	\$417,090,818
	• CSA Audit Fee	\$251,549	\$373,473	\$245,160	\$834,182
	Total Project Fund Deposits:	\$107,990,000	\$187,110,000	\$122,825,000	\$417,925,000
	• Cost of Issuance	\$800,000	\$800,000	\$800,000	\$2,400,000
	• Underwriter's Discount	\$1,100,000	\$1,900,000	\$1,250,000	\$4,250,000
	• CGOBOC Fee	\$110,000	\$190,000	\$125,000	\$425,000
Total Uses:		\$110,000,000	\$190,000,000	\$125,000,000	\$425,000,000

PATH TO THE BALLOT BOX



**Port
Commission**
April 10



**Capital
Planning
Committee**
April 16



**Board of
Supervisors**
May



**November
Ballot**

A stylized graphic of a city skyline in yellow, with a large yellow seawall structure in the foreground. The seawall is composed of several rectangular blocks of varying sizes, some of which are tilted. The background is a solid blue color.

**PROTECT THE CITY:
STRENGTHEN
THE SEAWALL**

QUESTIONS?