



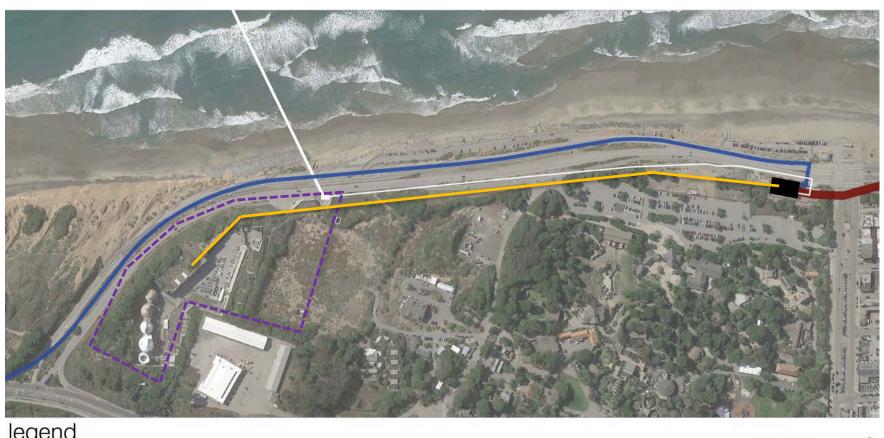
Ocean Beach Climate Change Adaptation Project

3 Phases: Short-term Improvements, ACOE Beach Nourishment, Long-term Improvements
Anna M. Roche, Project Manager

1. PROJECT DRIVERS

Wastewater Infrastructure at Risk





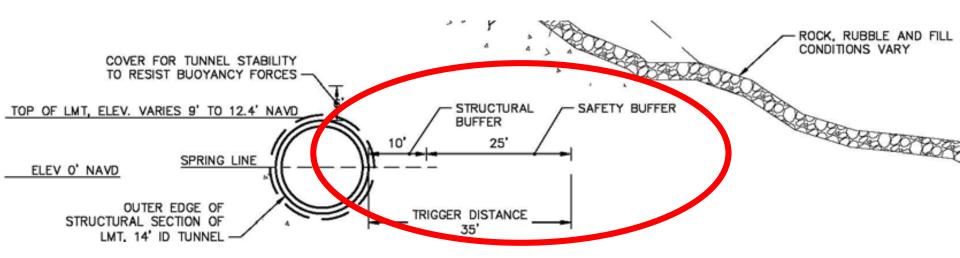


Project Drivers



Existing Vulnerability of LMT - HIGH

- Short-term Improvements only partially mitigate risk
- 25-year storm event could result in 40 feet of erosion
- Current bluff toe is within 50 feet of Trigger Distance



Project Drivers



OBMP Guiding Principles

- Managed Retreat / Adaptive Management
- Beach Nourishment
- Structural Protection
- Access & Recreation

SF Planning Adopts Local Coastal Program Update

Adopts policy supporting OBMP guiding principles

Terms of 2014 Litigation Settlement

- Implement short-term project to enhance recreation
- Implement long-term adaptive management project
- Protect natural resources/sensitive species
- Remove emergency armoring

Terms of 2015 Coastal Permit for Short-term

Requires an application by December 2021

2. PROJECT HISTORY

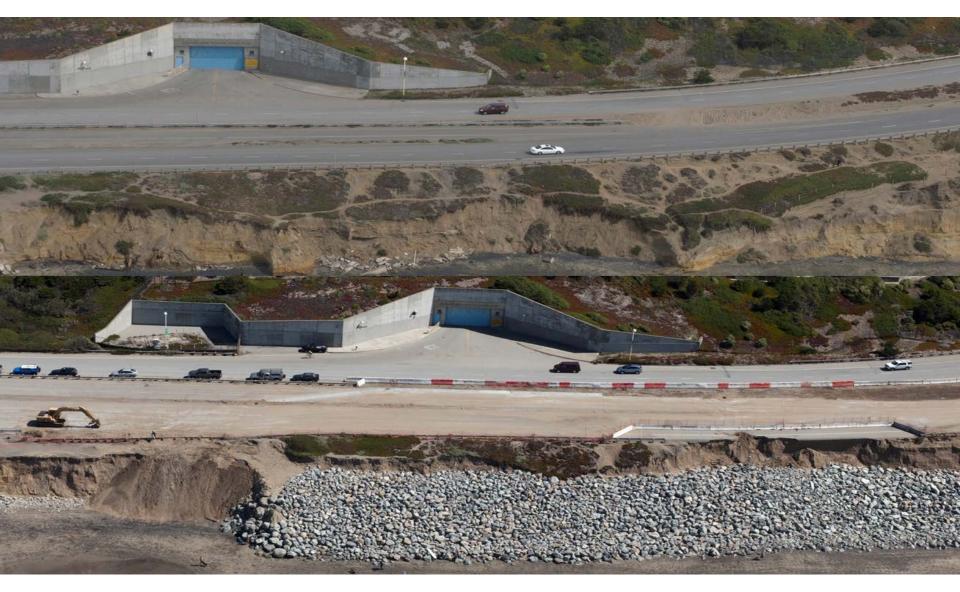
Project History: Chronic Erosion





Historic Approaches to Erosion





3. SHORT-TERM IMPROVEMENTS



Wastewater Facilities & Infrastructure – Ocean Beach Protection | Grey. Green. Clean.

Short-term Improvements



2011 Sand Bags

100-feet in a localized notch

2012 Sand Placement

• 77,000 cubic yards

2014 Sand Placement (with new permit)

• 22,500 cubic yards

2016 Sand Placement

70,000 cubic yards

2017 Sand Placement

• 65,000 cubic yards + 300 sand bags

2019 Sand Placement (on-going)

60,000 cubic yards & sand bag maintenance





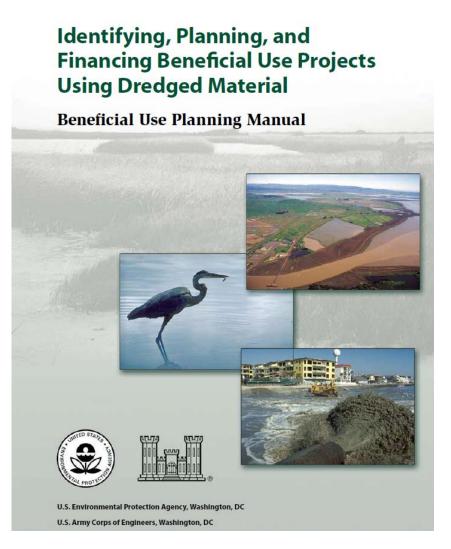


4. ACOE BEACH NOURISHMENT

ACOE Beneficial Use of Dredged Material as Sand Nourishment



- Army Corps of Engineers, Section 204 Beneficial Use of Dredged Material
- Requires a Local Sponsor (SFPUC)
- Requires Cost Share Agreement
 - ✓ 35% to 65% split
 - ✓ \$2.8 M for 350,000 cubic yards NOTE: \$1.3 M for 70,000 cubic yards in 2016
- Design Agreement Signed June 2019 & Funds Provided (\$280k)
- Anticipate Implementation in 2021



5. LONG-TERM IMPROVEMENTS

PUC and Non-PUC Elements



PUC – Structural Protection

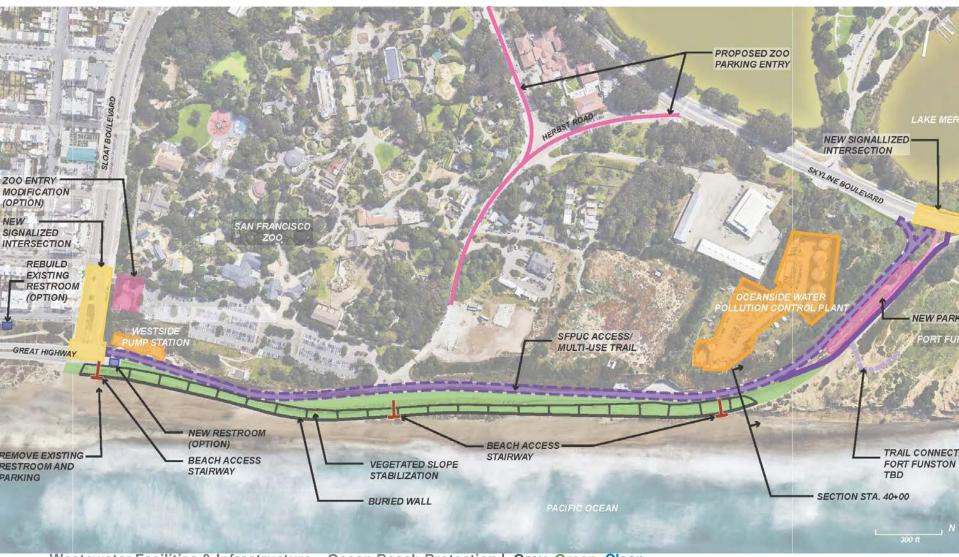
- Low-profile wall
- SFPUC Service Road
- Recontour and revegetate bluff
- Remove shoreline armoring

MTA + RPD - Coastal Access & Recreation (design by PW)

- Coastal Access Trail & Beach Access
- Public Bathroom
- Coastal Parking
- Intersection Improvements
- Maintain Access to SF Zoo Parking Lot

Project Elements





6. PROJECT BUDGET AND SCHEDULE

Long-term Improvements Only Construction Costs Comparison



	AAR	CER	VARIANCE
*PUC Base Construction	\$67,892,366	\$98,540,689	**\$30,648,323
***Non-PUC Base Construction	\$0	\$16,350,485	\$16,350,485
Design/Estimating Contingency	\$15,430,083	\$22,718,349	\$7,288,266
Construction Contingency	\$8,332,245	\$13,760,953	\$5,428,708
Total	\$91,654,693	\$151,370,476	\$59,715,782

^{*}Cost includes Bonds & Insurance, Escalation, and Profit

^{**}Construction schedule extends from 28 to 46 months, updated escalation rates add \$15.5M, and profit increases add \$13M

^{***}Non-PUC Components total approximately \$22M with Design and Construction Contingency added

Ocean Beach Project Schedule



PHASE*	BASELINE FINISH	FORECAST FINISH	VARIANCE (Forecast – Baseline)
*Project Management	January 2026	July 2027	+ 19 Months
Planning	June 2019	September 2019	+ 3 Months
Environmental	October 2022	October 2022	
Design	September 2021	December 2021	+ 3 Months
Bid and Award	December 2022	December 2022	
Construction	July 2025	January 2027	+ 18 Months
Construction Management	July 2025	January 2027	+ 18 Months
Closeout	January 2026	July 2027	+ 18 Months

^{*} Construction Schedule extended by 18 months

5. Q & A

Discussion / Questions



