Ocean Beach Climate Change Adaptation Project

3 Phases: Short-term Improvements, ACOE Beach Nourishment, Long-term Improvements

Anna M. Roche, Project Manager

December 9, 2019
Capital Planning Committee
1. PROJECT DRIVERS
Wastewater Infrastructure at Risk

legend

- lake merced tunnel
- westside transport box
- westside force main
- sewer outfall
- pump station
- oceanside treatment plant
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
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

- Westside Pump Station
- New Restroom (Option)
- Beach Access Stairway
- Vegetated Slope Stabilization
- Buried Wall
- Proposed Zoo Parking Entry
- New Signalized Intersection
- New Park (Fort Funston TBD)
- Oceanside Water Pollution Control Plant
- SFPUC Access/Multi-Use Trail
- Trail Connect Fort Funston TBD
- Section STA. 40+00

6. PROJECT BUDGET AND SCHEDULE
# Long-term Improvements Only

## Construction Costs Comparison

<table>
<thead>
<tr>
<th></th>
<th>AAR</th>
<th>CER</th>
<th>VARIANCE</th>
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</thead>
<tbody>
<tr>
<td><strong>PUC Base Construction</strong></td>
<td>$67,892,366</td>
<td>$98,540,689</td>
<td><strong>$30,648,323</strong></td>
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<td>*<strong>Non-PUC Base Construction</strong></td>
<td>$0</td>
<td>$16,350,485</td>
<td>$16,350,485</td>
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<tr>
<td>Design/Estimating Contingency</td>
<td>$15,430,083</td>
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<tr>
<td>Construction Contingency</td>
<td>$8,332,245</td>
<td>$13,760,953</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$91,654,693</strong></td>
<td><strong>$151,370,476</strong></td>
<td><strong>$59,715,782</strong></td>
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</tbody>
</table>

*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

<table>
<thead>
<tr>
<th>PHASE*</th>
<th>BASELINE FINISH</th>
<th>FORECAST FINISH</th>
<th>VARIANCE (Forecast – Baseline)</th>
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<tbody>
<tr>
<td>*Project Management</td>
<td>January 2026</td>
<td>July 2027</td>
<td>+ 19 Months</td>
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<td>Planning</td>
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<td>September 2019</td>
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<tr>
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<td>+ 3 Months</td>
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<td>Bid and Award</td>
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<tr>
<td>Construction</td>
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<tr>
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<tr>
<td>Closeout</td>
<td>January 2026</td>
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<td>+ 18 Months</td>
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* Construction Schedule extended by 18 months
5. Q & A
Discussion / Questions