

# North Half Moon Bay (Pillar Point Harbor), California

## Continuing Authorities Program (CAP) 111 Project

Public Meeting  
November 8, 2013  
Half Moon Bay, CA

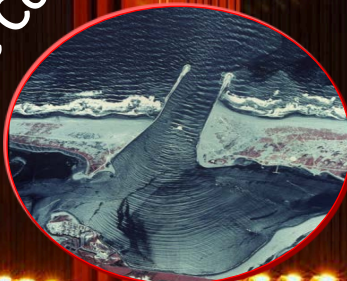


®



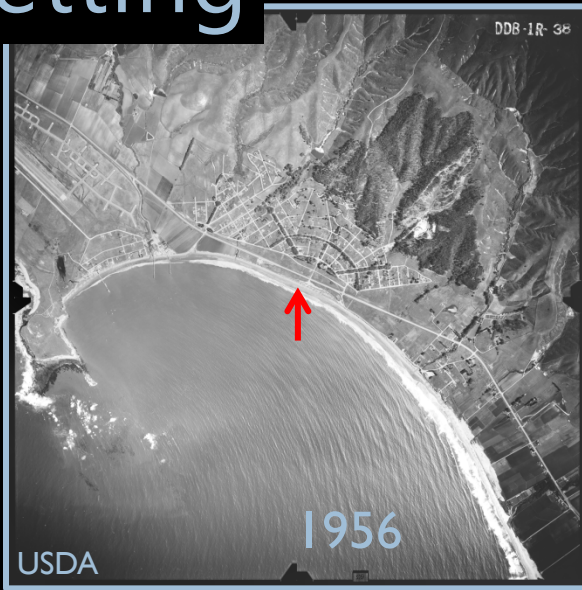
US Army Corps of Engineers  
**BUILDING STRONG**®  
San Francisco District

*Building Strong on the Cornerstone of the Southwest*





# Setting



2013



US Army Corps of Engineers  
San Francisco District



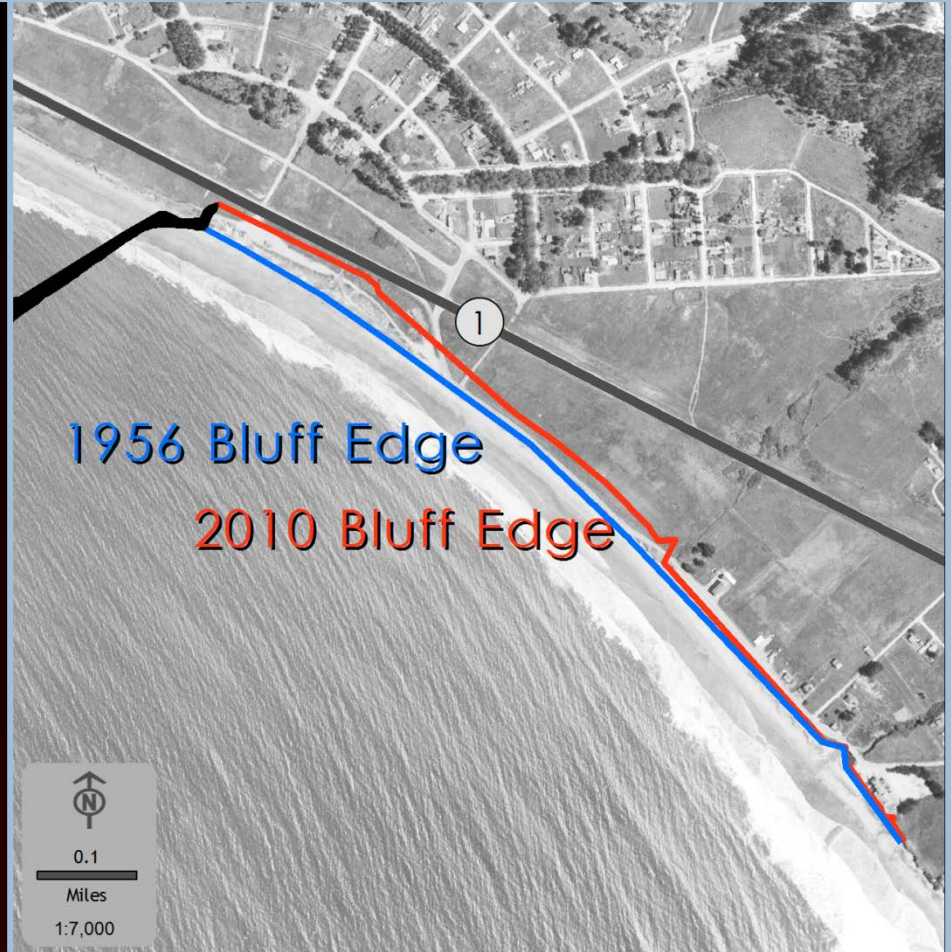
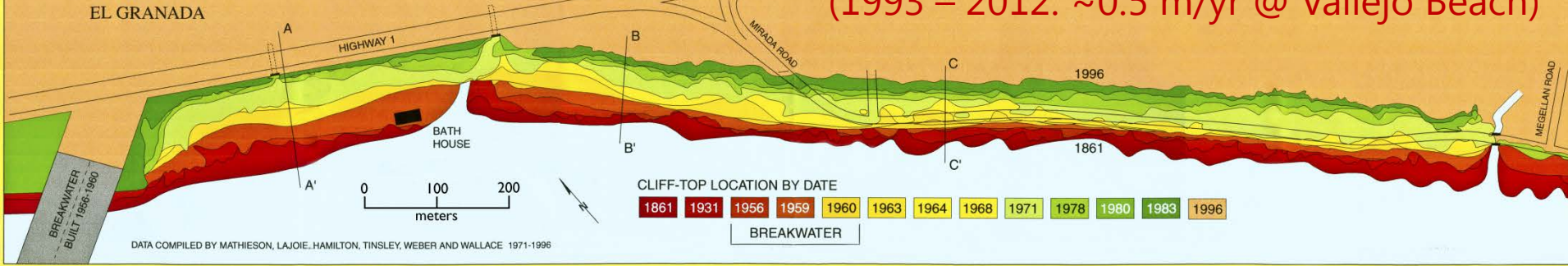
# Conditions on April 28, 2011





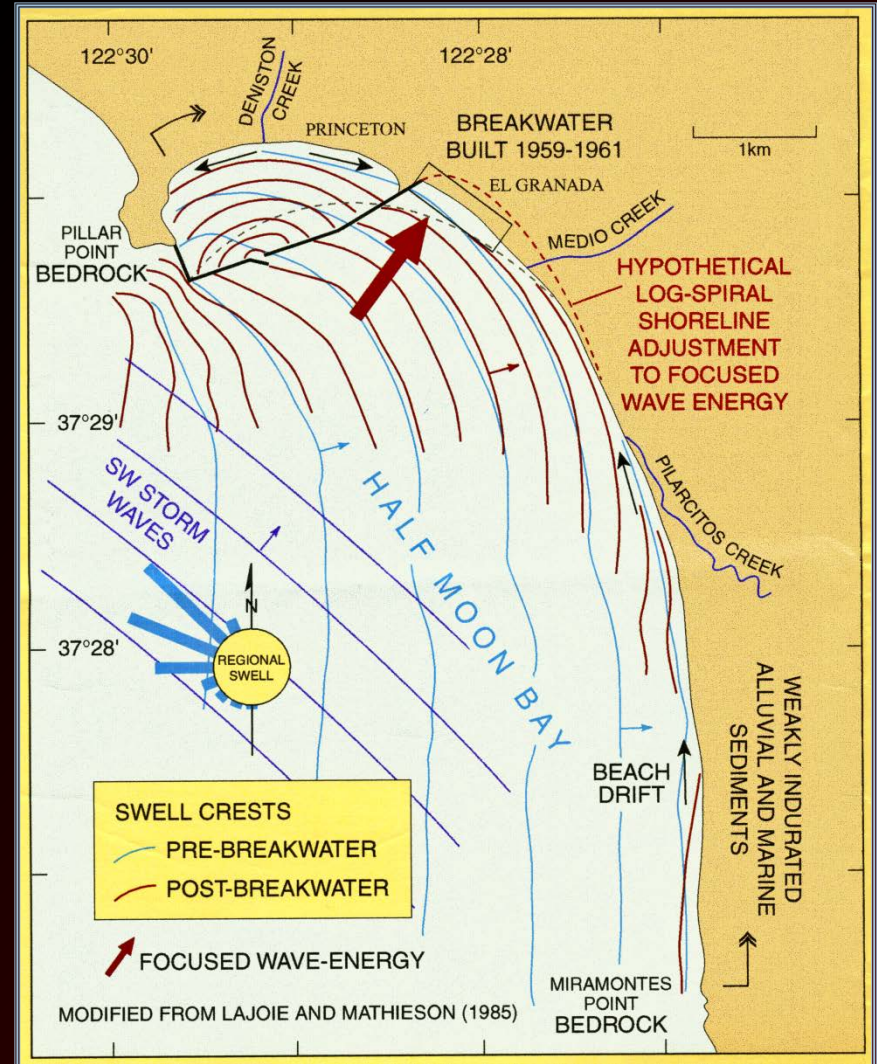
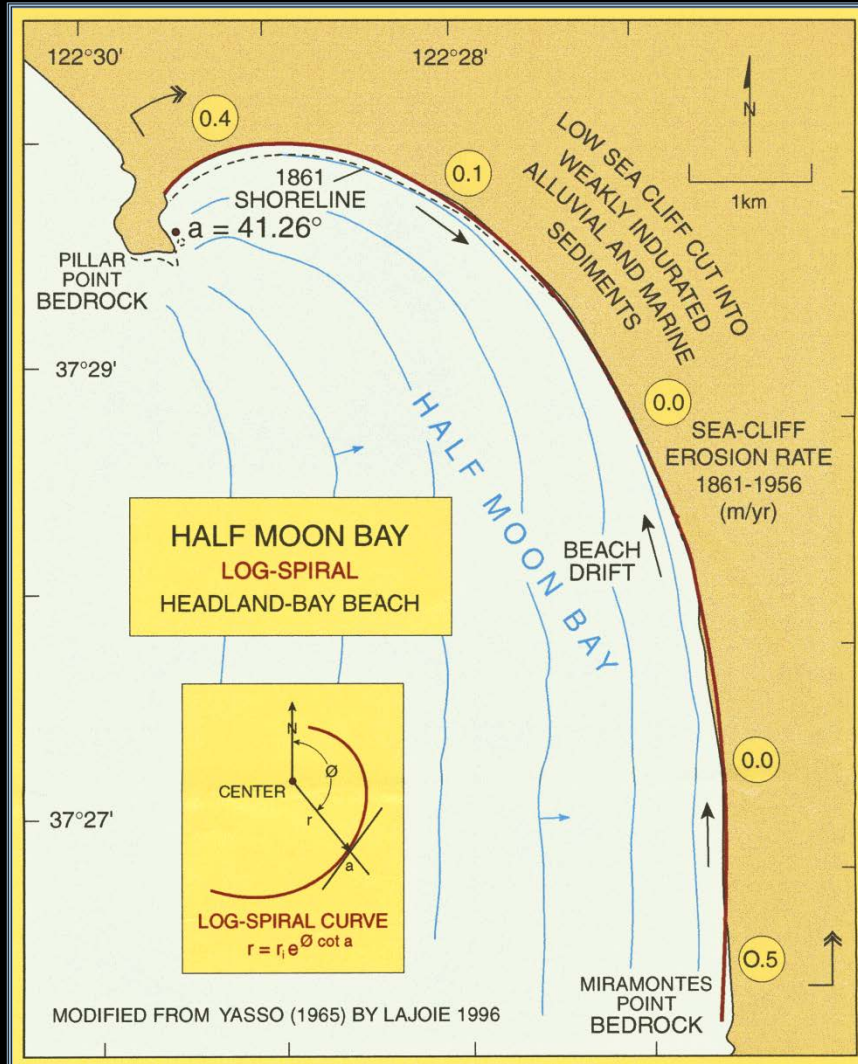
# Bluff Retreat

(1993 – 2012: ~0.5 m/yr @ Vallejo Beach)





# Post-Breakwater Changes

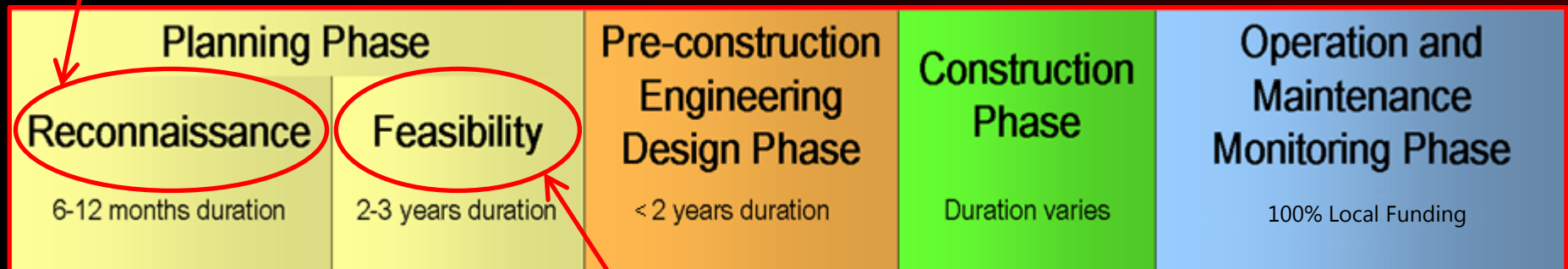


# Project Development Phases

## CAP 111: *Mitigation of [FUTURE] Damages Caused by a Federal Navigation Project*

- New Congressional authorization is not needed
- The federal funding limit is \$5M
- The Non-Federal Sponsor (SMCHD) shares in the costs as prescribed in the Section 111 legislation

**Completed (216 IA Report)**

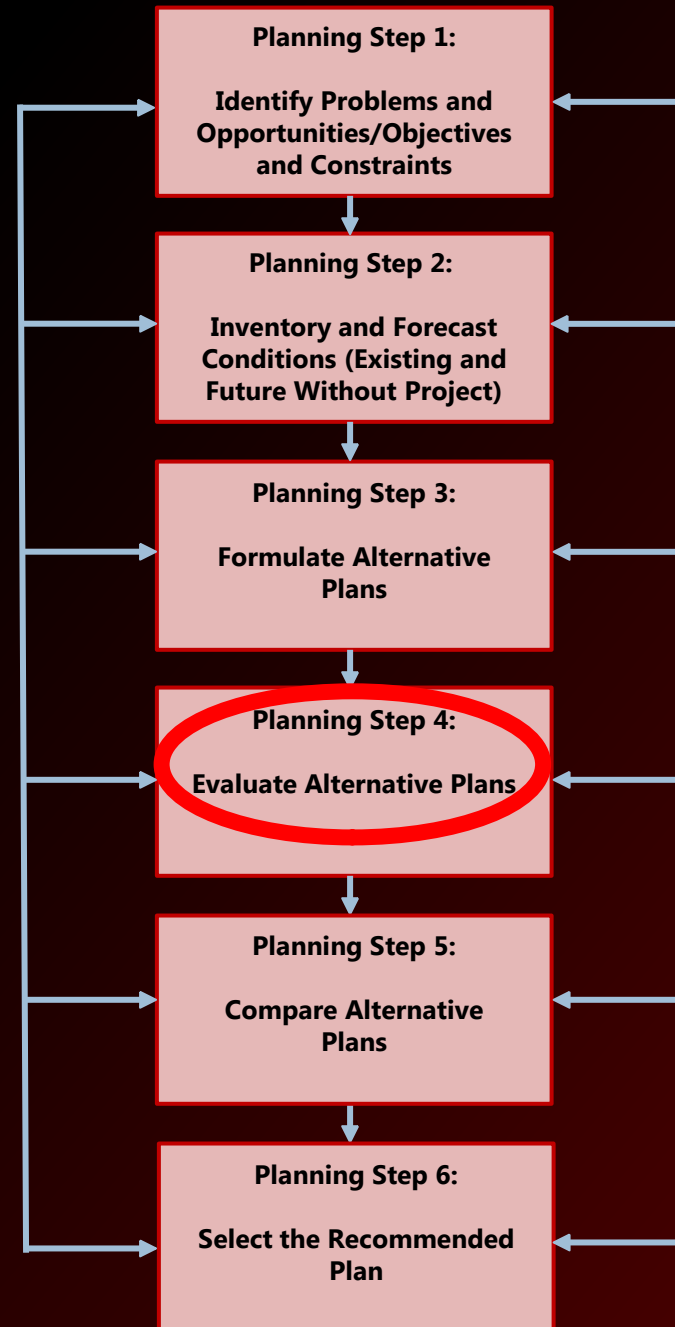


**In Progress**

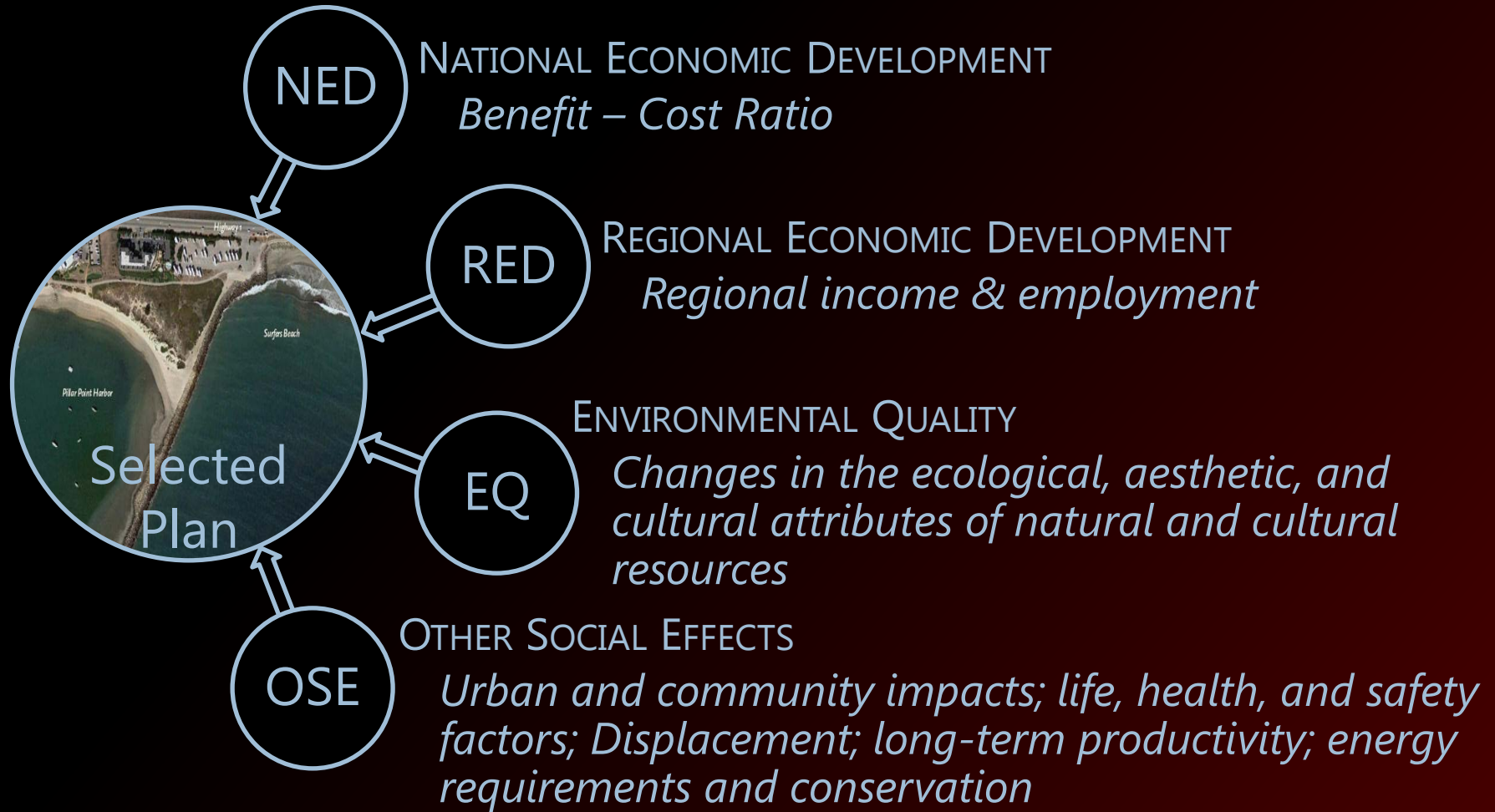


US Army Corps of Engineers  
San Francisco District

# Six-Step Planning Process

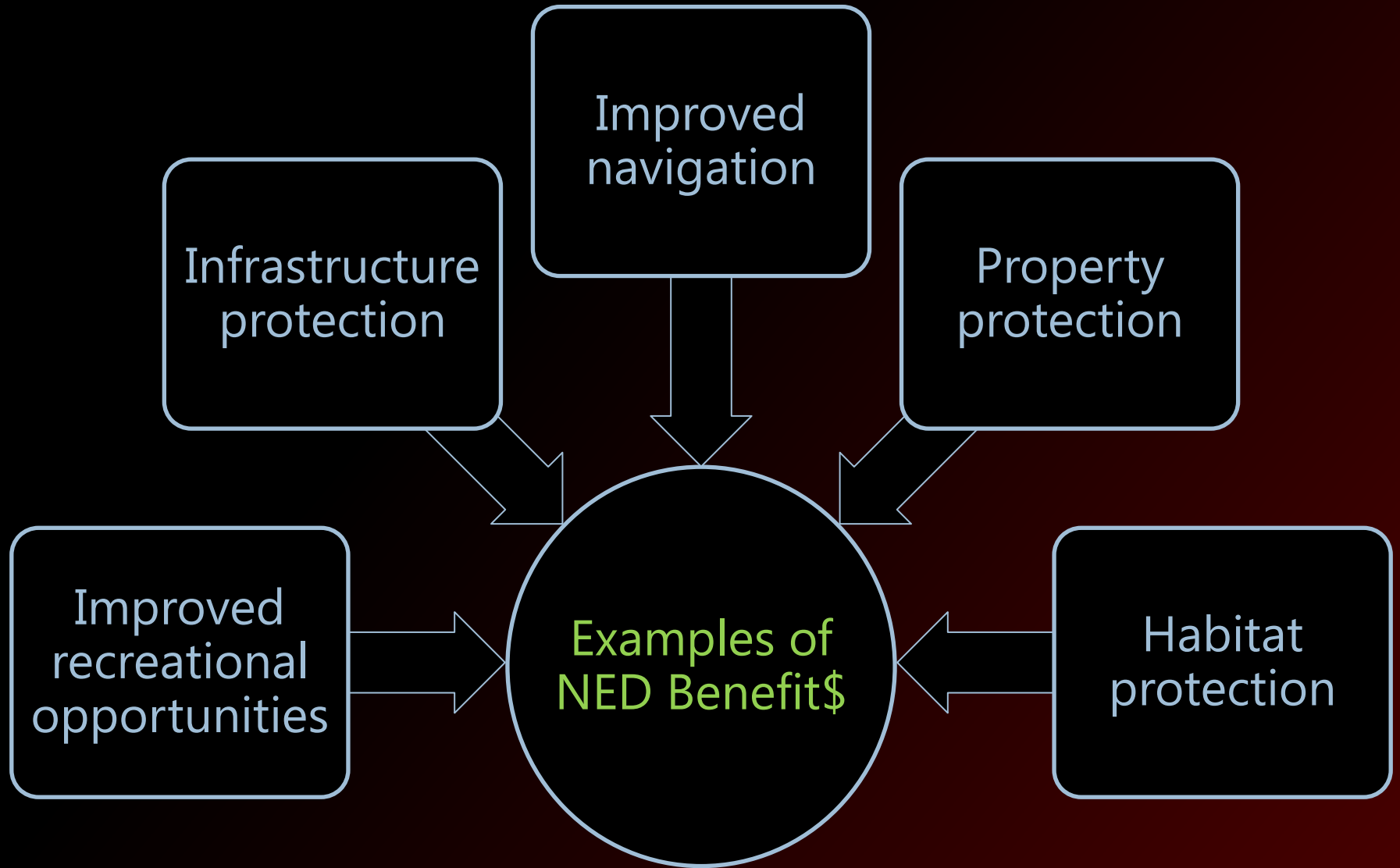


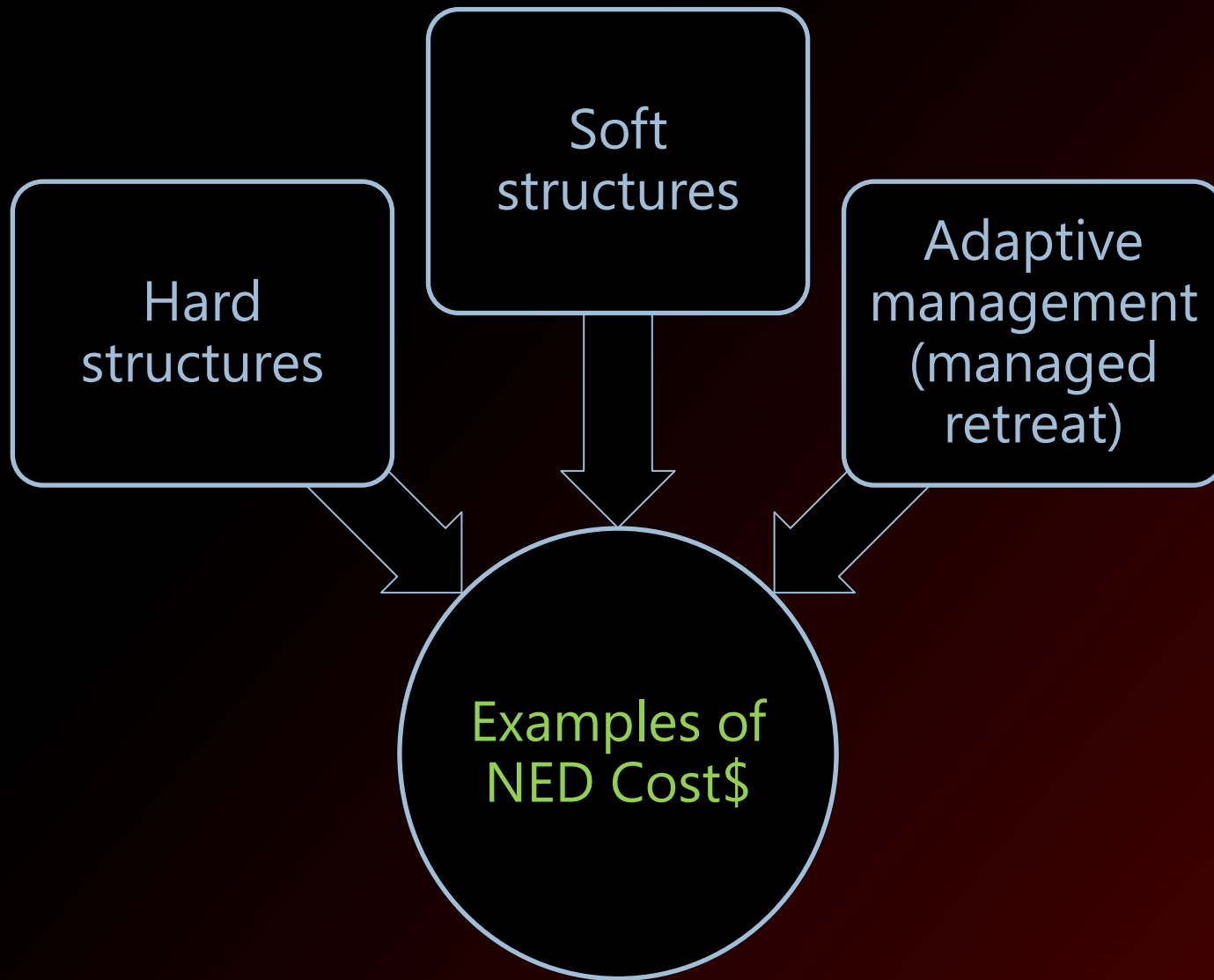
# Evaluate Alternatives: System of Accounts



US Army Corps of Engineers  
San Francisco District





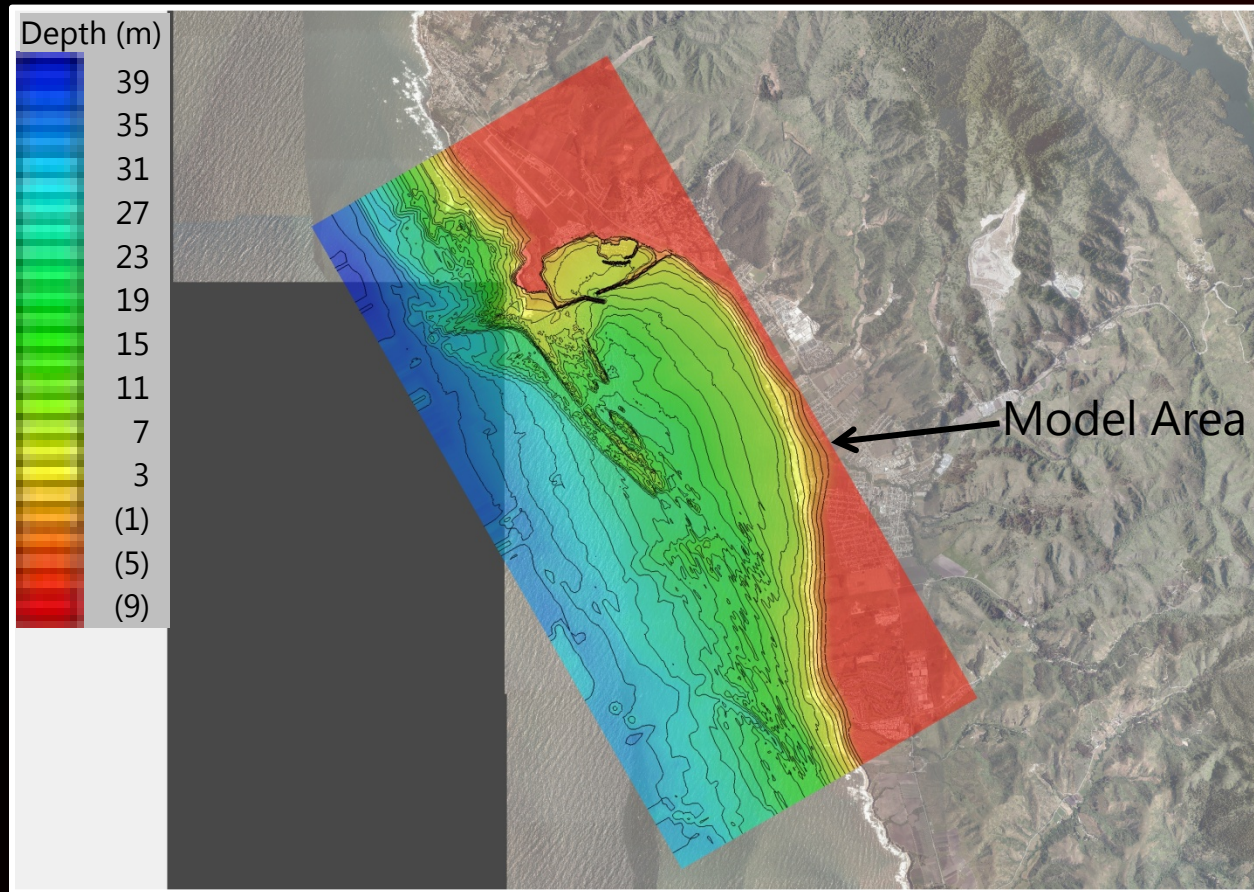




# CAP 111 Benefit – Cost Ratio (NED)

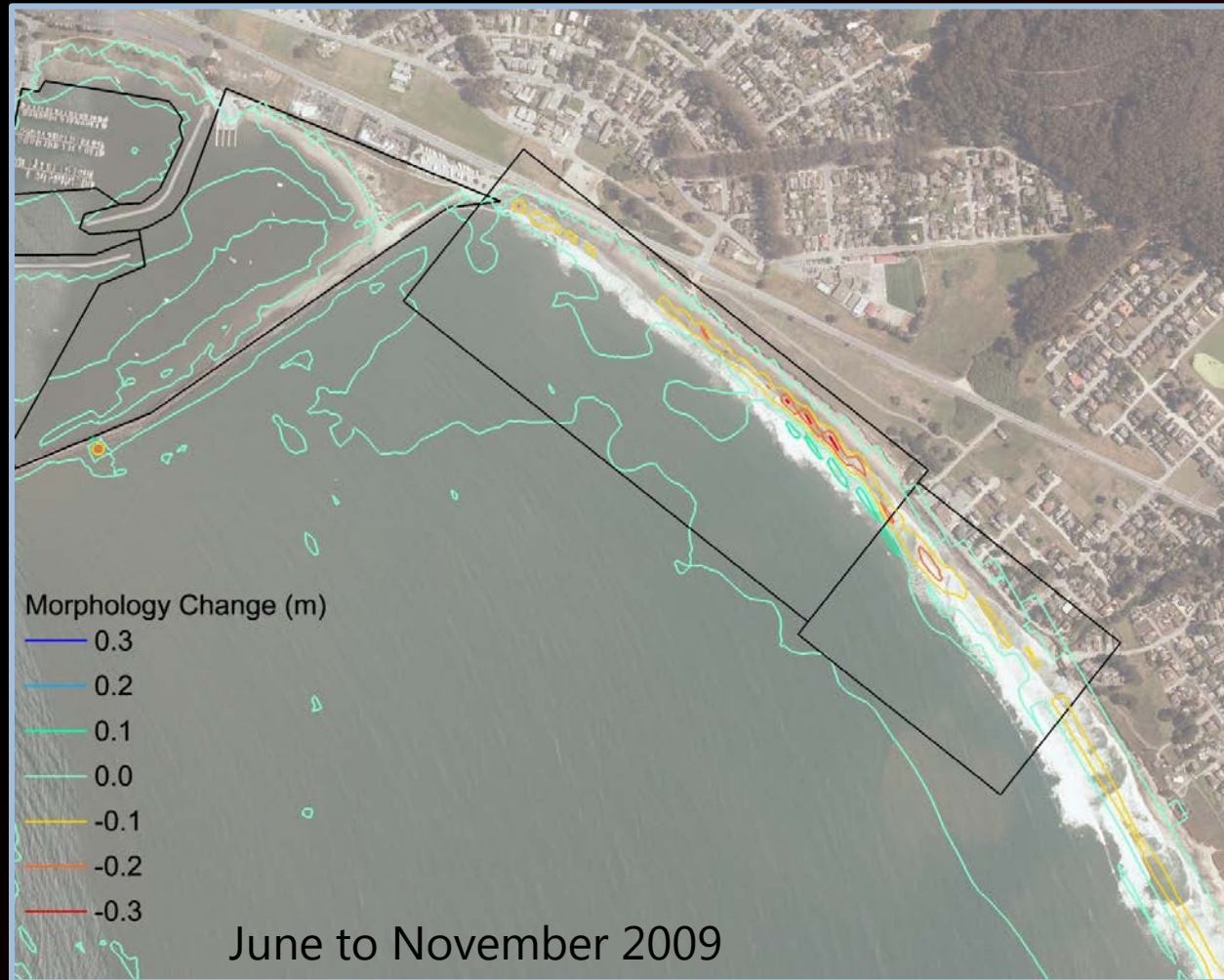
- 1.0 or Greater => 👍 , but economic justification does not ensure funding – e.g., if less than ~2.5 (ratio changes), appropriation unlikely
- Less than 1.0 => 👎 , but
  - Evaluate the other accounts (RED, EQ, OSE)
  - Demonstration Project
  - Different USACE authority

# Numerical Modeling of Beach Placement

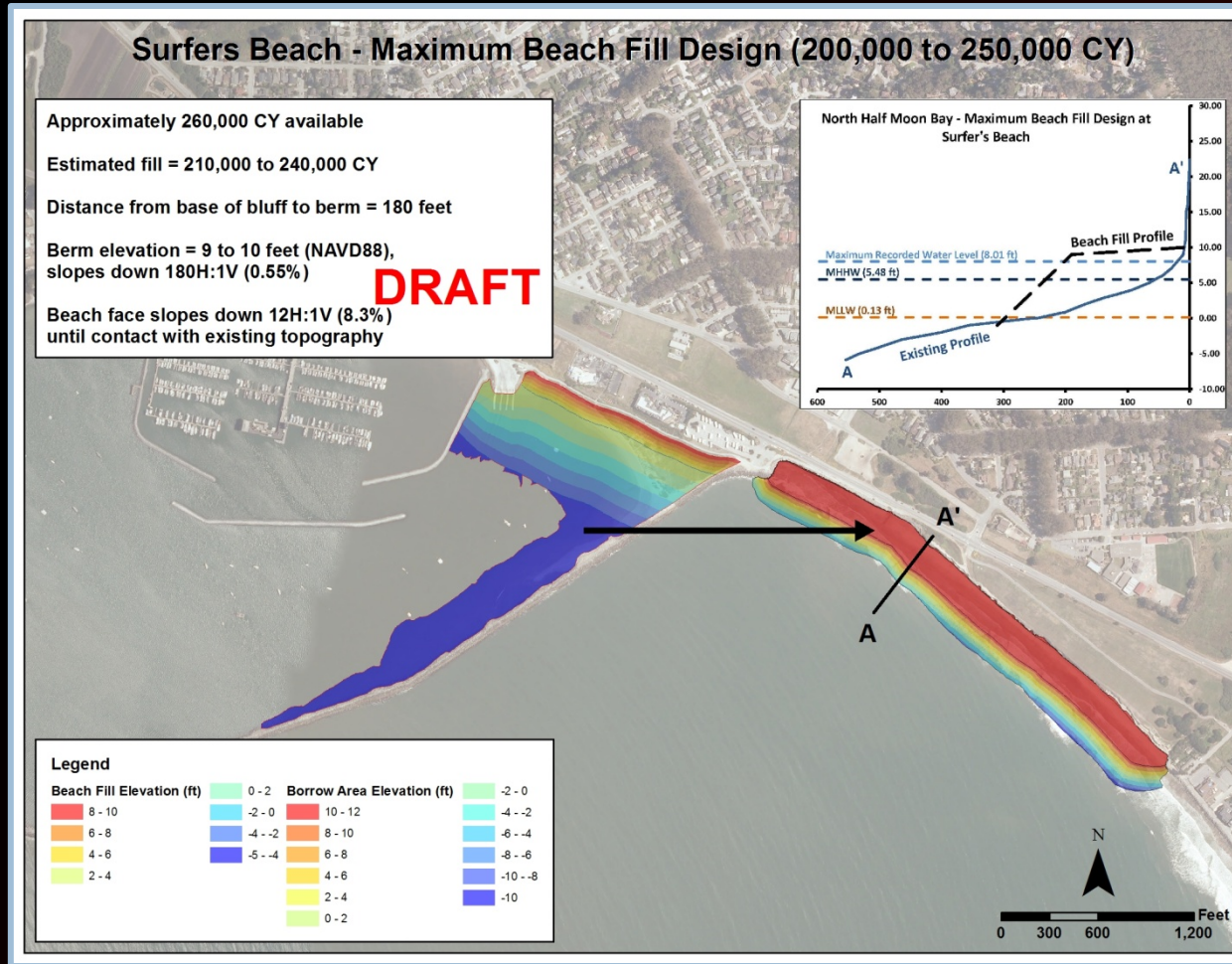




# Modeled erosion and accretion: Existing Conditions

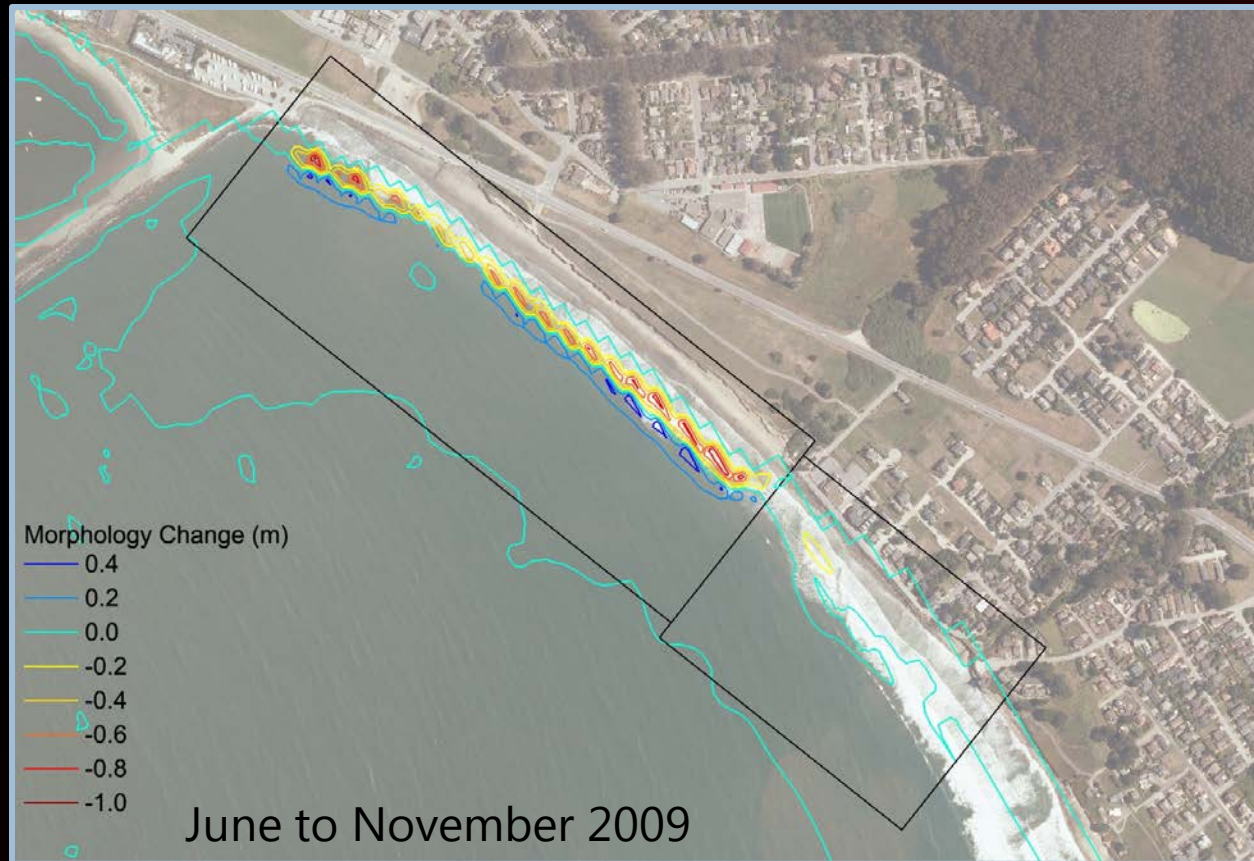


# Engineering Model Results: Maximum Beach Fill Scenario

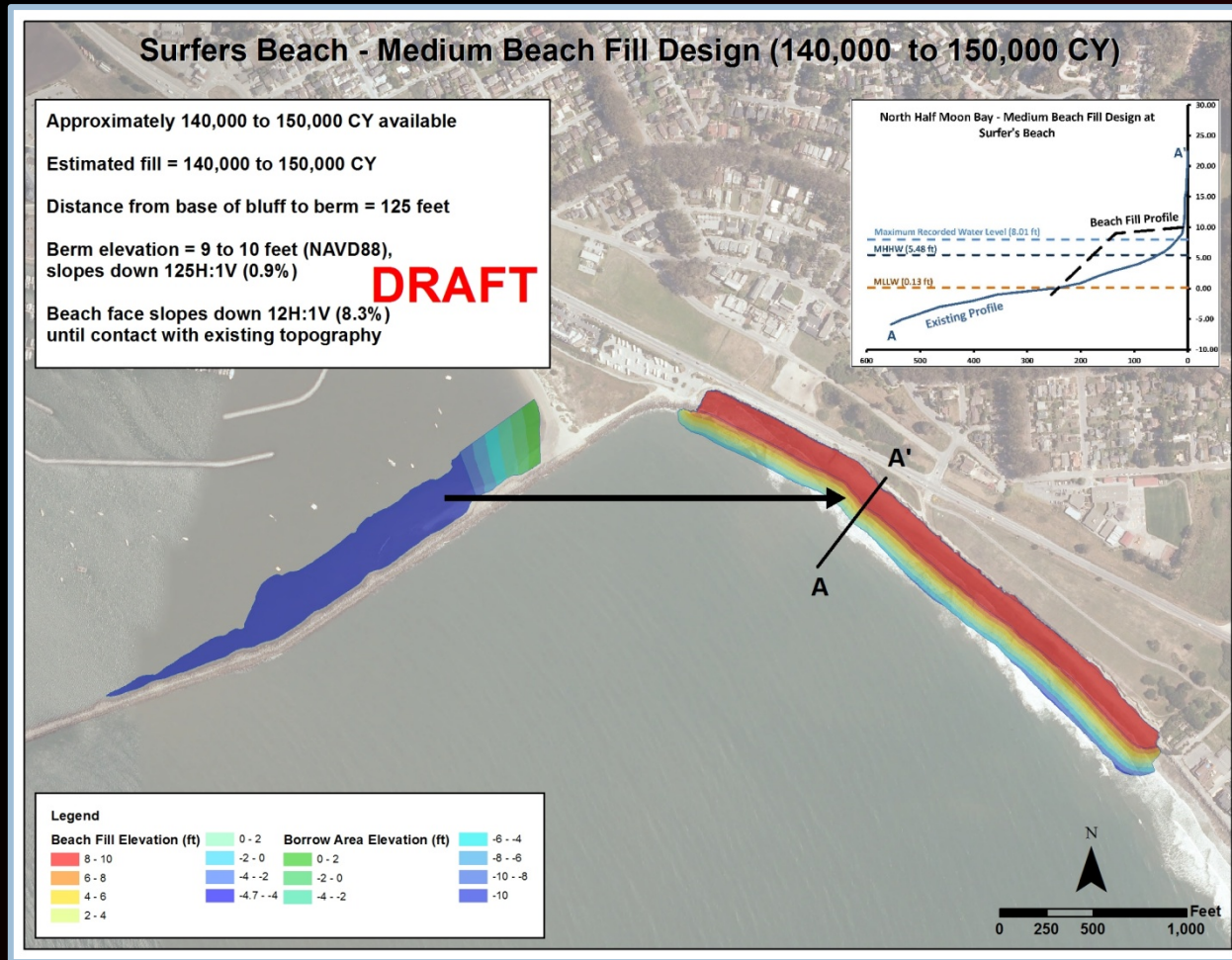




# Modeled erosion and accretion: Maximum Beach Fill



# Engineering Model Results: Medium Beach Fill Scenario





# Modeled erosion and accretion: Medium Beach Fill



# Model Estimate of Beach-Fill Life:

## Medium Beach Fill Scenario (140,000–150,000 yd<sup>3</sup>)

- Typical year (e.g., June 2009 – May 2010)
  - Approximately 24,000 yd<sup>3</sup> of sand will erode from the constructed beach. Assuming several consecutive typical years, the all of the placed sand will be gone in approximately 6 years.
  - However, 80 to 90% of the eroded sand will move into the adjacent surf zone in depths of 3 to 10 feet. As a result, approximately 4,000 yd<sup>3</sup> per year will leave the project area, giving a total residence time of approximately 36 years.
- Although not yet modeled, a similar analysis for Ocean Beach (San Francisco) shows that including an El Niño winter will notably shorten the beach-fill lifespan.





# Study Schedule

- Determine final array of project alternatives
- Complete project coastal and economic modeling
- Complete Draft Detailed Project Report (DPR) and Environmental Assessment (EA)
- Complete agency and public review of DPR and EA
- Finalize DPR and EA with FONSI (Finding of No Significant Impact)
- Submit final DPR and EA to the South Pacific Division for approval
- If approved, request funding for Detailed Design & Construction





# Project Development Team

Mark Bierman

Project Manager  
Economist

John Dingler

Project Planner

Peter Grenell

Non-Federal Sponsor

Richard Stradford

Environmental Manager

Frank Wu

Coastal Engineer

James Zoulas

Coastal Engineer

# Contact Information

Mark Bierman      [mark.d.bierman@usace.army.mil](mailto:mark.d.bierman@usace.army.mil)

John Dingler      [john.r.dingler@usace.army.mil](mailto:john.r.dingler@usace.army.mil)

James Zoulas      [james.g.zoulas@usace.army.mil](mailto:james.g.zoulas@usace.army.mil)

Peter Grenell      [harbordistrict@smharbor.com](mailto:harbordistrict@smharbor.com)

Tom Kendall      [thomas.r.kendall@usace.army.mil](mailto:thomas.r.kendall@usace.army.mil)