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
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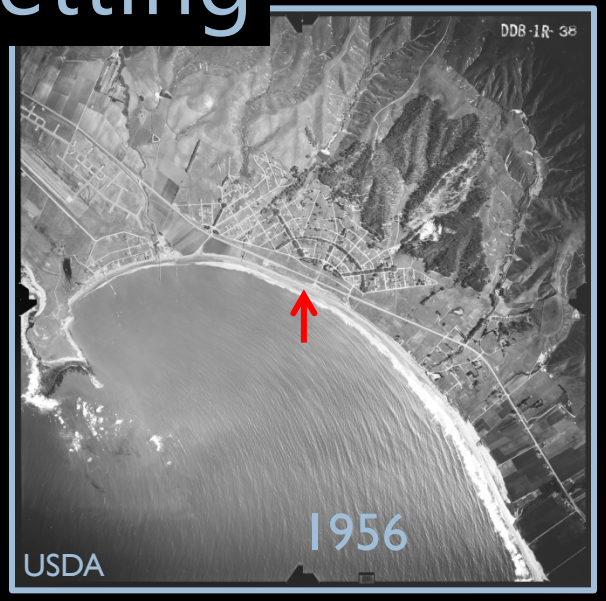
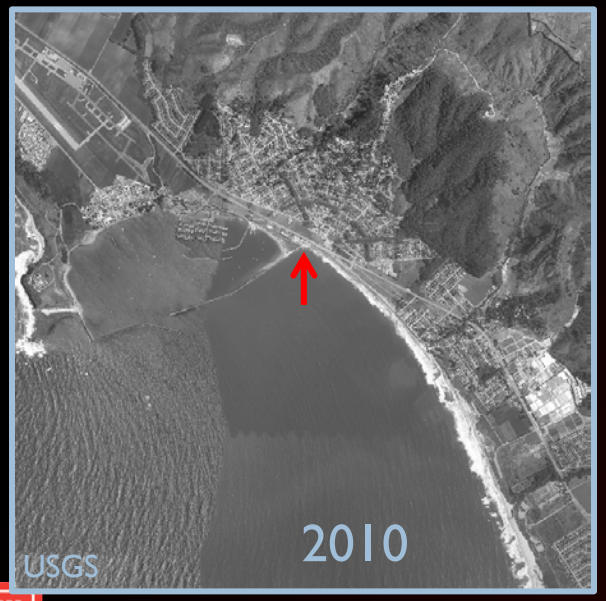
San Francisco District

Setting





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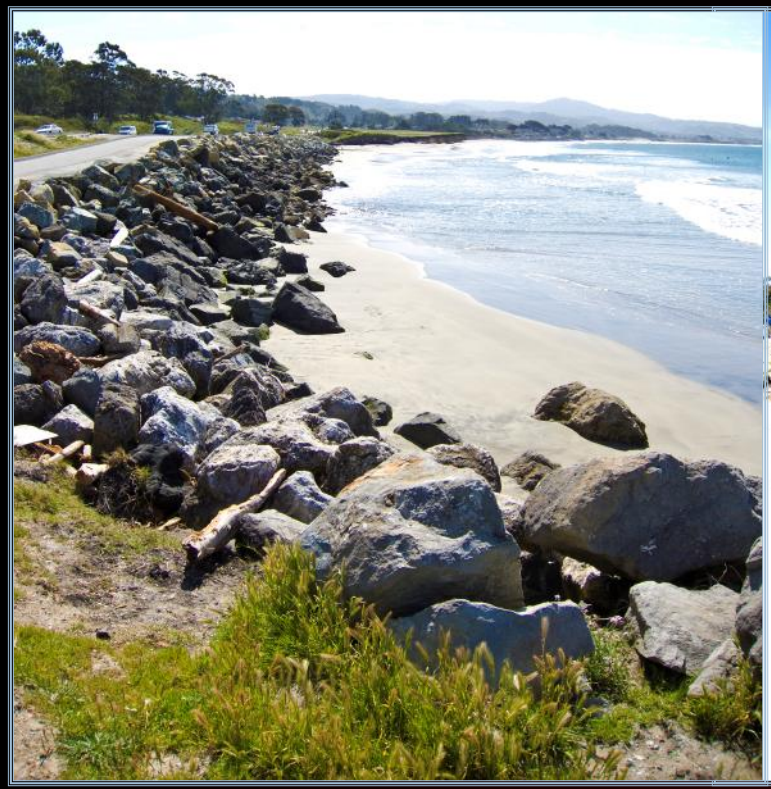
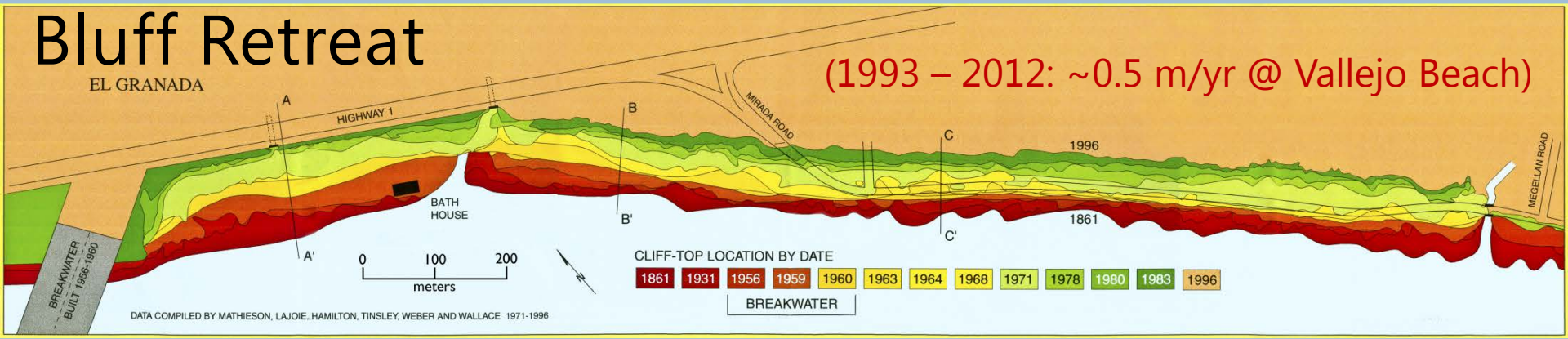
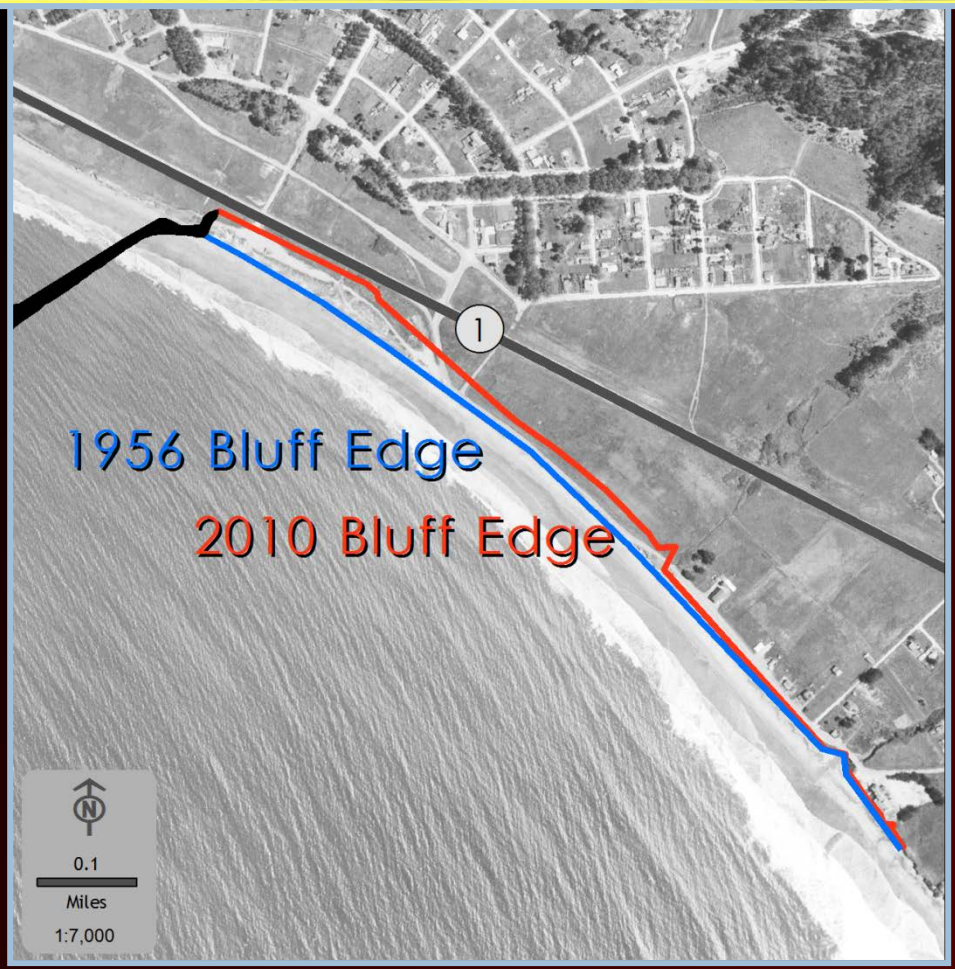
Conditions on April 28, 2011



Bluff Retreat

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





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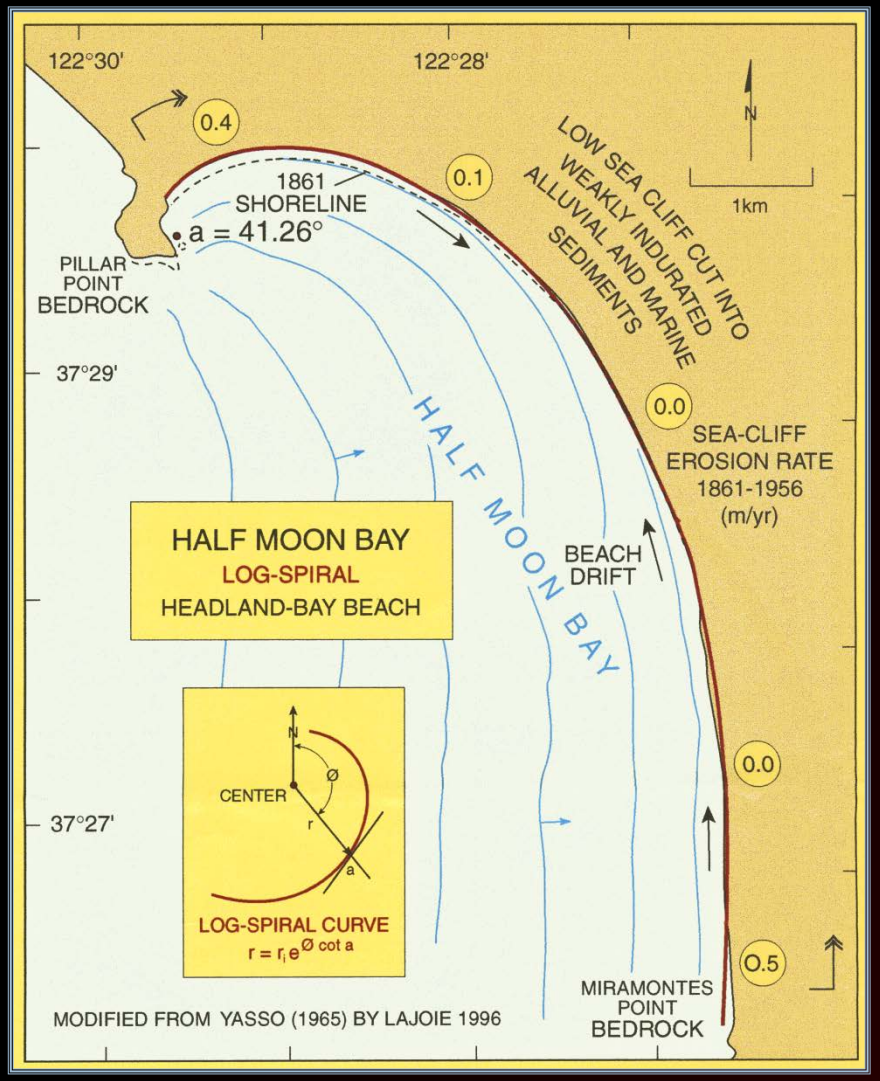
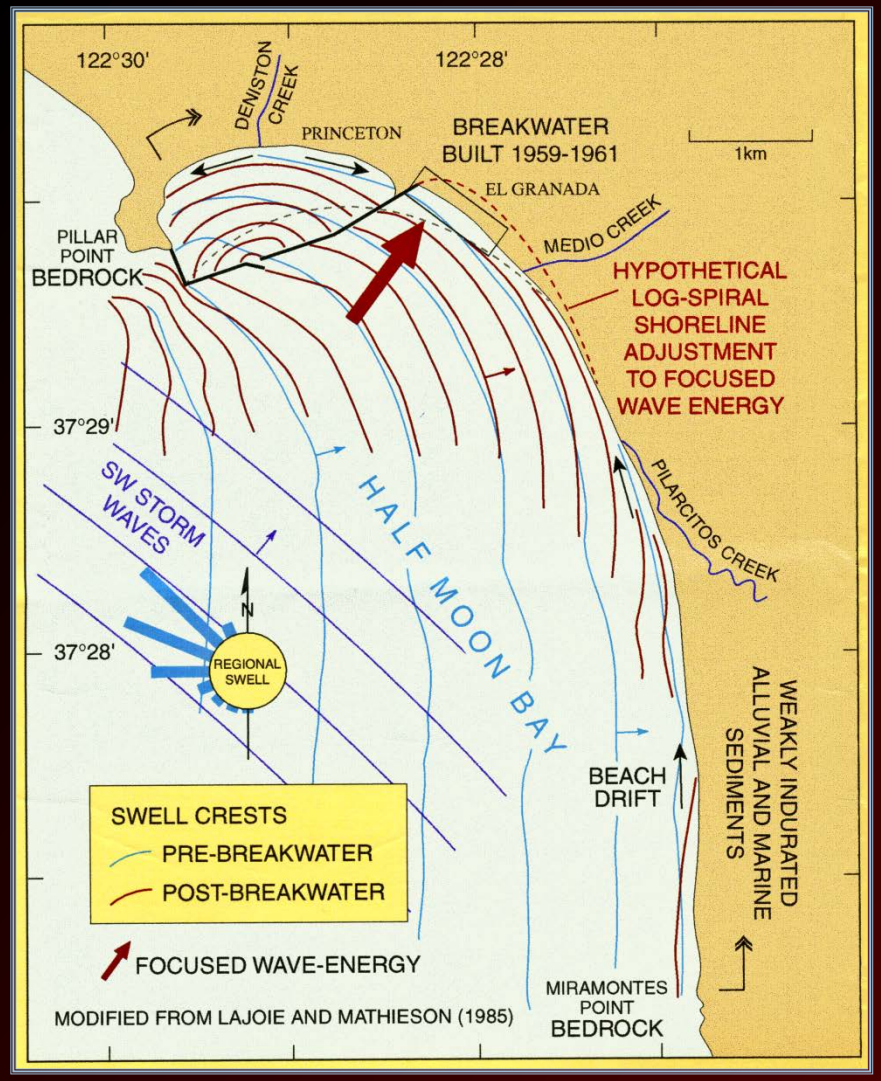
Post-Breakwater Changes



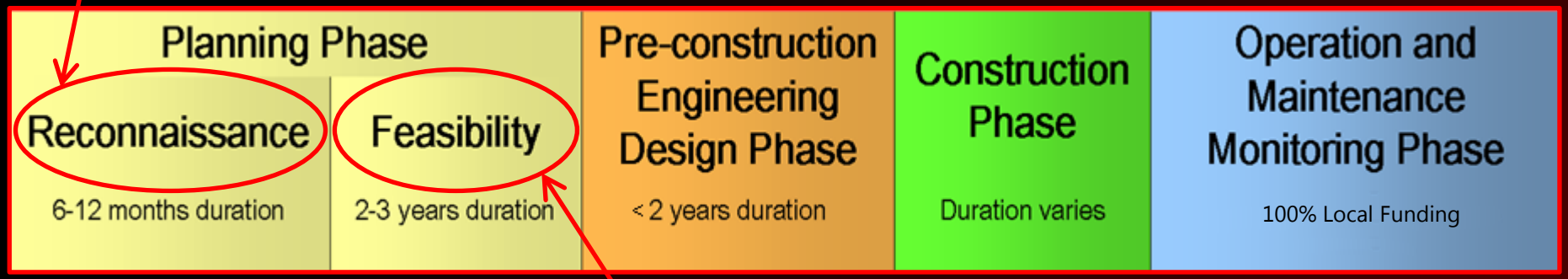


Project Development Phases

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

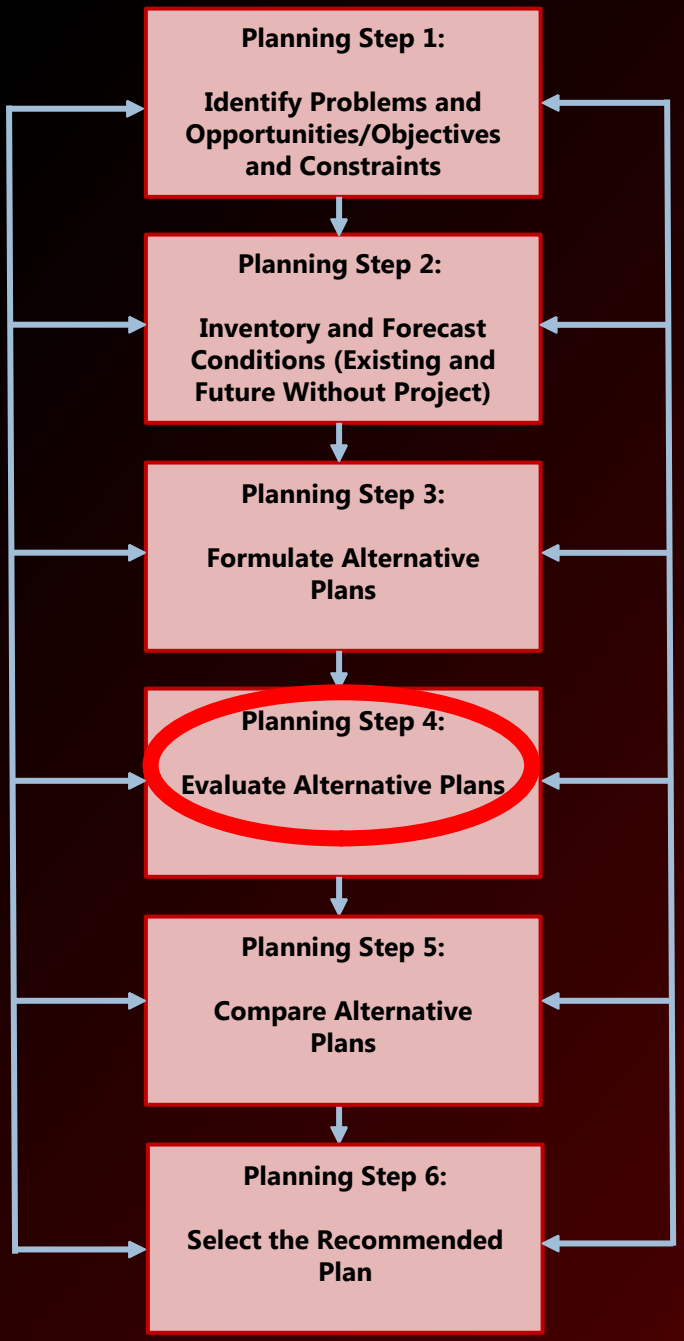
- New Congressional authorization is not needed
- The federal funding limit is $5M
- The Non-Federal Sponsor (SMCHD) shares in the costs as prescribed in the Section 111 legislation

Completed (216 IA Report)



In Progress

Six-Step Planning Process



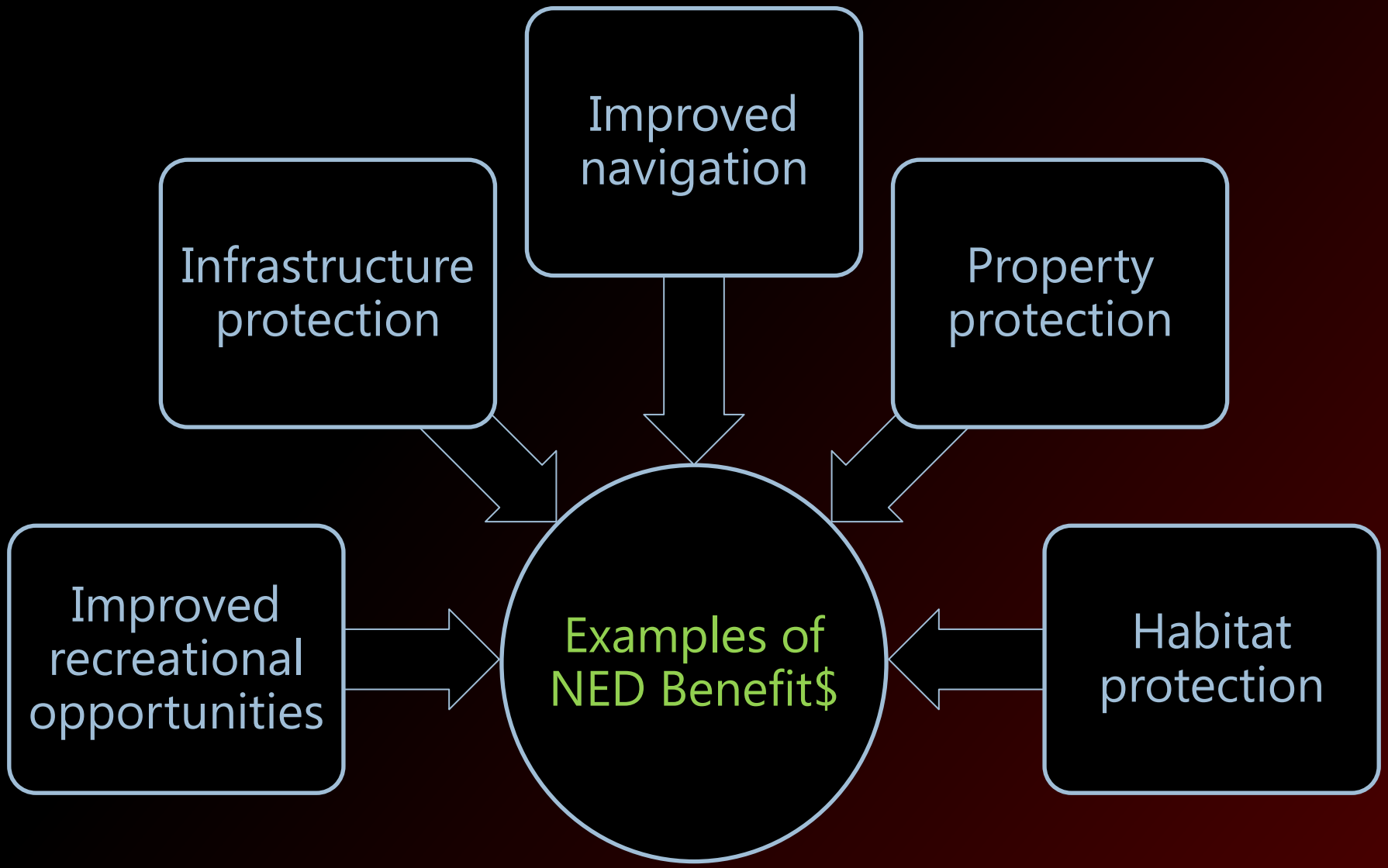
Evaluate Alternatives: System of Accounts

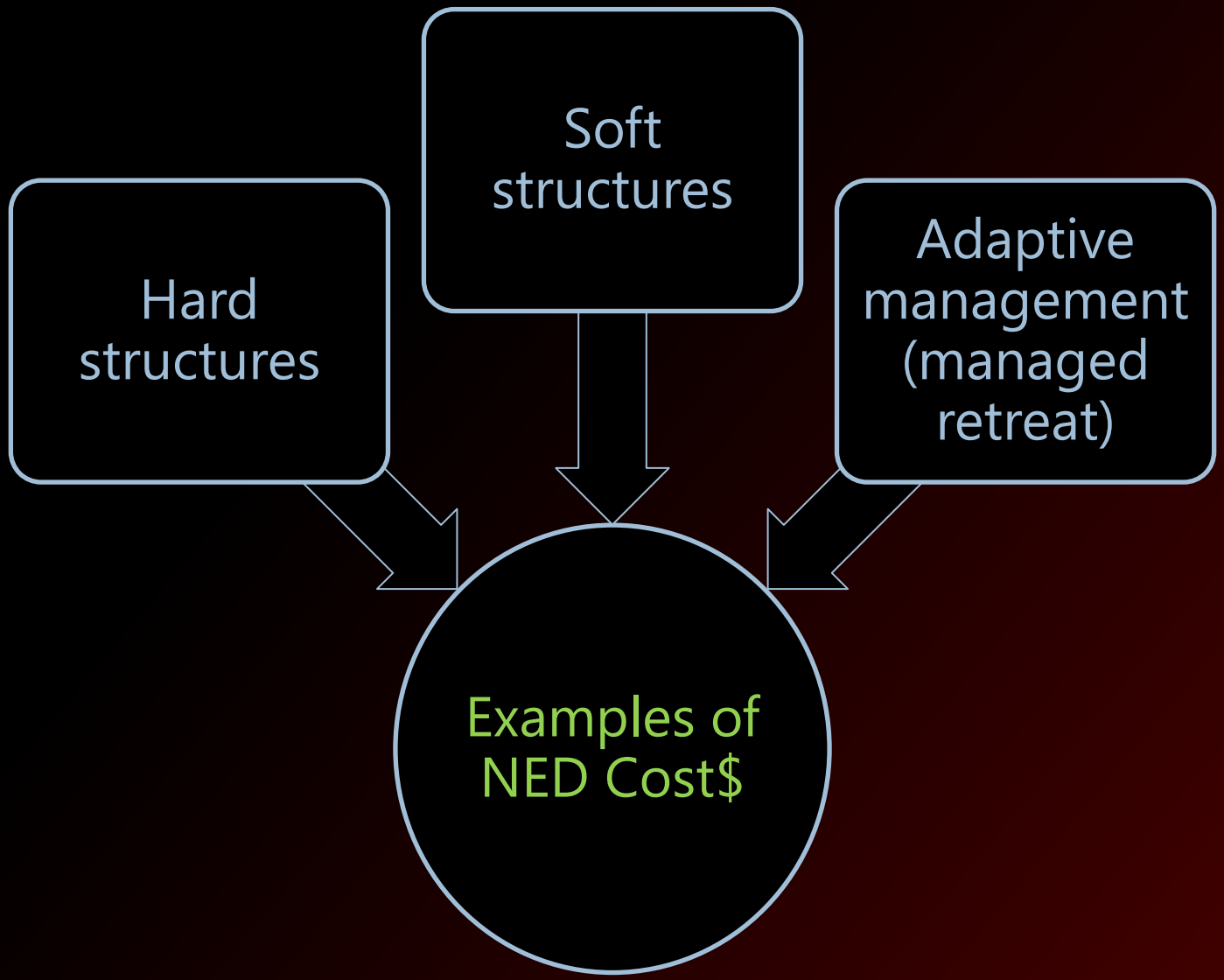
NED — National Economic Development
Benefit – Cost Ratio

RED — Regional Economic Development
Regional income & employment

EQ — Environmental Quality
Changes in the ecological, aesthetic, and cultural attributes of natural and cultural resources

OSE — Other Social Effects
Urban and community impacts; life, health, and safety factors; Displacement; long-term productivity; energy requirements and conservation

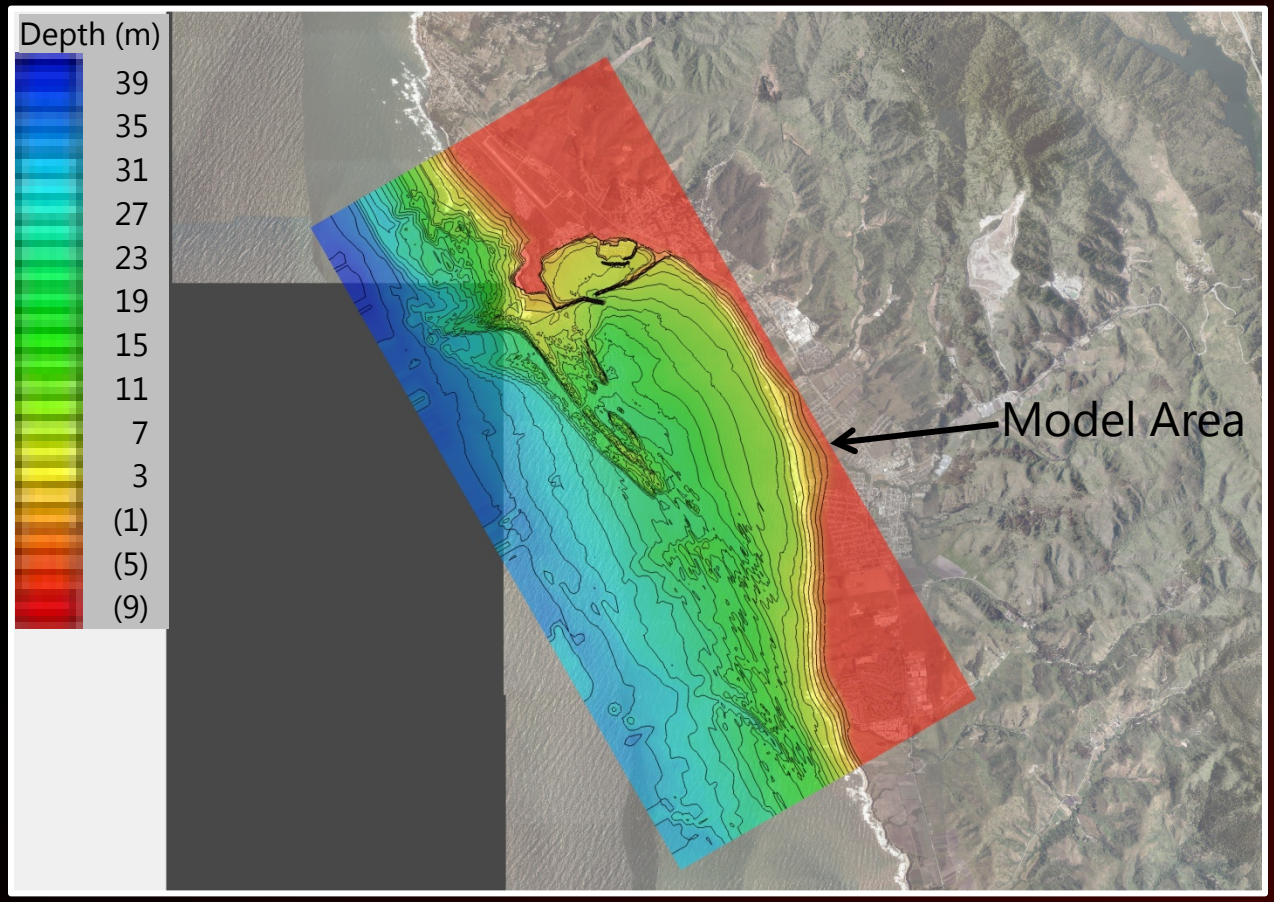

Improved navigation
Infrastructure protection
Property protection
Improved recreational opportunities
Examples of NED Benefit$
Habitat protection


Soft structures
Hard structures
Adaptive management (managed retreat)
Examples of NED Cost$

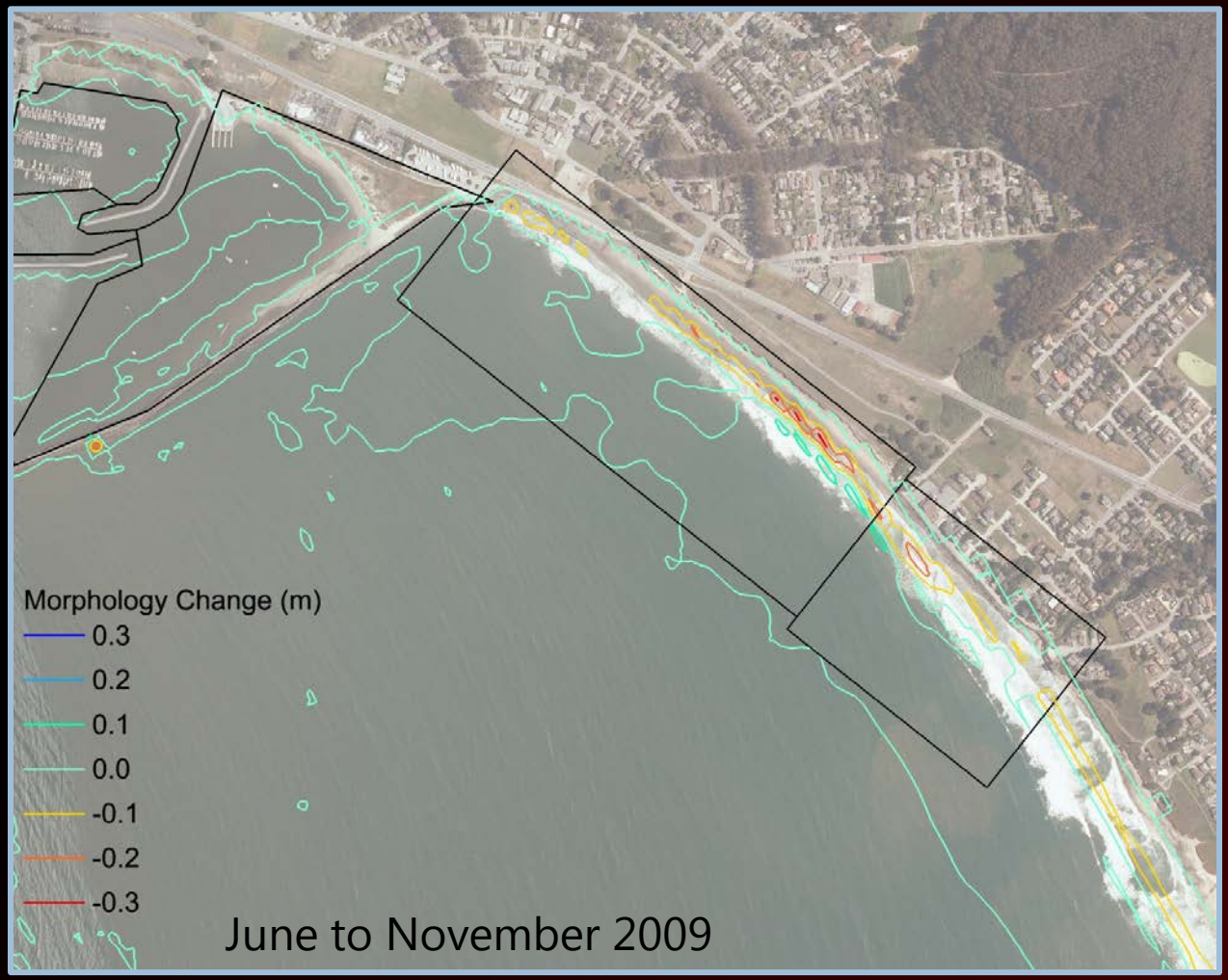
CAP 111 Benefit – Cost Ratio (NED)

- 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

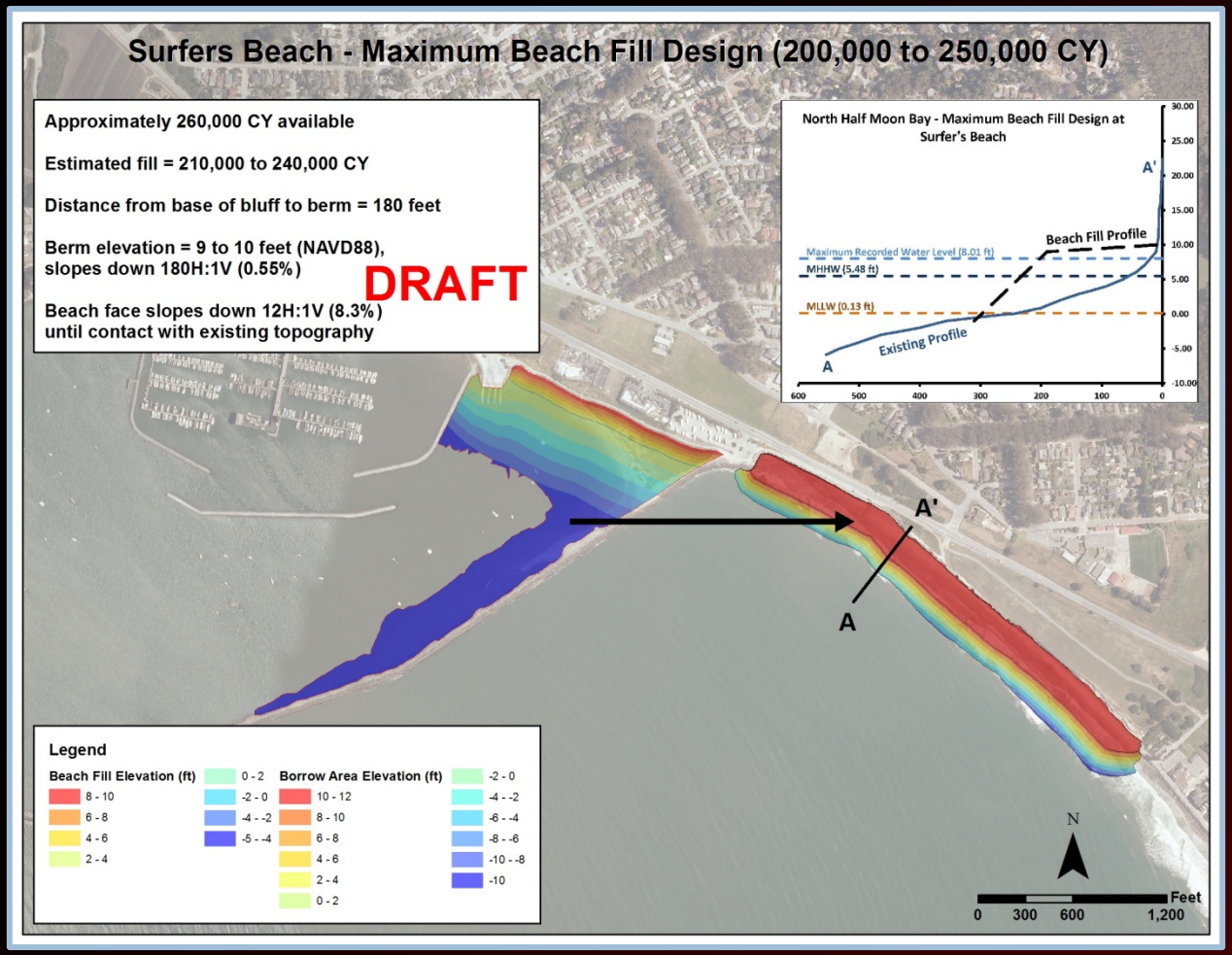
Numerical Modeling of Beach Placement



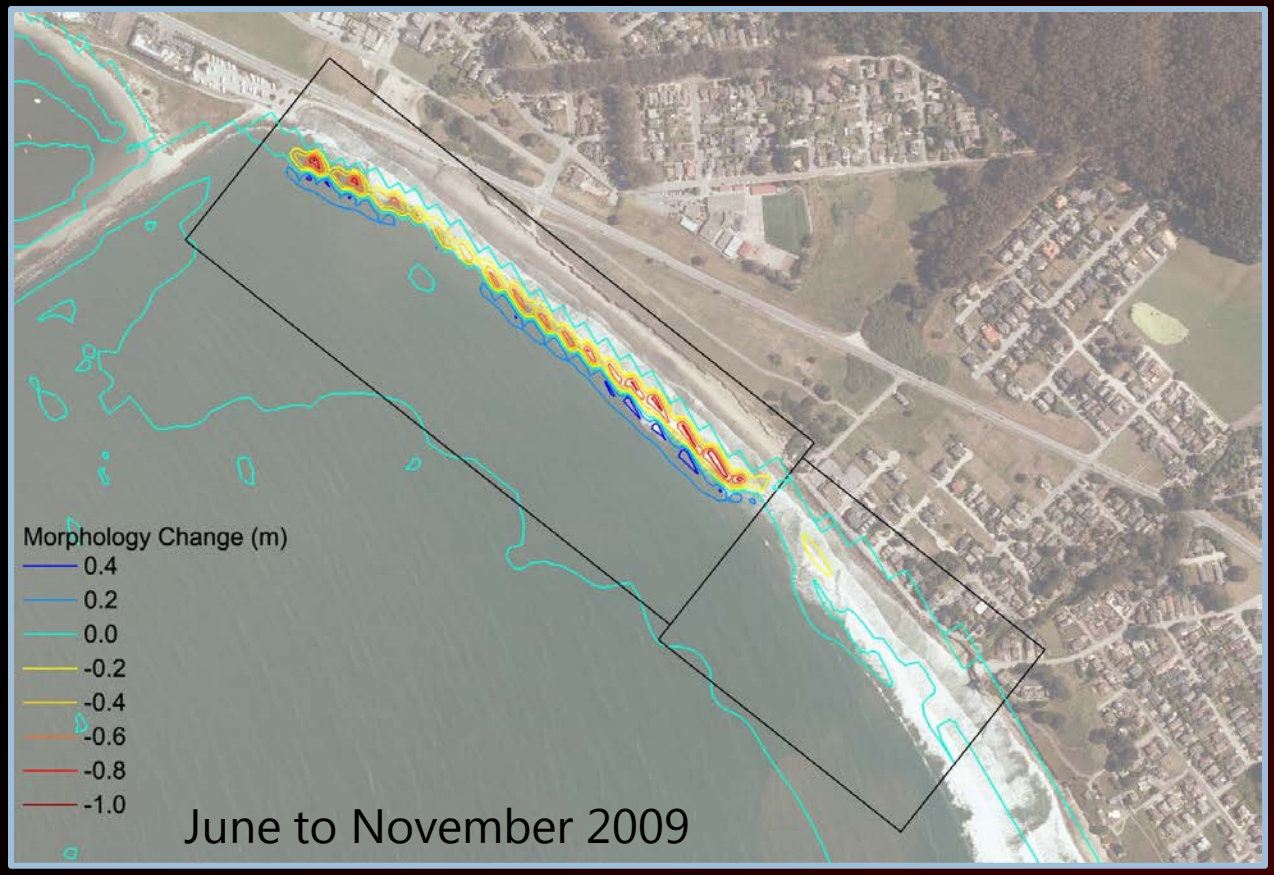
Modeled erosion and accretion: Existing Conditions



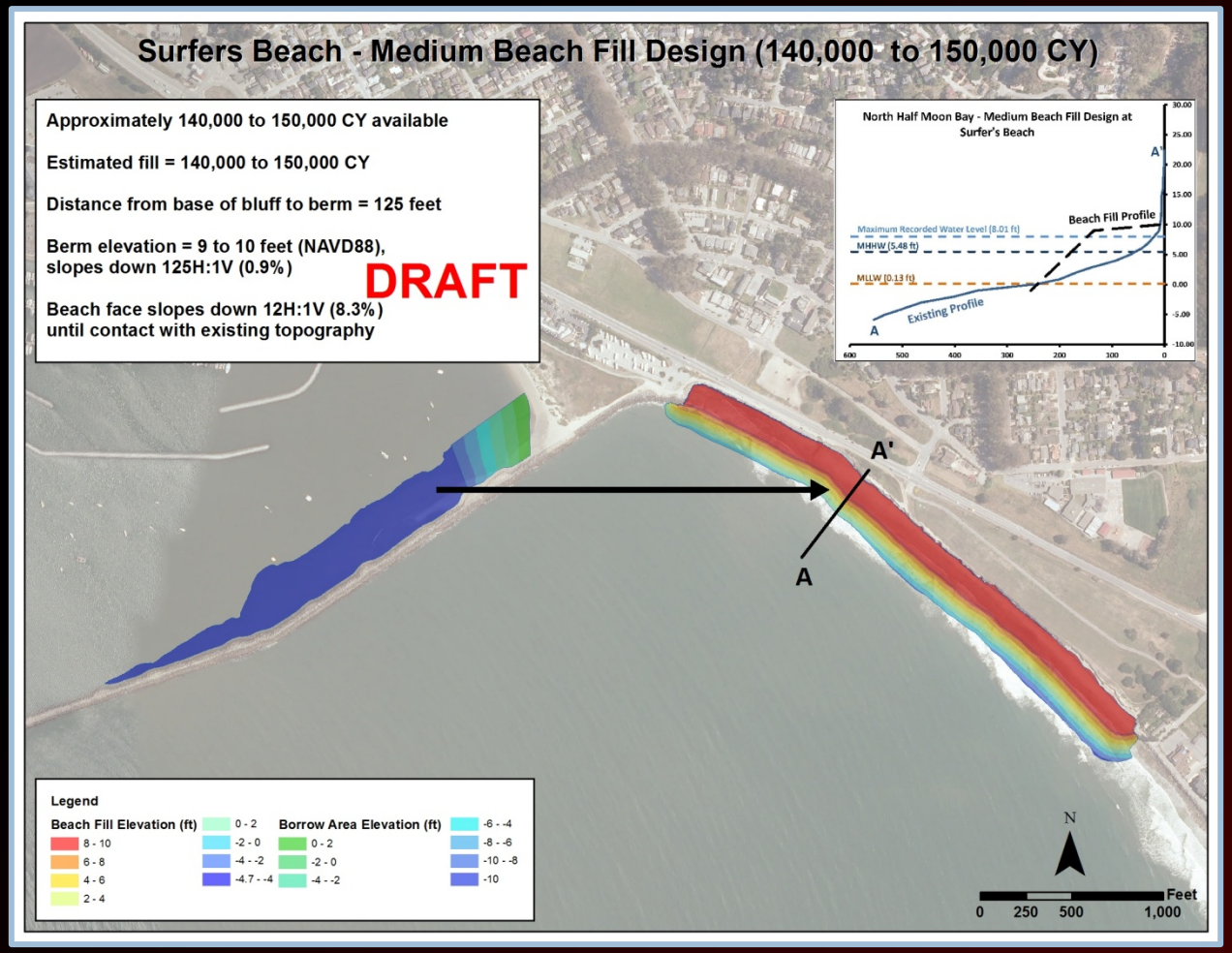
Engineering Model Results: Maximum Beach Fill Scenario



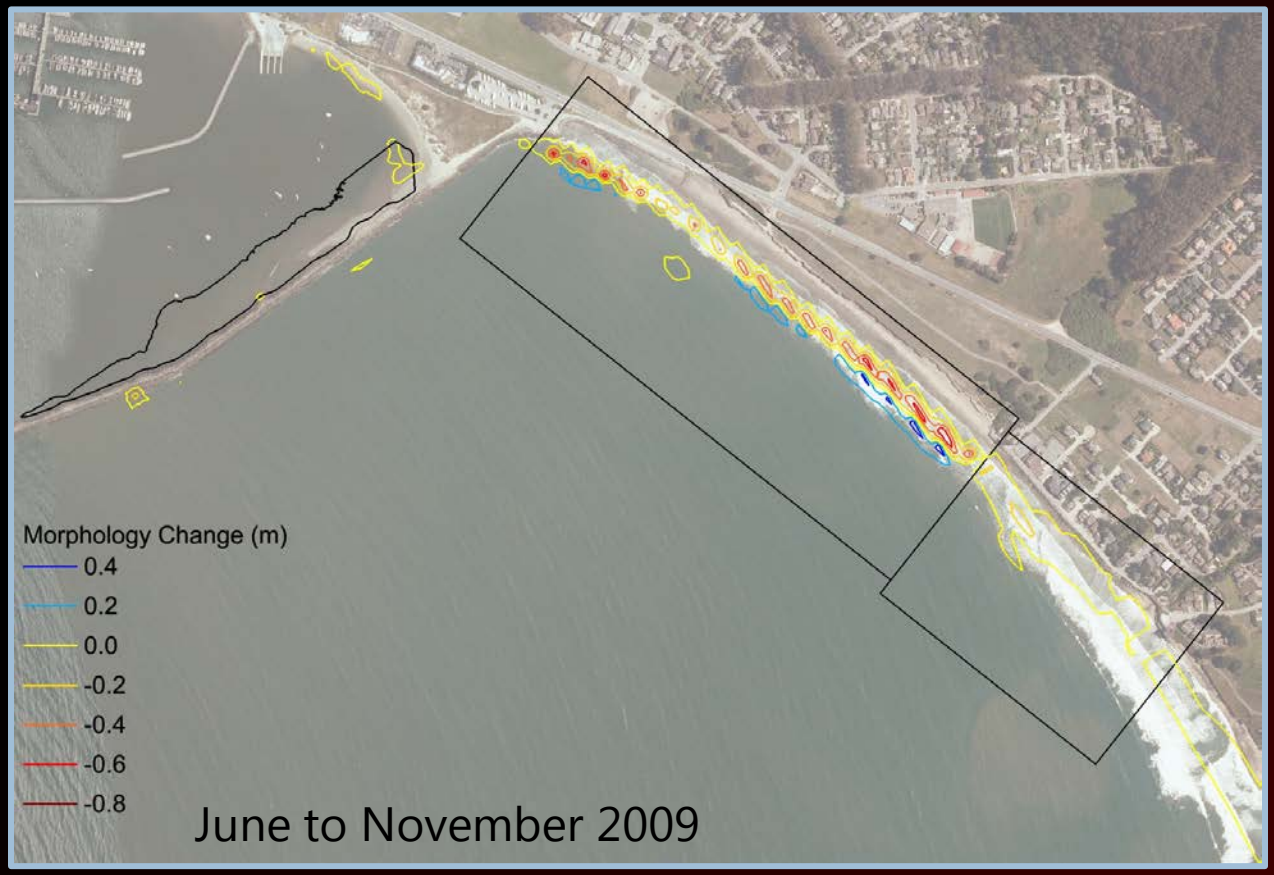
Modeled erosion and accretion: Maximum Beach Fill



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^3)

- Typical year (e.g., June 2009 – May 2010)
  - Approximately 24,000 yd^3 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^3 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

Monterey Bay National Marine Sanctuary

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San Francisco District
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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
John Dingler john.r.dingler@usace.army.mil
James Zoulas james.g.zoulas@usace.army.mil
Peter Grenell harbordistrict@smharbor.com
Tom Kendall thomas.r.kendall@usace.army.mil