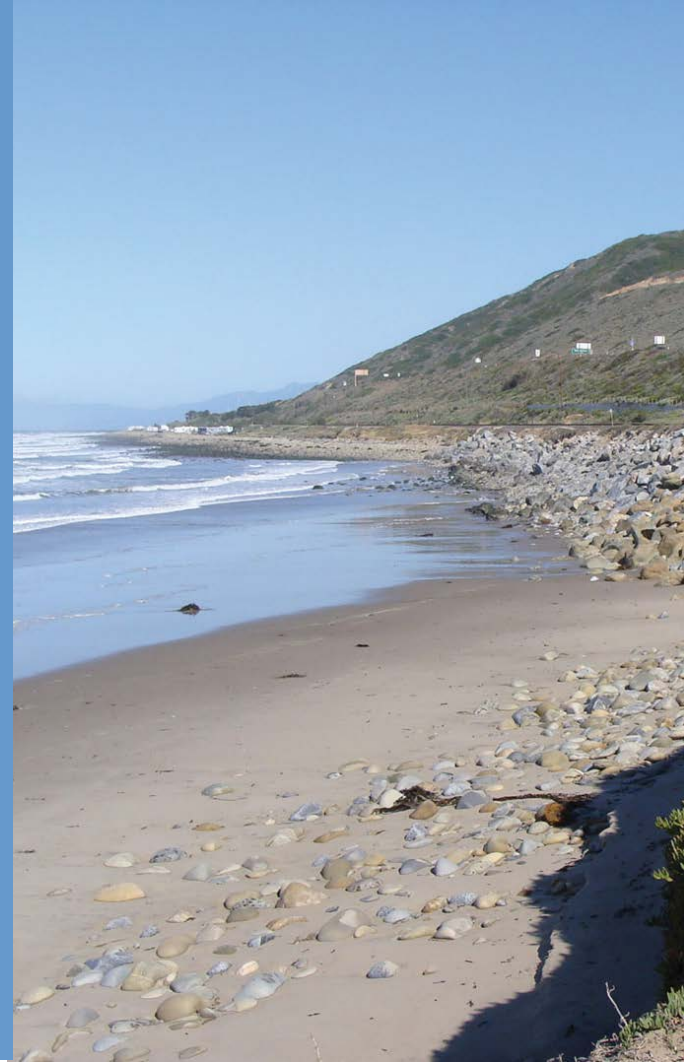


# Your Coast in 50 Years Sediment Management Workshop

## San Francisco Littoral Cell CRSMP

Public Workshop, 5-8  
November 14, 2012 (Pacifica)

*Doug George and Bob Battalio, ESA PWA  
Athena Honore, ABAG*



## Essentials for Tonight

- This Project: develop a coastal regional sediment management plan
  - Identify ways to mitigate coastal erosion hazards by increasing sediment supply
  - Describe actions that may become part of plan but not specific projects
- This Plan: for state and federal agencies to create local and regional projects
- This Workshop: inform and educate public about coastal hazards and allow cities to present some of their preferred alternatives for consideration

# Tonight's Agenda

<i>Time</i>	<i>Topic</i>	<i>Speaker</i>
5:00-5:05	Opening, Introduction	Athena Honore, ABAG
5:05-5:20	Project overview, including hazard zones and introduction to new economic information and examples from SANDAG	Doug George, ESA PWA
5:20-5:50	Tools, alternatives, scenarios. Impacts of existing approach (armoring)	Bob Battalio, ESA PWA
5:50-6:00	Economic analysis	Phil King, SFSU
6:00-6:05	Break	
6:05-6:55	Explanation of municipal work group exercise	Doug
6:55-7:05	City presentations	Shannon Fiala, SPUR Michael Van Lonkhuysen, Daly City Lee Diaz, Pacifica
7:05-7:30	Break	
7:30-7:40	Public feedback period (timed comments)	Moderated by Athena
7:40-7:50	Policy development	Athena
7:50-8:00	Next steps, closing	Athena

# Project overview: regional coastal troubles

## The New York Times

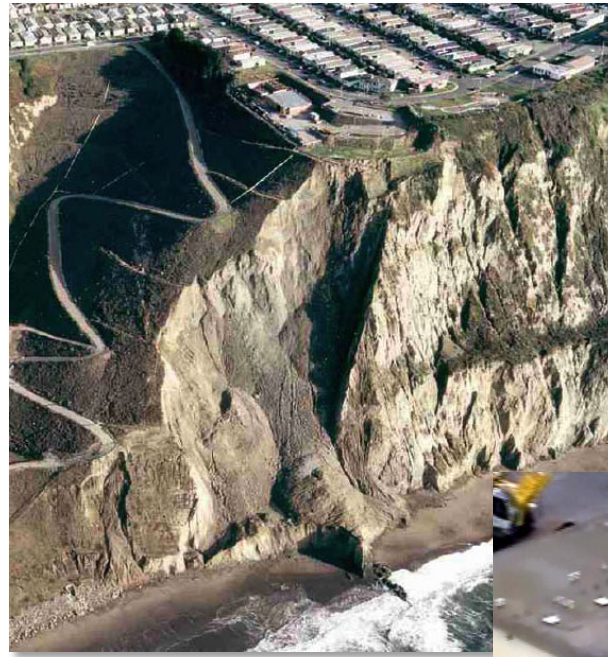
Both Coasts Watch Closely as San Francisco Faces Erosion



Jim Wilson/The New York Times

At the south end of Ocean Beach, a 3.5-mile stretch of the Pacific in San Francisco, El Niño-driven storms have torn down bluffs, pulling huge amounts of sand into the sea.

By FELICITY BARRINGER  
Published: March 24, 2012



Daly City



Pacifica



2010

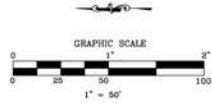
1943

- LEGEND**
- APPROXIMATE TOP OF BLUFF (BASED ON FIELD SURVEY DATED JANUARY 26, 2010)
  - APPROXIMATE TOP OF BLUFF (BASED ON AERIAL PHOTO DATED DECEMBER 18, 2008)
  - APPROXIMATE TOP OF BLUFF (BASED ON AERIAL PHOTO DATED SEPTEMBER 18, 2009)
  - APPROXIMATE TOP OF BLUFF (BASED ON AERIAL PHOTO DATED JULY 2007)
  - APPROXIMATE TOP OF BLUFF (BASED ON AERIAL PHOTO DATED JUNE 2001)
  - APPROXIMATE TOP OF BLUFF (BASED ON AERIAL PHOTO DATED APRIL 1993)
  - APPROXIMATE TOP OF BLUFF (BASED ON AERIAL PHOTO DATED MARCH 1986)
  - APPROXIMATE TOP OF BLUFF (BASED ON AERIAL PHOTO DATED 1973)
  - APPROXIMATE TOP OF BLUFF (BASED ON AERIAL PHOTO DATED MAY 1965)
  - APPROXIMATE TOP OF BLUFF (BASED ON AERIAL PHOTO DATED OCTOBER 1943)
  - ARTIFICIAL BLUFF PROGRESSION AS A RESULT OF HISTORIC SITE GRADING

WILD 15/4 UAS  
N. 13350  
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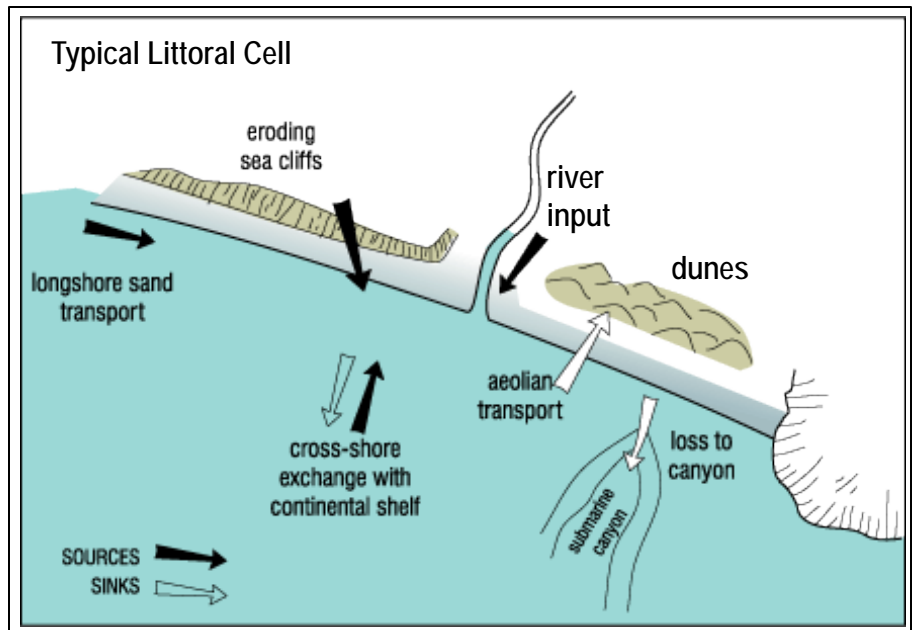


**HISTORICAL AERIAL PHOTO (1943-JANUARY 2010)**  
 HISTORICAL BLUFF RETREAT  
 LAND'S END HOA  
 100 ESPLANADE AVENUE  
 PACIFICA, CALIFORNIA

## Project overview: The role of sediment (sand and mud)

- Buffer from ocean processes
- Habitat (beaches, tidal flats)
- Creates recreational zone

*Littoral cell* – geographic area offshore that contains a complete cycle of sedimentation including sources, transport paths, and sinks.





# Project overview: California Coastal Sediment Master Plan

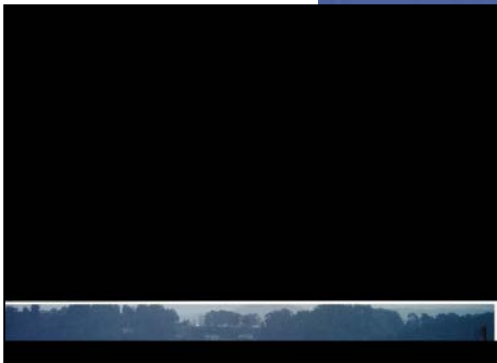
## A “Super-Regional” Approach



*Ocean Beach*



*Port of Oakland*



*Pacifica, 1994*



*South Bay Salt Ponds*



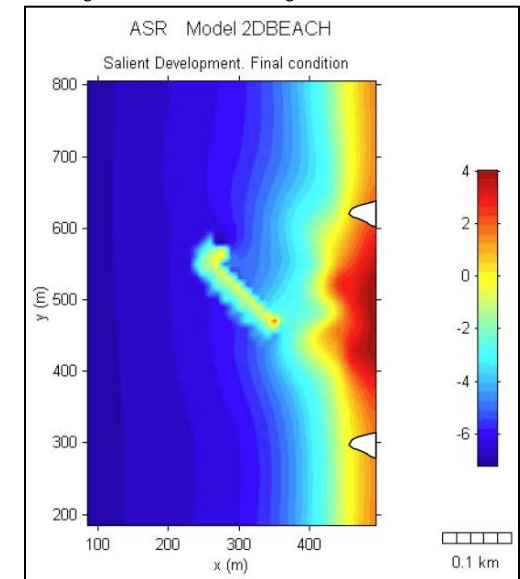


# CRSMP examples from southern CA

*Artificial Reef, Oil Piers*



*Managed Retreat, Surfer's Point*



*Photo: USACE*



*County Flood Control  
Agency Sediment Supply*

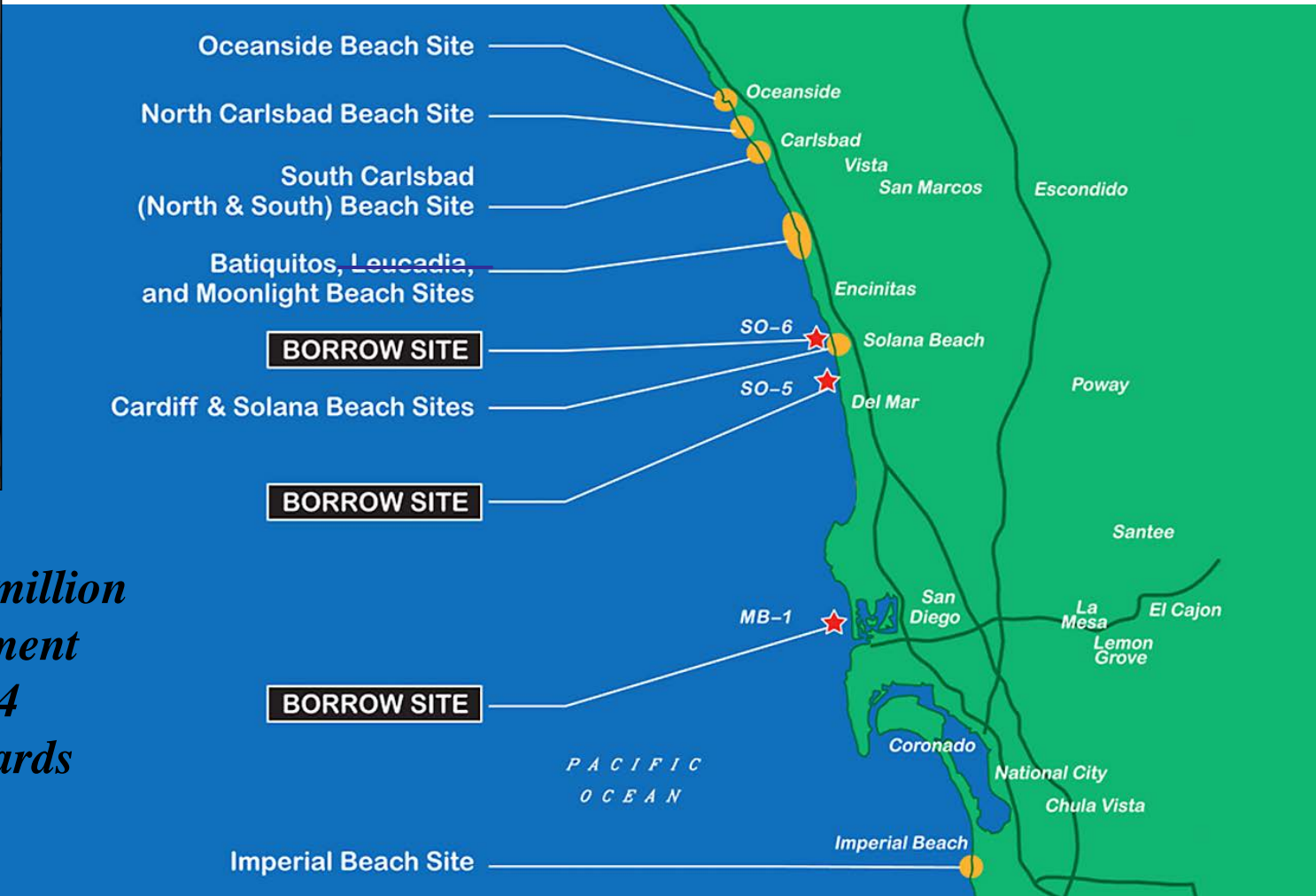


# CRSMP examples from southern CA



Photo: SANDAG

***RSBP II: \$2.9 million beach nourishment program of ~1.4 million cubic yards***



## A mini-CRSMP in SF



*Photo: SPUR*

- City of SF and NPS (GGNRA)
  - Sand trucking from NOB to SOB
  - 100,000 cubic yards in August 2012
- USACE
  - Single placement of 300,000 cubic yards
    - Dredged sediment pumped onshore at Sloat and to 4000' south
  - Designation of OBDS as permanent site
- Ocean Beach Master Plan
  - 2 million cubic yards of sand placed every 10 years





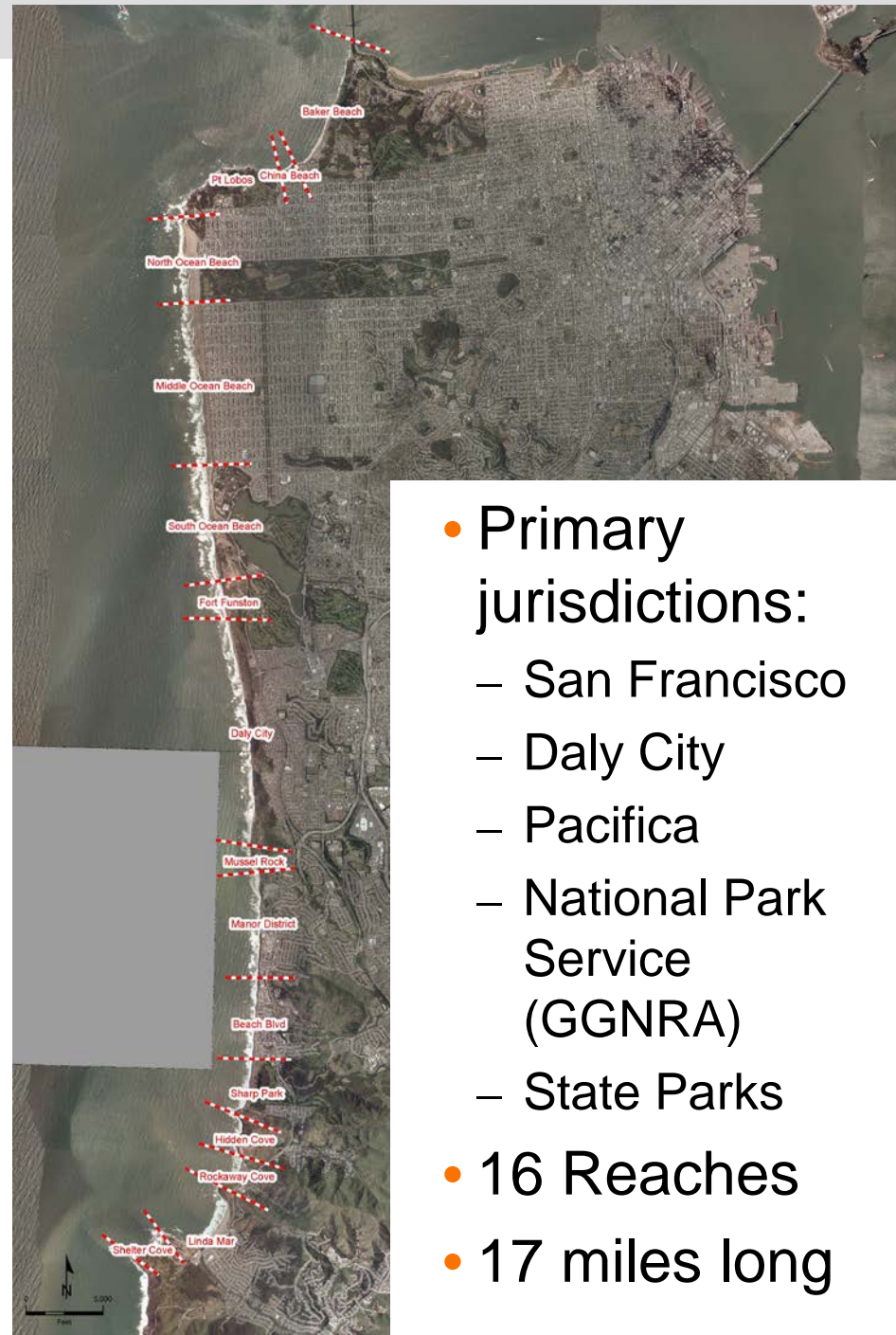
# CRSMP Basics



Direction of Net Sand Transport



Cell Boundaries



- Primary jurisdictions:
  - San Francisco
  - Daly City
  - Pacifica
  - National Park Service (GGNRA)
  - State Parks
- 16 Reaches
- 17 miles long

# CRSMP Players

Federal  
Interests



State  
Interests



Stakeholder  
Advisory  
Group

Public

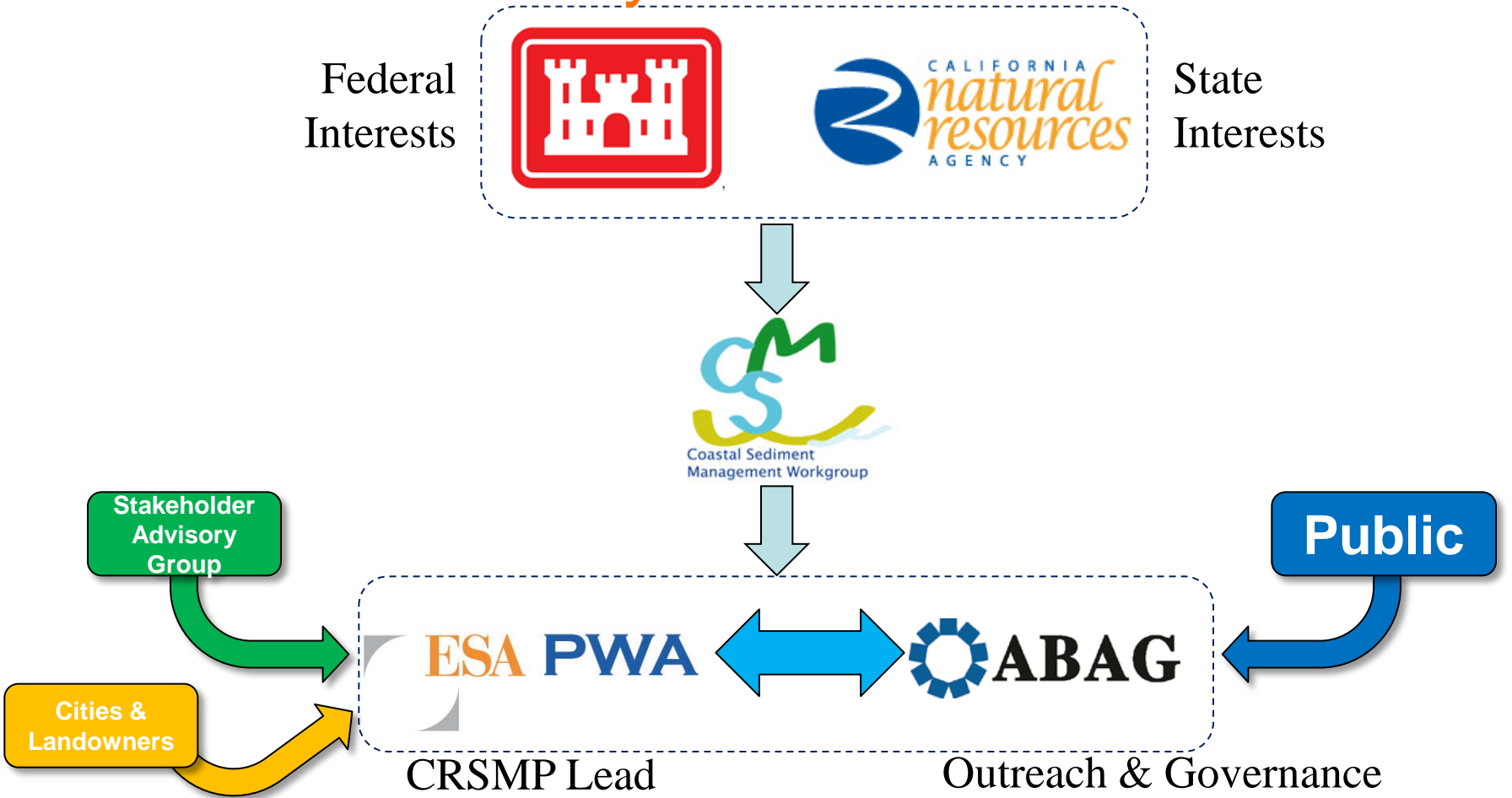
Cities &  
Landowners

ESA PWA



CRSMP Lead

Outreach & Governance



## CRSMP Economic Analysis

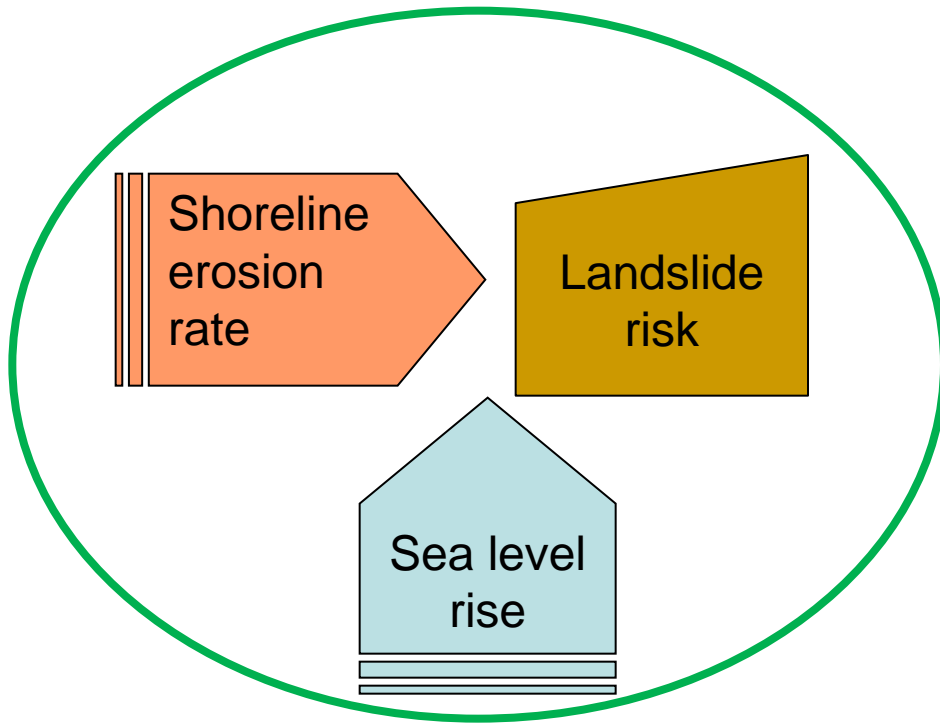
- Economic Analysis will be performed by Dr. Philip King and Aaron McGregor
- First part of the study will collect data necessary for analysis
- Conducted preliminary counts
- Prepared baseline estimates and categorized assets at risk



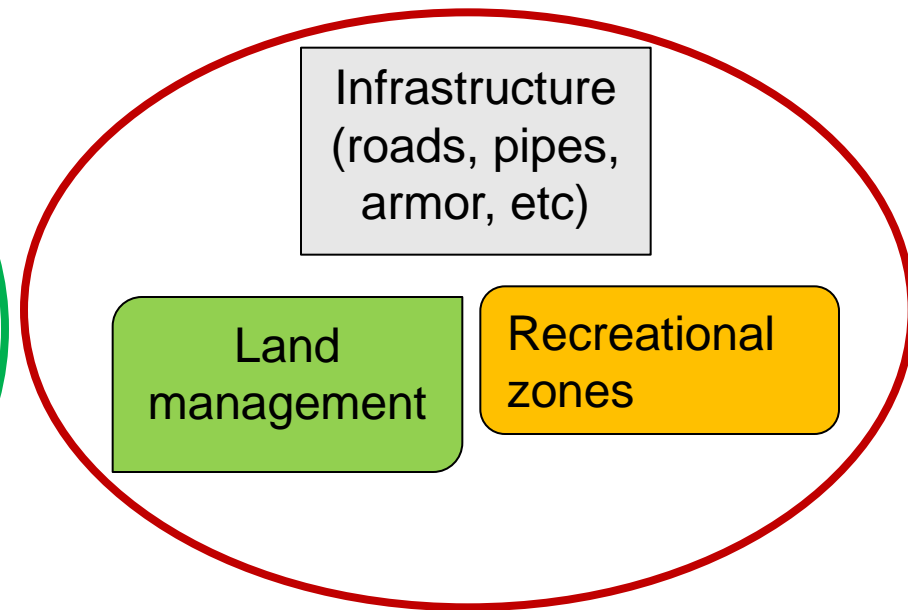


# CRSMP Hazards Analyses

*Physical and geological processes*



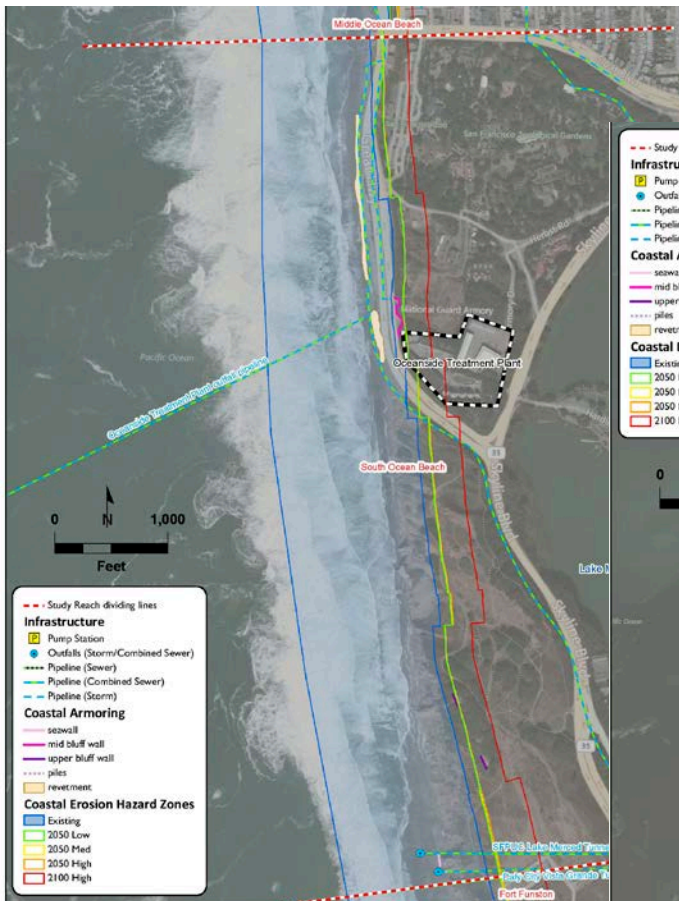
*Human environment*



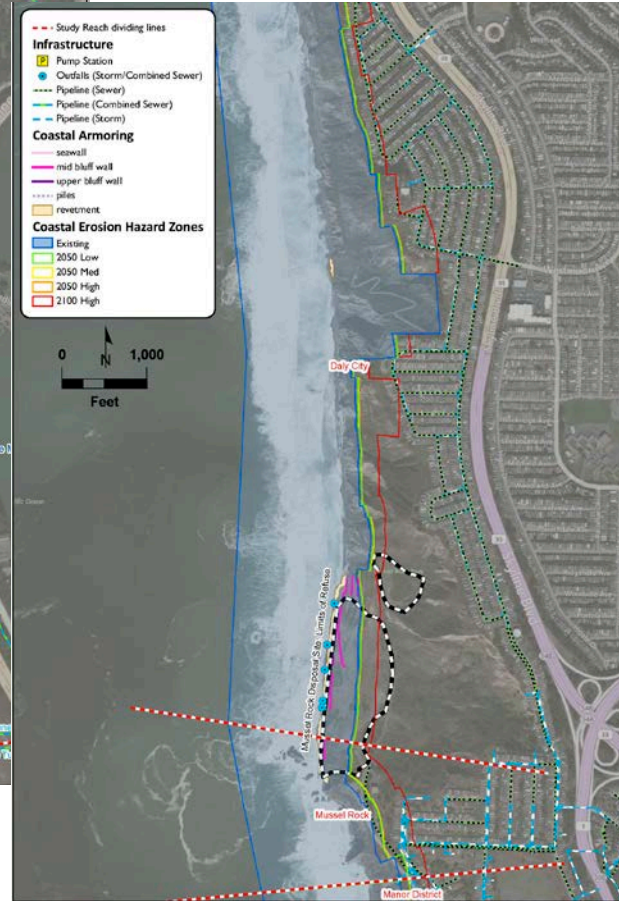
Information from USGS, USACE, NOAA, CGS, NPS, Coastal Commission, Coastal Conservancy, cities, counties, academic and engineering studies

# Example city hazard zones: now-2100

## Southern Daly City



South Ocean Beach, SF



Manor District, Pacifica



# Larger landslide concerns in Daly City

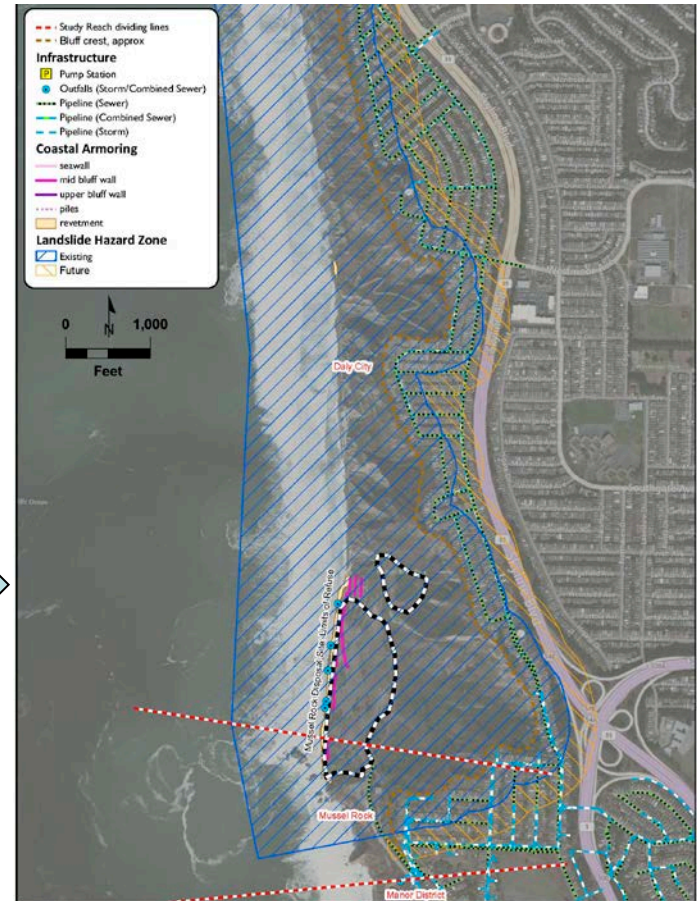
“Coastal Erosion Hazard Zones”



CRSMP affecting directly

CRSMP affecting indirectly

“Landslide Hazard Zones”





# WHAT CAN BE DONE?







# WORKGROUP EXERCISE



## Goal and Setup

- Allowed in-depth brainstorming by municipalities and landowners/regulators to address coastal hazard zones
- Used the tools
  - Posters of cities with hazard zones
  - Labels of coastal erosion mitigation alternatives
  - Information packet as a reference
  - Example scenarios
- Reported back to the group to look at regional differences and similarities