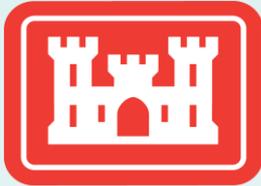


East San Pedro Bay Ecosystem Restoration Feasibility Study Long Beach, CA

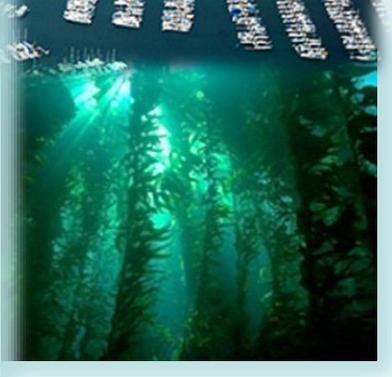
Community Update

27 November 2017

CITY OF
LONG BEACH



US Army Corps of Engineers
BUILDING STRONG





Presentation Outline

I. Background - Study Overview & Formulation

- ❖ Study Area, Goal & Objective
- ❖ Constraints, Opportunity Zones, & Measures

II. Progress Over the Last Year

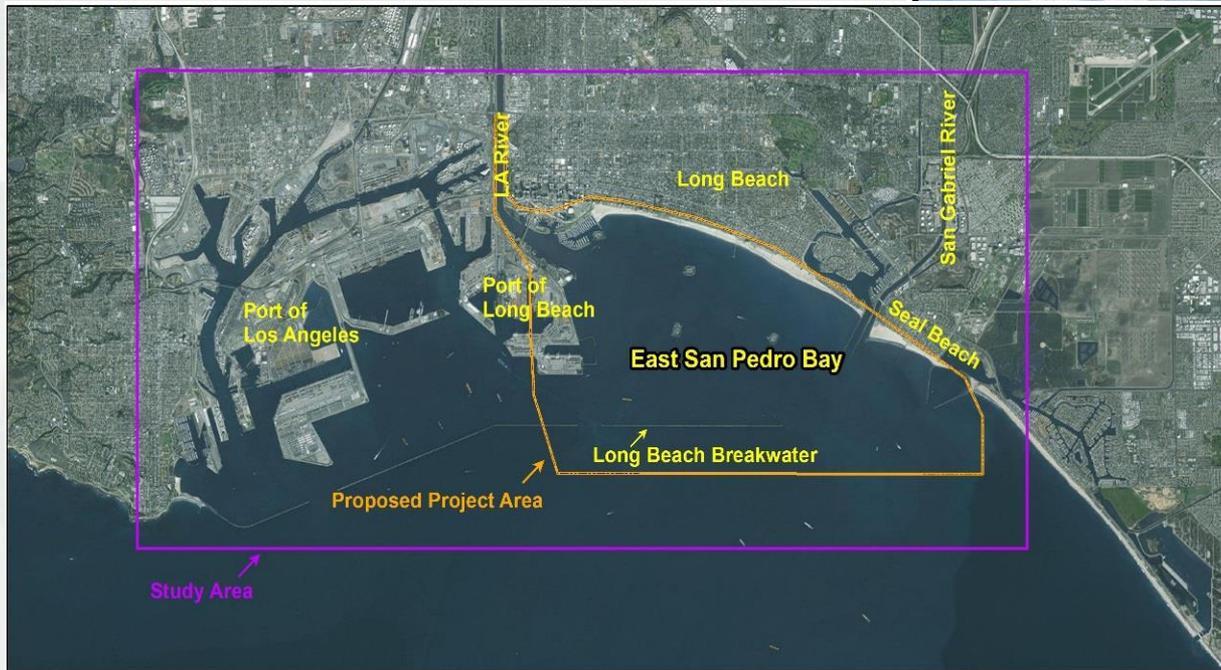
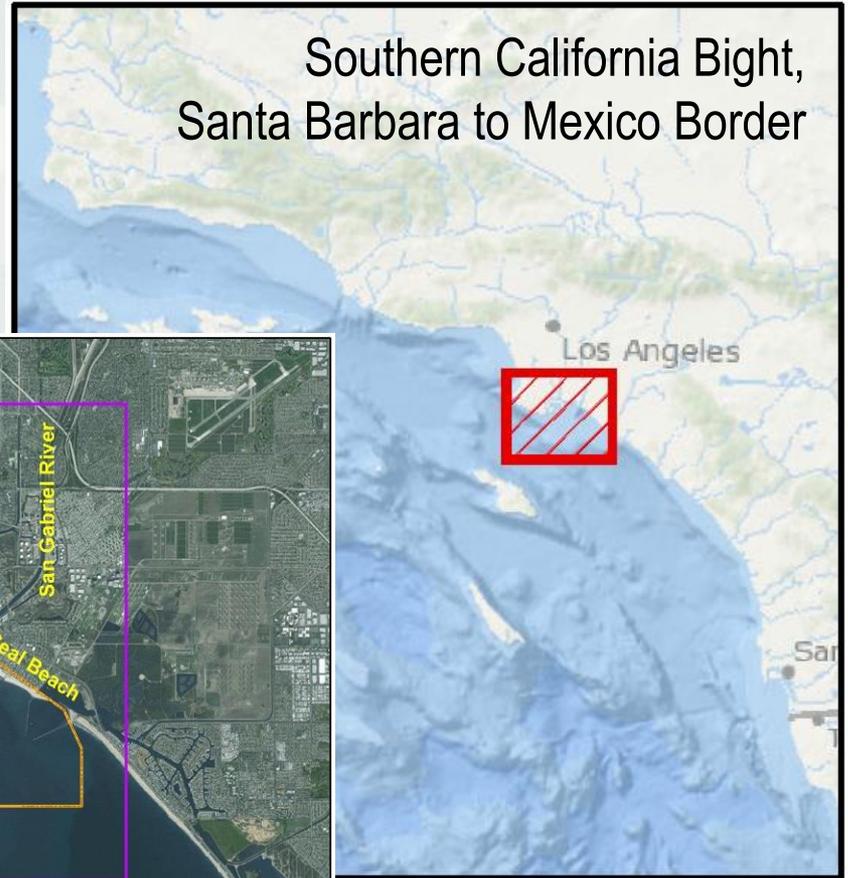
- ❖ HEM Workshop, Preliminary Alternatives, Wave Modeling, Hydrodynamic Modeling, Conceptual Cost Estimates, Schedule Assessment, Funding

III. Next Steps

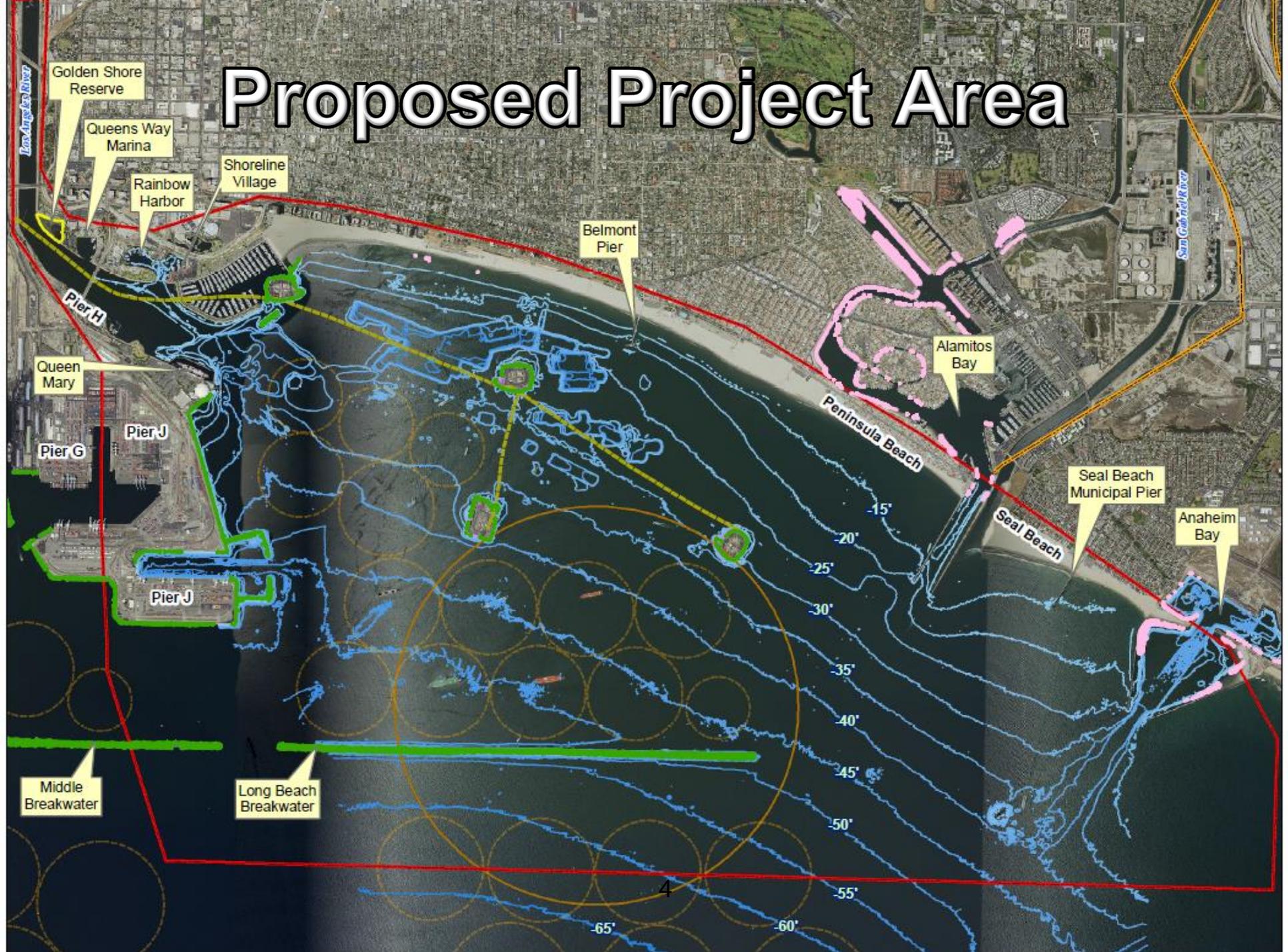
- ❖ HEM, CEICA, Final Array, IFR, Public Outreach, Funding



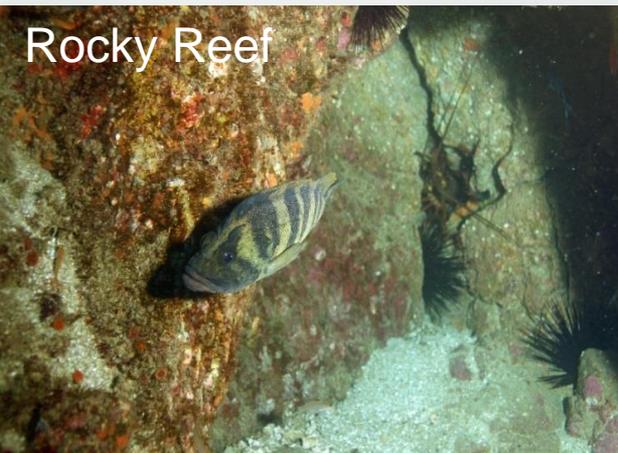
Study Area



Proposed Project Area



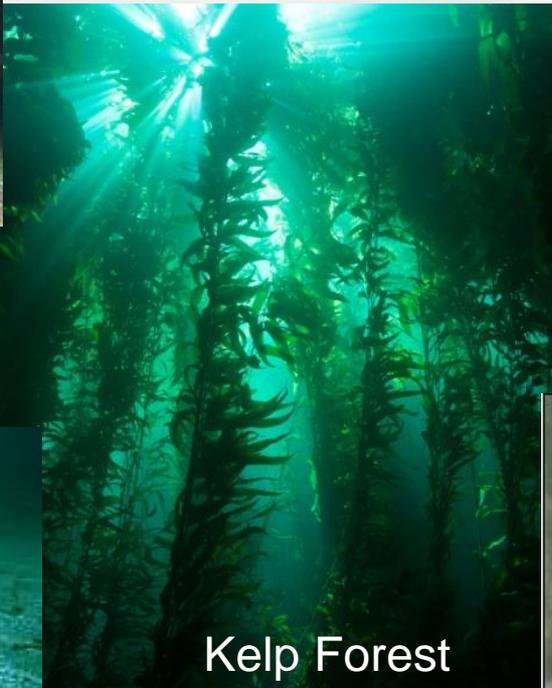
Existing Conditions Habitat Types



Rocky Reef



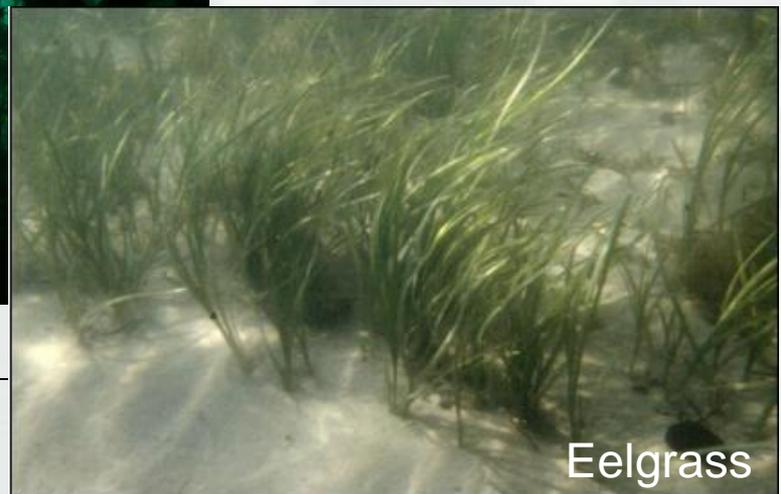
Tidal Marsh Estuary



Kelp Forest



Sandy Bottom



Eelgrass

Study Goal & Objective

Goal

Restore and improve aquatic ecosystem structure and function for increased habitat biodiversity and ecosystem value of the southern California bight within the proposed project area of East San Pedro Bay (ESPB).



Objective

Restore aquatic habitat such as kelp, rocky reef, coastal wetlands and other types historically present in San Pedro Bay of sufficient quality and quantity to support diverse resident and migratory species within ESPB during the period of analysis.



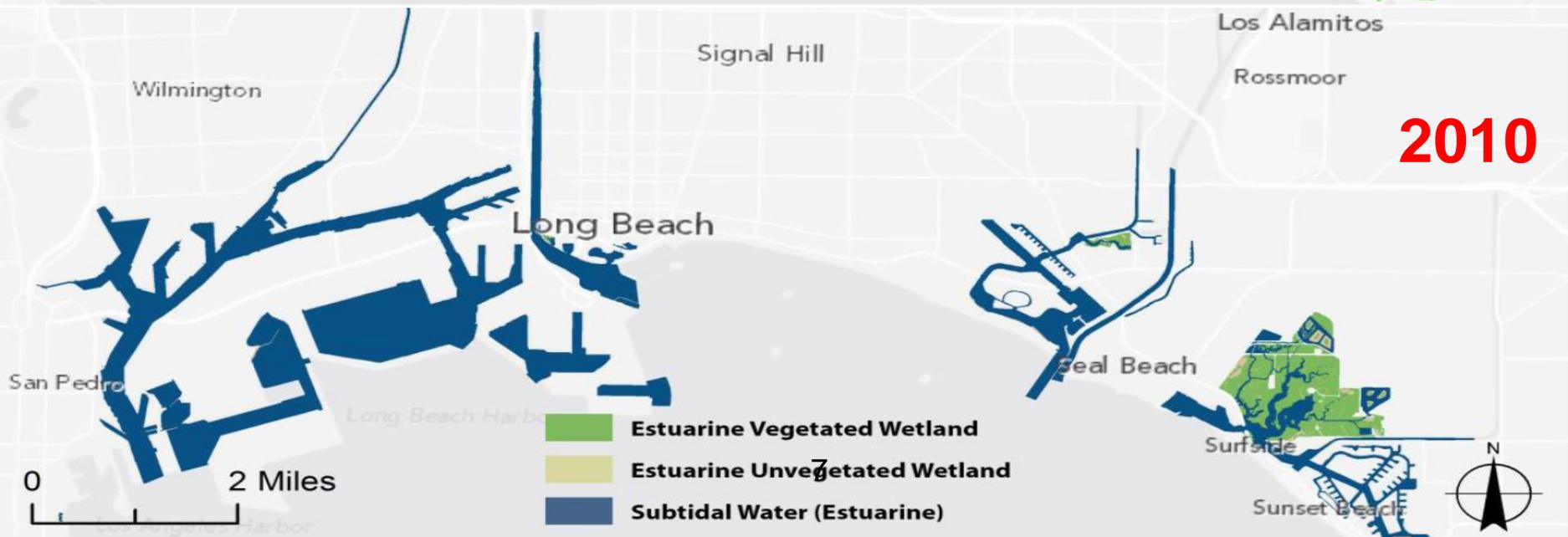
Coastal Wetland Loss

1850
(approx.)



Historic and Current Estuarine Habitat (Source: Wetlands of the Southern California Coast, Southern California Coastal Water Research Project)

2010



Future Without Project

- Degradation of rare marine habitats
- Continued decline in marine biodiversity and populations
- Impairment of water circulation and wave induced mixing will continue to concentrate pollutants and reduce water clarity within the bay, resulting in deleterious effects on sensitive ecosystem functions.
- Reduced wave energy will continue to limit certain recreational activities along the beach shoreline including surfing and swimming.



Constraints and Considerations

- ▶ Do not reduce maritime operational capacity for the port, the U.S. Navy, THUMS energy islands.
- ▶ Minimize impacts to known major utilities or navigation channels and anchorages.
- ▶ Avoid increases in shoreline erosion, wave related damages, and coastal flooding to existing residences, public infrastructure, marinas, existing jetties, other structures, and recreational beaches.
- ▶ Minimize impact to flood risk management operations on LA River.
- ▶ Minimize vulnerability of coastal areas to accelerating sea level rise.





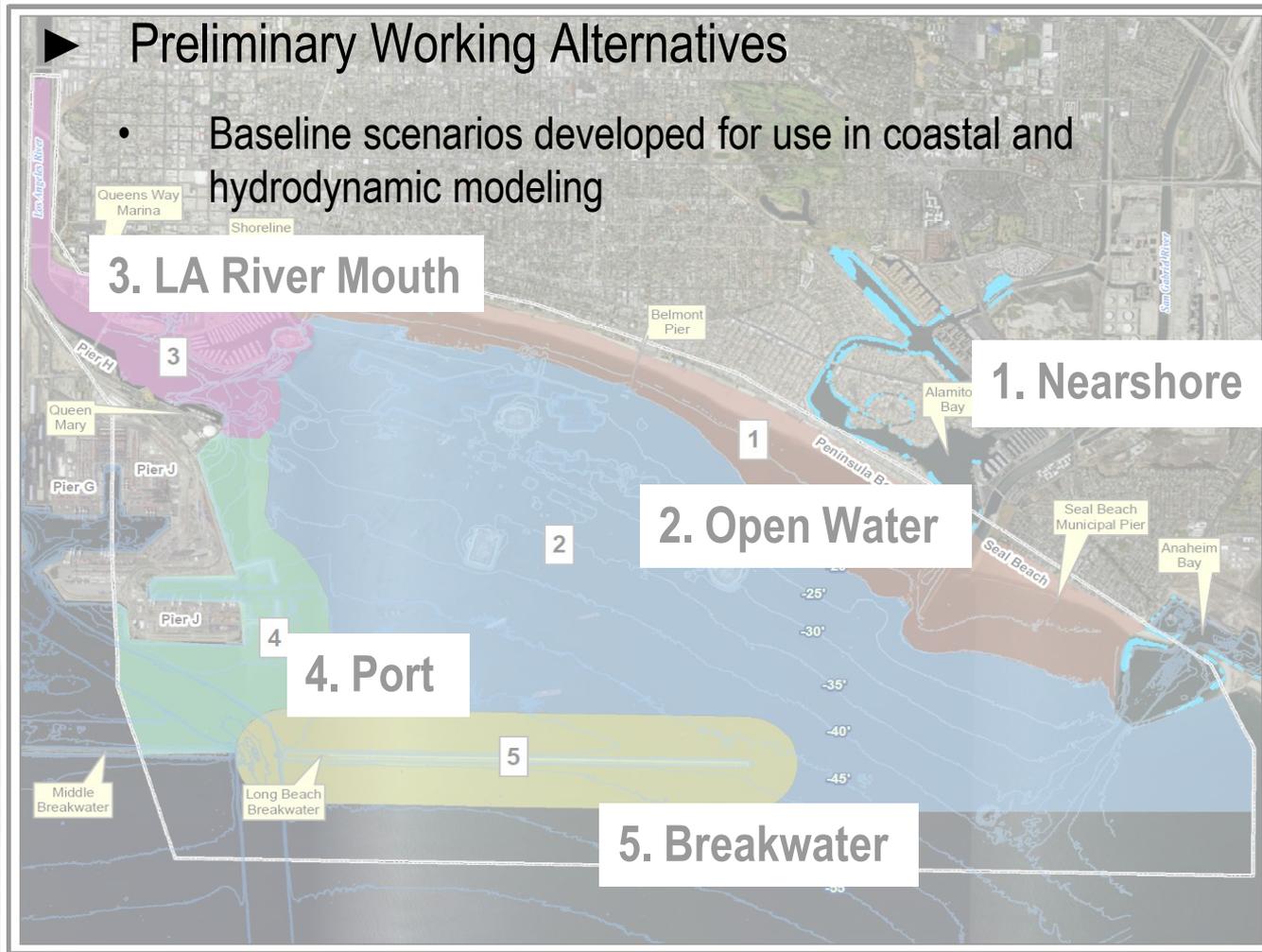
Progress to date

▶ Habitat Evaluation Model Workshop

- 2 day workshop – November 2016
- Develop foundation for HEM
- Comprised of subject matter experts
- HEM is the tool that determines benefits of measures
- Outputs from model represented as habitat unit and used in the CE/ICA model



Progress to date



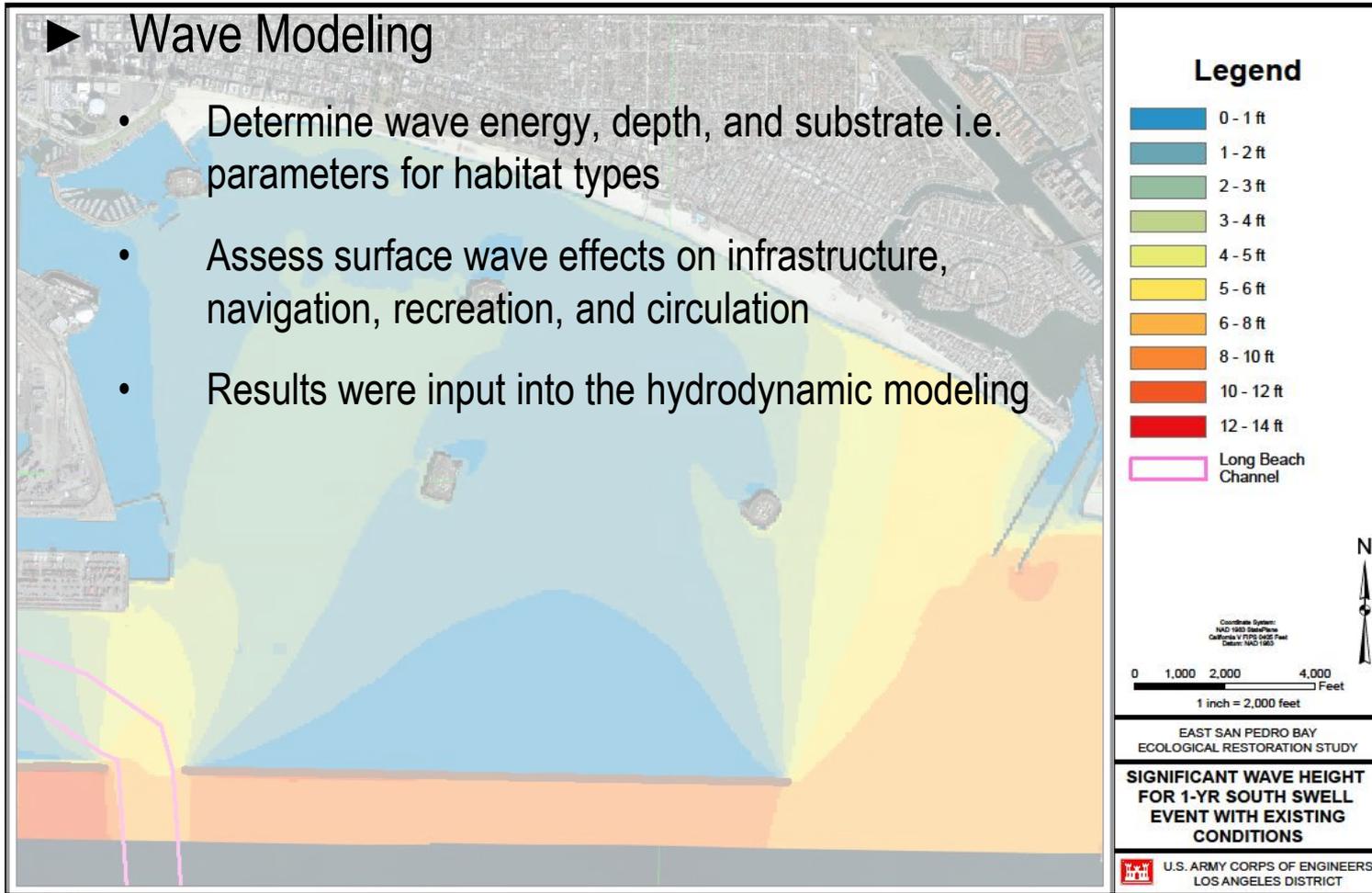
Example Measures by Zone

MEASURE	ZONE	1. Nearshore	2. Open Water	3. LA River Mouth	4. Port	5. Breakwater
Giant Kelp Forest			X			X
Eelgrass Beds		X		X		
Rocky Reef		X	X	X	X	X
Sandy/Rocky Shoals		X				
Sandy Island		X		X		
Oyster Beds		X		X	X	
Sandy Bottom		X	X			
Coastal Wetlands				X	X	
Training Wall				X	X	
Breakwater Modifications						X
Underwater Contouring			X	X	X	
Beach sand management		X				

Progress to date

► Wave Modeling

- Determine wave energy, depth, and substrate i.e. parameters for habitat types
- Assess surface wave effects on infrastructure, navigation, recreation, and circulation
- Results were input into the hydrodynamic modeling



November 2017



Progress to date

14

► Hydrodynamic Modeling

- Numeric tracer tracking study
- 3-D visualization of sediment transport and water quality
- Results were input into the habitat evaluation model

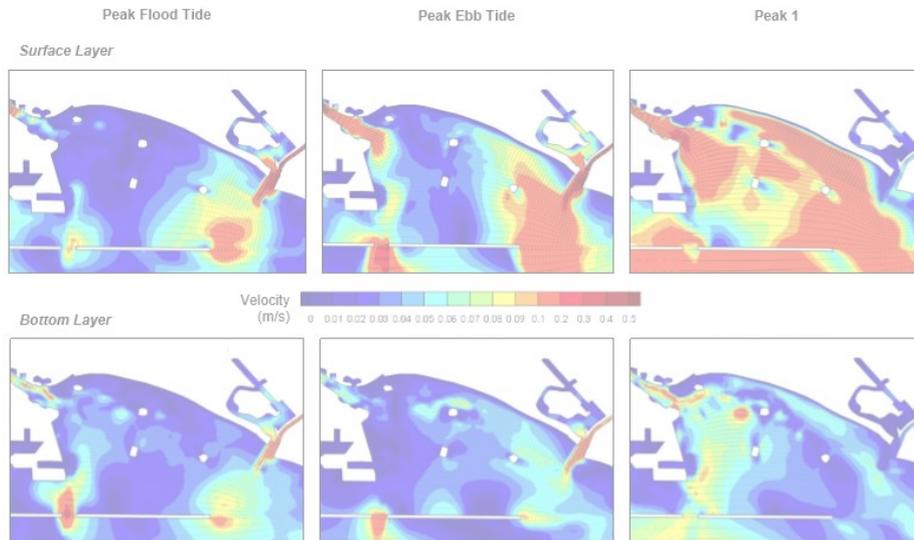


Figure 4.2 Existing Conditions Velocity Spatial Plots





Progress to date

15

► Conceptual Cost Estimates

- Cost estimate for each measure or individual restoration feature.
- Measures serve as building blocks for each study alternative.
- Results are input into the CE/ICA model





Progress to date

16

► Schedule Assessment

- Extension of TSP milestone: September 2017 to Summer 2018

► Budget

- \$275,000 in federal funding was received for FY17
- \$194,000 budgeted for FY18





Next Steps

17

- ▶ **Habitat Evaluation Modeling (HEM)**
 - Evaluate existing and future capacity of various habitats
 - Results are input into the CE/ICA model

- ▶ **Cost Effectiveness/ Incremental Cost Analysis (CE/ICA)**
 - Balances the results of the cost estimates and HEM for cost effective solutions for habitat restoration

- ▶ **Final Array of Alternatives**
 - Best buy plans from CE/ICA
 - National Ecosystem Restoration Plan (NER)
 - Tentatively Selected Plan (TSP)
 - Locally Preferred Plan (LPP)





Next Steps

18

▶ Draft Integrated Feasibility Report (IFR)

- Includes final array
- Draft Environmental Impact Statement (EIS)
- Environmental Impact Report (EIR)
- Presented for public comment period

▶ Public Outreach/ Comment

- Update and overview of CE/ICA process spring of 2018
- Public meeting to present Draft IFR
- Public comment period



Timeline

