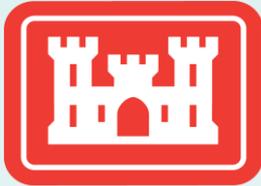


East San Pedro Bay Ecosystem Restoration Feasibility Study Long Beach, CA

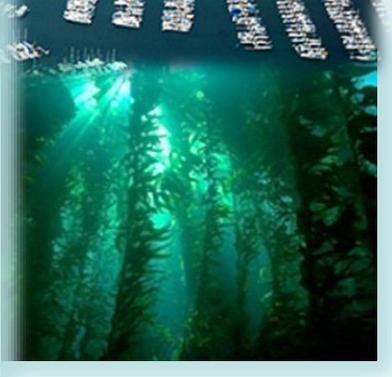
Community Update

21 June 2018

CITY OF
LONG BEACH



US Army Corps of Engineers
BUILDING STRONG



Presentation Outline

- ▶ Background - Study Overview & Formulation
 - Study Area, Goal & Objective
 - Constraints, Opportunity Zones, & Measures
- ▶ Progress Over the Last Year
 - Preliminary Alternatives, Wave Modeling, Hydrodynamic Modeling, Conceptual Cost Estimates, Schedule Assessment, HEM, CEICA
- ▶ Next Steps
 - Final Array, IFR/EIS-R, Public Outreach



Project Area



Existing Habitat Types



Tidal Salt Marsh/Coastal Wetland
(Golden Shore Reserve)



Eelgrass



Giant Kelp Forest



Rocky Reef



Oysters



Study Goal & Objective

Goal

Restore and improve aquatic ecosystem structure and function for increased habitat biodiversity and ecosystem value within the project area.



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.



Constraints and Considerations

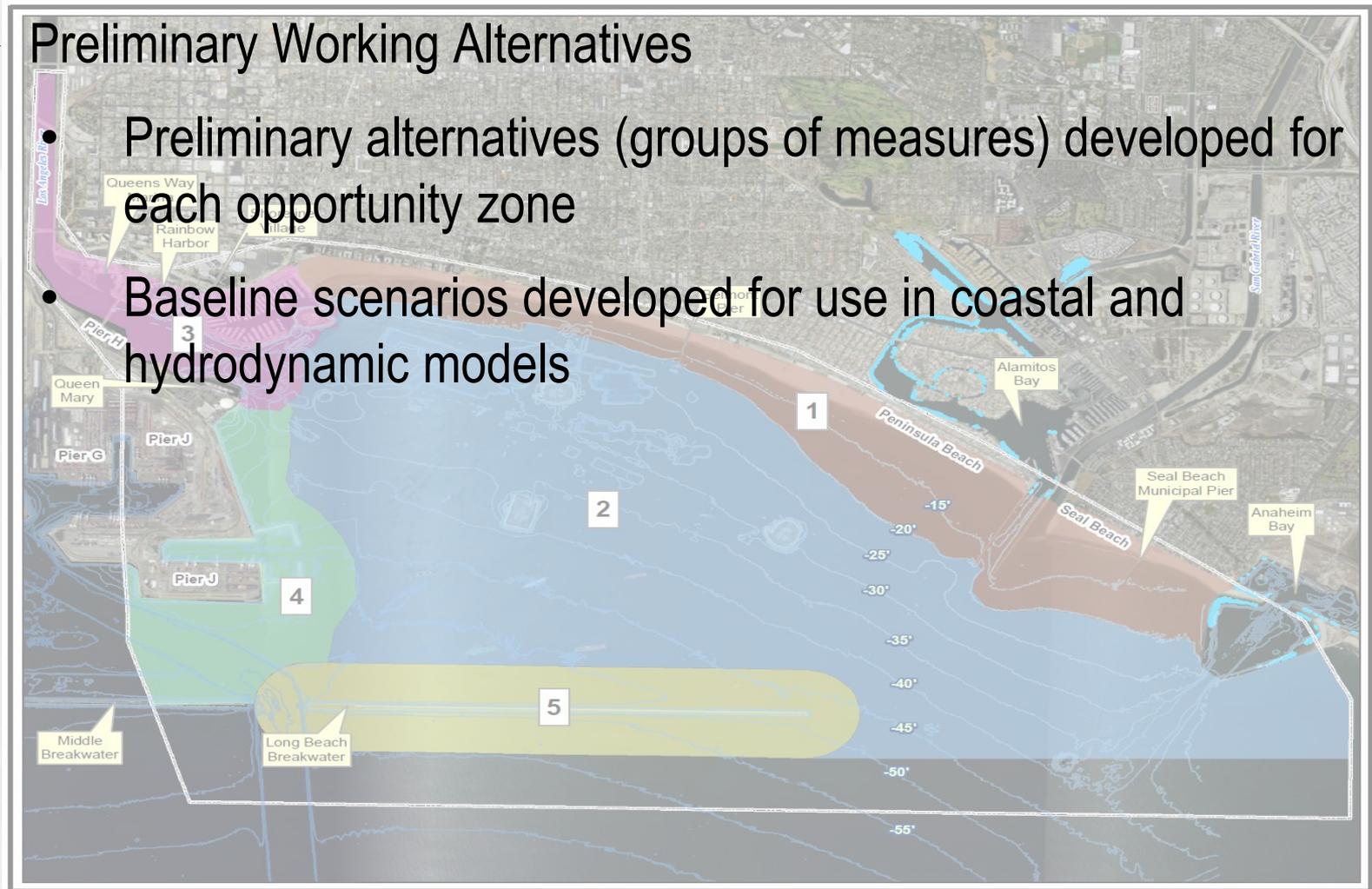
- ▶ Do not reduce maritime operational capacity for the port, the U.S. Navy, THUMS energy islands.
- ▶ Minimize impacts to known major utilities or navigation channels and anchorages.
- ▶ Avoid increases in shoreline erosion, wave related damages, and coastal flooding to existing residences, public infrastructure, 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

► Preliminary Working Alternatives

- Preliminary alternatives (groups of measures) developed for each opportunity zone
- Baseline scenarios developed for use in coastal and hydrodynamic models





Example Measures by Zone

MEASURE BASED ON OBJECTIVES	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	8			



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





Progress to date

▶ Hydrodynamic Modeling

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





Progress to date

- ▶ Habitat Evaluation Modeling (HEM)
 - HEM is the tool that determines benefits of each measure
 - Outputs from the model represented as number of habitat units and used in the Cost Effectiveness/Incremental Cost Analysis model (CE/ICA)
 - Developed by subject matter experts



Progress to date

- ▶ 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

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





Next Steps

13

► Final Array of Alternatives

- Will include 3-5 best buy plans as determined through Army Corps modeling efforts, with a request from the City to include locally preferred alternatives to meet local project objectives including options for possible breakwater modifications.





Next Steps

- ▶ Draft Integrated Feasibility Report (IFR)
 - Includes final array of Alternatives
 - Will identify a Tentatively Selected Plan (TSP)
 - Draft Environmental Impact Statement (EIS)
 - Draft Environmental Impact Report (EIR)
 - ▷ Includes Supporting Documents
 - Released for concurrent public and agency review period Late 2018
- ▶ Public Outreach/ Comment
 - Public meeting to present Draft IFR late 2018



Timeline

Drafts Complete

Next Steps for 2018

