# East San Pedro Bay Ecosystem Restoration Feasibility Study

## Long Beach, CA

## Community Update

**October 10, 2018**

CITY OF LONG BEACH

U.S.ARMY

US Army Corps of Engineers

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# 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, Final Array
- Next Steps
  - IFR/EIS-R, Public Comment



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# Project Area

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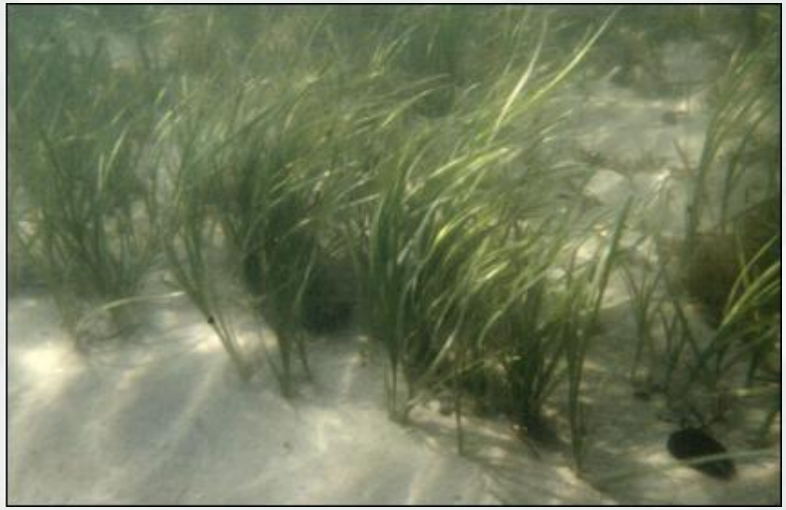
# Existing Habitat Types

Intertidal Zone
Rocky Reef

# 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

- Minimize impacts that would 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.
- Minimize impacts to 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.



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# Progress to date

- Preliminary Working Alternatives
  - Preliminary alternatives (groups of measures) developed for each opportunity zone
  - Baseline scenarios developed for use in various models



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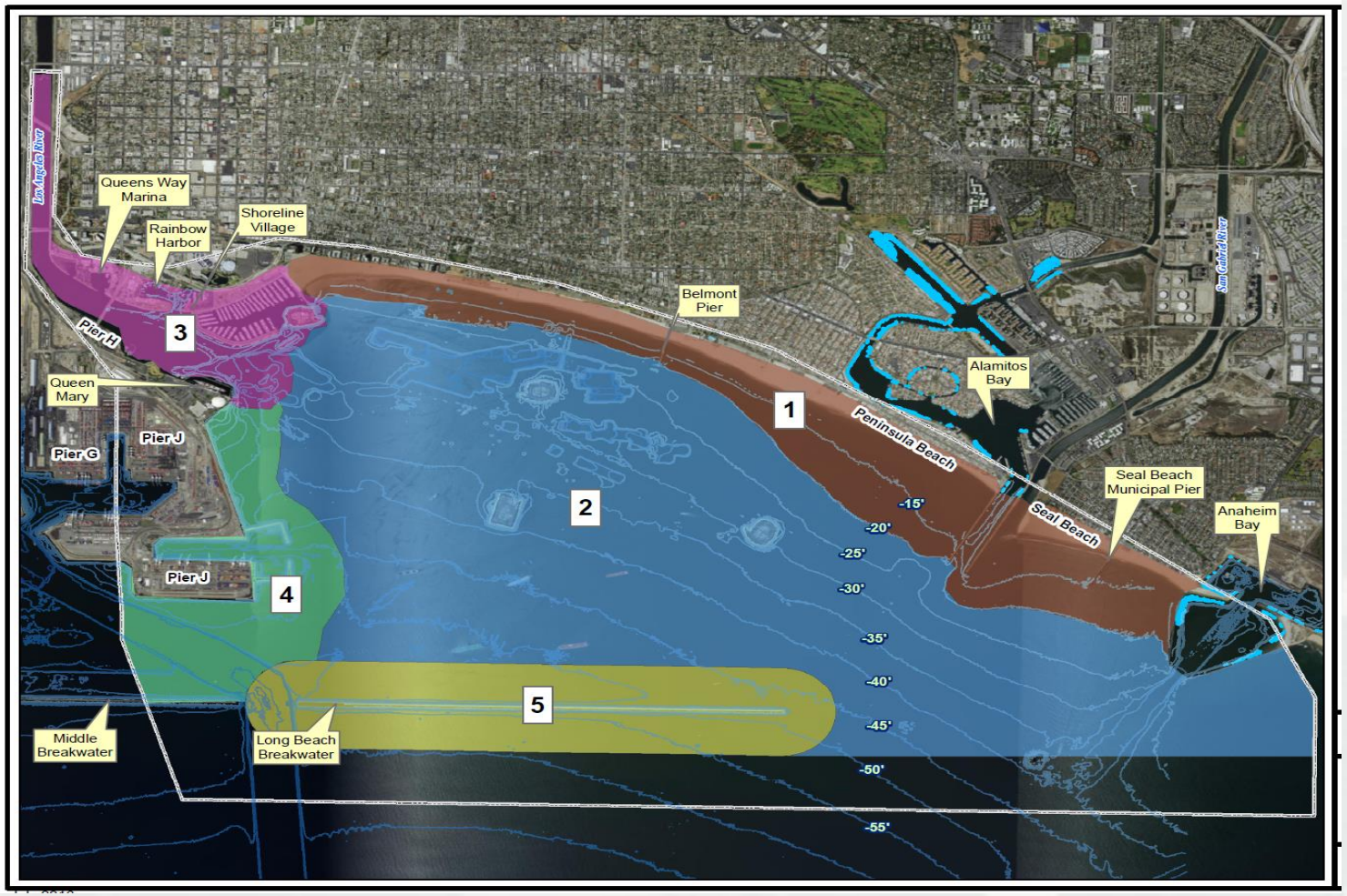
# Opportunity Zones



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# 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 | | | | |

# 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
- Hydrodynamic Modeling
  - 3-D visualization of sediment transport and water quality
  - Results were input of sediment transport and water quality



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# Progress to date

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



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# Progress to date

- Draft Array of Alternatives
  - 5 best buy plans as determined through Army Corps modeling efforts, and locally preferred alternatives to meet local project objectives
  - Now accepting feedback related to port navigation relative to the draft alternatives and wave modeling



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# Kelp Restoration Plan

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# Reef Restoration Plan

## Legend

**Type**

- Eelgrass
- Kelp - BW
- Kelp - OW
- Rocky Reef
- Rocky Reef - Nearshore

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# Scarce Habitat Restoration Plan

**Legend**

**Type**

- Eelgrass
- Kelp - BW
- Kelp - OW
- Oyster - NS
- Rocky Reef
- Rocky Reef - Nearshore
- Sandy Island - NS
- Wetland - LAR
- Wetland - PJ

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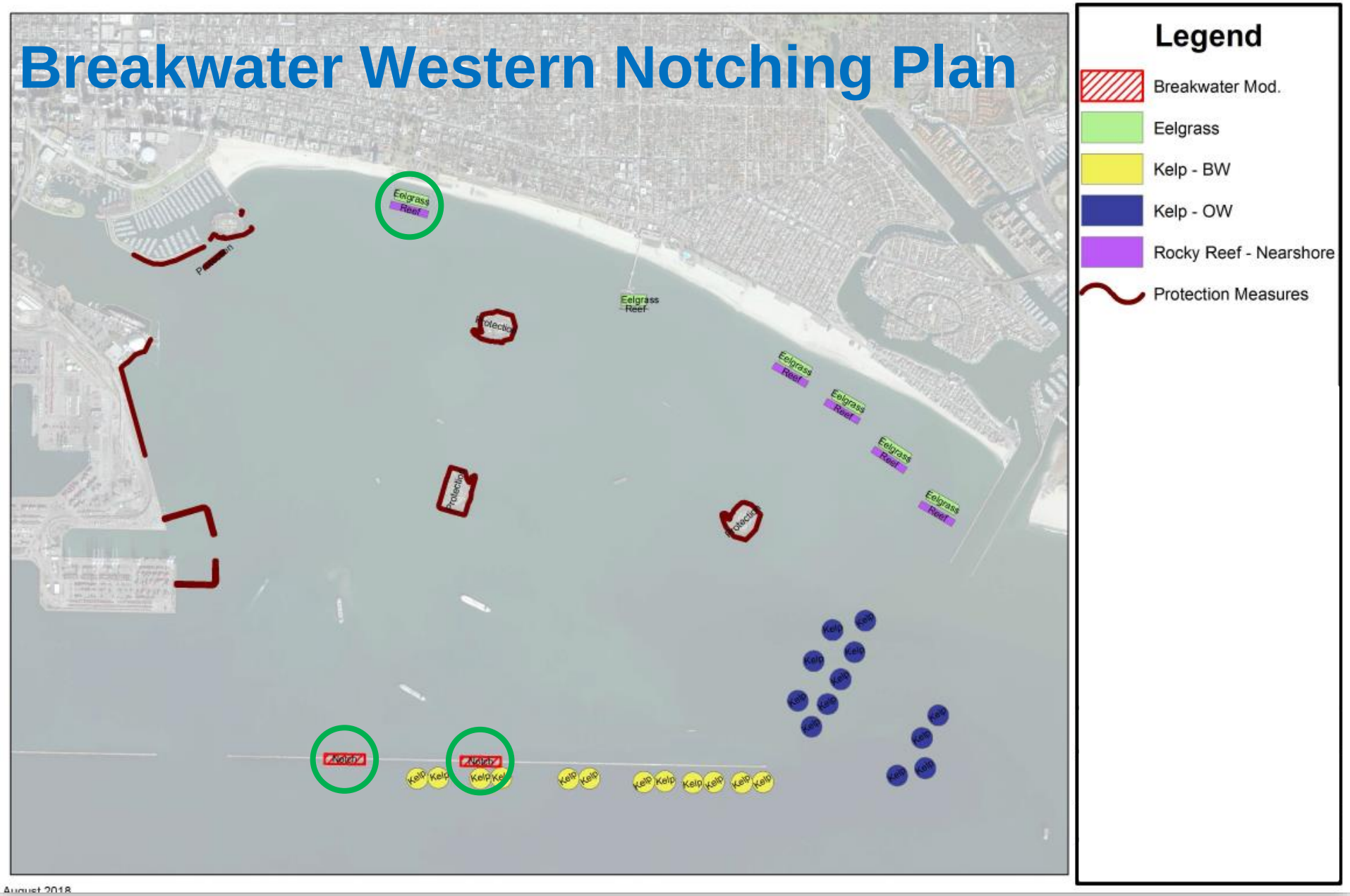
# Breakwater Western Notching Plan

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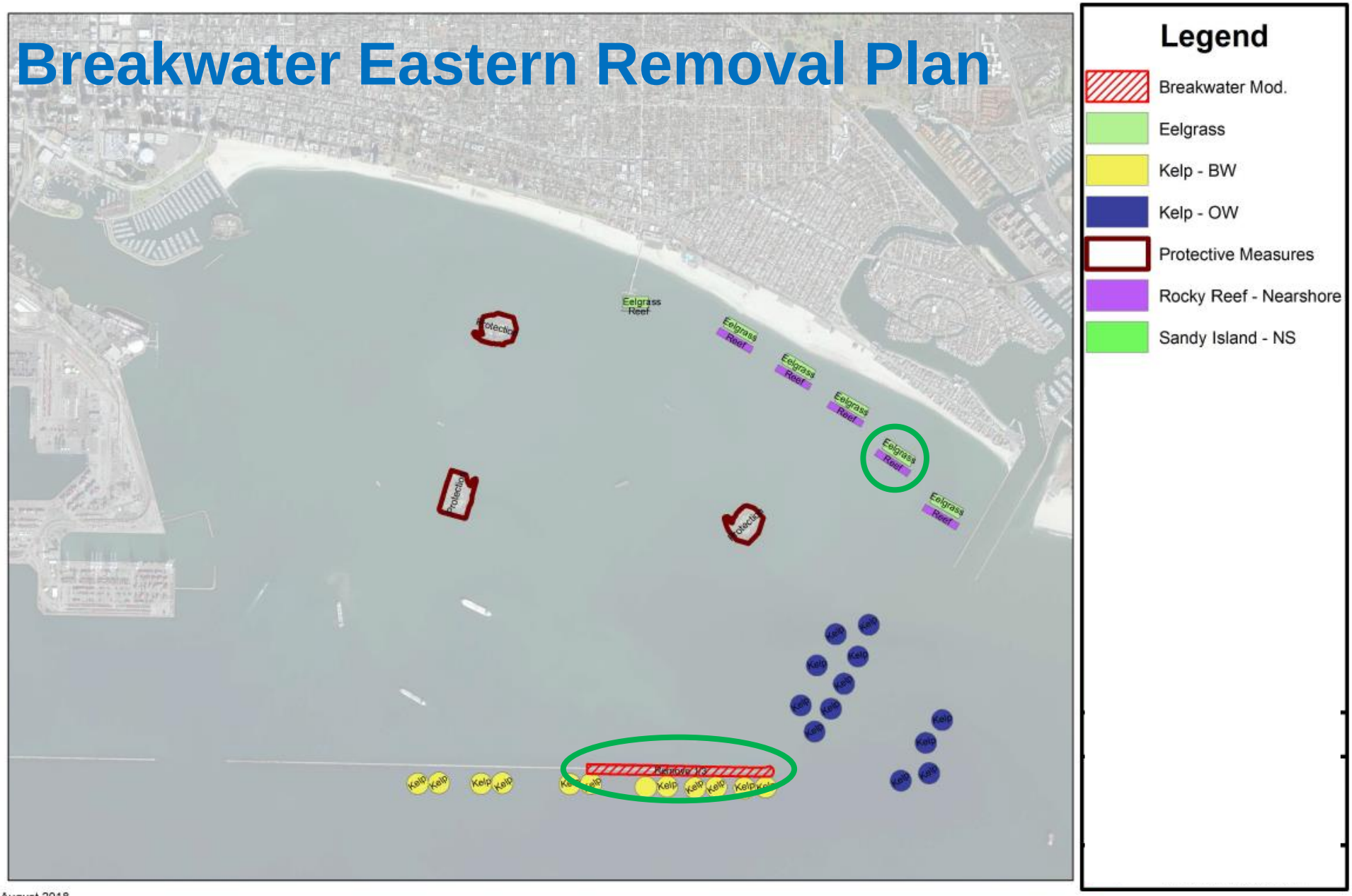
# Breakwater Eastern Removal Plan

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# Timeline

Wave Modeling → Hydro Modeling → Habitat Modeling / Concept Est. → CE/ ICA → Final Array → Draft IFR → Public Comments

Drafts Complete

Current Progress

Next Steps



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# 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
  - Anticipated release for public and agency review early 2019
- Public Outreach/ Comment
  - Public meeting to present Draft IFR upon release