
Thank you for coming!
El Rincon Reef Shoreline Protection Project
Community Meeting
March 25, 2026
Presentation begins at 6:00 pm
COASTAL BEND BAYS & ESTUARIES PROGRAM
ANCHOR QEA
NATIONAL FISH AND WILDLIFE FOUNDATION
NFWF
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

COASTAL BEND BAYS & ESTUARIES PROGRAM

Protecting our bays and estuaries

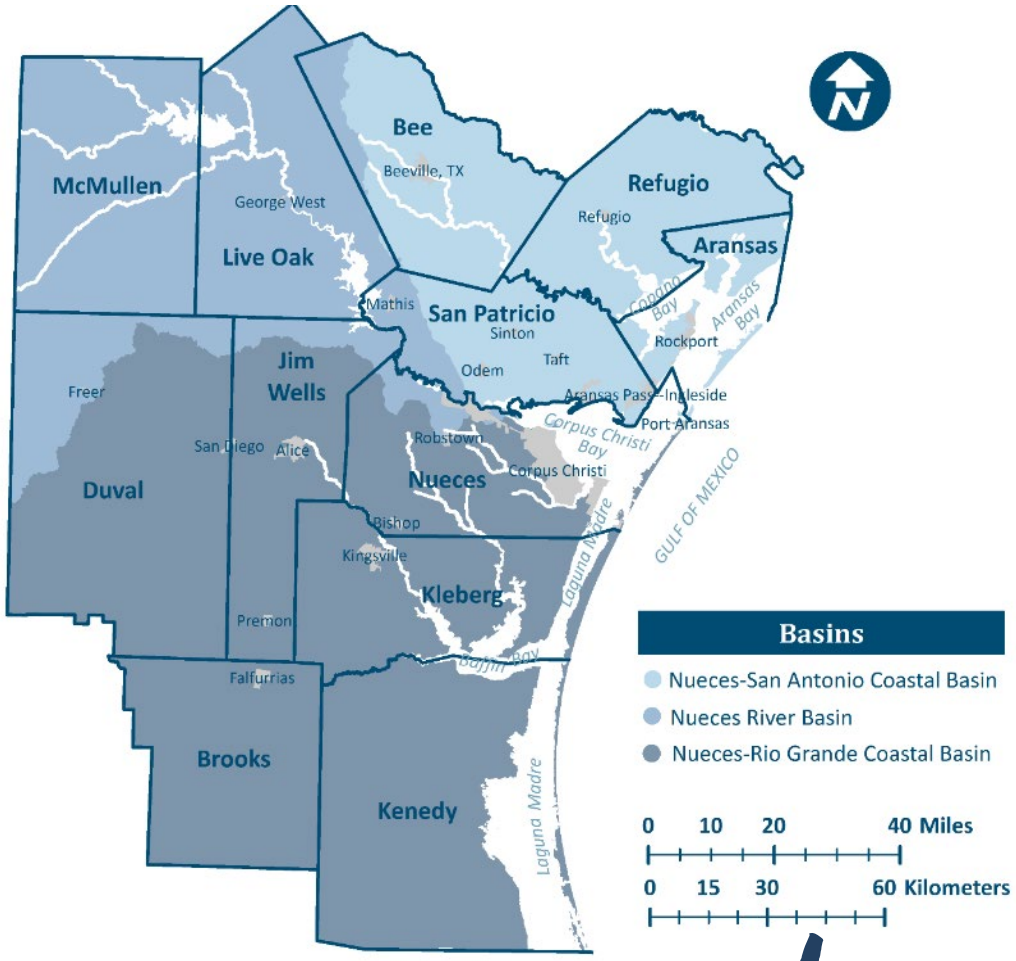
The Coastal Bend Bays & Estuaries Program is a non-profit organization dedicated to protecting and restoring bays and estuaries in the twelve counties of the Texas Coastal Bend.

SUPPORT US. GET INVOLVED. LEARN MORE.

www.cbbep.org

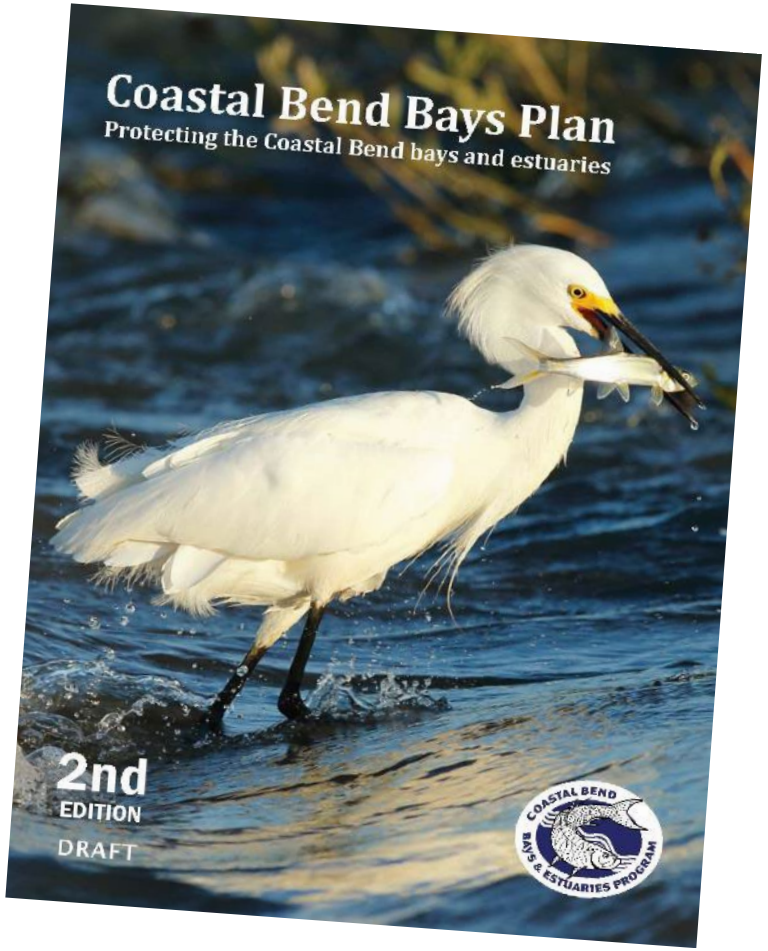
1 OF 28… NATIONAL ESTUARY PROGRAMS

"Bottom-up Approach"



Where we work

What we do



Coastal Bend Bays Plan

15 action plans organized into 10 categories

FY 2026

STATE & FEDERAL AGENCY

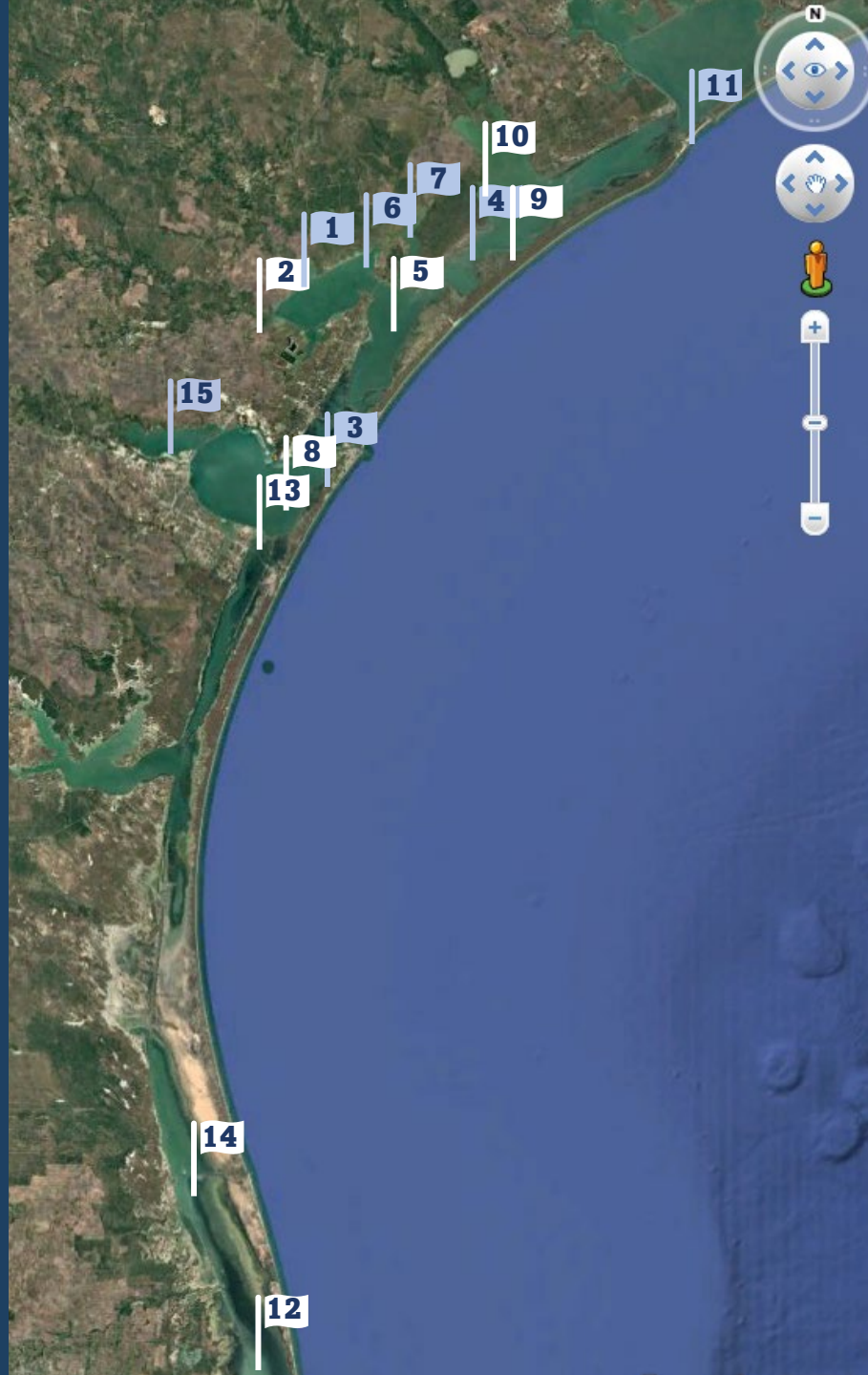
LOCAL GOVERNMENT

PRIVATE / INDUSTRY

FOUNDATION & NON-PROFIT

Shoreline Protection Projects

1. Copano Bay Shoreline Restoration and Protection
2. Town of Bayside Shoreline Protection and Public Access (partnership with Refugio County)
3. Mustang Island Resiliency Plan
4. Protection and Restoration of Ayres Point Oyster Reefs
5. Protection and Restoration of Deadman Island, Aransas Bay
6. Newcomb Marsh Shoreline Protection (partnership with TPWD)
7. Protection and Restoration of the Tatton Unit Shoreline
8. Cohn Preserve Restoration and Protection (partnership with TNC)
9. Protection and Restoration of Matagorda Island West Marsh
10. Protection and Restoration of Dagger Point
11. Matagorda Island Gulf Shoreline Erosion and Pass Cavallo Exchange Restoration
12. Bahia Grande Rookery Islands Protection and Restoration
13. Tern Island Protection and Restoration
14. Benny's Shack Protection and Restoration
15. El Rincon Reef Shoreline Protection Project



El Rincon Reef Shoreline Protection Project Community Meeting

Presented by:

Leigh Perry, CBBEP
Aaron Horine, PE, Anchor QEA
Rick Coupe, PE, Anchor QEA
Sohaib Alahmed, PhD, PE, Anchor QEA

March 25, 2026

Agenda

- Project Background
- Work Completed to Date
- U.S. Army Corps of Engineers (USACE) Permit
- 30% Design
- Coastal Modeling Updates
- Project Status and Future Work
- Question and Answers

Project Background

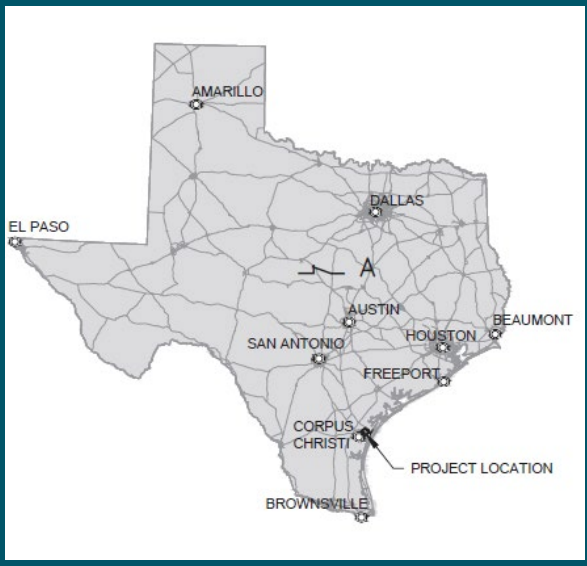
- **Goals**
  - Provide shoreline protection for North Beach
  - Estuarine marsh and oyster habitat
  - Recreational opportunities
- **History**
  - **2017:** North Beach Redevelopment Initiative
  - **2018:** City of Corpus Christi CIP
  - **2020:** Coastal Engineering Analysis
  - **2023:** TxGLO: TCRMP **Tier 1** Project
  - **2022-2026:** USACE Permitting
  - **2025-present**: Final Design

City of Corpus Christi (2018)

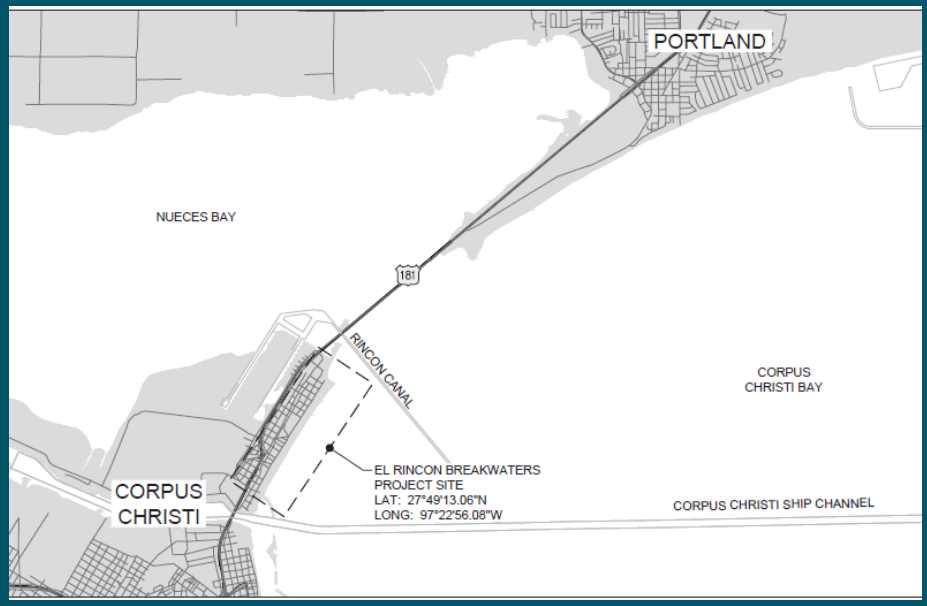
Texas General Land Office, Texas Coastal Resiliency Master Plan (2023)

Project Background

- Historical Stakeholders
  - City of Corpus Christi
  - Port of Corpus Christi
  - Ed Rachal Foundation
  - Nueces County
  - North Beach Community Association



Mott MacDonald USACE Permit (2024)



Mott MacDonald USACE Permit (2024)

Project Background

- Current Project owners/champions
  - CBBEP
- Final design funding
  - National Fish and Wildlife Foundation
- Letters of Support from Local Stakeholders
  - USS Lexington
  - Texas State Aquarium
  - TxGLO
  - Nueces County
  - North Beach Community Association
  - Nature Trails Kayaking

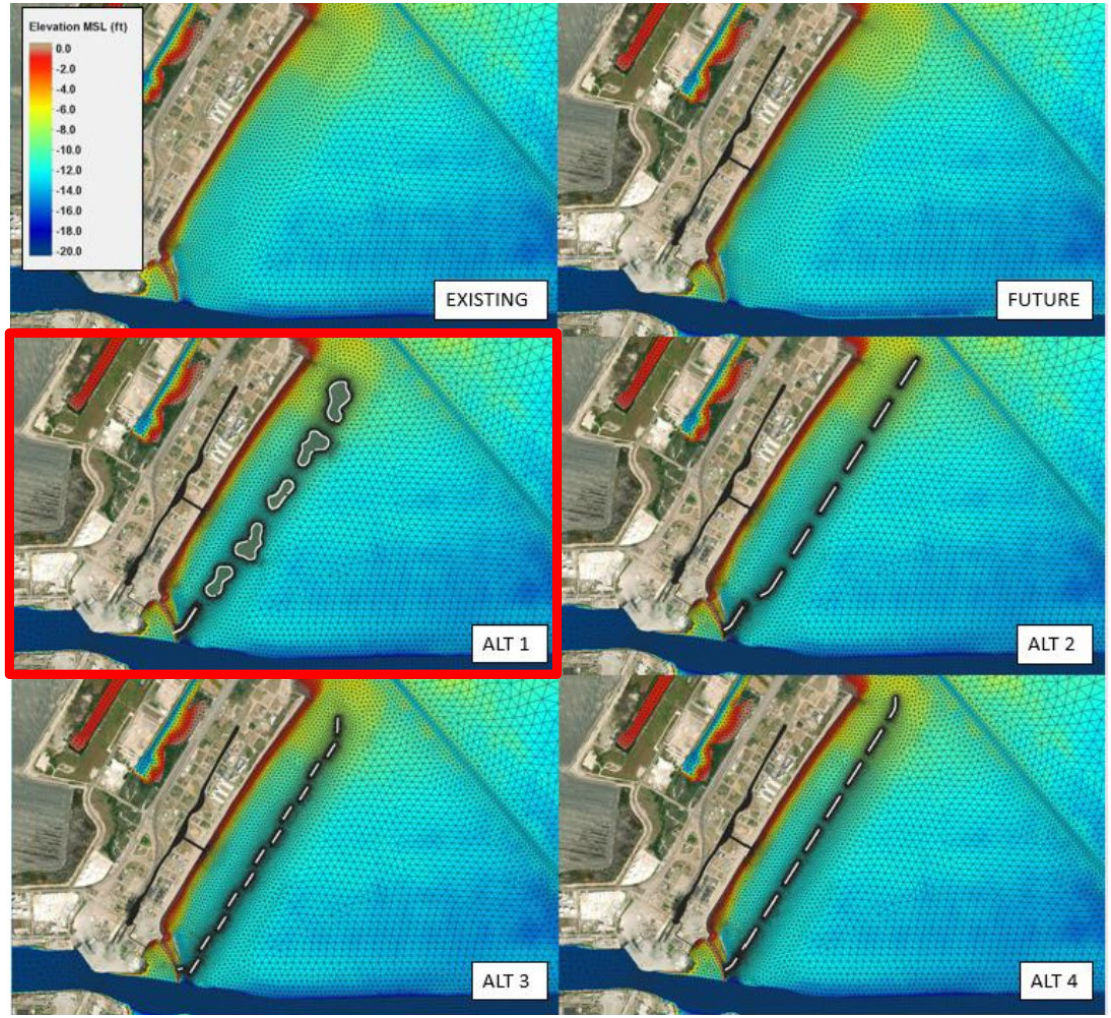

Mott MacDonald (2023)

Work Completed to Date

- Bathymetric survey
  - Performed July 9 and 10, 2019, extending approximately 2,500 feet from North Beach
  - Average depth within project footprint is approximately 10.4 feet
- Geotechnical investigation
  - 8 cores collected July 18 and 24, 2019
  - Additional geotechnical analyses ongoing
- Aquatic sensitive resources
  - January 2023 survey yielded no SAV or oysters
- Cultural resources survey
  - Performed December 2 and 3, 2023
  - 200-acre survey area
  - One anomaly identified; 164 ft-buffer recommended; 1 island relocated

Work Completed to Date

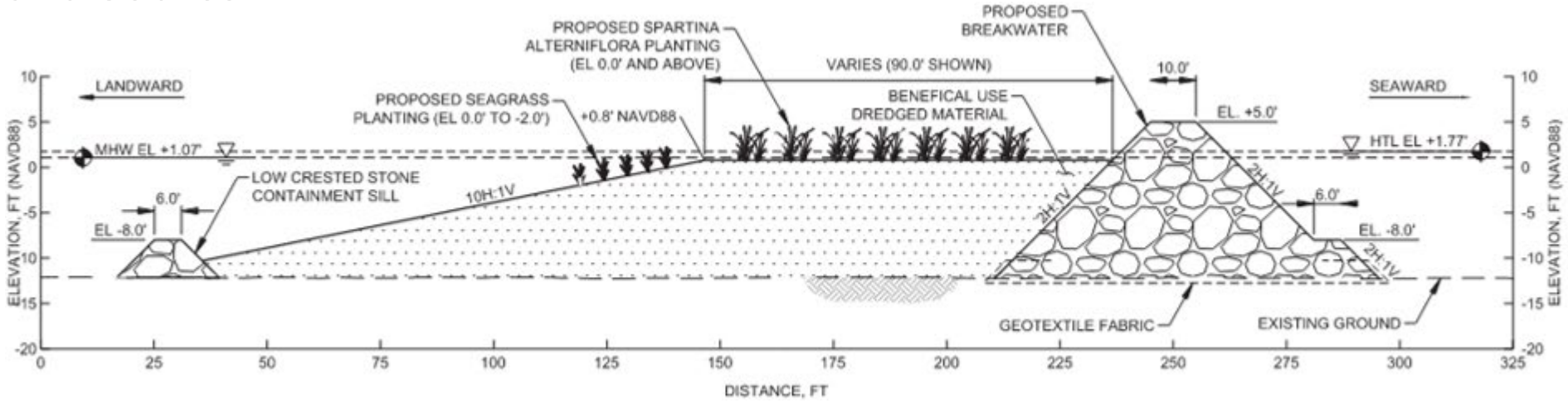
- Coastal modeling
  - Numerical modeling conducted in 2020
  - Sediment transport
  - Shoreline response
  - Vessel wake analysis
  - Armor stone sizing
  - Confirmatory modeling conducted in 2026 post-USACE permit
- Completed design phases
  - Conceptual design
  - Alternatives analysis
  - Permitting
  - 30% design



Mott MacDonald (2020)

USACE Permit Process Completed

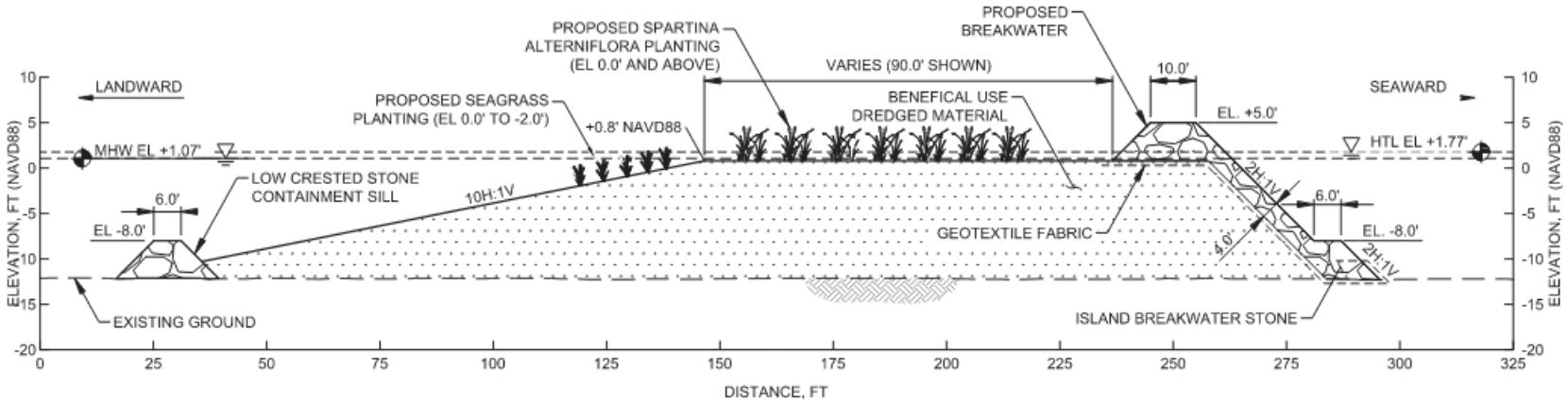
- SWG-2023-00292 issued January 29, 2026
- South breakwater and breakwater islands or revetment-style (preferred) approach
- Sources for beneficial use of dredged material (BUDM):
  - USACE dredging
  - Existing placement areas
  - Approved upland source



Mott MacDonald (2024)

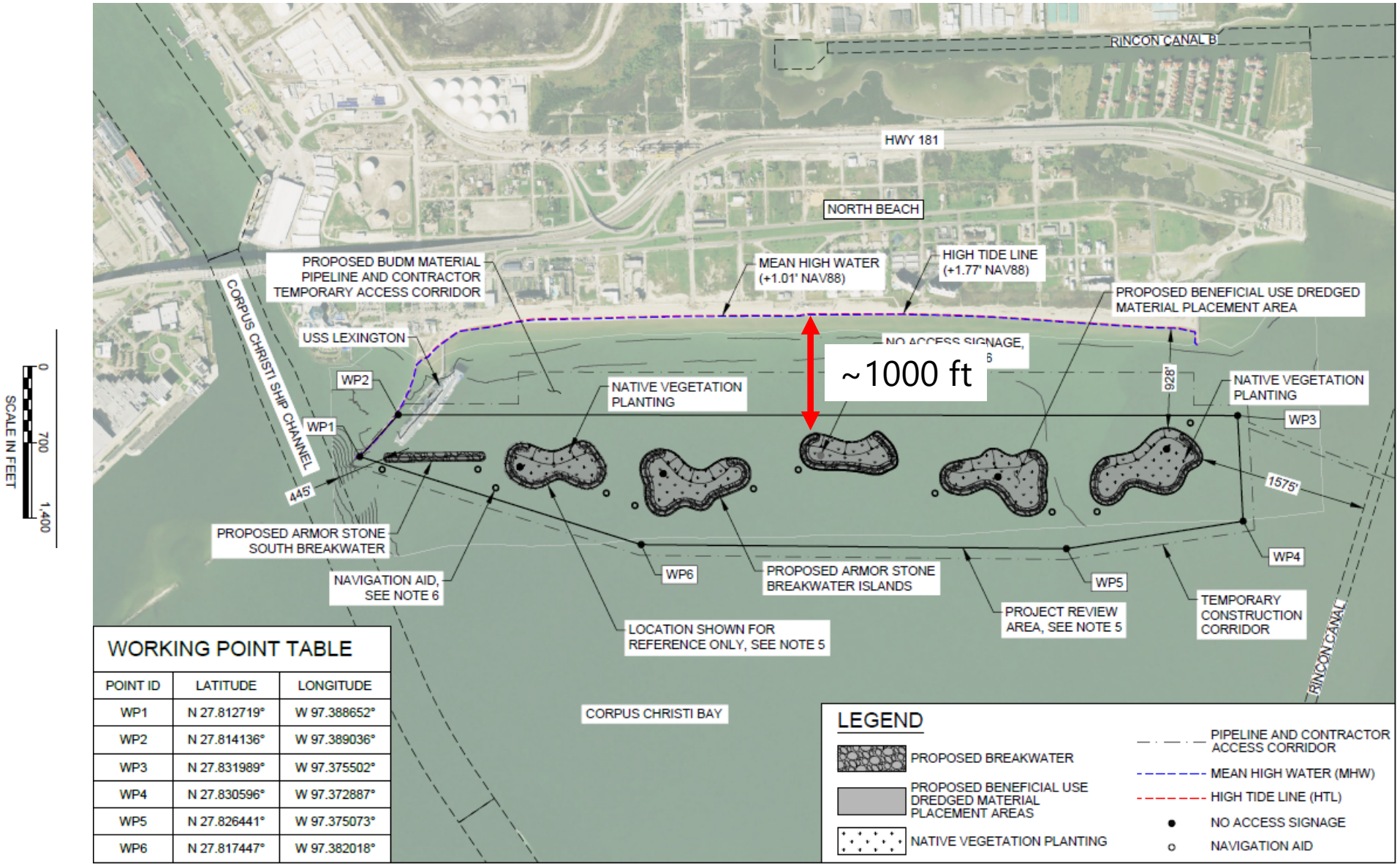
USACE Permit Process Completed

- Revetment-style construction sequence
  - Construct the full containment berm
  - Fill the containment berm with BUDM
  - Lower the containment berm
  - Lay geotextile and place rock for the breakwater islands
  - Contour and grade to marsh elevation, then plant



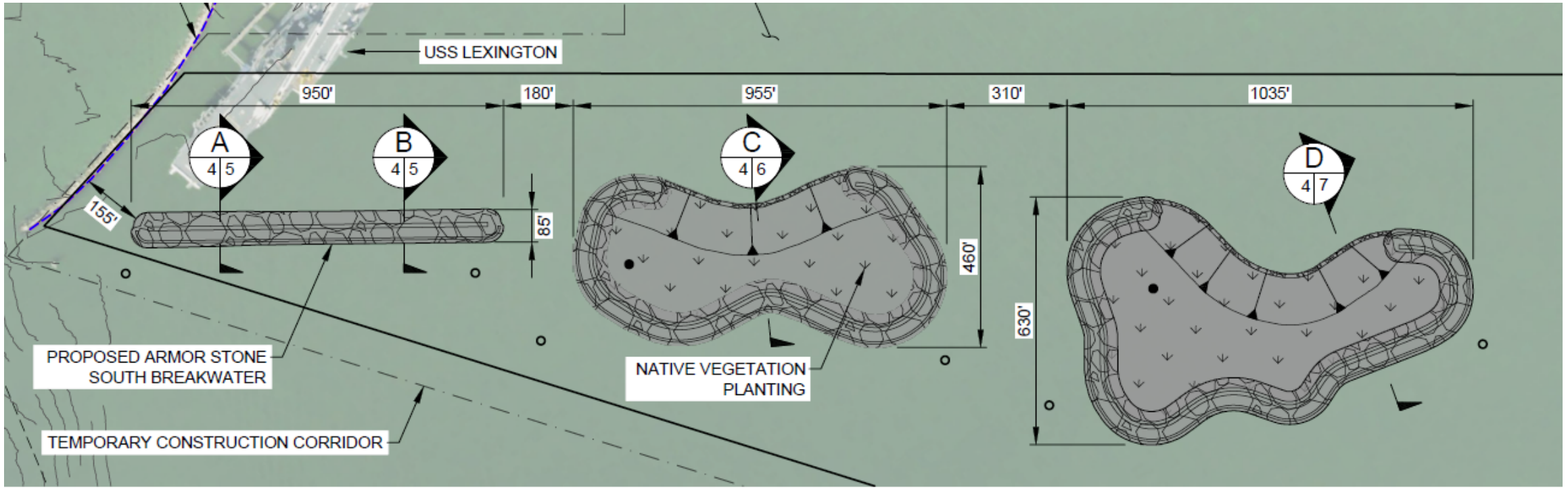
Mott MacDonald (2024)

30% Design: South Breakwater and Breakwater Islands



Mott MacDonald (2024)

30% Design: South Breakwater



Southern Breakwater: 2.3-ac

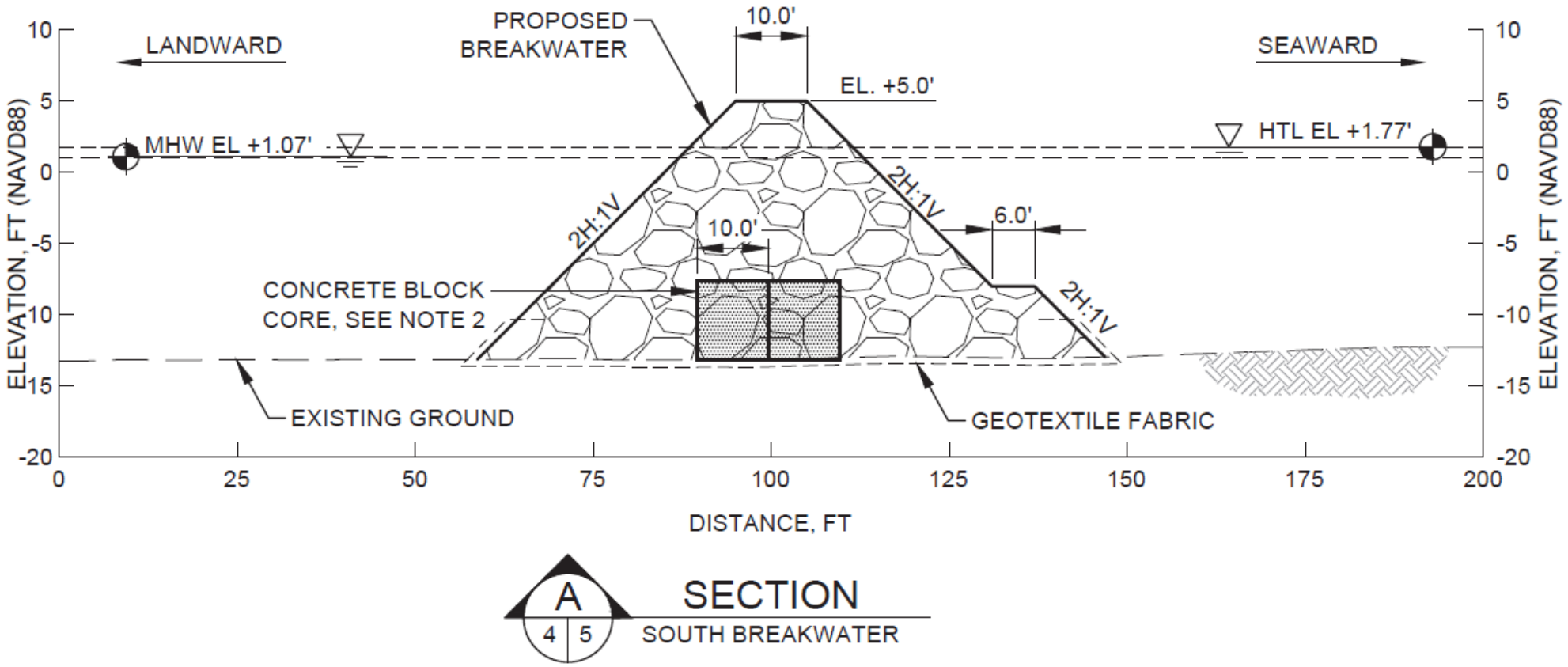
Breakwater Island 1: 13.5-ac

Breakwater Island 2: 17.5-ac

Mott MacDonald (2023)

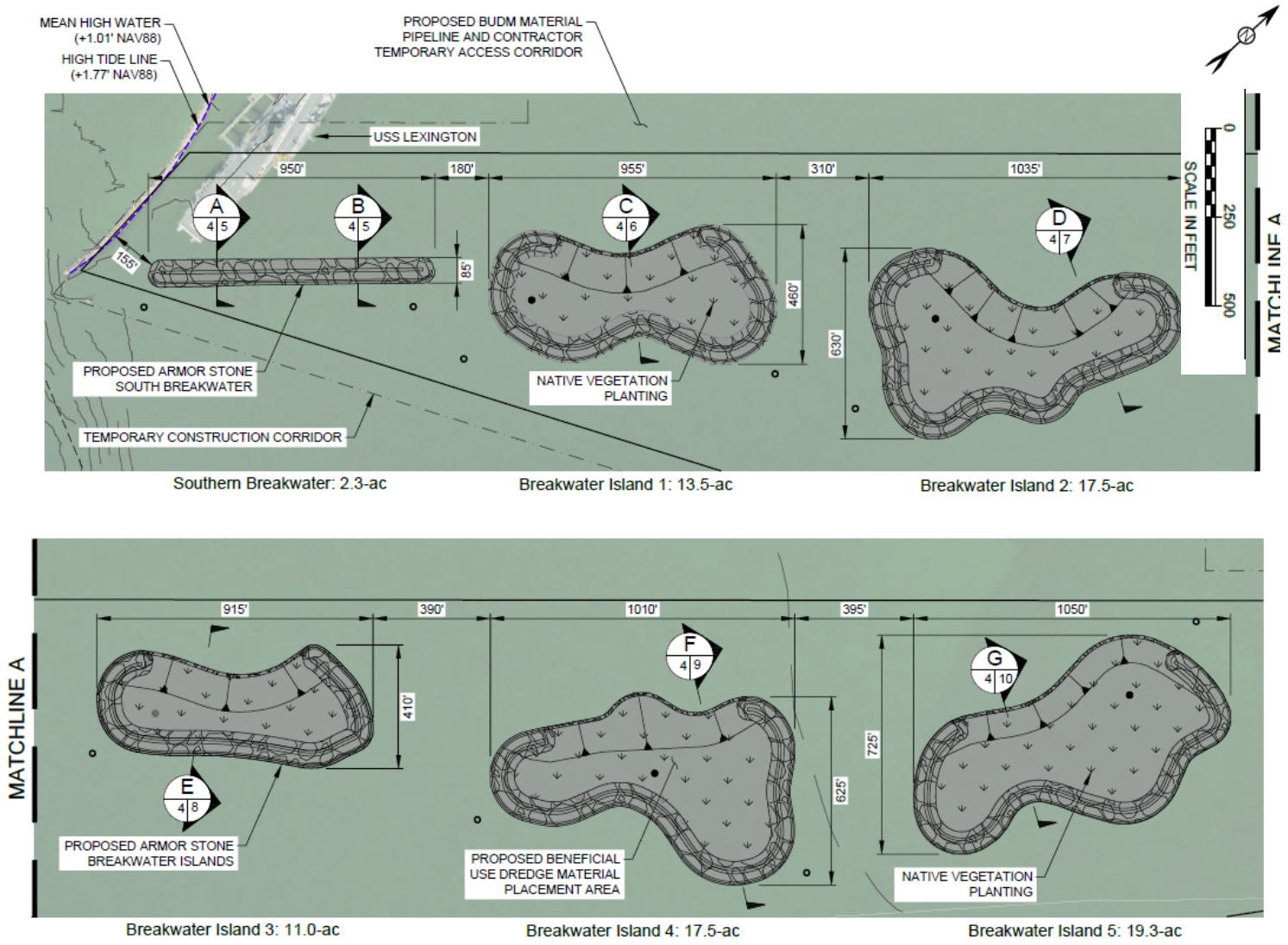
ANCHOR QEA

30% Design: South Breakwater



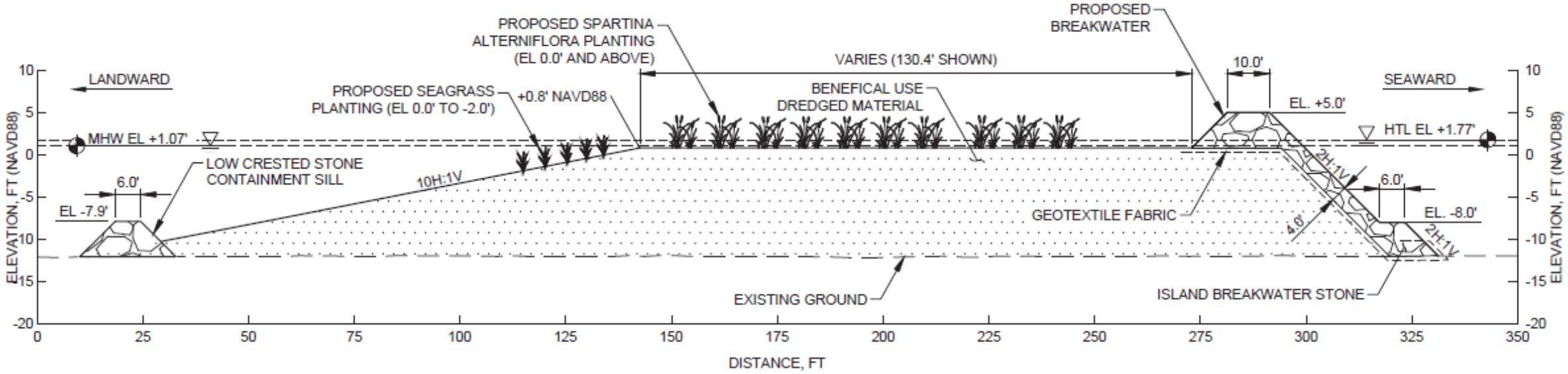
Mott MacDonald (2023)

30% Design: Breakwater Islands



Permitted plans (Mott MacDonald 2024)

30% Design: Breakwater Islands

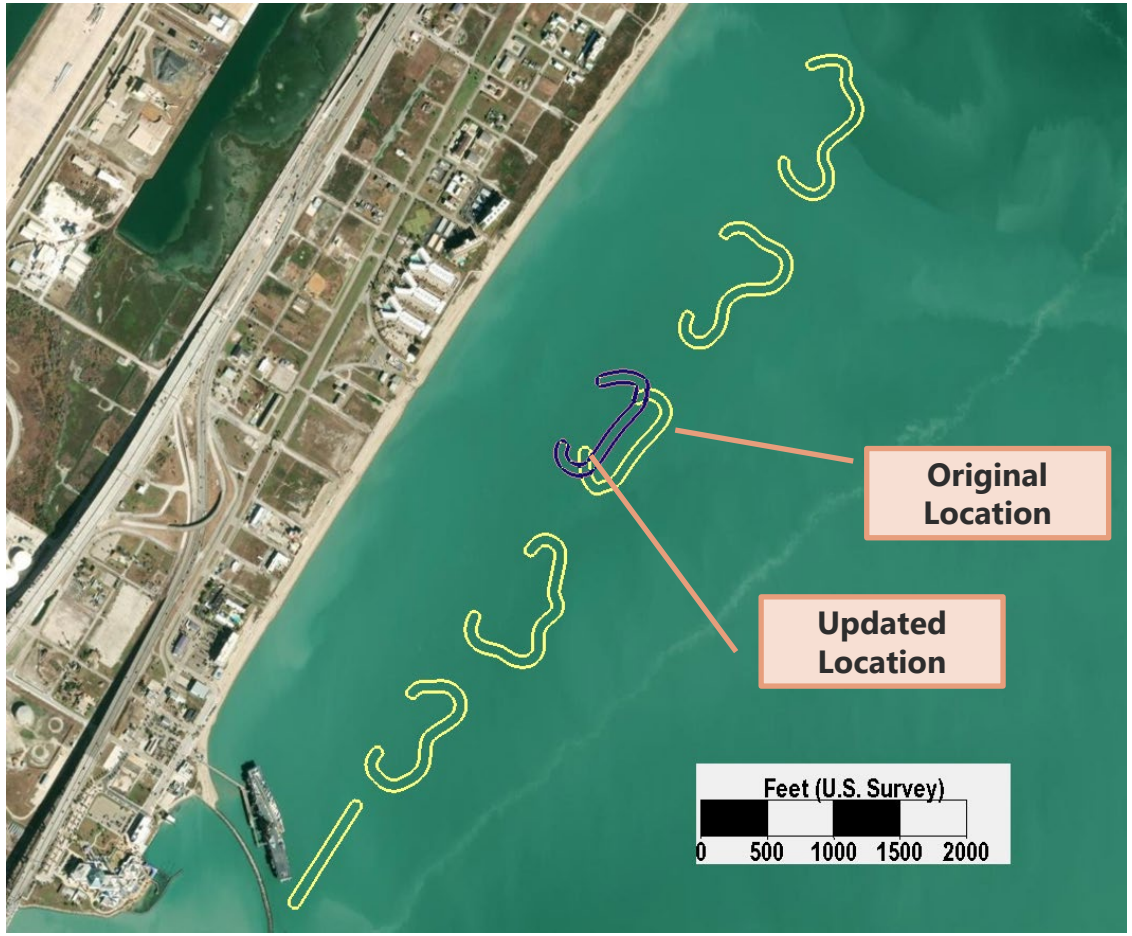


Updated Coastal Modeling

- Modeling conducted in 2020 as a part of pre-permit design
- Breakwater Island 3 realigned to due to nearby avoidance area
- Additional modeling performed to confirm project performance with respect to original modeling

Updated Coastal Modeling

- Objective
  - Analyze the impact of the breakwater island shift on the water circulation and the wave height generated by wind or the passing vessel
- Approach
  - Hydrodynamic modeling
  - Wave modeling
  - Passing vessel modeling



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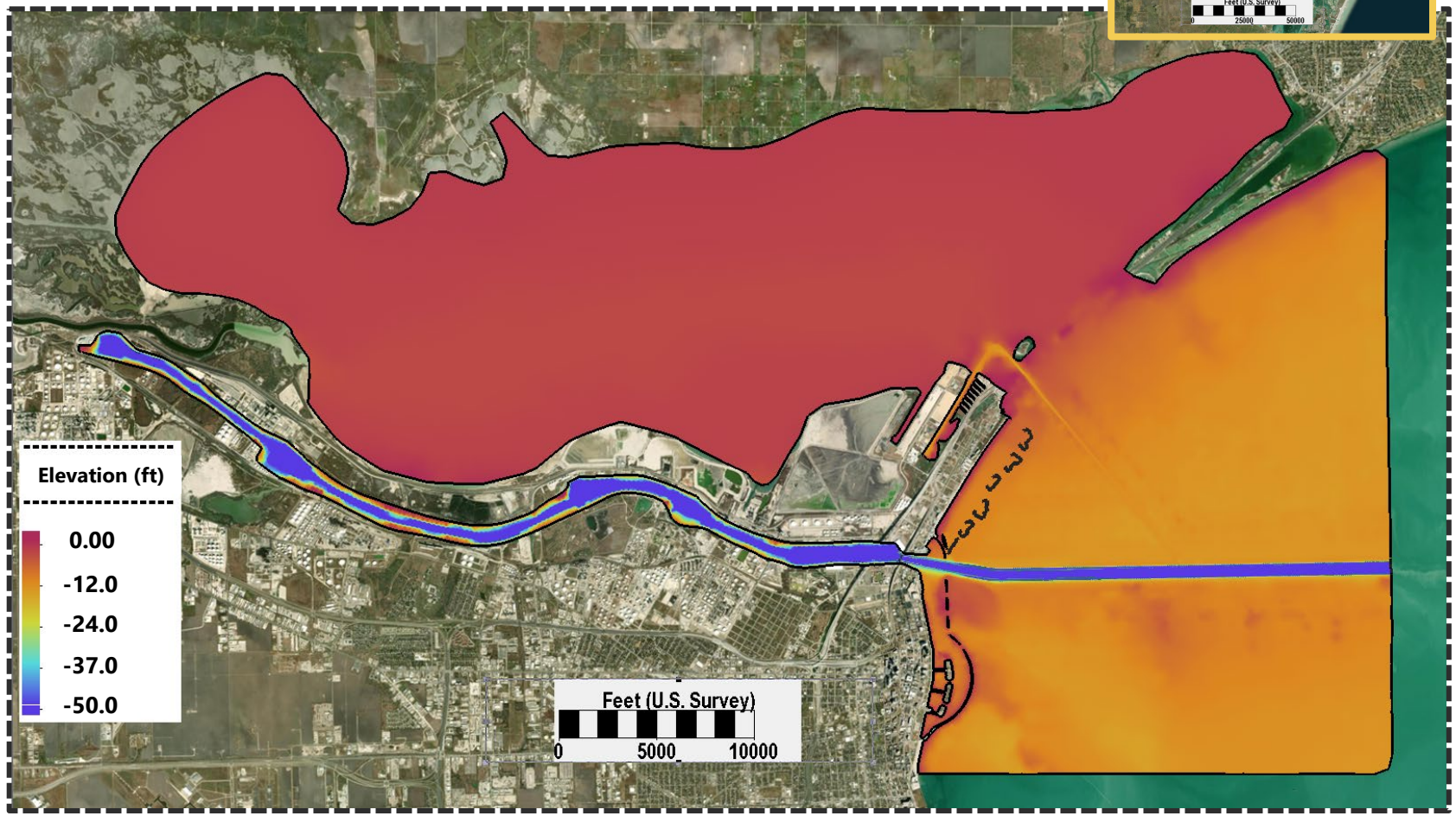
Updated Coastal Modeling: MIKE21 Model

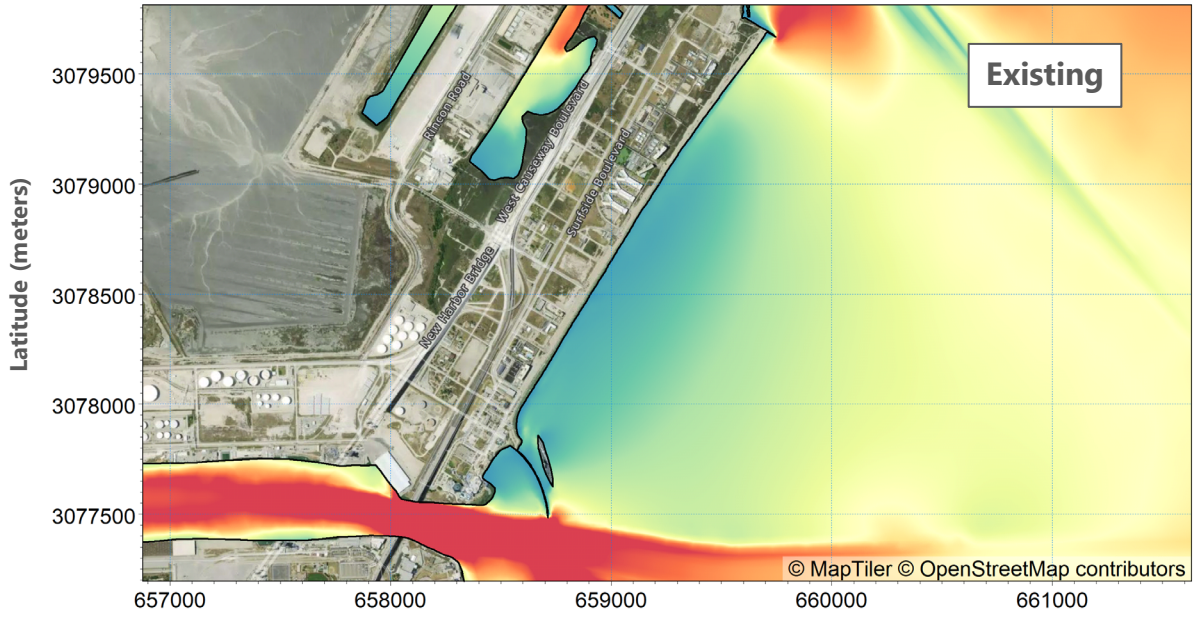
The model covers

- Nueces Bay
- Tule Lake Channel
- Part of Corpus Christi Bay

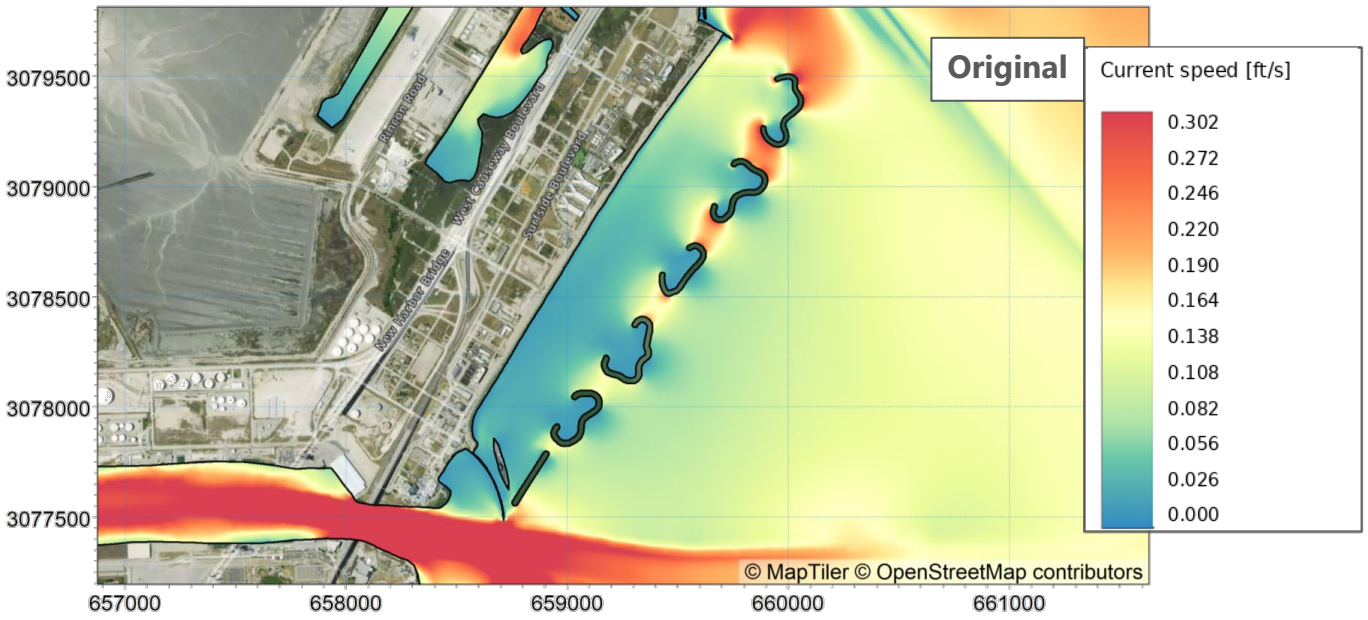


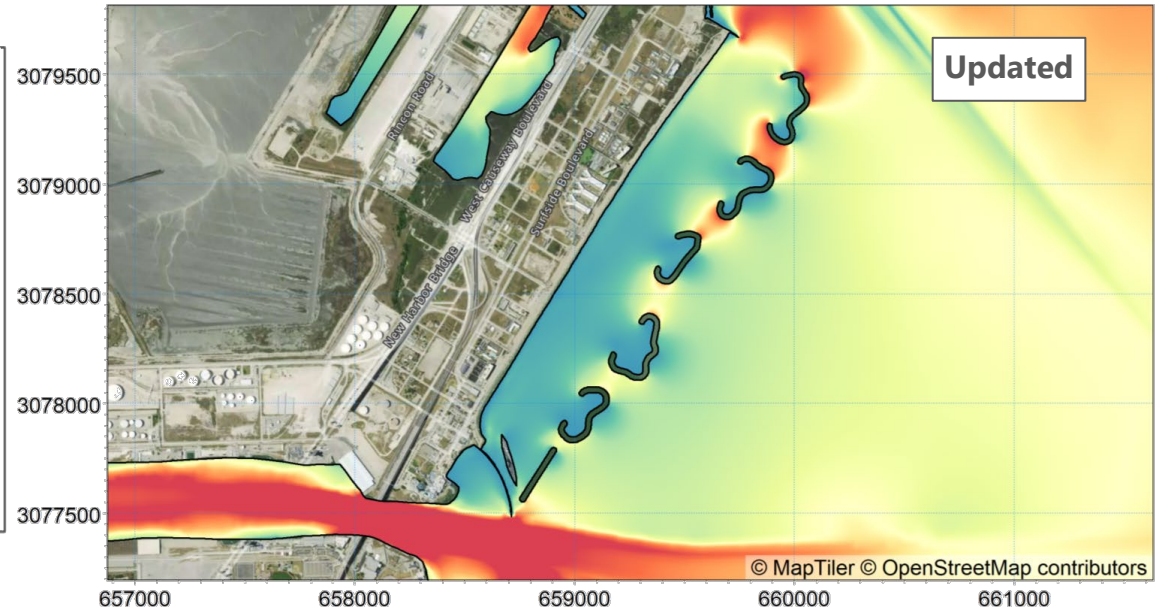
Updated Coastal Modeling: Flow Model

- Updated island location has negligible impact on the overall circulation relative to the permitted configuration



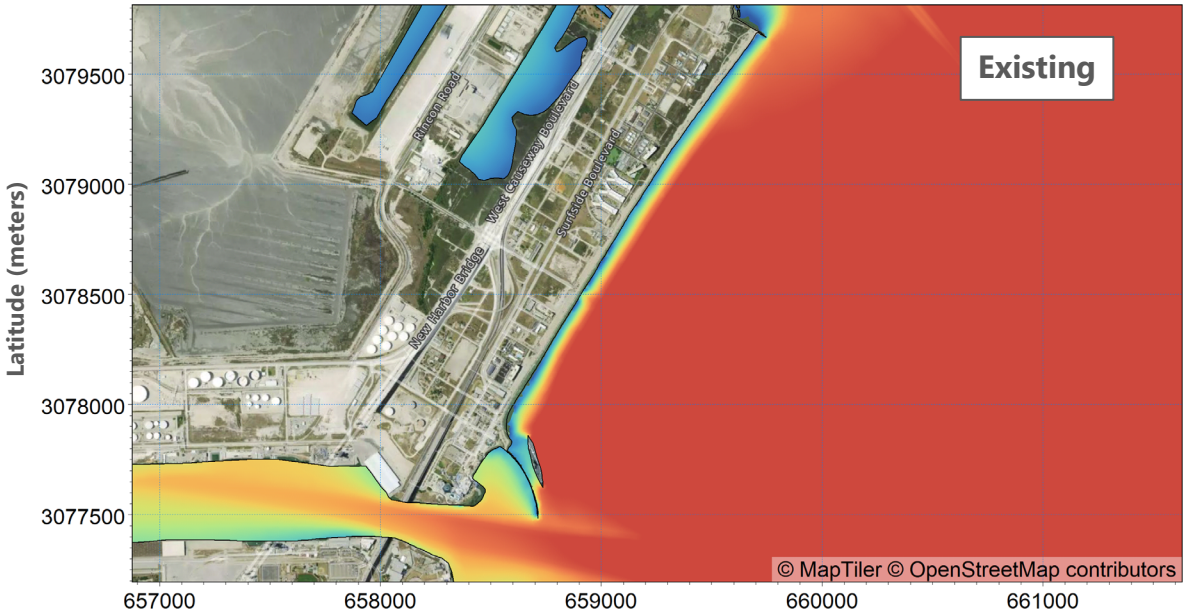
Current During Maximum Flood

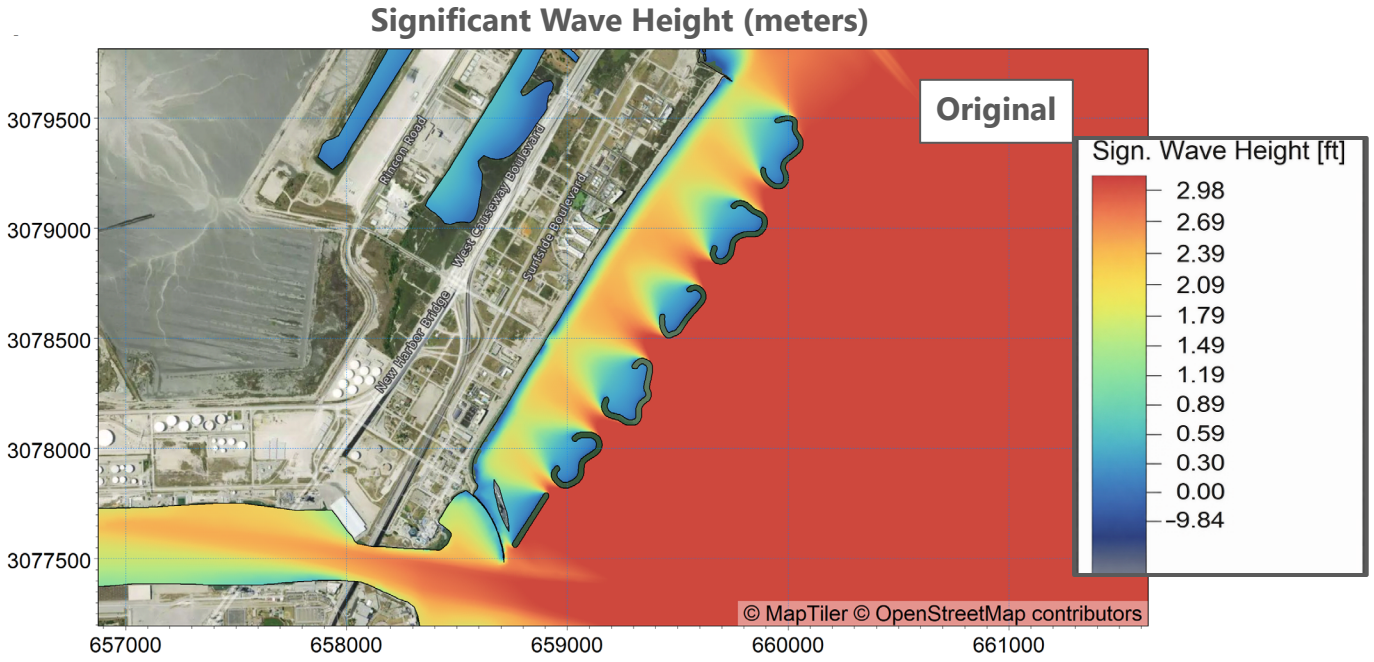


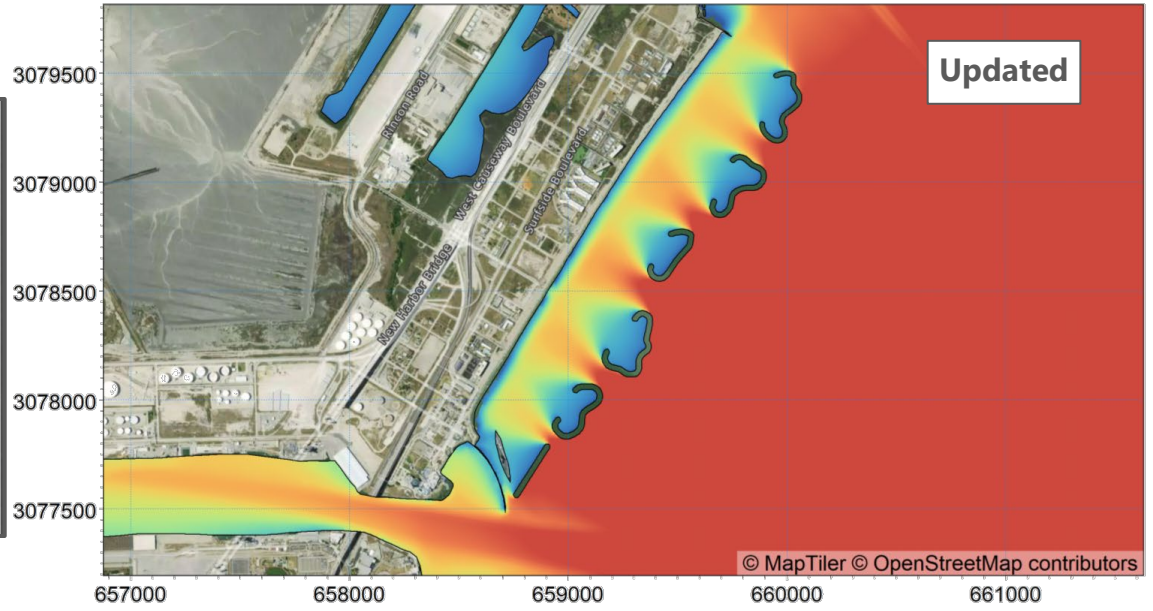


Updated Coastal Modeling: Wind-Induced Waves Model

- Updated island location does not significantly affect the wave conditions compared to the permitted configuration







Updated Coastal Modeling: Passing Vessel

- Suezmax tanker
- LOA: 900 feet
- Beam: 158 feet
- Draft: 45 feet
- Speed: 12 knots

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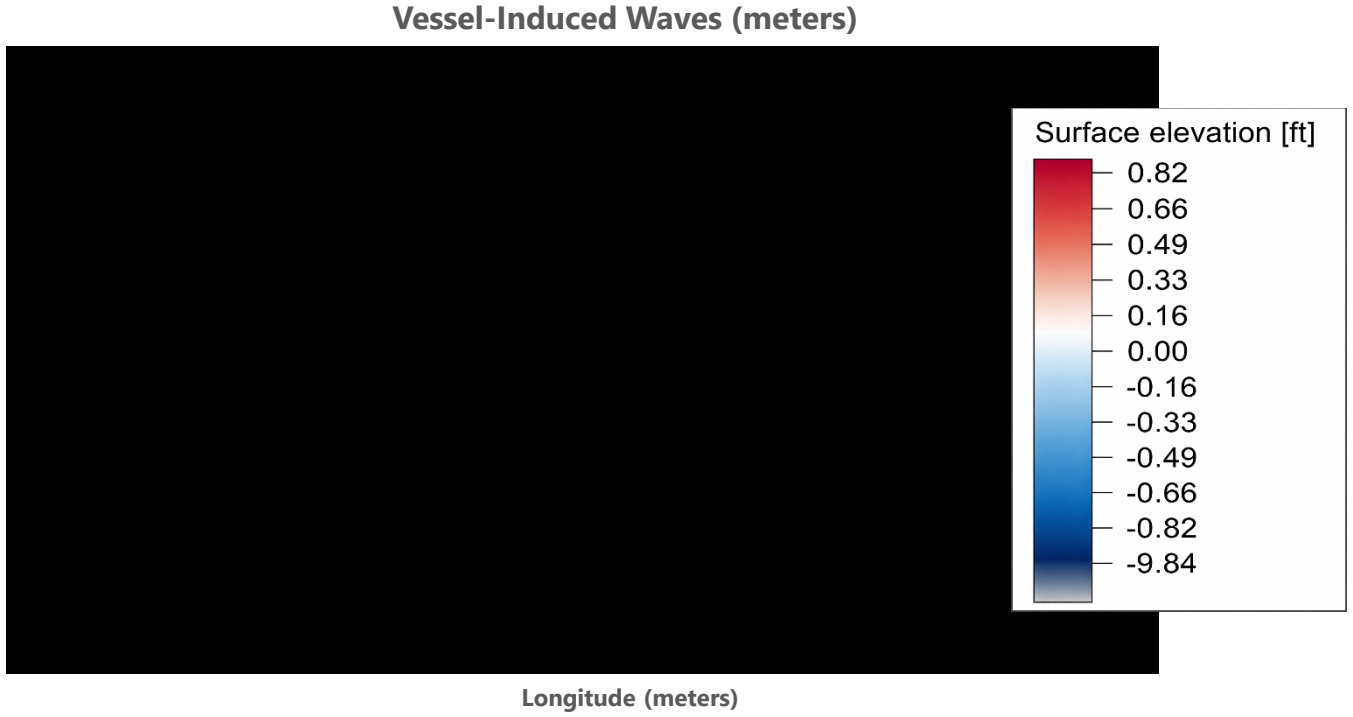
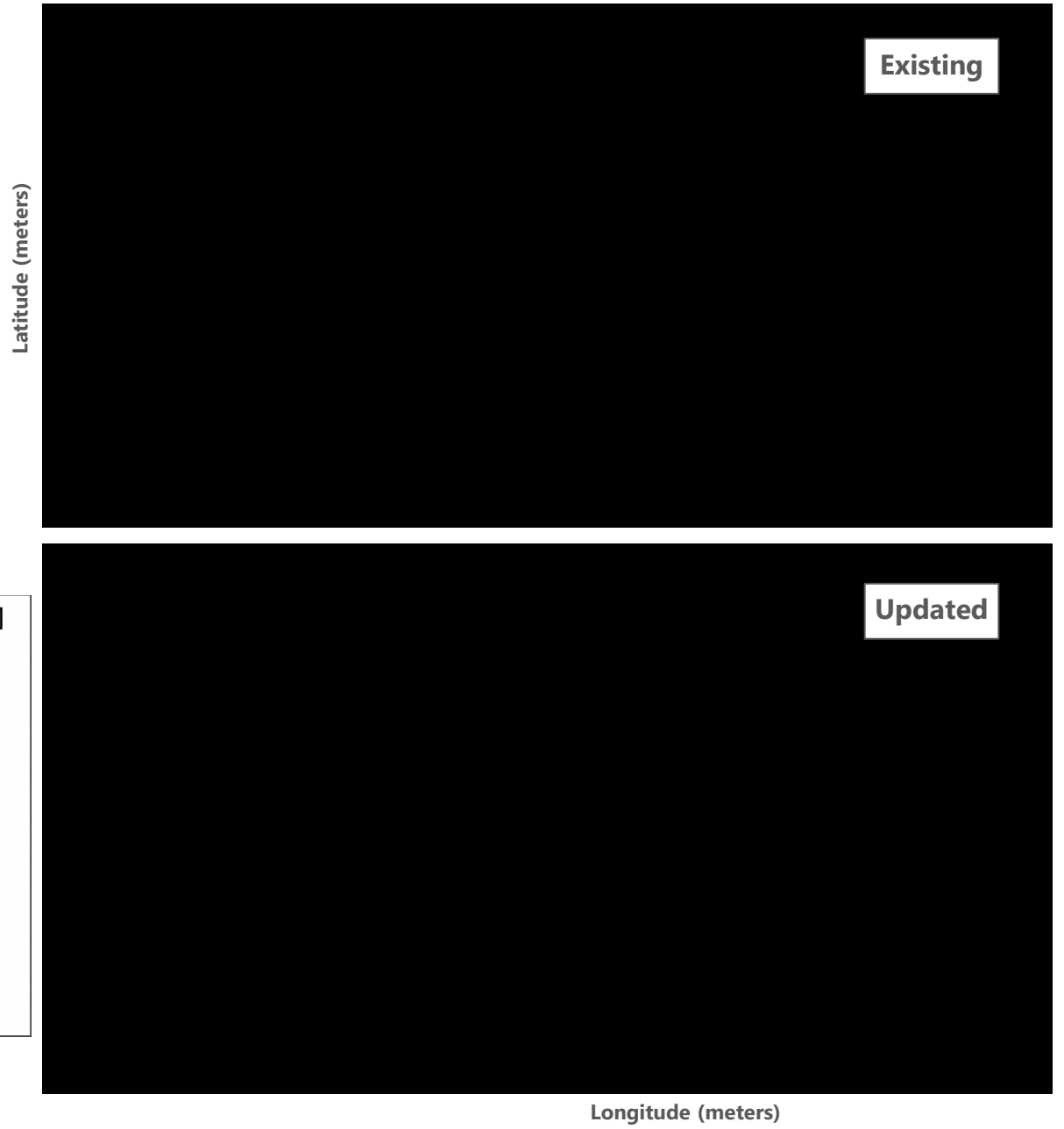
Updated Coastal Modeling: Passing Vessel

- Updated island location does not significantly affect the vessel induced wave conditions compared to the permitted configuration





Design Overview

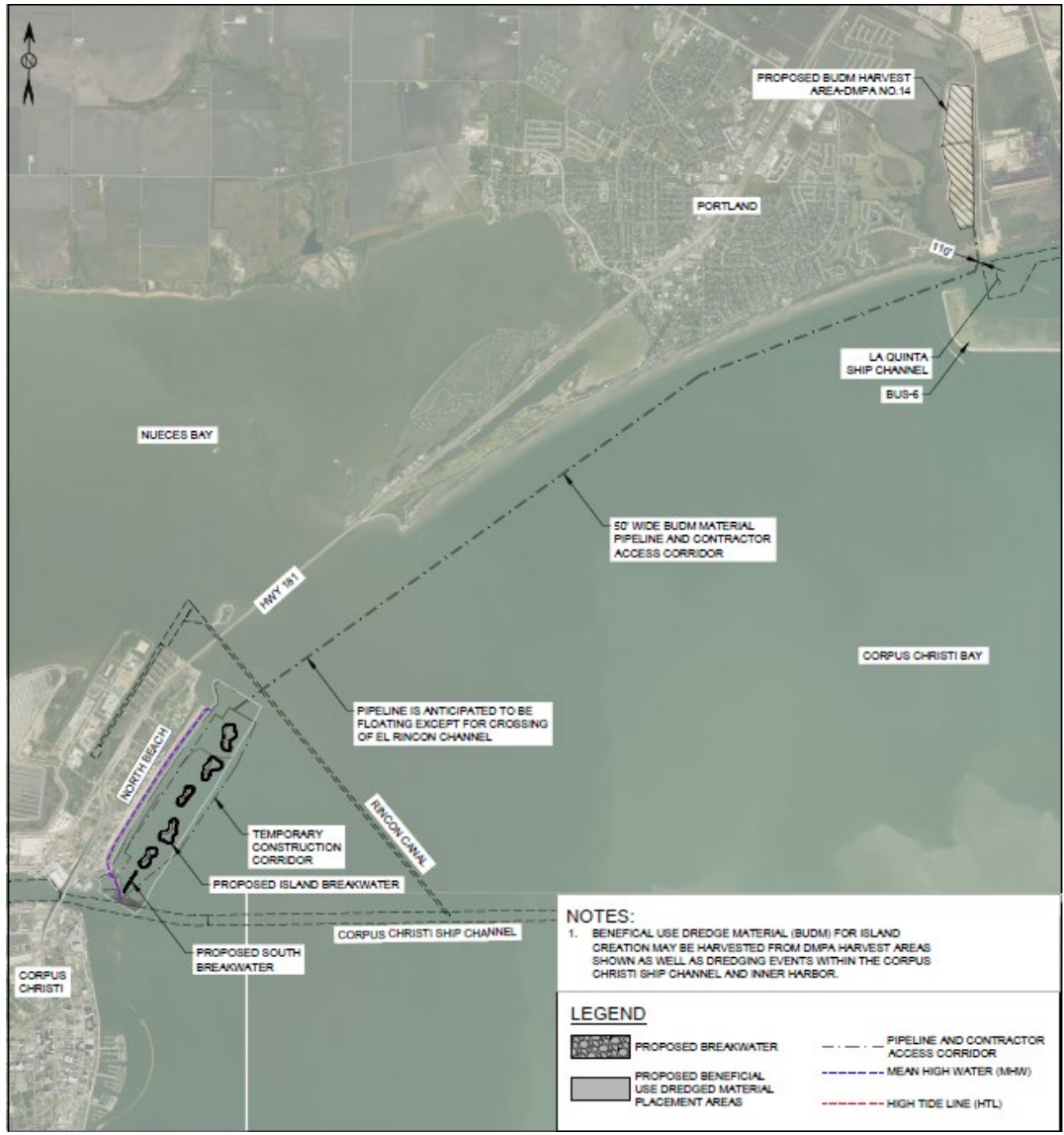
Breakwater Design Criteria	Breakwater Design Values					
	South Breakwater	Breakwater Island 1	Breakwater Island 2	Breakwater Island 3	Breakwater Island 4	Breakwater Island 5
Total structure area	2.3 acres	13.5 acres	17.5 acres	11.0 acres	17.5 acres	19.3 acres
Crest width	10 feet					
Design breakwater crest height	+5.0 feet NAVD88					
Approximate rock quantity[1]	35,000 tons	23,000 tons	25,000 tons	20,000 tons	26,000 tons	26,000 tons
Approximate fill volume[1]	N/A	263,000 cy	322,000 cy	189,000 cy	294,000 cy	278,000 cy
30% design costs[2]	$6.5M	$10.7M	$12.7M	$8.5M	$12.0M	$11.7M

Total cost[2]: $62,100,000

Notes:
1. Volumes are subject to change based on ongoing confirmatory geotechnical analysis.
2. Total cost assumes 80% losses for island fill and includes 30% contingency on all other items.
cy: cubic yard
NAVD88: North American Vertical Datum of 1988

Current Status and Future Work

- 30% design completed
- Next steps: 60%, 90%, and 100% designs
  - Late fall/winter 2026
- Potential project funding sources
  - GOMESA
  - CEPRA
  - RESTORE Act
  - CDBG-MIT
  - NFWF
  - Others
- Coordination with USACE for BUDM
- **Project Phasing**



Mott MacDonald (2024)

References

- Mott MacDonald, 2020. *Coastal Engineering and Alternative Analysis*. North Beach Coastal Protection. December 2020.
- Mott MacDonald, 2023. *Design Rendering*. March 2023.
- Mott MacDonald, 2024. "Attachment A – Permit Drawings." *Request for Individual Permit Authorization – El Rincon Breakwaters Project, Corpus Christi Bay, Nueces County, Texas*.

Questions?