

A Texas-Sized Vision for the Beneficial Use of Dredged Material



US Army Corps of Engineers



Presented by

Hayden Smith,¹ Todd Merendino,² Sarah Garza,³ Harrison McNeil,³
Yvonne Dives-Gomez,³ Matt Mahoney,⁴ Ray Newby,⁴
Jane Sarosdy,⁵ and Dan Opdyke¹

WEDA Gulf Coast Chapter Meeting, November 8, 2023

¹Anchor QEA, LLC.

²Ducks Unlimited, Inc.

³Port of Corpus Christi Authority

⁴Texas Department of Transportation

⁵Sarosdy Consulting

Presentation Background

- Ducks Unlimited has been leading a multiyear, multiagency effort to facilitate beneficial use (BU) through stakeholder outreach, planning, design, and permitting
- The following projects provide a framework for BU site planning and implementation:
 - Deepwater Horizon (DWH) Natural Resources Damage Assessment (NRDA) Texas Trustee Implementation Group (Texas TIG)
 - Texas Lower Coast BU Planning Project
 - Phase 1
 - Phase 2
 - Texas BU Master Plan

DWH NRDA Texas TIG

Project Background

- Funding

- Texas DWH NRDA Texas TIG allocated \$1.964M in 2017 for a Restoration Plan/Environmental Assessment project to address DWH injury to tidally influenced marshes

- Goal

- Prioritize eight stakeholder recommended project sites
 - Completed 2020
- Complete planning, surveying, 30% engineering designs, 60% engineering designs, and permit packages
 - Completed 2021
- Final report
 - Completed 2022



Site Selection Priorities

- Must be degraded, tidally influenced marsh with significant open water
 - Other potential BUs (e.g., bird islands, seagrass beds, and beaches) not prioritized
 - Preference given to sites recommended by natural resource agency and NGO staff
- Viable sources of material available nearby
- Public land, single landowner preferred
- No nearby projects competing for sediment
- No problematic permitting issues (e.g., seagrasses and oysters)
- Related project in General Land Office's (GLO's) Texas Coastal Resiliency Master Plan (TCRMP)



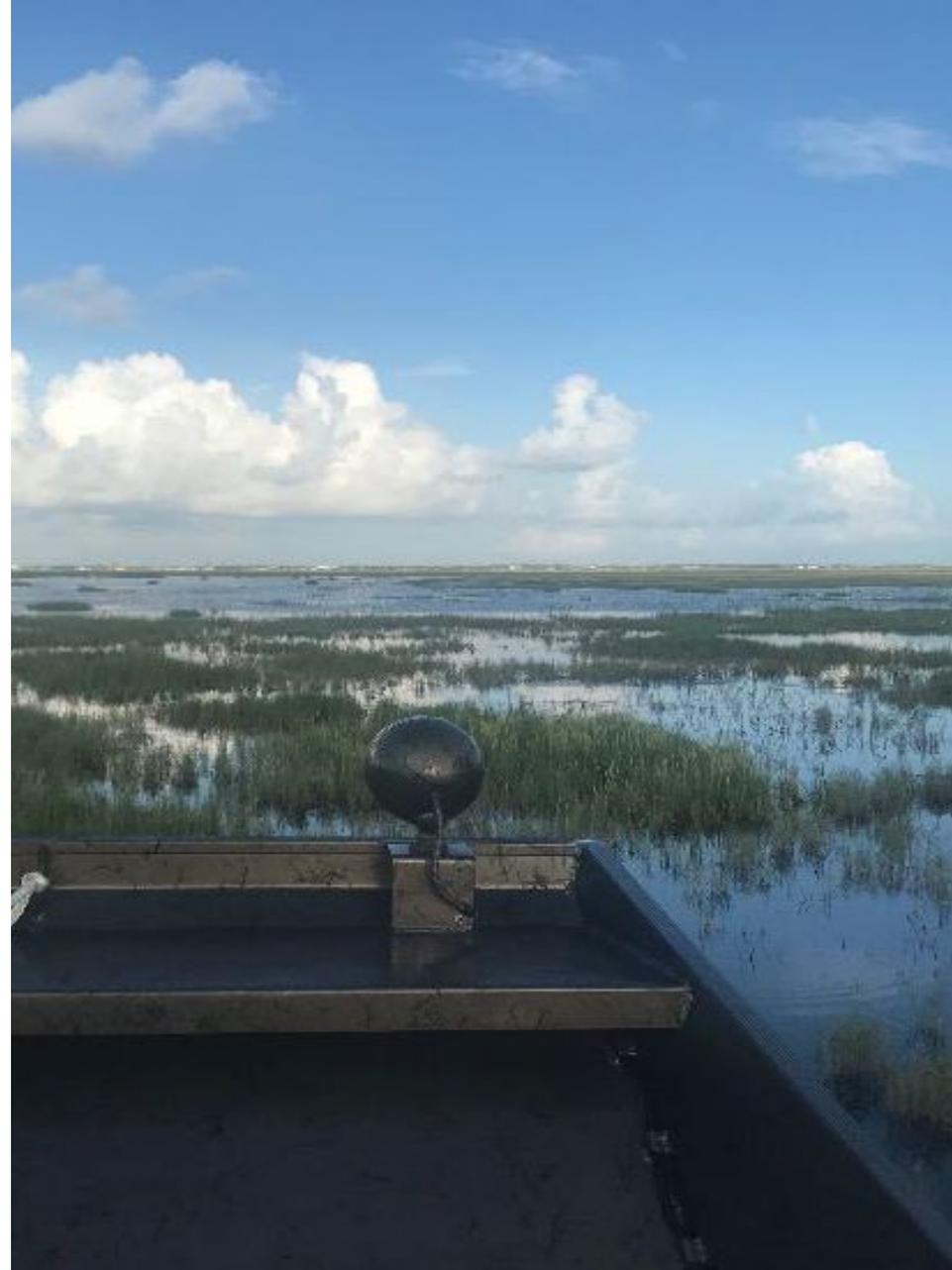
Texas TIG Selects Eight Sites for Planning



Over 150 potential sites were recommended

Project Highlights

- 3,053 acres of marsh
- 4.3 million cubic yards (cy) of material
- All five projects that are eligible for state funding were included in the 2023 TCRMP as follows:
 - Lower Neches WMA Old River Unit (Orange County)
 - Texas Point NWR (Jefferson County)
 - McFaddin NWR Willow Lake Terraces (Jefferson County)
 - Anahuac NWR Robert Mueller Tract (Chambers County)
 - San Bernard NWR Sargent Oil Field (Matagorda County)



Current Status

- Project sponsors and permit applicants need to be identified
- Funding needed to:
 - Complete designs
 - Support permitting process
 - Implement projects
- In June 2023, Texas TIG announced that further funding may be available for design and implementation for some of these sites



Texas Lower Coast BU Planning Project: Phase 1

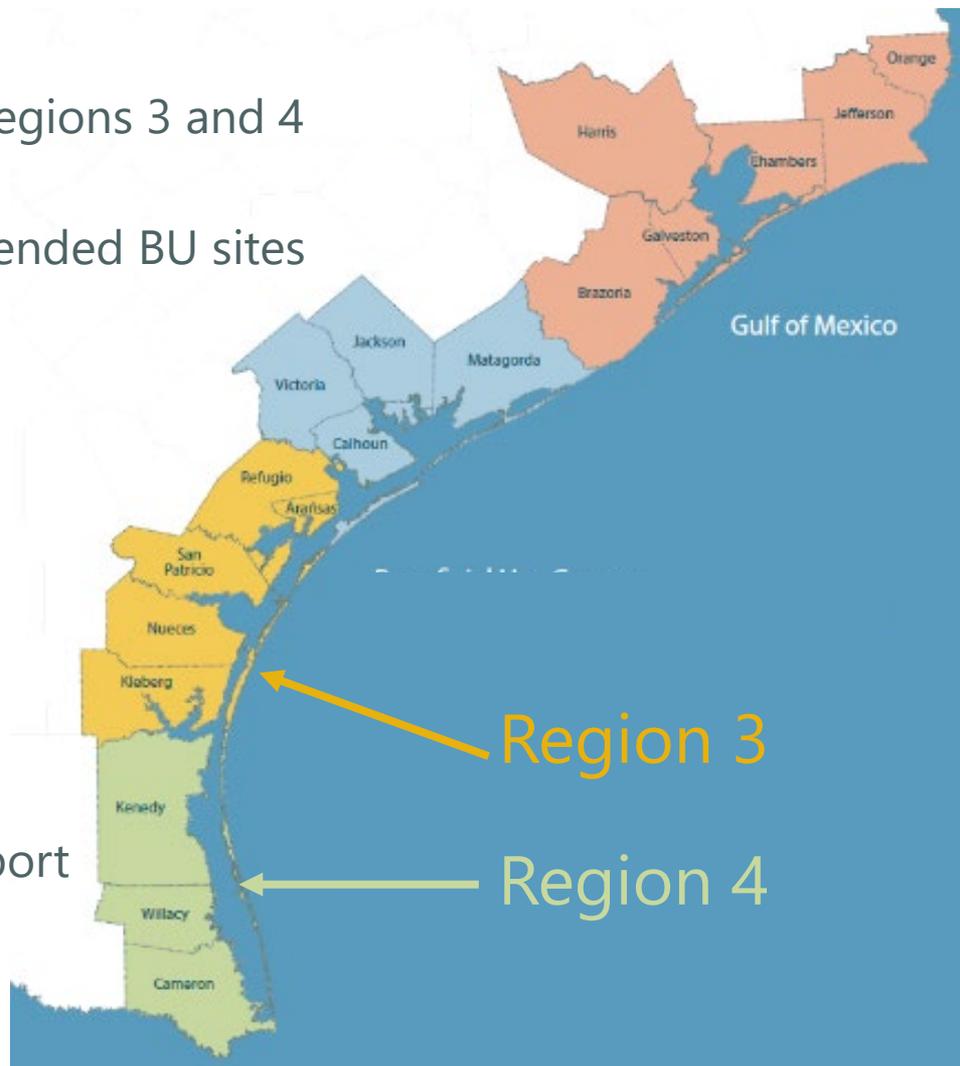
Phase 1 Overview

- Funding
 - GLO-CMP Cycle 26 GOMESA
 - Gulf of Mexico Energy Security Act
 - Texas GLO Coastal Management Program Project of Special Merit Grant to Ducks Unlimited, Inc.
 - Port of Corpus Christi Authority (PCCA)
- Goal
 - Develop preliminary designs for GLO Regions 3 and 4 projects to secure funding for final design and construction



Phase 1 Overview (cont.)

- Task 1
 - Three stakeholder meetings in Regions 3 and 4
- Task 2
 - Evaluating stakeholder: recommended BU sites and selecting priorities
- Task 3
 - 10% design on 20 sites
 - 16 GLO and 4 PCCA
 - 30% design on 11 sites
 - 8 GLO and 3 PCCA
 - 60% design on 7 sites
 - 5 GLO and 2 PCCA
- Task 4
 - CMP project reporting—final report completed March 2023



Phase 1 Overview (cont.)

Restoration Type	10% Designs	30% Designs	60% Designs
Marsh	9	4	2
Bird Island	6	4	3
Beach nourishment	2	2	1
Tidal flat	1	0	0
Seagrass	2	1	1
Total	20	11	7

Phase 1 Overview (cont.)

60% Designs

Causeway Bird Island

PA9-S

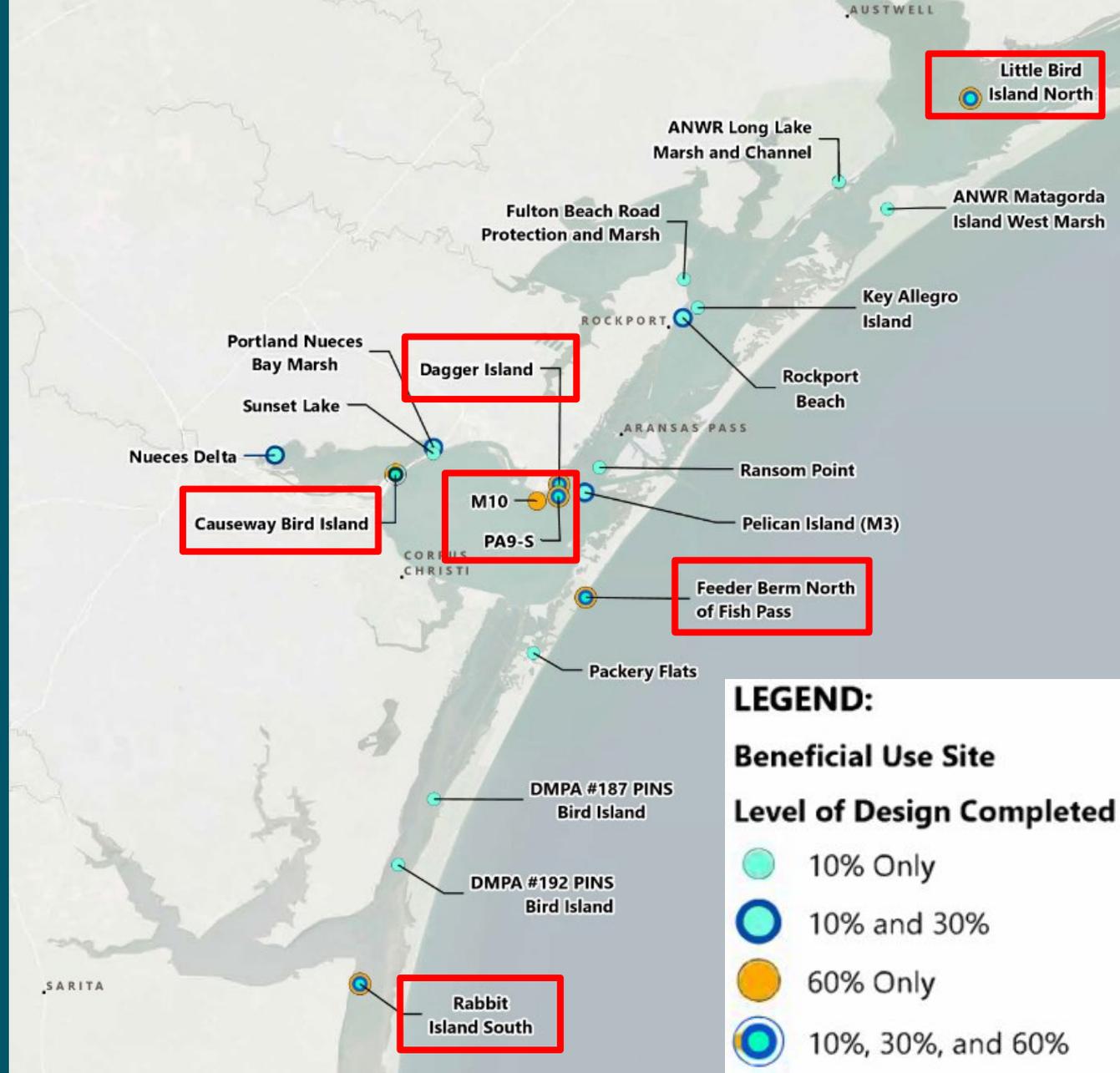
M10

Dagger Island

Little Bird Island North

Feeder Berm North of Fish Pass

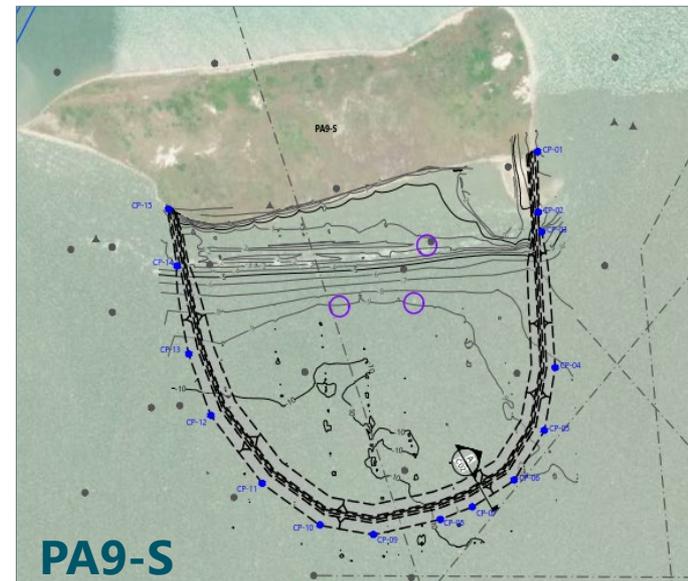
Rabbit Island South



Texas Lower Coast BU Planning Project: Phase 2

Phase 2 Project Background

- Funding
 - GLO-CMP Cycle 28 GOMESA
 - GLO CMP Project of Special Merit Grant to Ducks Unlimited
 - Port of Corpus Christi Authority
- Goal
 - To advance Causeway Bird Island and PA9-S from 60% to 90% project designs



Causeway Bird Island Overview

Key Features

- **Rookery size: 16 acres**
- Restoration of a degrading rookery
- Containment and protection from existing breakwater completed in 2022
- Creation of a variety of habitats
- Rincon Canal maintenance material

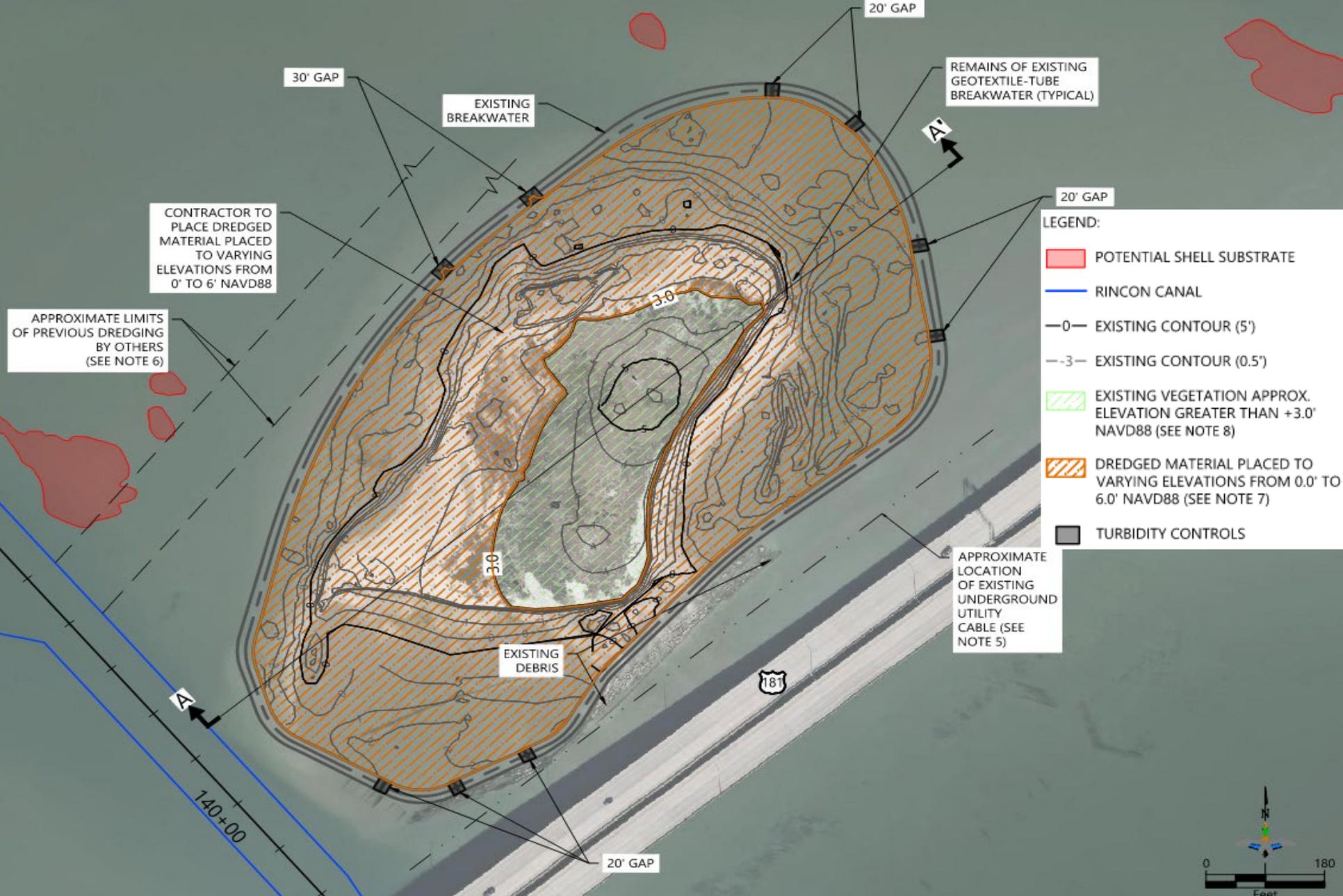
Benefits

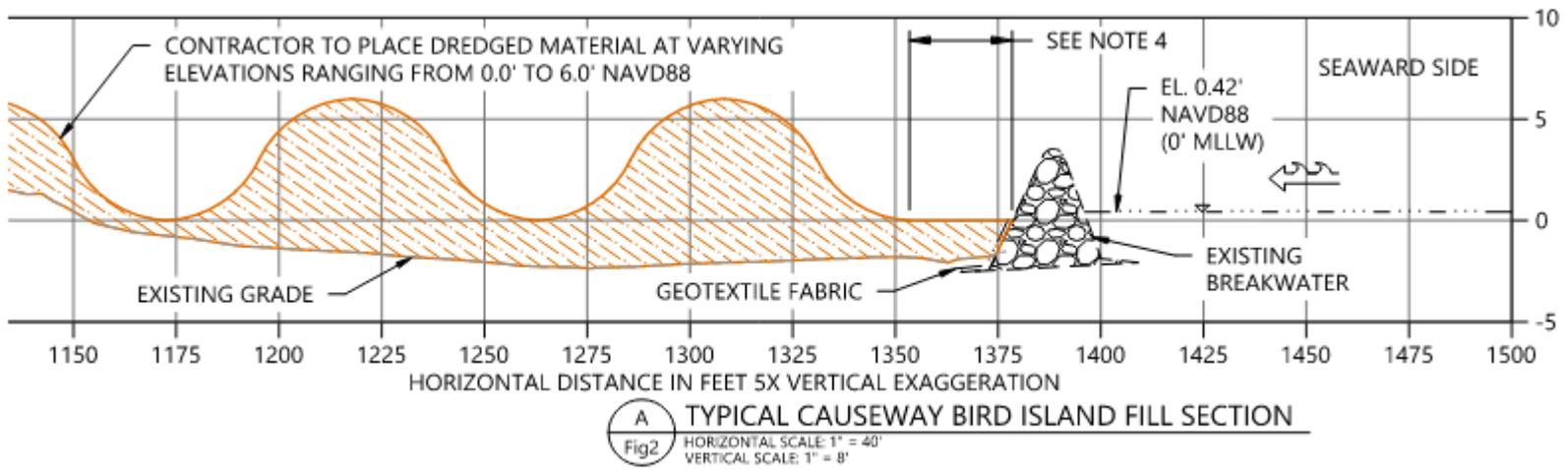
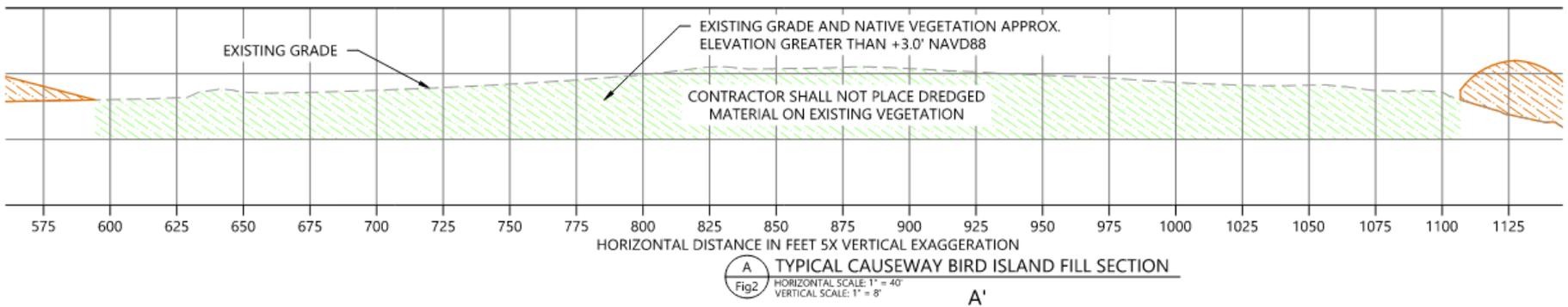
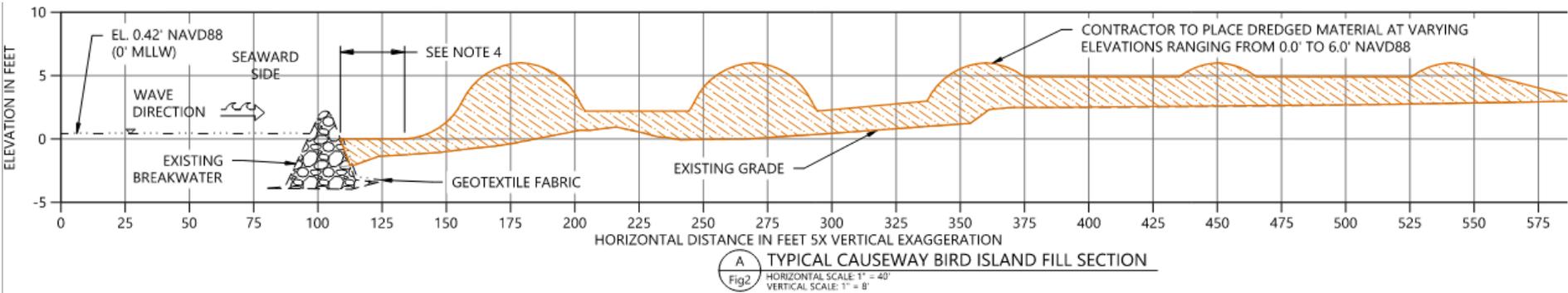
- Restoration of upland rookery at high and dry elevations (+0.0 to 6.0 feet NAVD88)
 - No placement proposed above +3.0 feet NAVD88 on vegetation
- 105,000 cy

Challenges

- Breakwater design information
- Geotech
 - Source material and placement area
- Existing rookery island







PA9-S Overview

Key Features

- **Marsh: 172 acres**
 - Target elevation: +2.5 to +3.5 feet NAVD88 (averaging +3.0 feet NAVD88)
- **Containment Berm: 40 acres**
 - Target elevation: +7.0 feet NAVD88
- Corpus Christi Ship Channel (CCSC) new-work material, CCSC maintenance material or others

Benefits

- Potential for a variety of habitat, including high marsh and tidal flats
- Possibility for constructing containment berm from material within footprint
- Capacity for approximately 4 million cy
- Proximity to CCSC

Challenges

- Oil and gas infrastructure within footprint
- Partially within a USACE DMPA
- Access to dredged material for berm if material in footprint is unsuitable
- Data gaps
 - Geotechnical data
 - Source material and placement area
 - Coastal Engineering Analysis and modeling

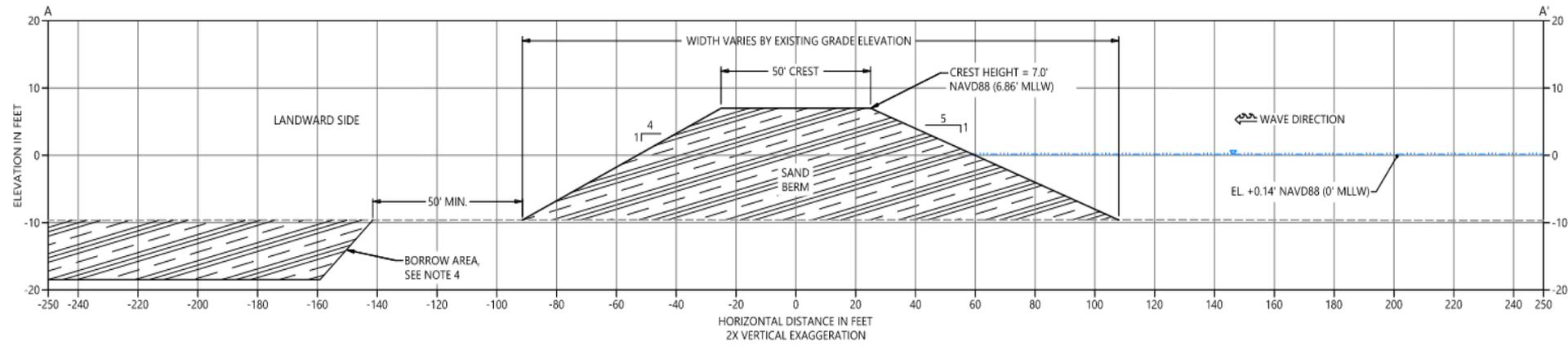




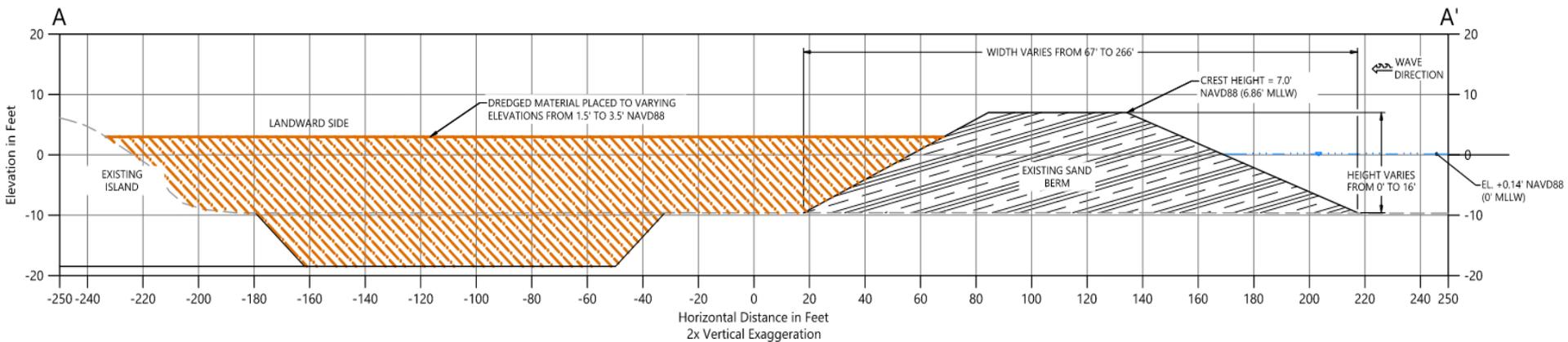
- LEGEND:
-  PROPOSED CONTAINMENT BERM
 -  GLO MAPPED PIPELINES
 -  RAILROAD COMMISSION OF TEXAS MAPPED OIL AND GAS INFRASTRUCTURE LOCATIONS
 -  DIRECTIONAL SURFACE LOCATION
 -  CORPUS CHRISTI SHIP CHANNEL
 -  GULF INTRACOASTAL WATERWAY
 -  -10- EXISTING CONTOUR (5')
 -  -3- EXISTING CONTOUR (1')
 -  VISUALLY IDENTIFIED OIL & GAS INFRASTRUCTURE
 -  BORROW AREA



A Texas-Sized Vision for the Beneficial Use of Dredged Material
 Presented by Hayden Smith



A TYPICAL CONTAINMENT BERM SECTION
 C01 HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 10'



A TYPICAL MARSH FILL SECTION
 Fig-2 HORIZONTAL SCALE: 1" = 40'
 VERTICAL SCALE: 1" = 20'

Phase 2 Next Steps

- Coordination, design work, and permit application submittal
 - Geotechnical data collection
 - Coastal modeling
 - 90% designs and cost estimates
 - Stakeholder meetings
 - USACE permit review coordination
- Schedule
 - Final report due September 2025



Possible Phase 3

- GLO has indicated tentative support for continued funding of Phase 3
 - 90% designs for the following two additional sites:
 - Little Bird Island North
 - Rabbit Island South



Texas BU Master Plan



Photo Courtesy of David Morgan

BU Master Plan



- Funding

- Texas Commission on Environmental Quality Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States (RESTORE) Act



- Bucket 1: economic benefits

- Supports maritime commerce
- Enhances commercial and recreational fisheries
- Protects infrastructure
- Defers filling placement areas
- Promotes tourism



- Goal

- Coordinate efforts, identify and prioritize sites, and produce plans and guidelines that result in cost savings and streamlined future BU projects across Texas

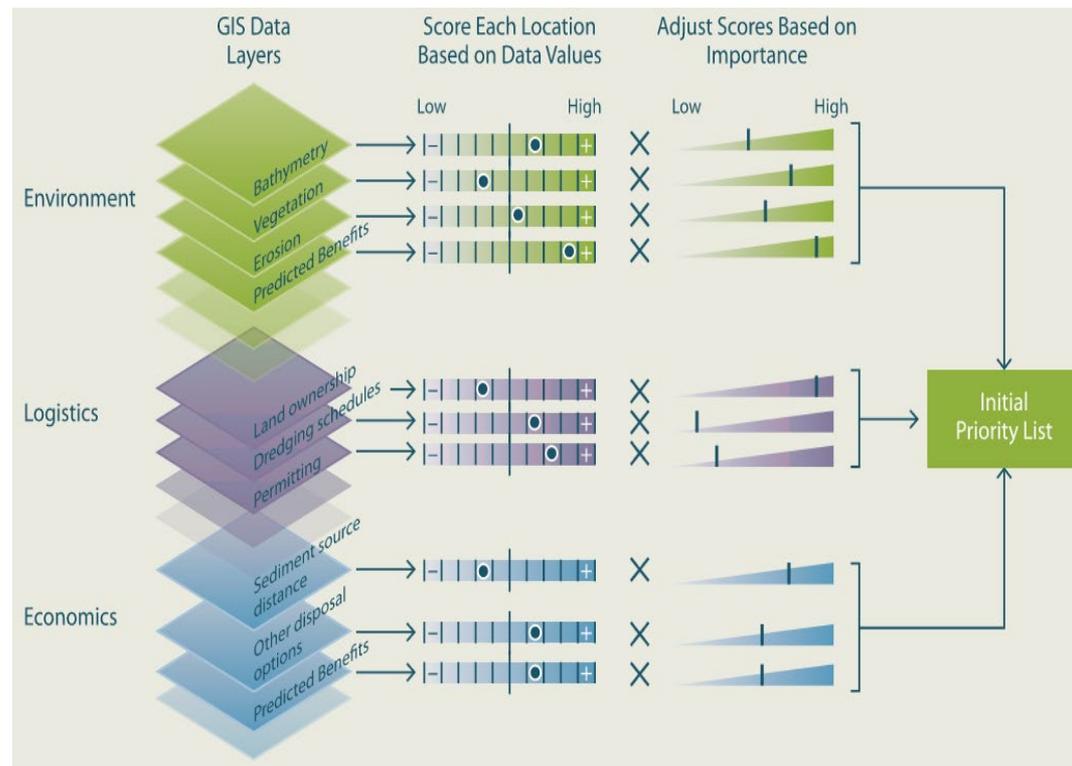
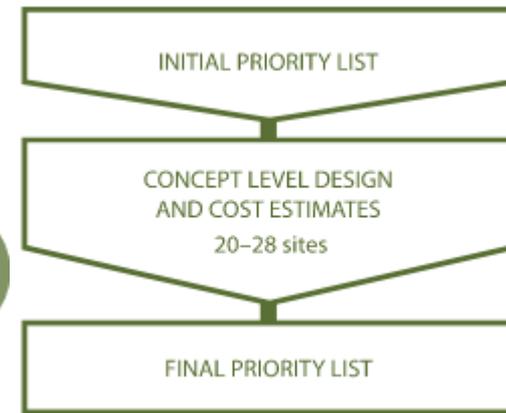


- Preparing sites for GOMESA, CMP, CEPRA, and RESTORE funding



Future Tasks

- Create a project website
- Establishing coordination and outreach efforts
 - Four BU groups (BUGs)
- Develop a GIS decision support tool coupled
- Determine list of up to 28 site priorities
 - 10% designs and cost estimates
- Develop a Master Plan and implementation guidelines for each region



We Need You!

- Stakeholder interaction will be imperative
- If you live in Texas and think you could be a BUG member or stakeholder, please be on the look out, and be prepared to participate
- First BUG and stakeholder meetings expected to commence within 6 months





Questions?

Please reach out with any questions or feedback:

Email:

hsmith@anchorqea.com

Phone:

(832) 671-2269



US Army Corps of Engineers

