



Unique Dredging and Placement Projects



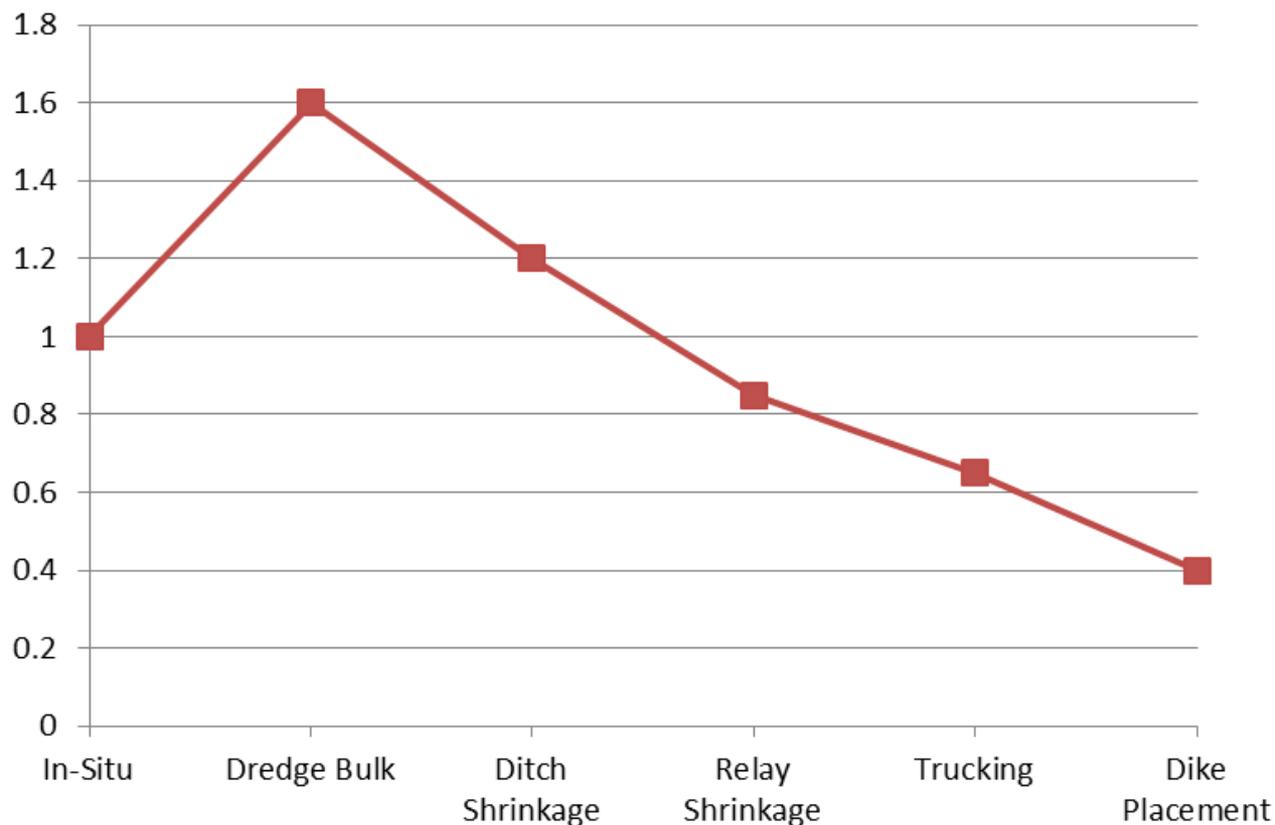
Presented by
Wendell Mears
October 22, 2015

Presentation Overview

- Dredging Basics, A Short Review
- On-site Aquatic Placement
- Confined Aquatic Disposal
- Beneficial Use Sites
- Coastal Mississippi: An Update

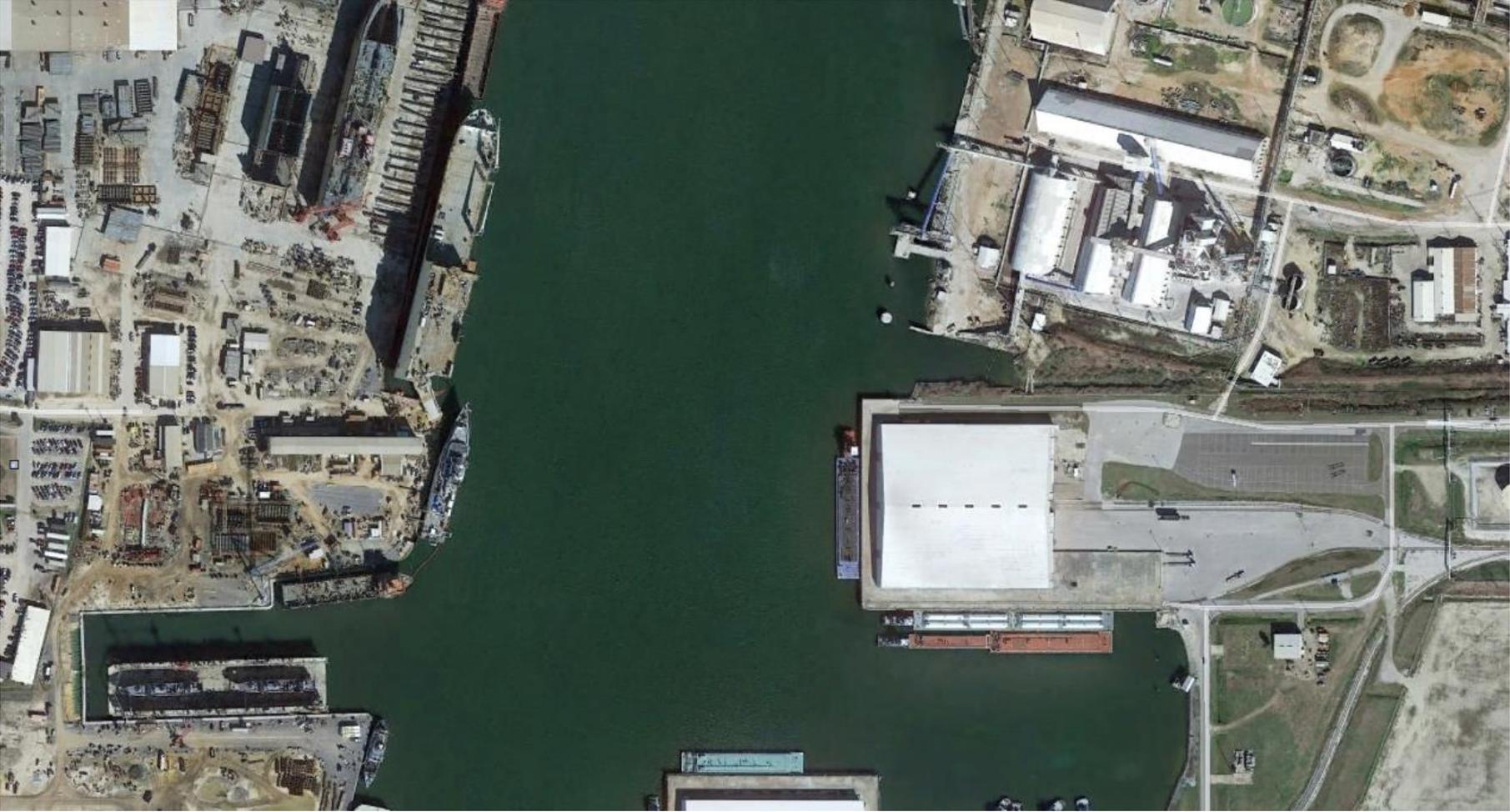
Review—A Yard Is Not a Yard Is Not a Yard

In situ, Intermediate, and End State



On-site Placement

Inner Harbor Berths



Dredging Method



Commercial Landfill

- Regulations
 - Federal: U.S. Environmental Protection Agency (USEPA)
 - State: DEP, DEQ, etc.
 - Local
- Processing for transport
 - Additives (e.g., Portland cement, etc.)
- Transport
 - Marine
 - Truck
 - Rail



On-site Placement

- Regulations
 - Federal: USEPA
 - State: DEP, DEQ, etc.
 - Local
- Transport
 - Barge
 - Truck and rail
 - Conveyor



On-site Placement

- Measurement and payment
 - Cubic yard (CY) in situ
- Liabilities and risks
 - Owner vs. landfill
 - Managed risks
- Contaminant stability
 - AVS SEM
 - Hydric conditions



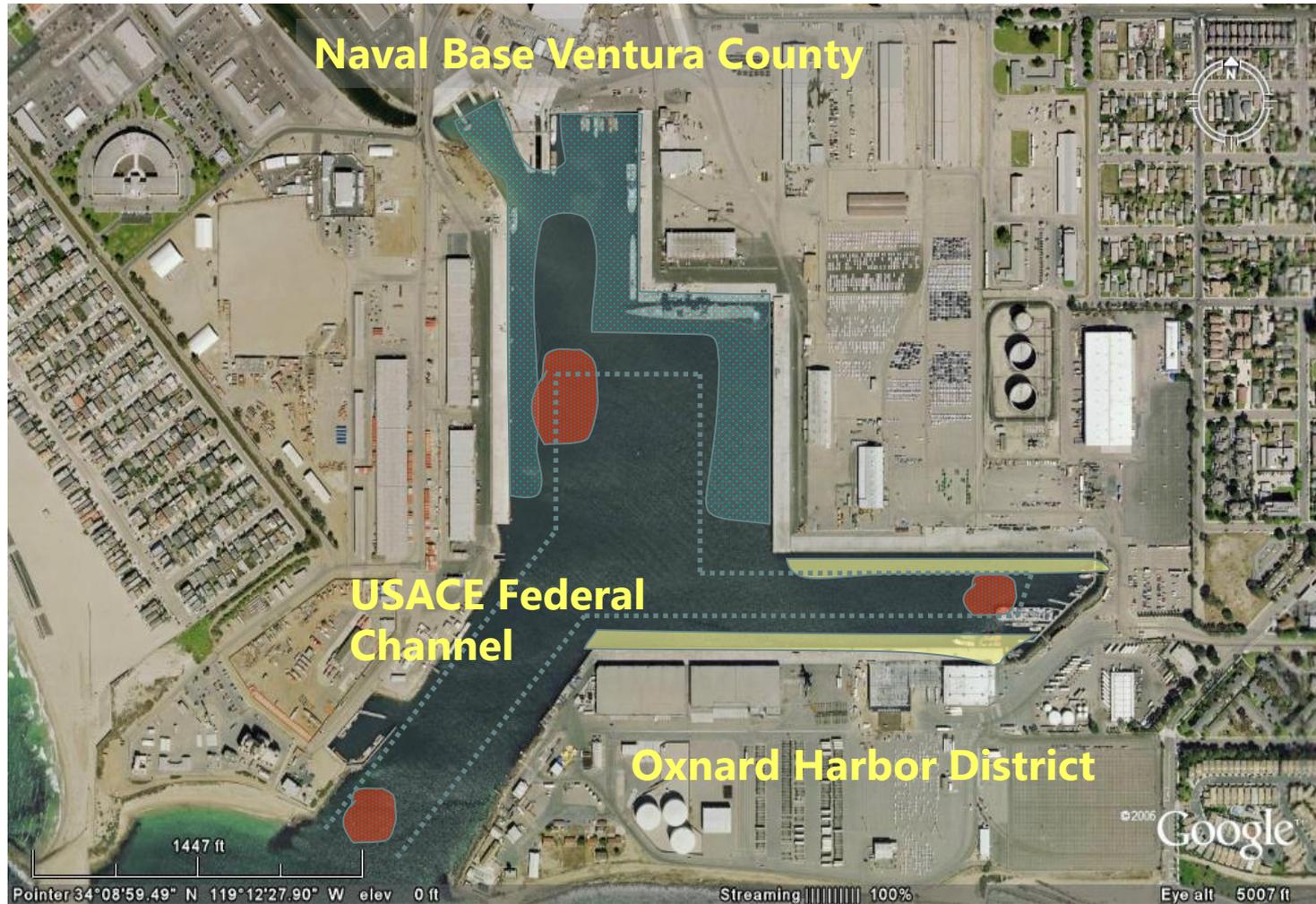
On Site Placement for Restoration



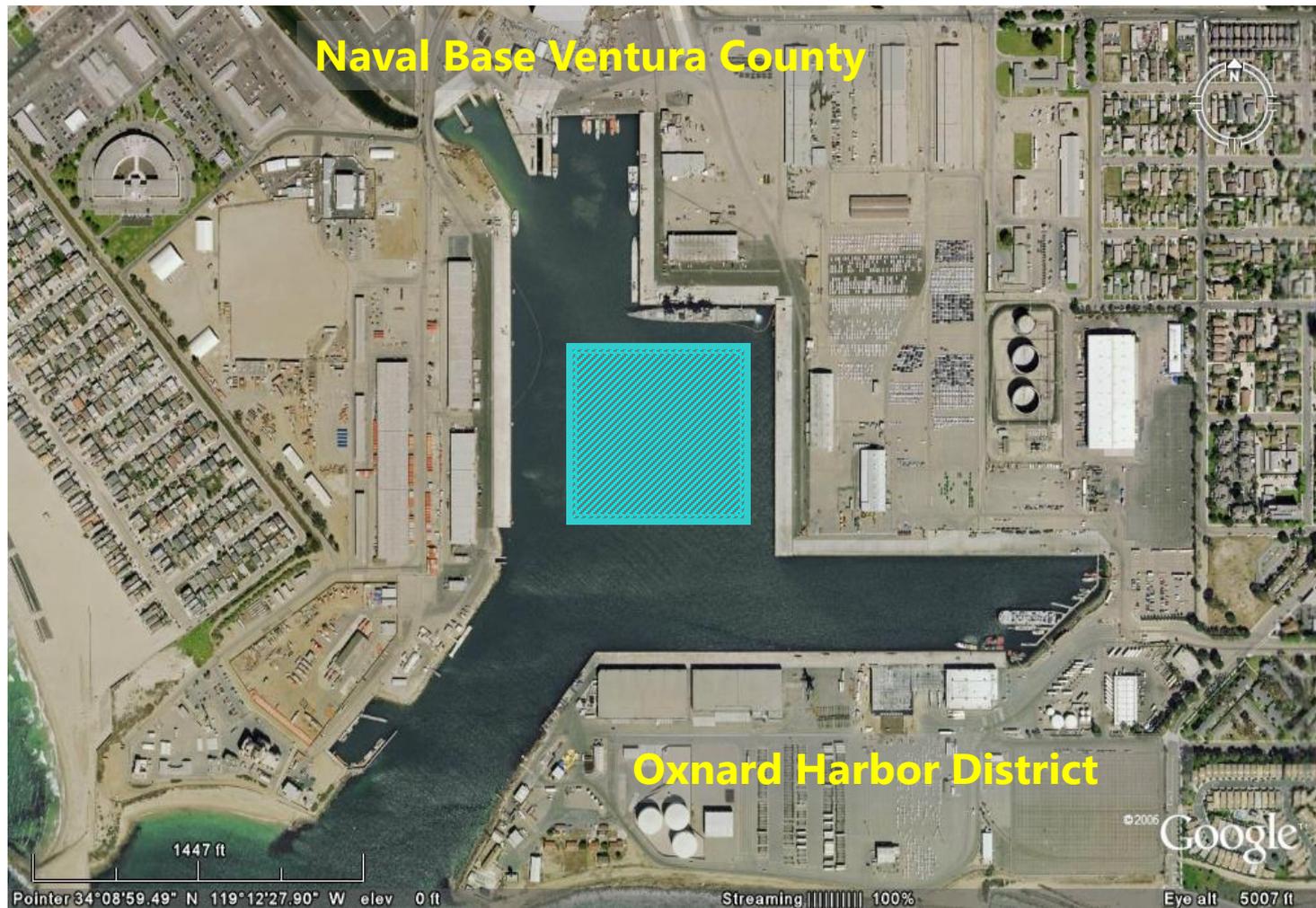
Confined Aquatic Sites



Port Hueneme Impacted Sediment Locations



Construction Sequence



CAD Excavation



Contaminated Sediment Dredging

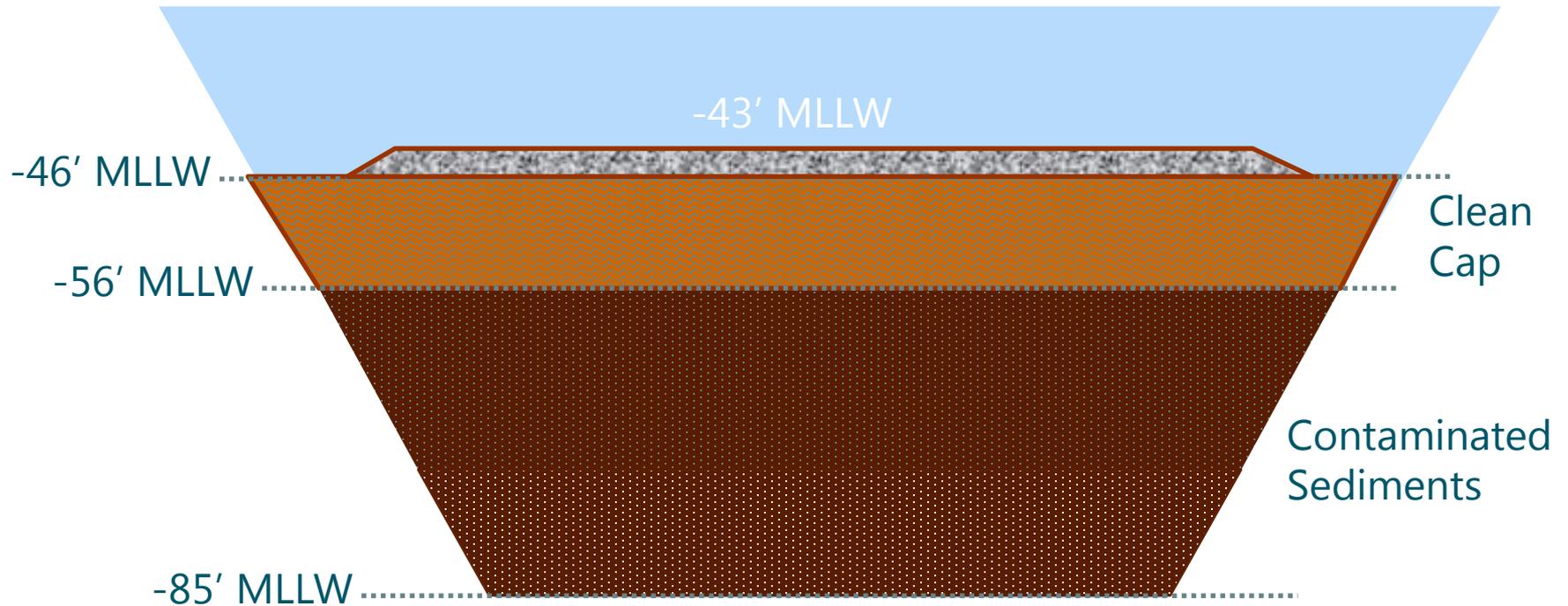


CAD Cell Capping



Step 3: Place Cap Material

Port Hueneme CAD Cross Section



Beneficial Use Sites

Beneficial Use (BU)



- Beach nourishment
- Agriculture and products
 - Topsoil
 - Aquaculture
- Berms
 - Stable and feeder
- Land creation
- Land improvement
- Marsh and intertidal habitat



BU Marsh Design

- Design Considerations
 - Foundation
 - Dredge material properties
 - Placement methods
 - Density phases
- Lessons learned
 - Marsh now
 - Larger sites and adaptive management

Coastal Mississippi: An Update

History and the BU Law

- 2001 & 2002
 - USACE and DMR identify potential BU sites
 - Develops Master Plan for BU in Mississippi
 - Deer Island identified as a pilot project and completed in 2003
- 2008
 - Beneficial Users Group (BUG) formed
 - State and federal agencies, co-chaired by DMR and USACE
 - Private stakeholders (e.g., local ports)
- 2010
 - BUG recommends revised legislation
 - House Bill 1440 passed March 2010
 - Coastal Wetlands Protection Act § 49-27-61,

Deer Island Marsh Creation Project: 2001 to 2003

- Components:
 - 7- to 8-foot-high dike
 - Easterly wing dike
 - Flash board riser weirs
 - Offset to provide bayou
- Dredged material from Biloxi Lateral Channel
- Approximately 40 acres were filled with 365,000 cy of sediment



Pre-Katrina



Post-Katrina



Deer Island BU and Port of Gulfport 2012



- Designed with DMR, Port, and Stakeholders
- USACE rebuilt existing cell under MsCIP
- Refill existing BU cell and construct additional expansion area BU cell
 - Open at the western end to encourage circulation and habitat development
 - Can be expanded for additional material
 - Mimics the historic 1850s footprint
 - Intertidal plant species
 - Chenier for nesting

Port of Gulfport—2012 Restoration



Deer Island BU Construction 2012



Port of Gulfport—2012 Restoration (cont.)



Current Views



Current Views



BU to Enhance Existing Marsh

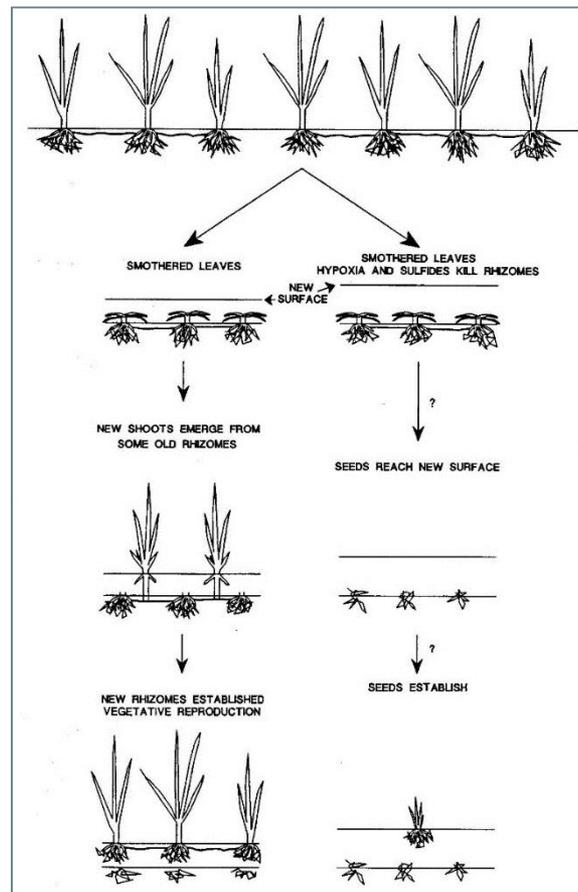
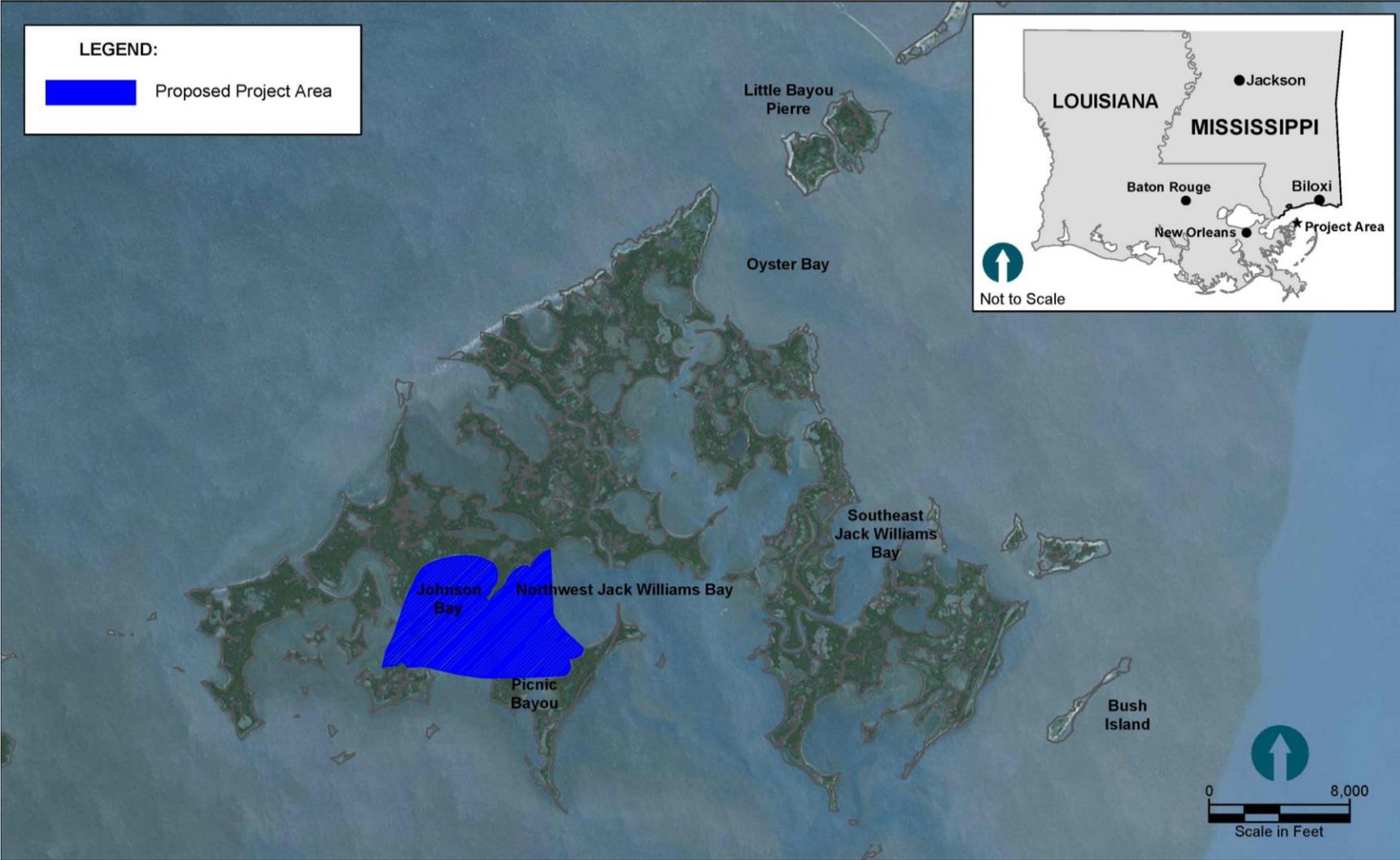


Illustration of conceptual model for marsh recovery after thin-layer disposal

Regional Sediment Management Sites



Questions /Discussion

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