Balancing Habitat Conservation and Human Use of the Lower Perdido Islands

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The Nature Conservancy Alabama

NOAA National Oceanic and Atmospheric Administration U.S. Department of Commerce

Orange Beach Alabama Life is better here Established 1984

MDTC

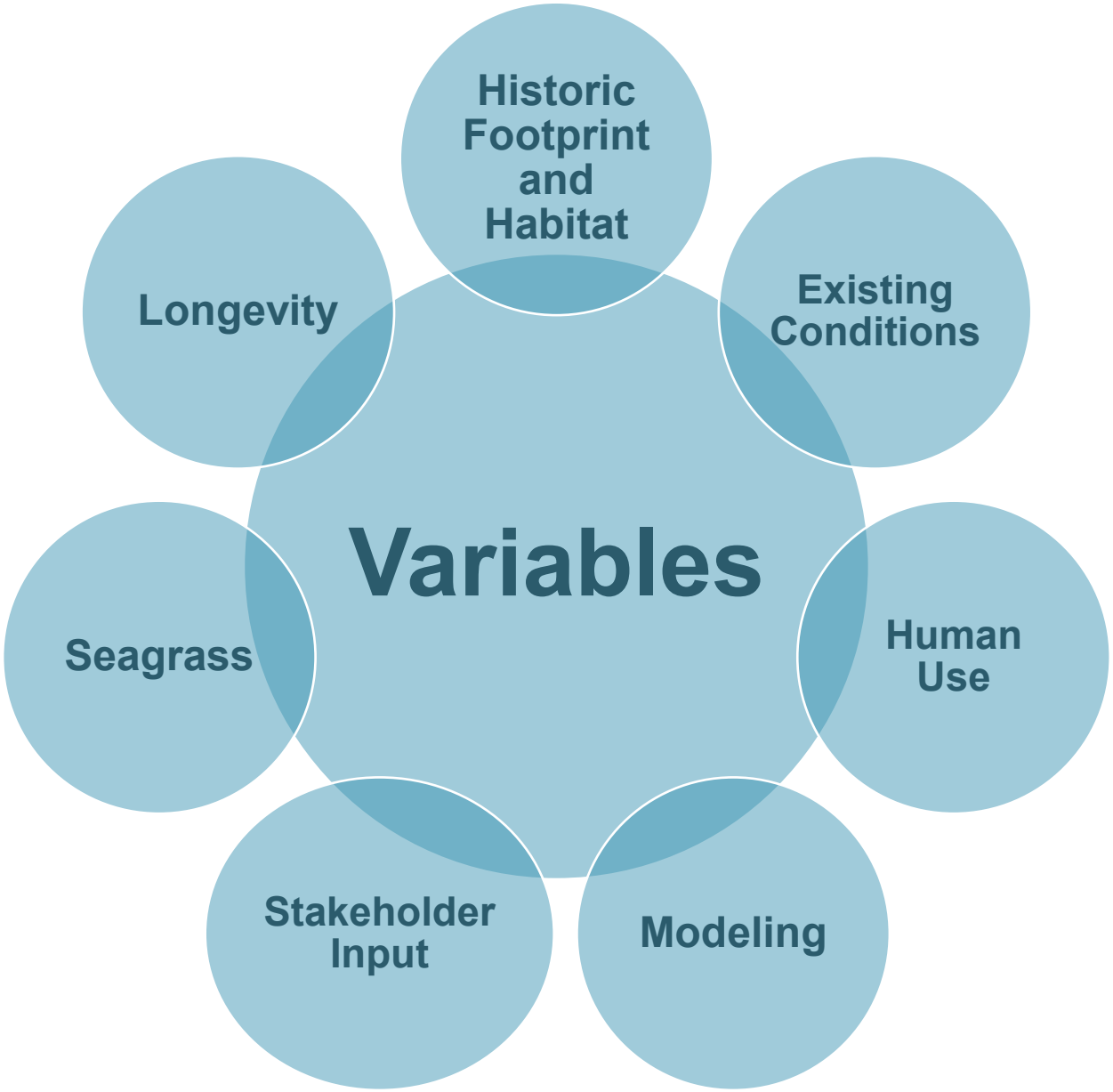

Mississippi
Alabama
Alabama
Florida
Mobile Bay
Orange Beach, Alabama
Mississippi Sound
The Gulf


Robinson Island
Walker Island
Bird Island
Perdido Bay
Perdido
Pass
The Gulf

Lower Perdido Islands Restoration Project

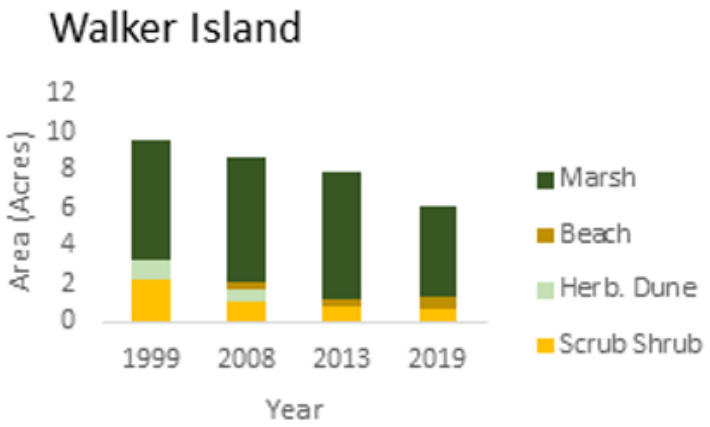
- **Who**: The Nature Conservancy
  - The City of Orange Beach
  - NOAA
- **Why**: Sustained erosion and habitat loss due to storms and increased human use
- **$$$**: RESTORE, Infrastructure Investment and Jobs Act (IIJA), Natural Resource Damage Assessment (NRDA)
- **Goal**: Maximize restoration and balance it with human use
- **Scope**: from data collection to post-con monitoring

Basis of Design

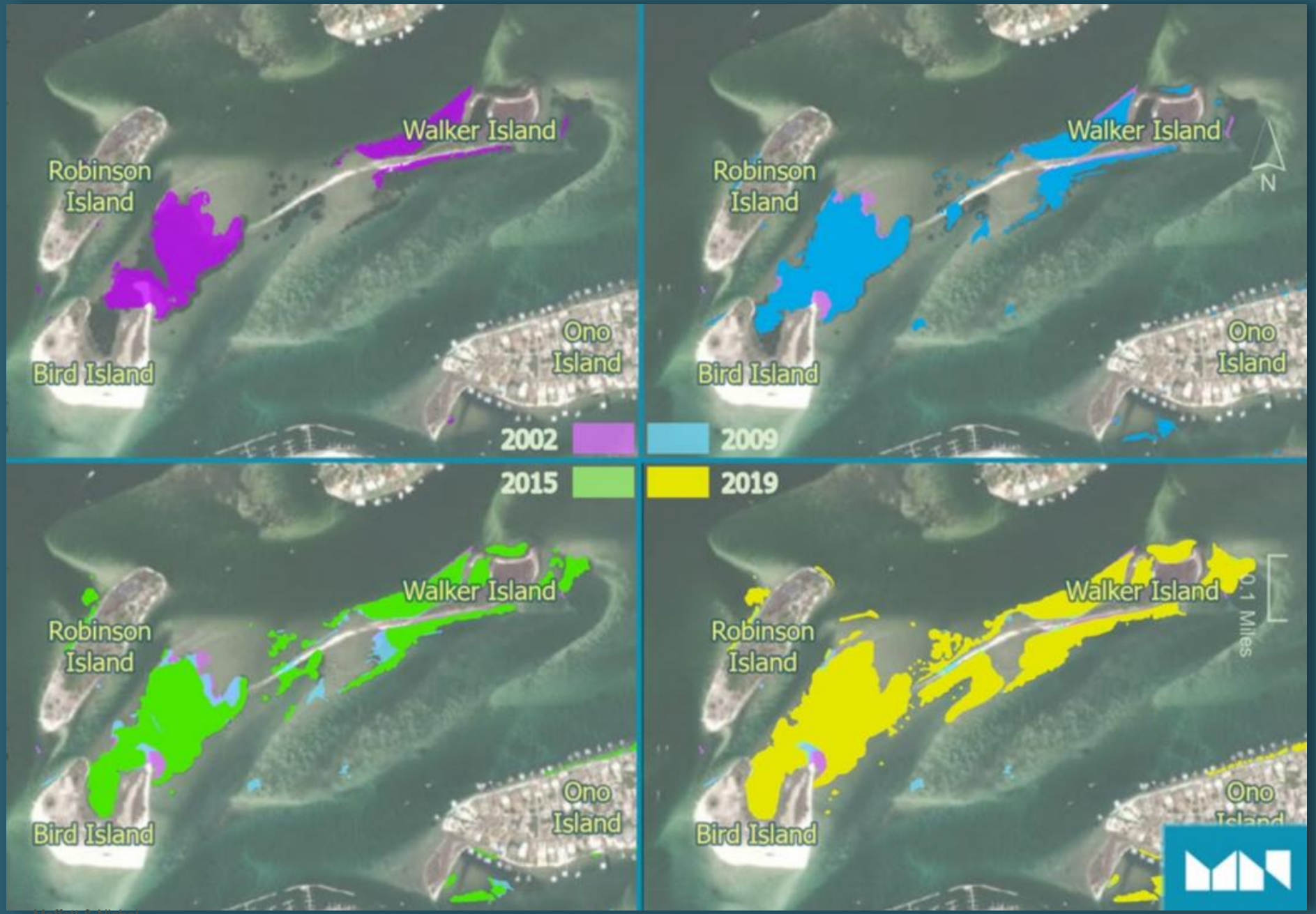


Historic vs Existing Conditions

Walker Island Example



Seagrass Avoidance



- Expanding beds
- Limits restoration footprint

Modeling and Longevity

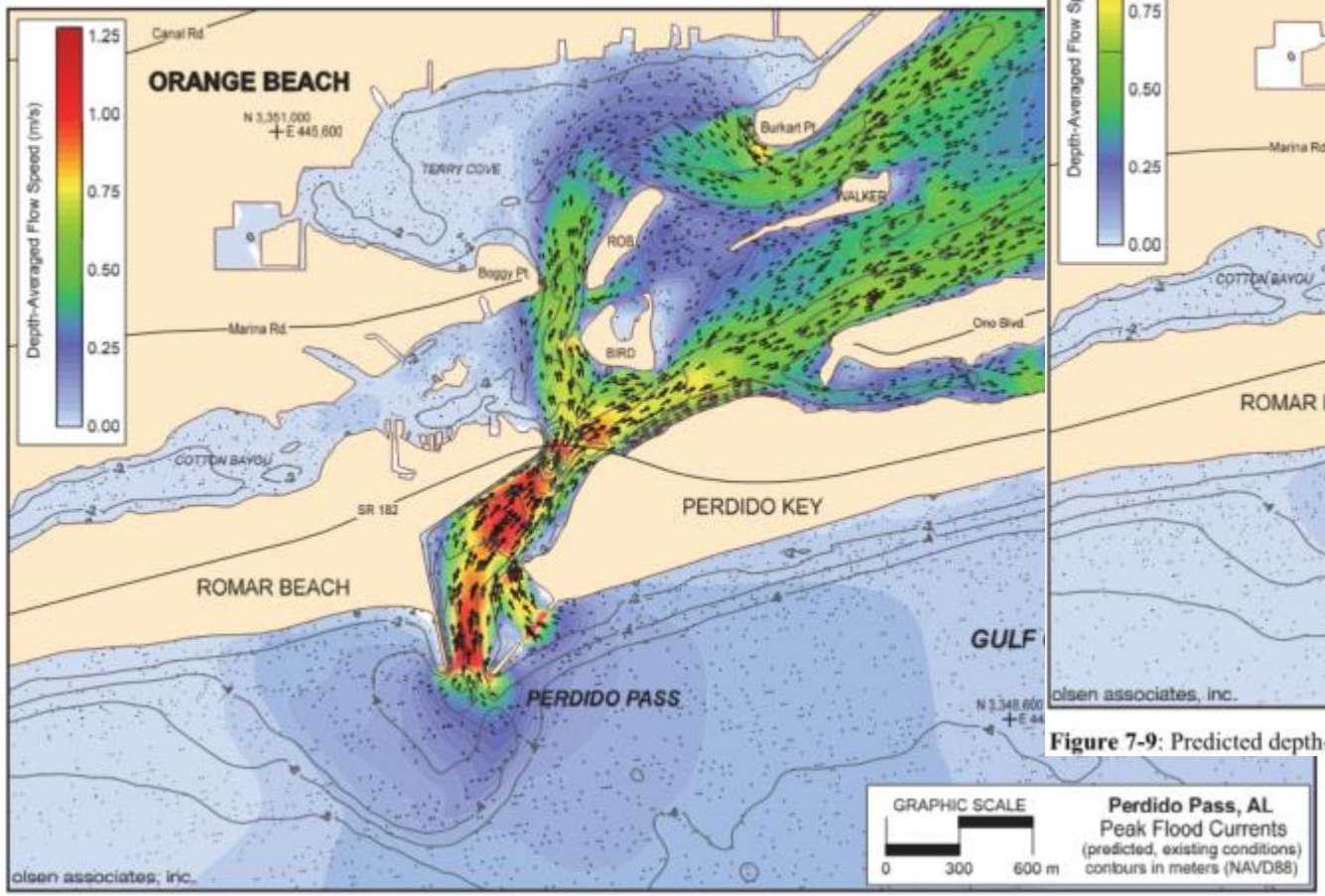


Figure 7-10: Predicted depth-averaged flow speeds at peak flood tide, Perdido Pass, AL.

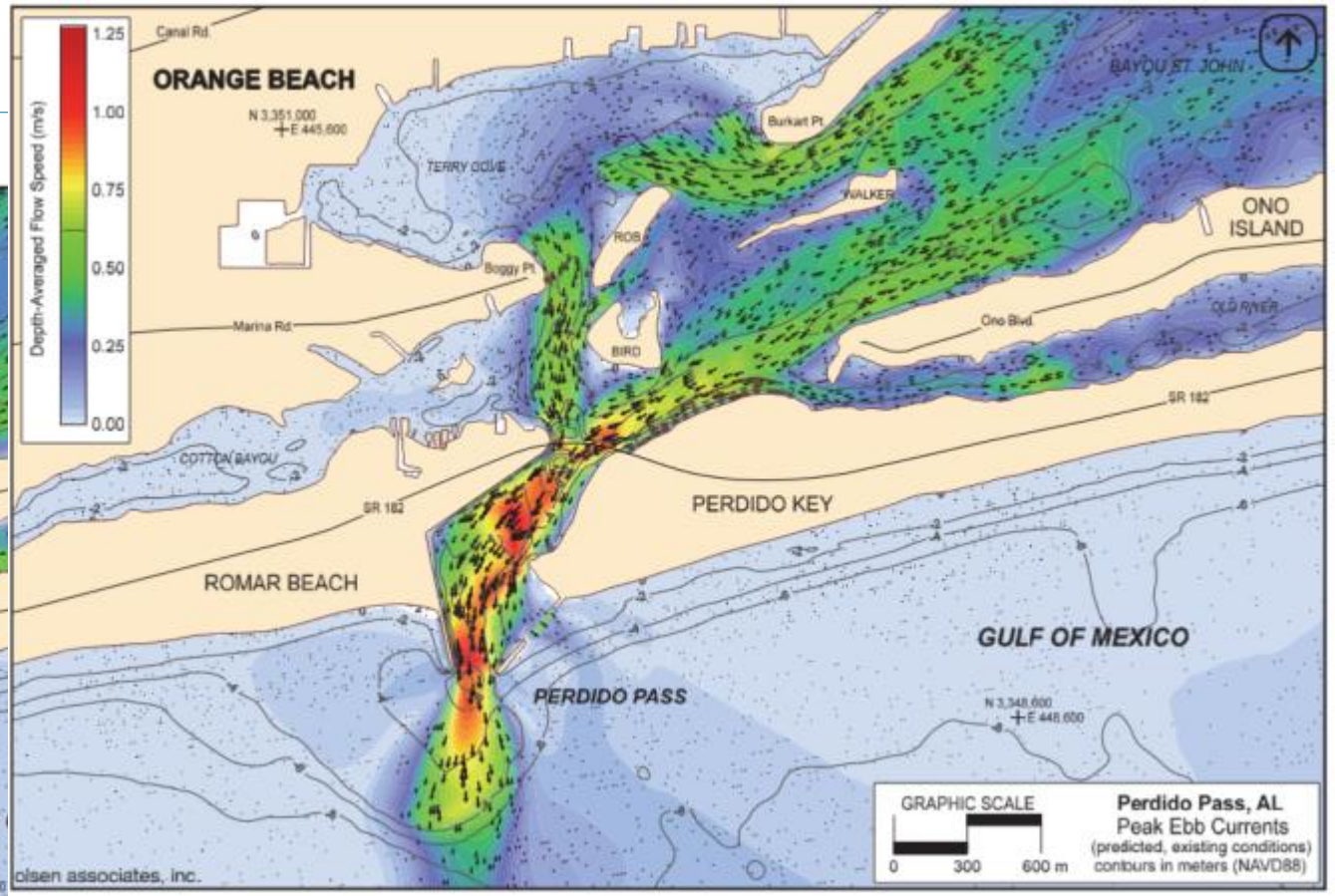


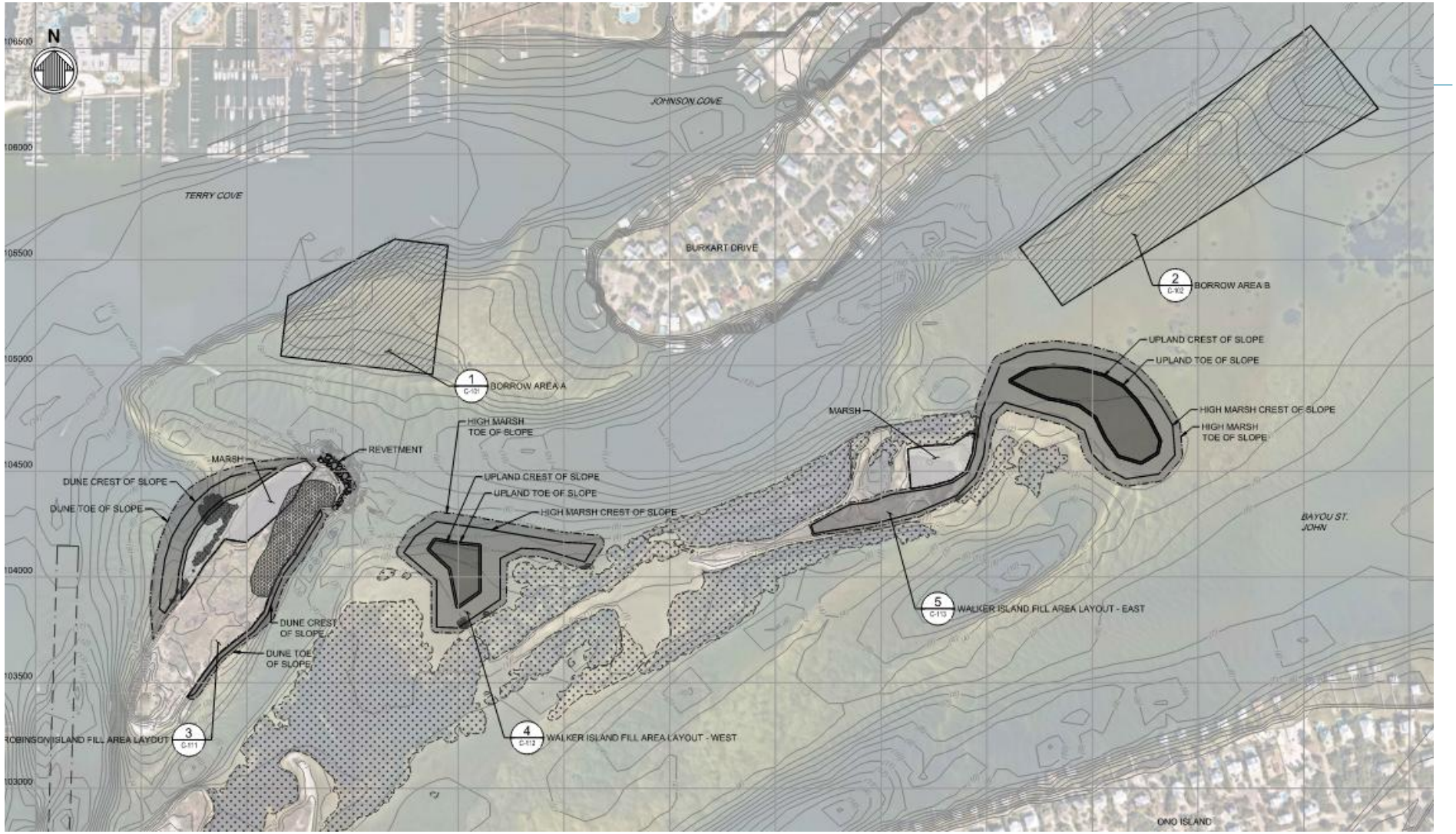
Figure 7-9: Predicted depth-averaged flow speeds at peak ebb tide, Perdido Pass, AL.

Stakeholder Input and Human Use of the Islands

- Charrette – top three priorities of 28 project partners
- Development of high-level alternatives
- Coordination with regulators
  - Impacts to islands
  - Beneficial use
- Recreational benefit vs environmental benefit
- Prioritization of three alternatives
  - Minimize impacts + maximize habitat

M&N Final Design

- Robinson Island
- Walker Island West
- Walker Island East
- Two borrow areas
- 25 acres
- 200,000 marsh and dune plants



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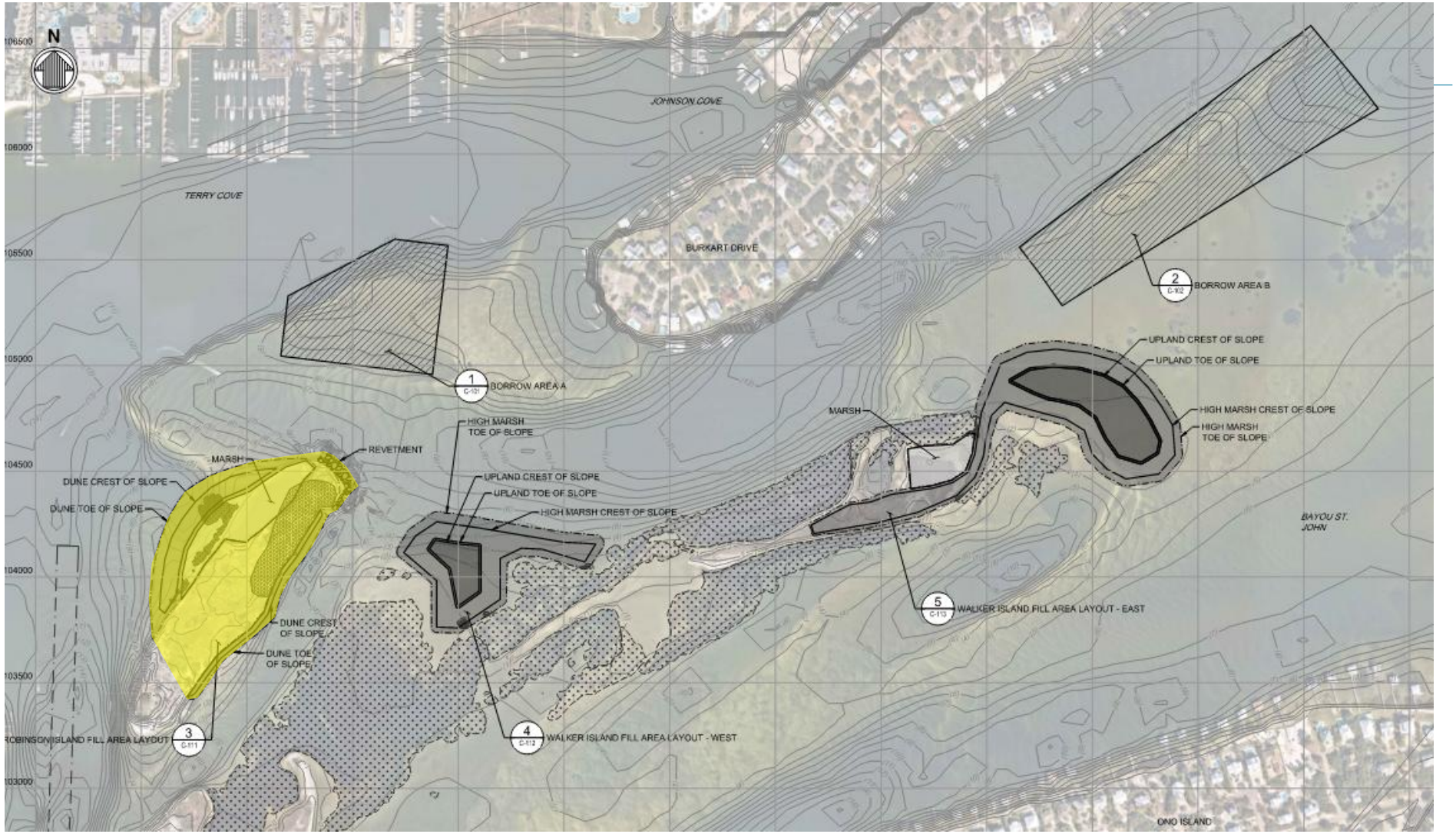

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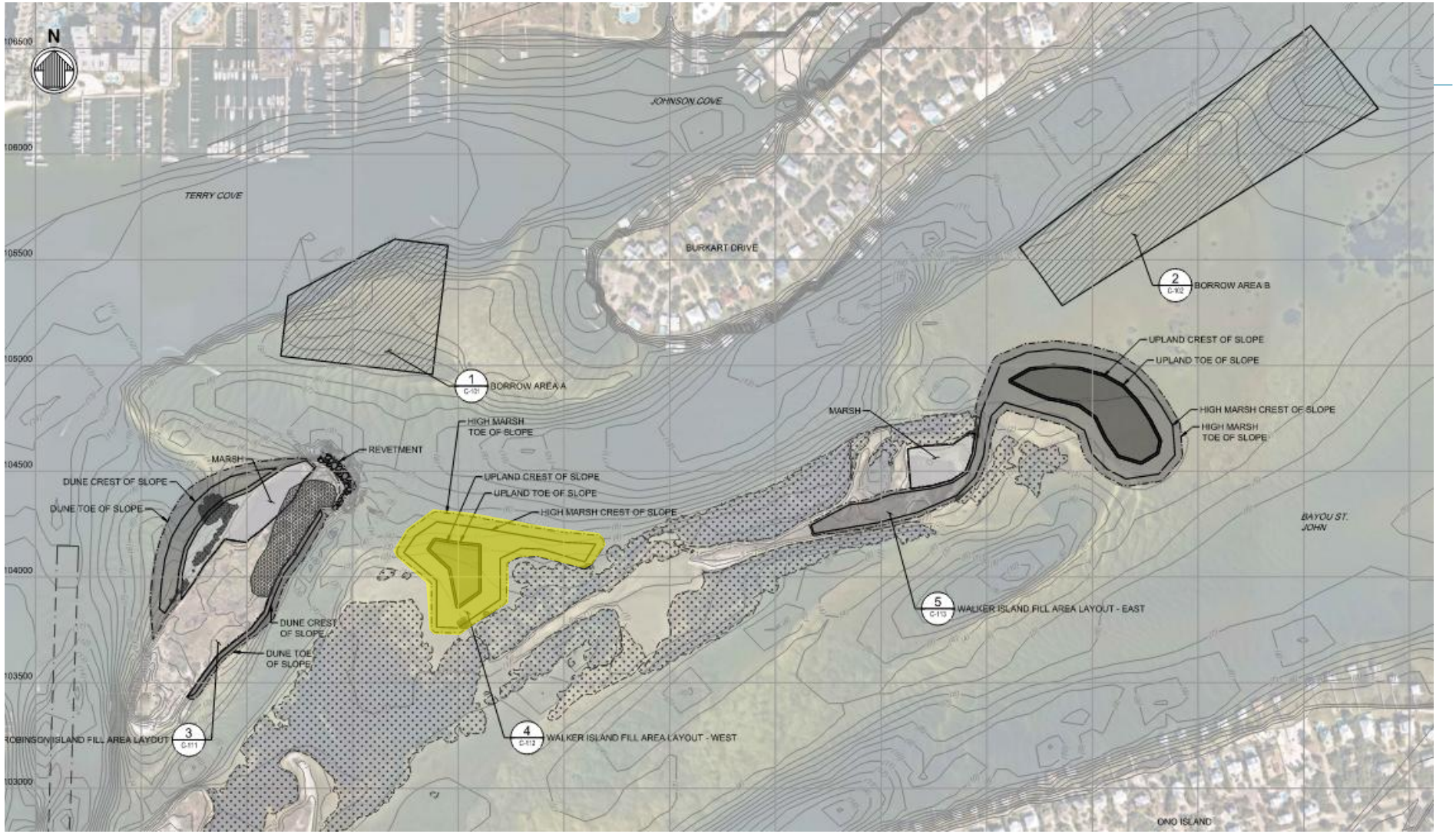

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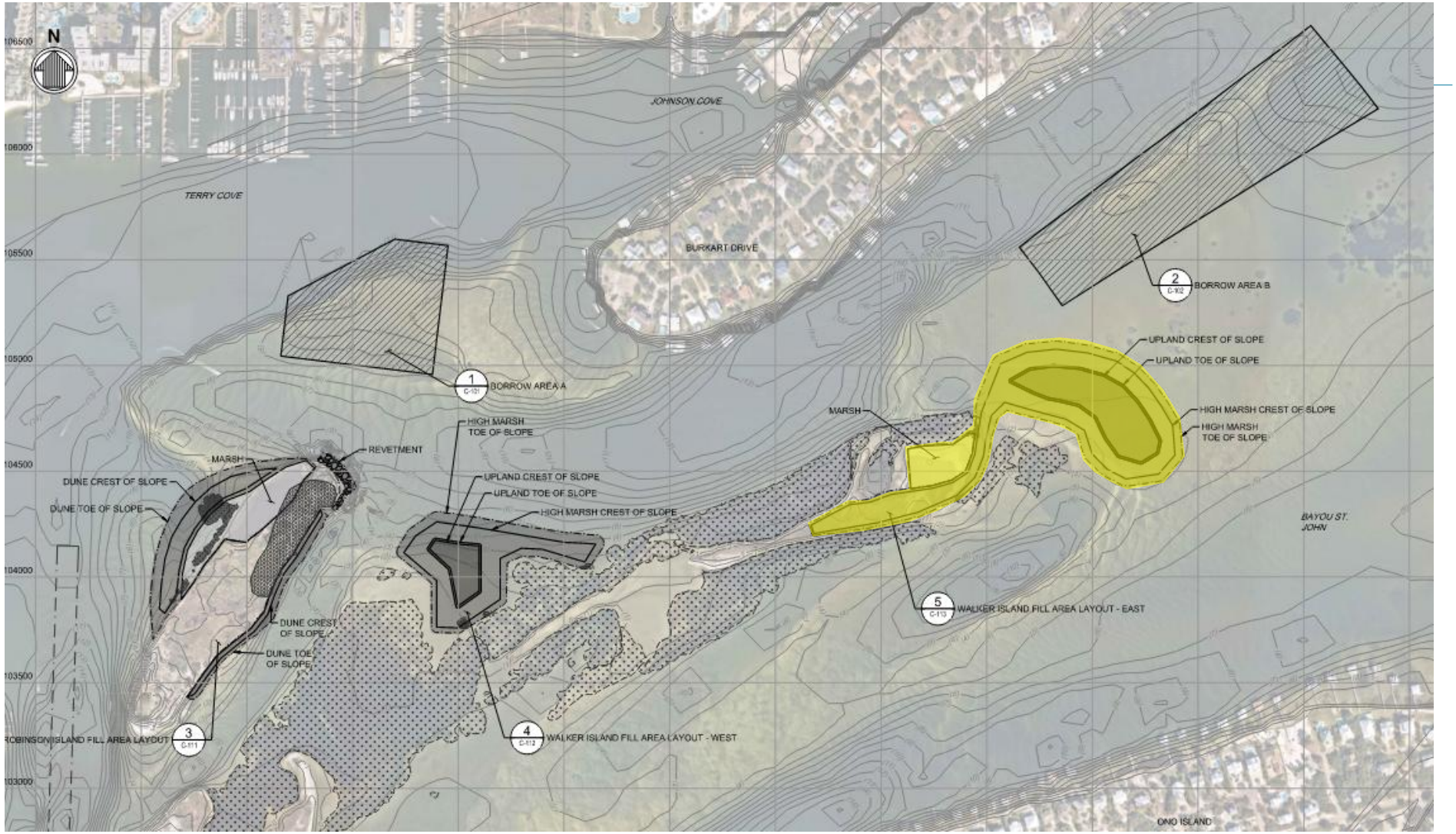

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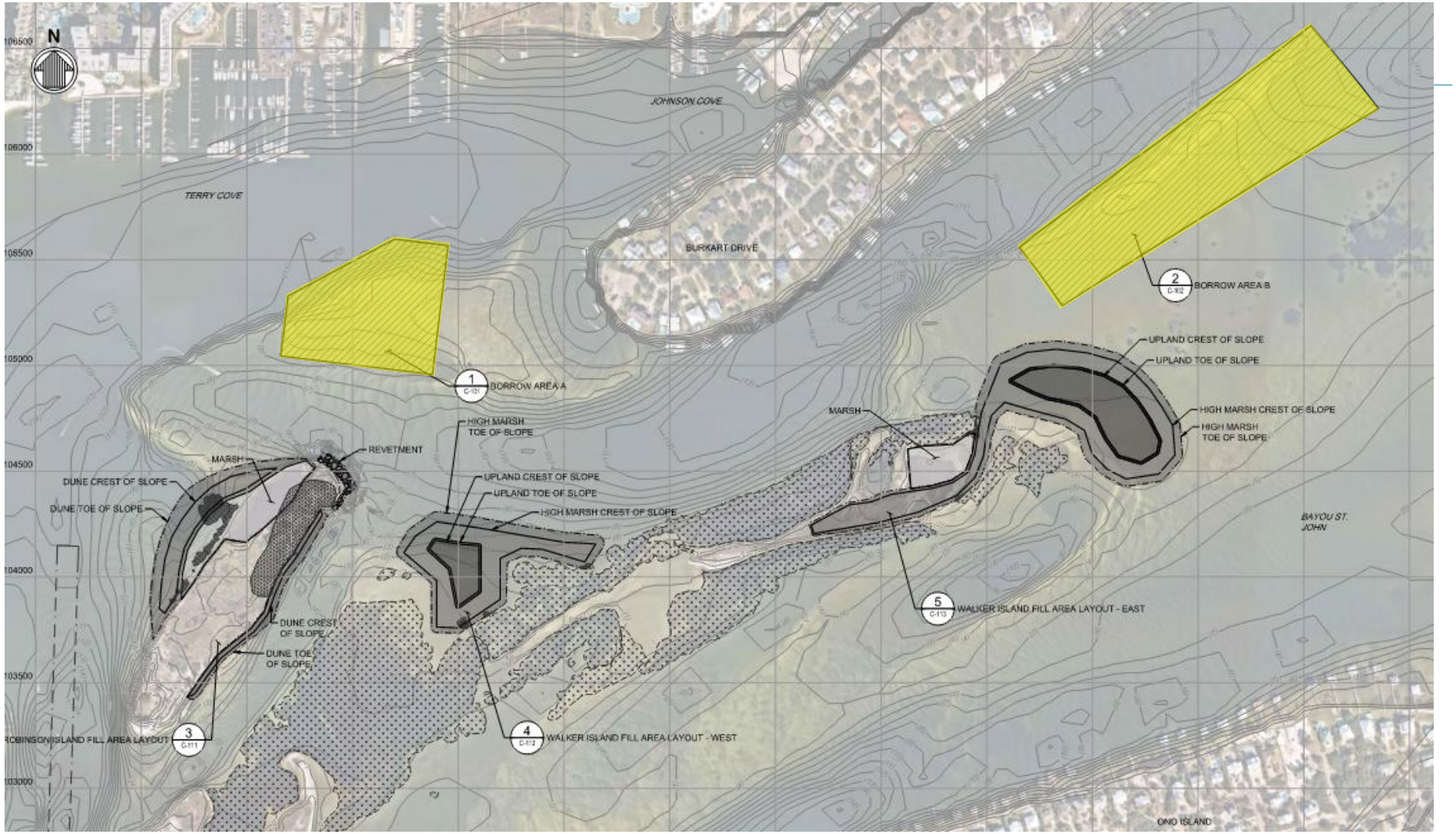

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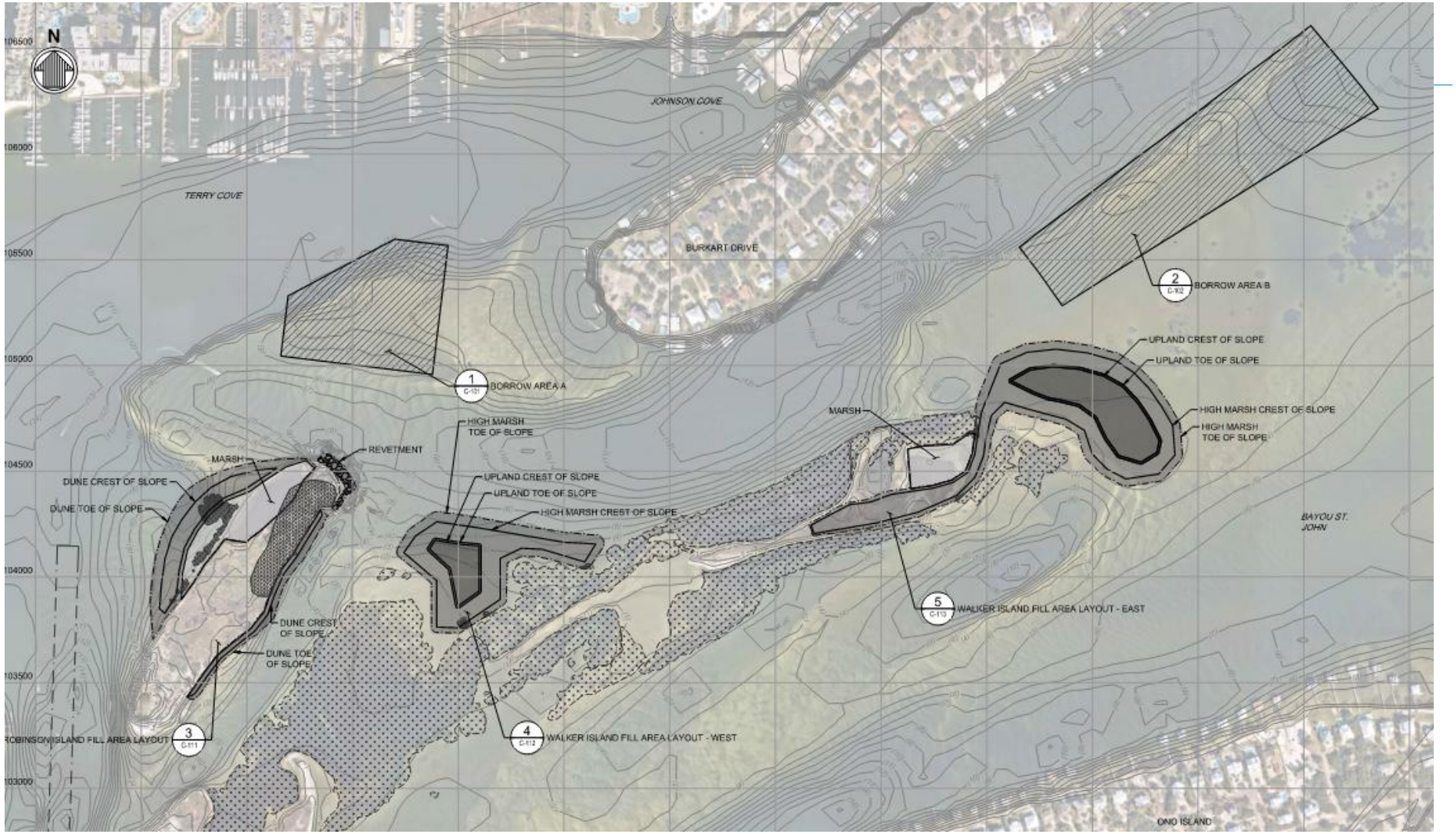

From Design to Construction

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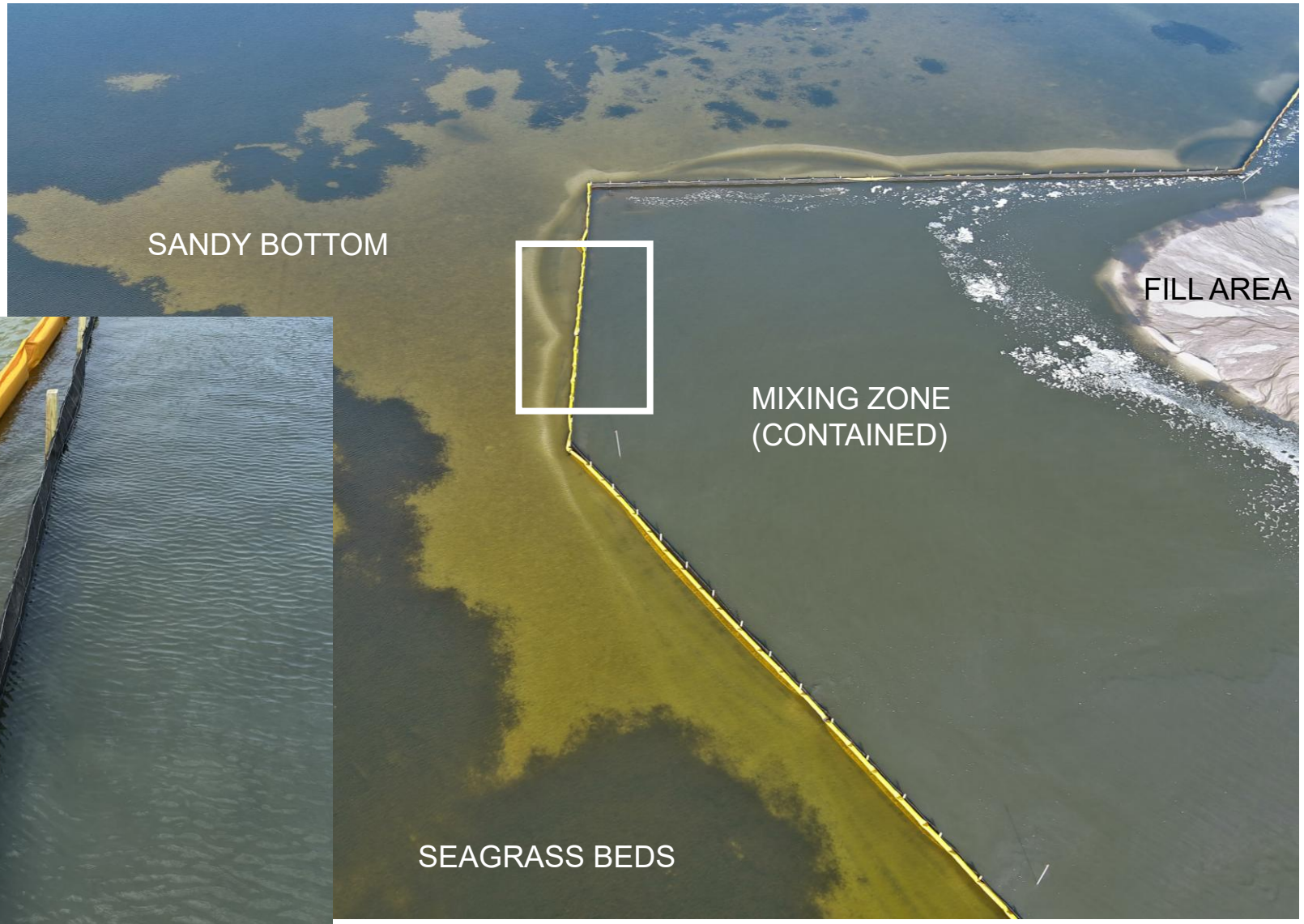
Construction Overview

- 6-month construction duration
  - 12-hour dredging window
- 2,800 Tons of rock
- Hydraulically dredged 217,000+ CY
  - 12 in cutterhead
  - 8 in cutterhead
  - 10 in eddy pump excavator

Turbidity Requirements

- Contain fill area turbidity near seagrass beds
- Double layered protection
  - Double wire backed silt fence
  - Turbidity curtain



Robinson Island

- 7 acres of marsh, dune, and beach habitat (41,700 CY)
- Revetment enhancement
- 44,900 native plantings

Walker West

- 6 acres of beach, dune, and upland habitat (57,700 CY)
- 48,700 native plantings

Walker East

- 12 acres of marsh, beach, dune, and upland habitat (117,900 CY)
- 106,500 native plantings

Next Steps

- Managed access
  - City of Orange Beach Marine Police Enforcement
  - Use of robust sand fences
- Monitoring
  - Physical (footprint + revetment)
  - Ecological (seagrass + planted vegetation)

Thank you

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Seagrass Impacts

- Project impacted 0.69 acre of seagrass
- 2:1 mitigation required transplantation equal to at least 1.38 acres
- 1.59 acre were created adjacent to an existing bed as part of this effort in August of 2025