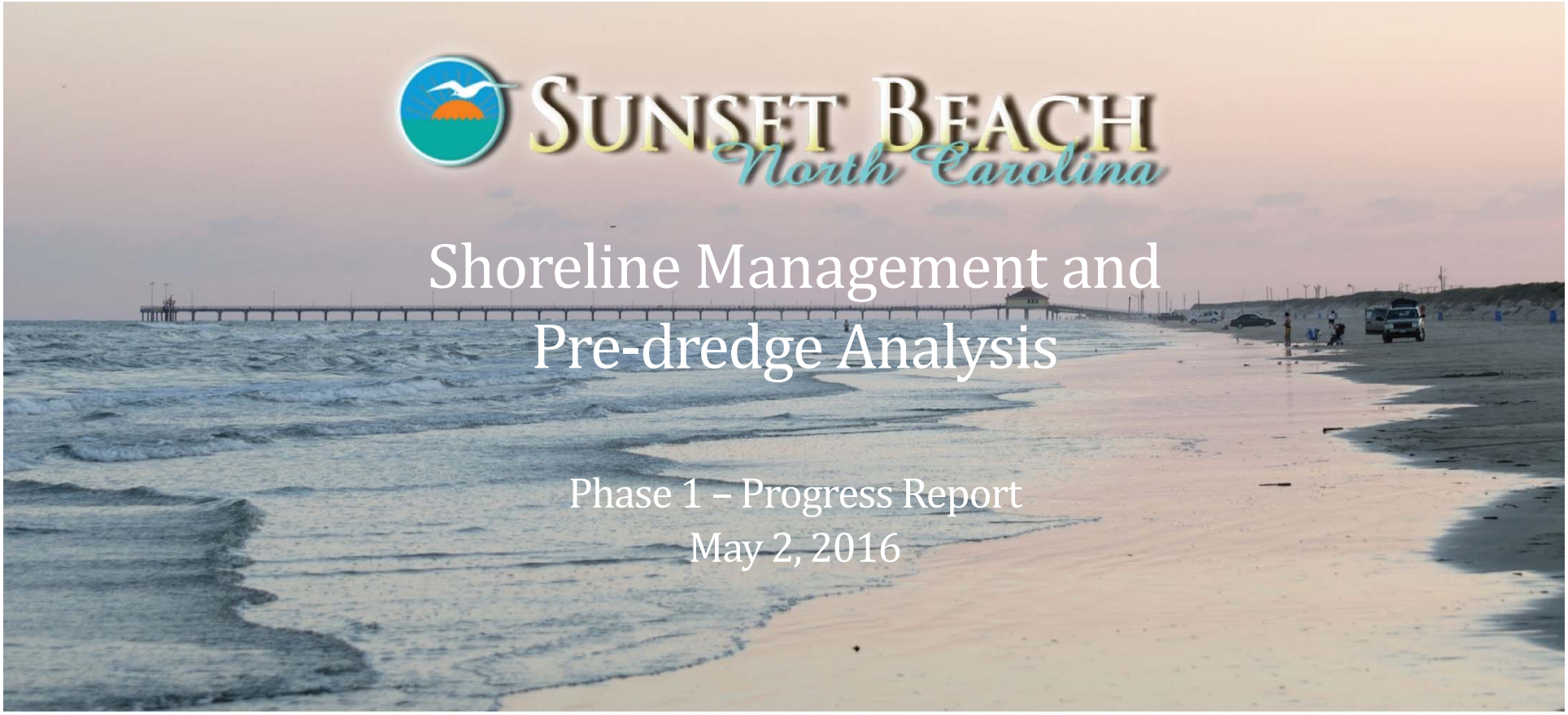
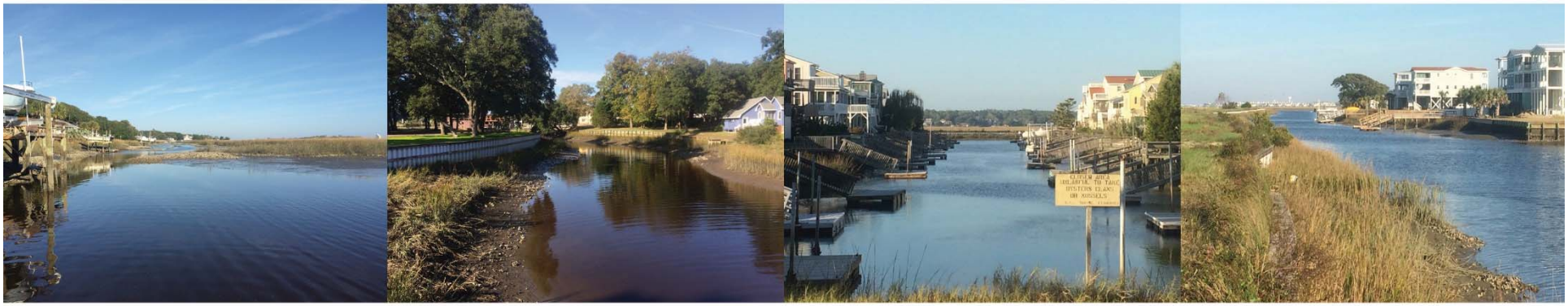


SUNSET BEACH
North Carolina

Shoreline Management and Pre-dredge Analysis

Phase 1 – Progress Report
May 2, 2016



moffatt & nichol

Objective

Update the Sunset Beach Town Council on the Progress of the Initial Work & Path Forward for Project Completion.

Presentation Outline

- Review Goals for Proposed Project
- Project Overview & Previous Maintenance Efforts
- Explain Design Considerations, Volume Estimate **(Conceptual)** & Disposal Locations
- Agency Concerns
- Path Forward Estimate for Town Consideration

Maintenance Dredging Purpose

Primary Goal:

- Provide Long-term Management Template For Maintaining Navigation Access Throughout the Town of Sunset Beach (Approx. 3.5 Miles).
- Document a Pier Head Alignment for Future Upland Development within North Shore Drive Feeder Canal.

Secondary Goal:

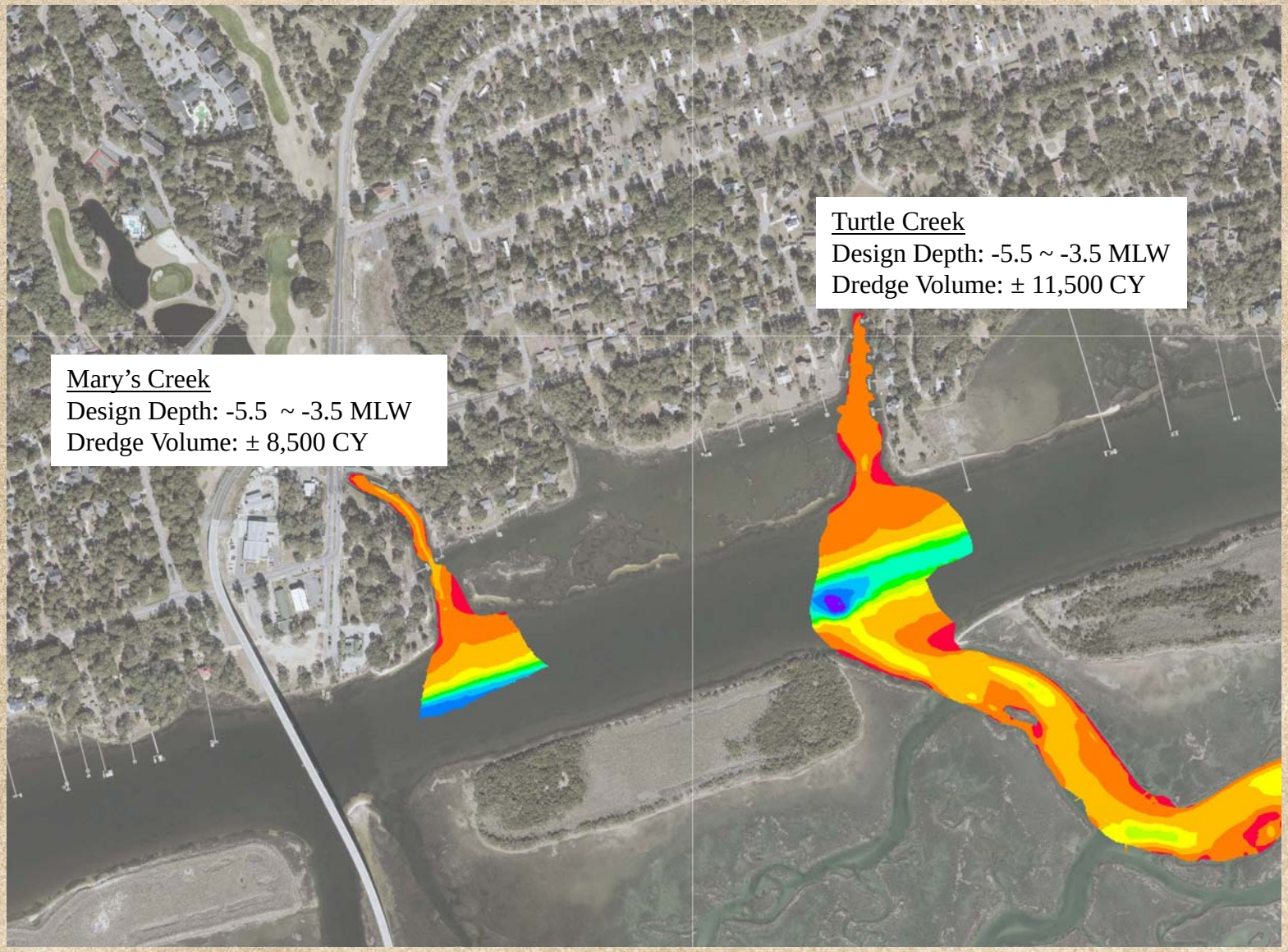
- Provide Beneficial Use Material Where Available for Use on Ocean Isle Beach for Cost Sharing Potential.

Project Overview

Design Considerations

- Follow Deep Water Conduits Where Feasible to Reduce Dredge Quantities & Potential Impacts.
- Maintain Adequate Width for Vessel Clearance - Minimum of Twice the Expected Beam Width for # of Vessels (Where Conditions Allow).
- Allow Sufficient Design Depth for Vessel Navigation Where Available
  - -6 MLW Where Space Allows
  - -3 ~ -5 MLW When Space Limited.
- Provide Appropriate Side Slopes to Prevent Sloughing (Typ. 3H:1V).
- Maintain Minimum Construction Clearance of 5 Ft from any Pier, Dock, Piling, or Bulkhead.
- Maintain Consistency with Previous Permits (CAMA 22-02 & 45-02)
- Anticipated Dredge Volume ~ 150,000 to 200,000 CY.
  - 131,000 ~ 154,500 CY for Beach Placement
  - 24,000 ~ 47,500 CY for Upland Disposal

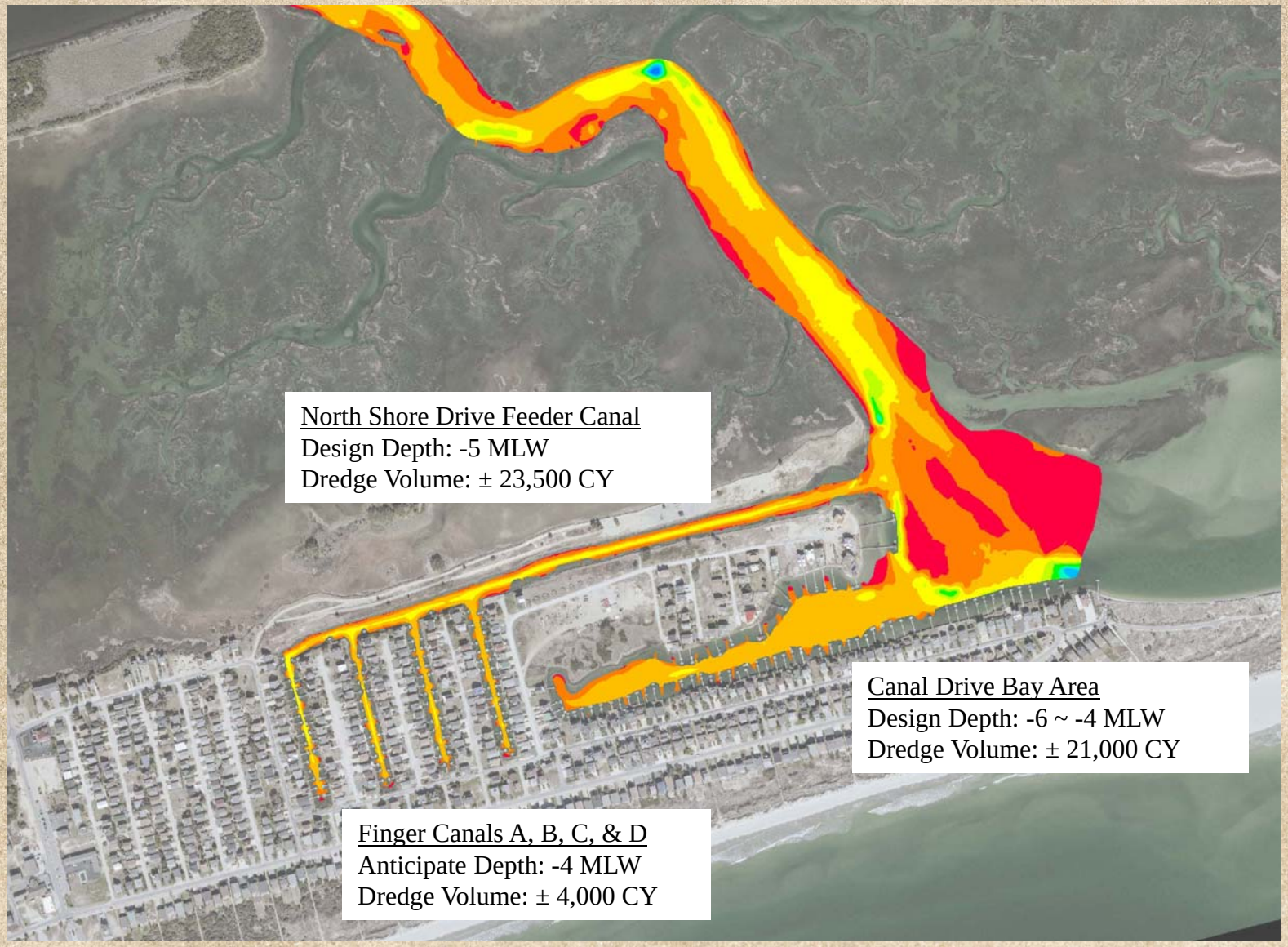
"Conceptual" Project



Elevation Legend

- +1 ~ +5 MLW
- -1 ~ +1 MLW
- -3 ~ -1 MLW
- -5 ~ -3 MLW
- -7 ~ -5 MLW
- -9 ~ -7 MLW
- -11 ~ -9 MLW
- -13 ~ -11 MLW
- -15 ~ -13 MLW

"Conceptual" Project



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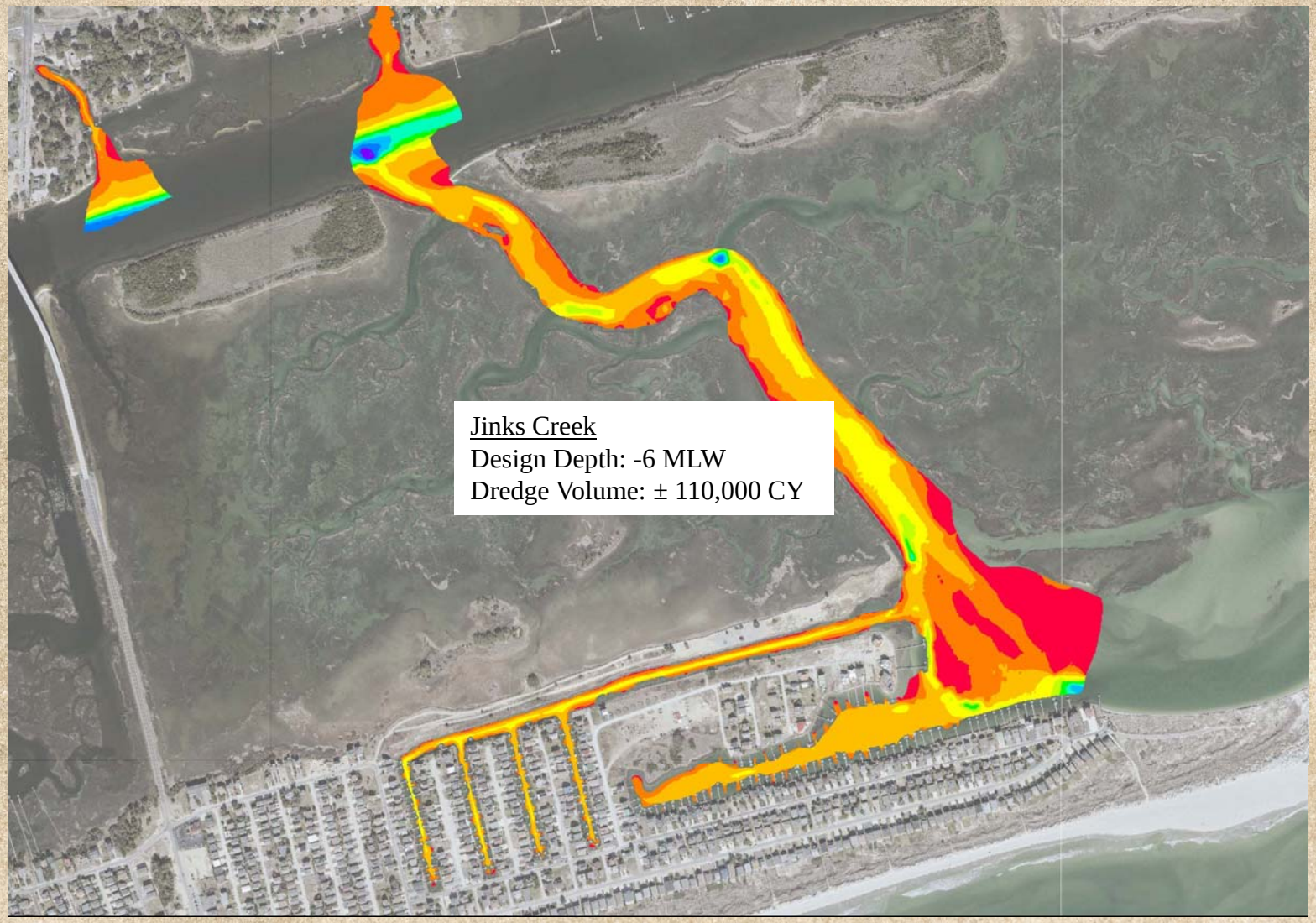
"Conceptual" Project



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-1 ~ +1 MLW	
-3 ~ -1 MLW	
-5 ~ -3 MLW	
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-9 ~ -7 MLW	
-11 ~ -9 MLW	
-13 ~ -11 MLW	
-15 ~ -13 MLW	

"Conceptual" Volume Estimate

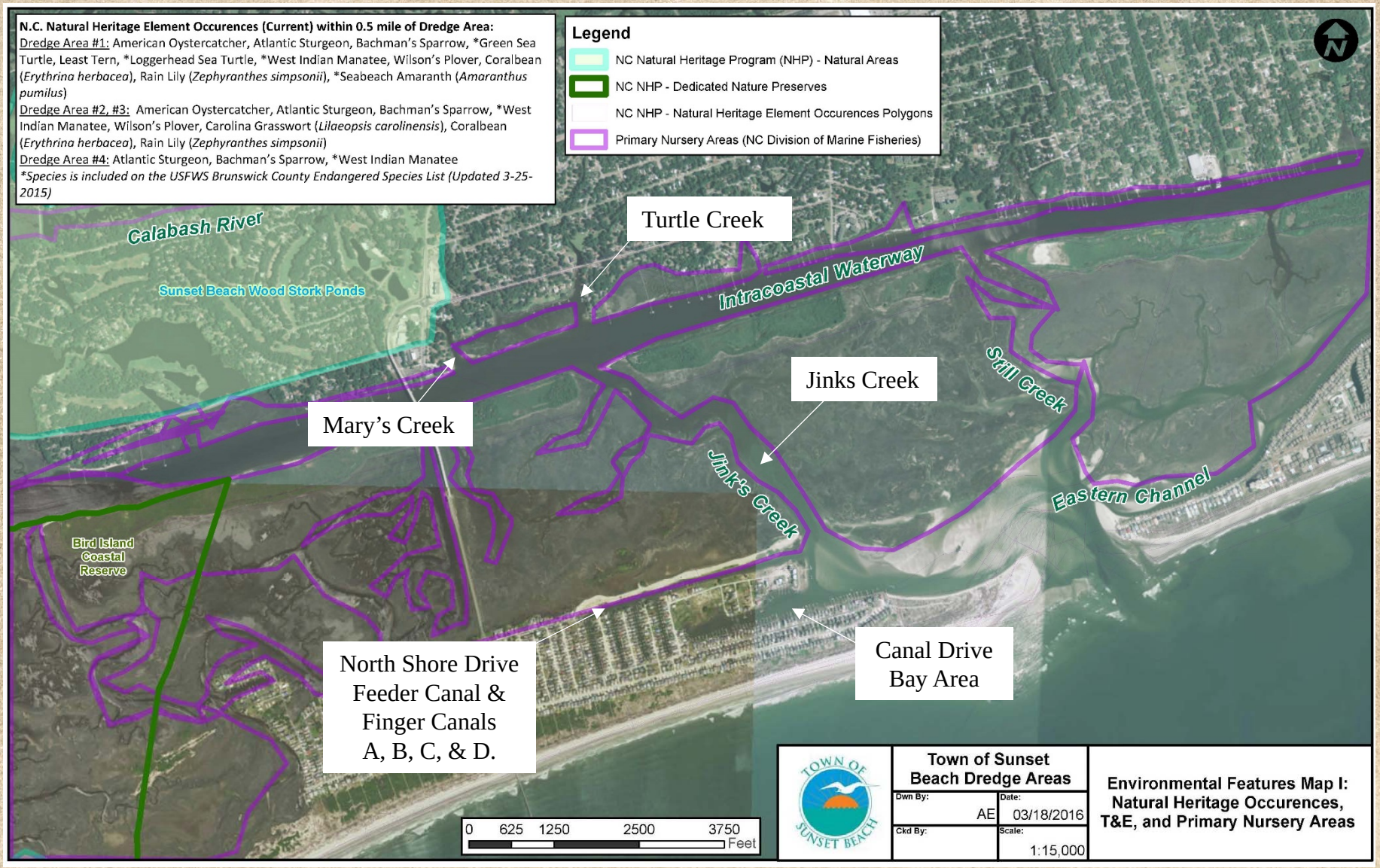
Site	Design Depth (MLW)	Length (ft)	Volume (CY)
Mary's Creek	-5.5 tapering to -3.5	±1,100	± 8,500
Turtle Creek	-5.5 tapering to -3.5	±1,100	± 11,500
Finger Canals (A, B, C, & D)	- 4	±3,600	± 4,000
North Shore Drive Feeder Canal	-5	±3,500	± 23,500
Canal Drive Bay Area	-6 tapering to -4	±2,100	± 21,000
Jinks Creek	-6	±6,800	± 110,000
Total		**±18,200**	**±178,500 CY**

Potential USACE Material Disposal Islands

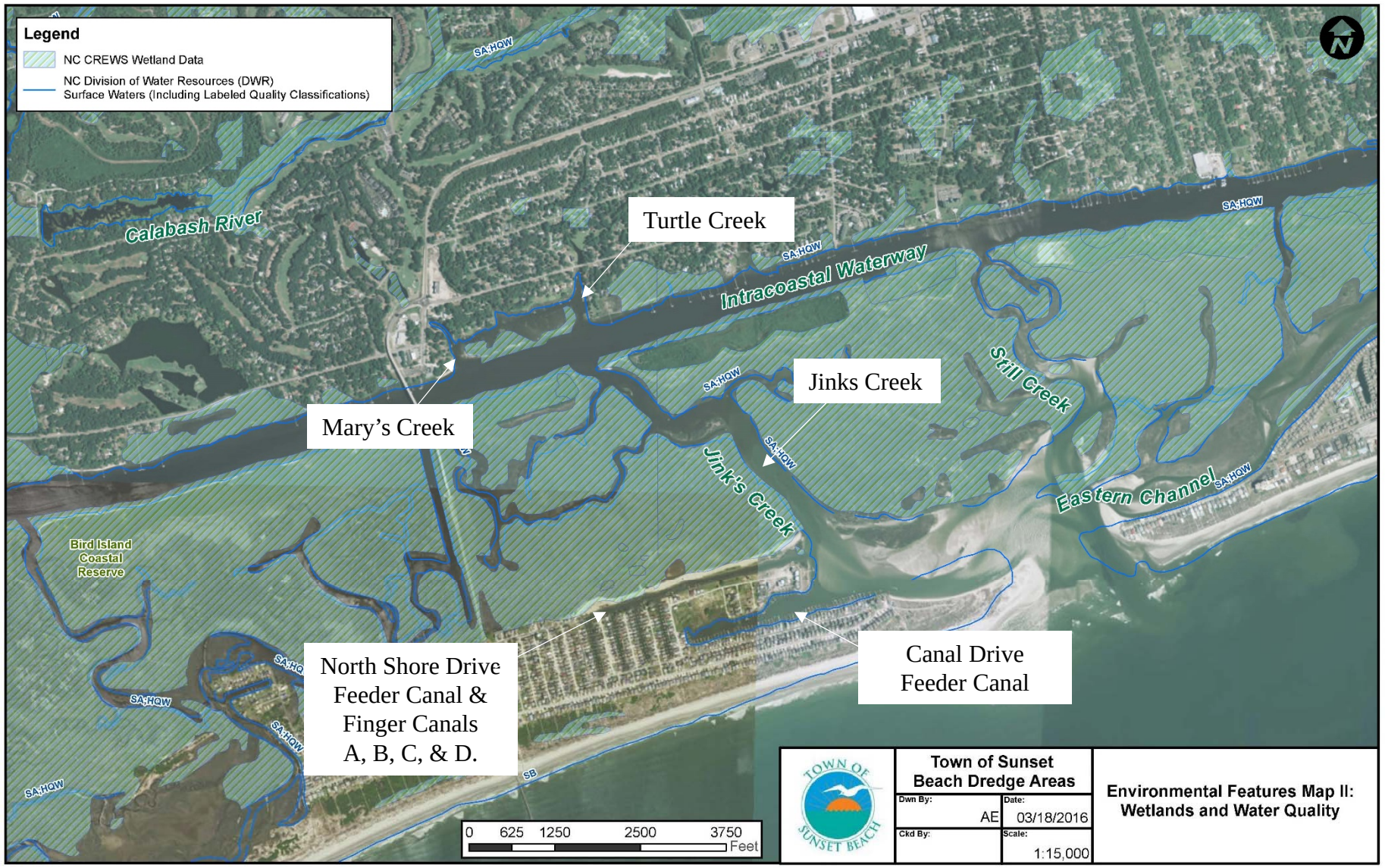
2002 Project Utilized Site 308 to Place an Estimated 80,000 CY

Potential Shoaling Impacts to AIWW, 'S' Curve, & Tubbs Inlet

Agency Concerns



Agency Concerns



Phase 2 – Cost Estimate

Task	Cost
Project Coordination	$16,465
Refined Design	$101,932
Sediment Testing	$56,792
Identify Least Cost Option for USACE Disposal Island	$6,325
Oyster Survey (Mary's & Turtle Creek)	$22,183
2nd Agency Coordination Meeting	$6,427
Conceptual Cost Estimate (Construction)	$2,030
Total	**$212,154**

Note:

1. Remaining Design and Permitting Costs Estimated at Approx. $150,000.
2. Construction Cost Could Reach $2.5 M ~ $3.5 M.
3. The Project Meets Eligibility Requirements for a 50% Cost Share Grant from the State of NC.
4. The Town of Ocean Isle Beach has Indicated They Would Consider Cost Sharing on Beneficial Use Placement of Beach Material.
5. The 2nd Agency Coordination Meeting Includes Necessary Efforts to Address Any Outstanding Question Resulting from the Information Provided at the Meeting.

Thank you!

Questions and Comments