



Isle of Palms, SC Beach Management Program Review

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October 9th, 2025

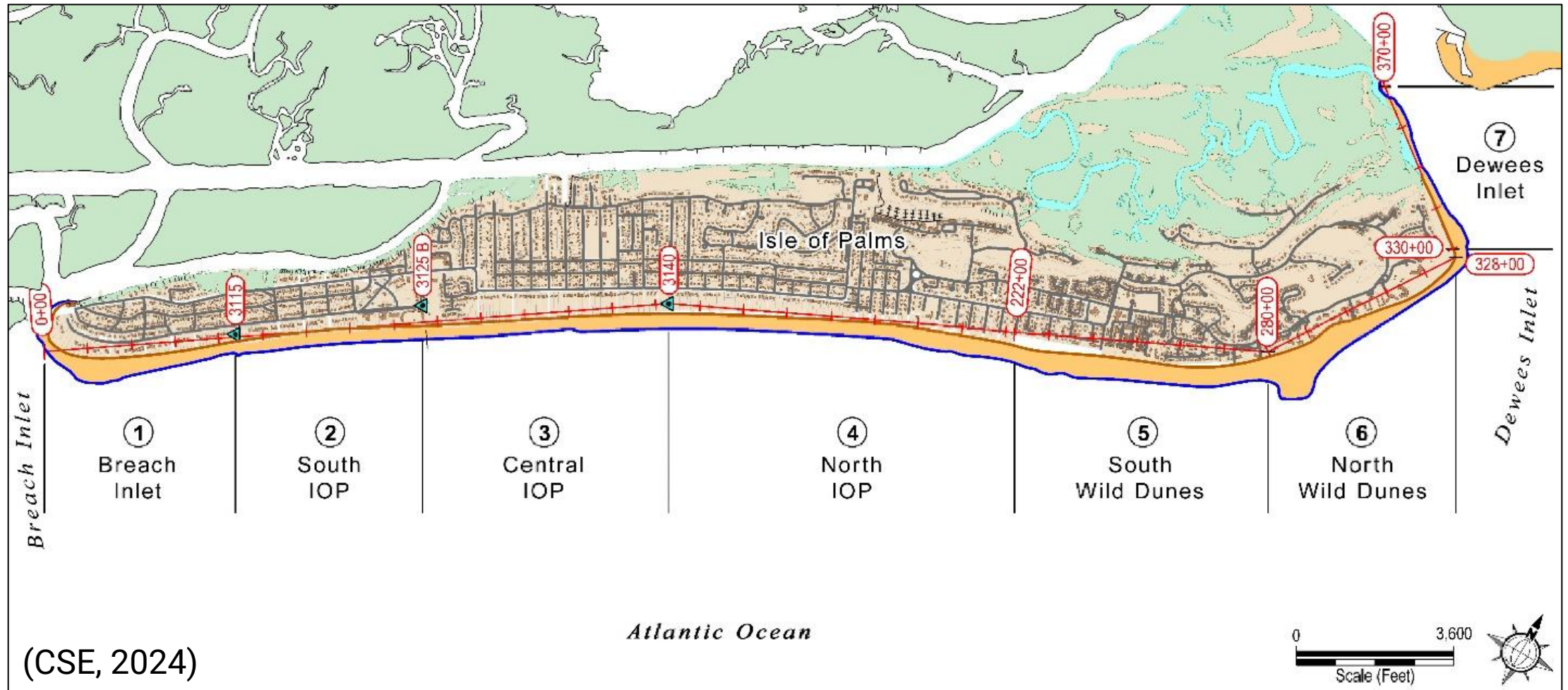
Our directive:

- Review impact of past work on IOP beach management
- Identify possible solutions and alternatives to reduce erosion and enhance the effectiveness of future renourishment projects
- Identify possible causes of recent shoreline erosion acceleration along the southern end of the island
- Identify a potential relationship between beach management activities on IOP and observed changes at Breach Inlet

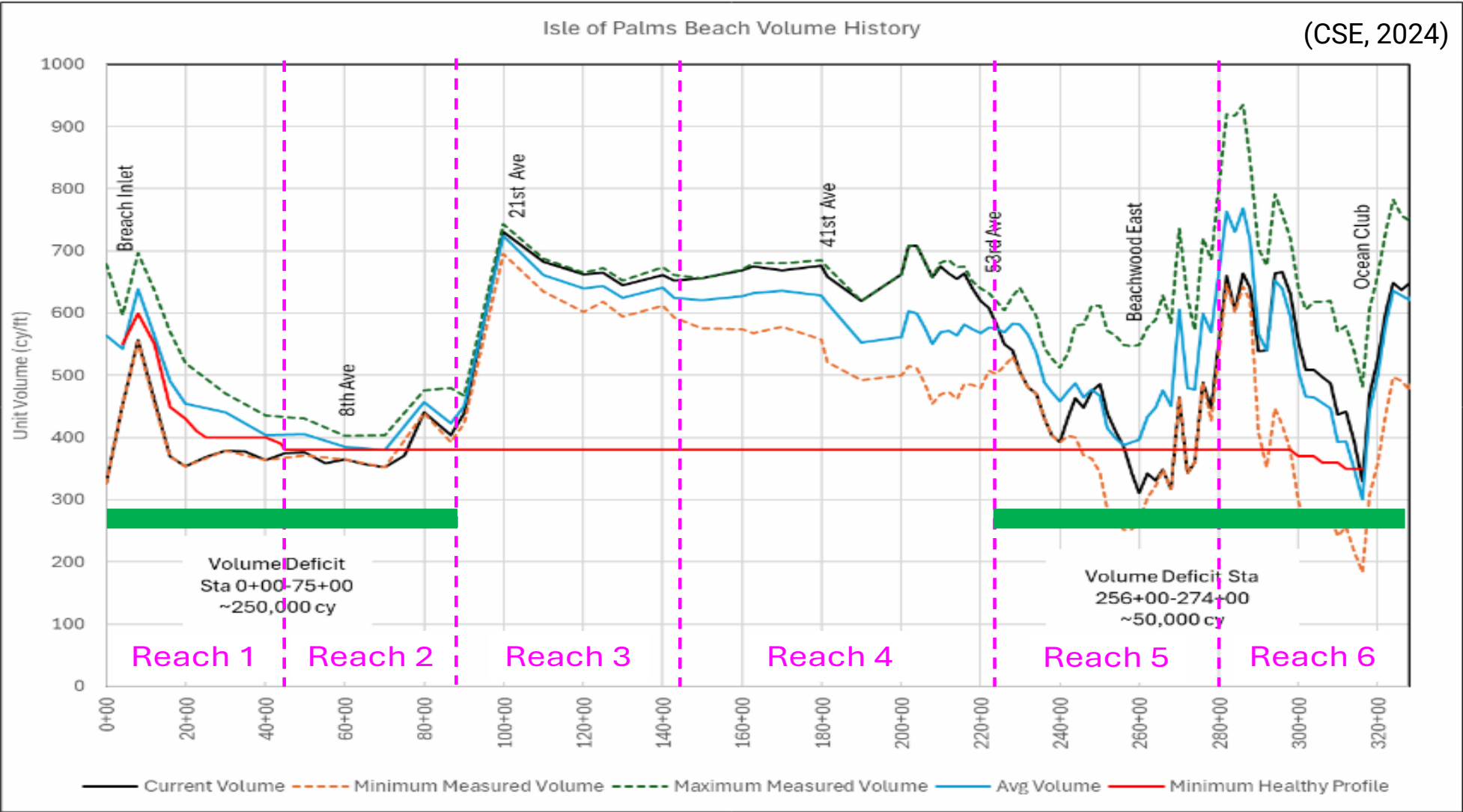
We Reviewed:

- Beach Ad Hoc Committee Report and recommendations
- Prior beach management project planning reports and presentations
- Prior project scope summaries and presentations
- Prior post-construction summary reports
- Prior planning, engineering and design reports
- Permit applications for currently planned future projects
- Select beach monitoring reports
- Available aerial imagery with focus on inlet shoal bypass events
- City regulations that prohibit erosion control structures within 250 feet of the MHWL

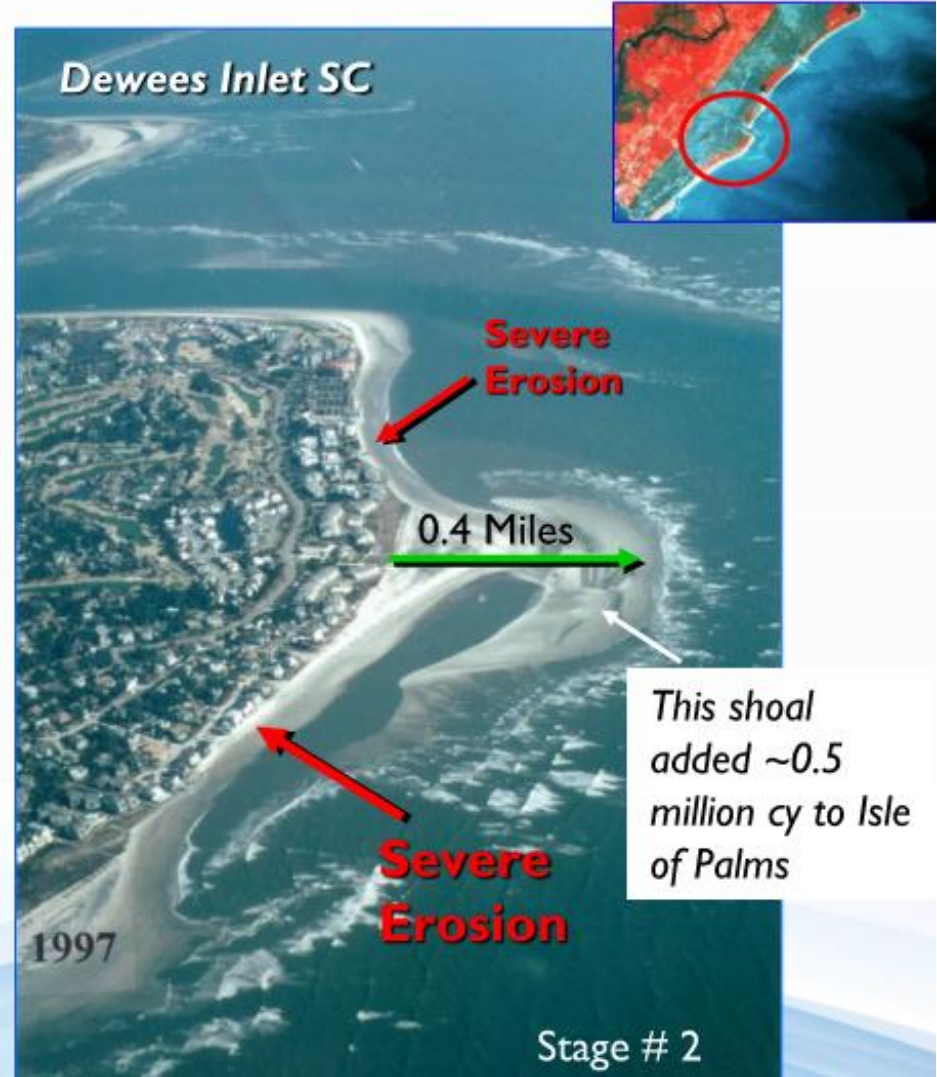
Isle of Palms Beach Management Reaches



Beach Volume History



Shoal Events



(CSE, 2024)

Reaches 5 and 6 (North End)

- The localized erosion rates that occur during shoal attachments cycles are too large to address with sand placement alone.
 - The timing and occurrence of these large erosion events cannot be managed with an offshore dredge project because of the time required to identify and permit an offshore source and the cost to mobilize a large offshore dredge.
- Localized erosion cannot be effectively managed with emergency sand scraping events.
 - The magnitude of erosional stress far exceeds the amount of sand that can be effectively moved to address the rate of sand loss.

Reaches 5 and 6 (North End)

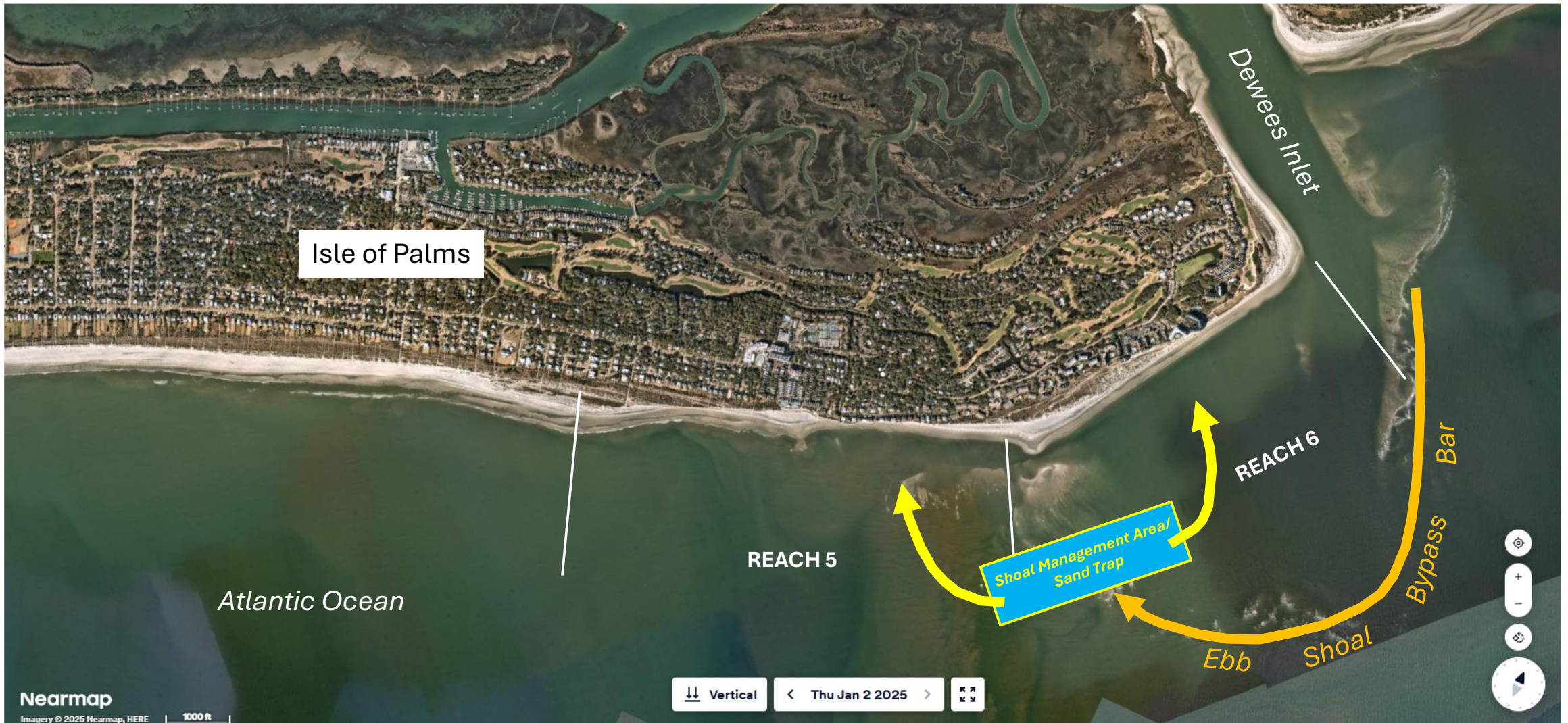
Need

- Provide more consistent beach width conditions and protection
- Reduce localized effects of shoal migrations and attachments
- Reduce long-term demand for sand

Possible Approaches

- More proactive shoal management
- Strategic Shore-Stabilizing Structures

Proactive management of the sand shoal migrations



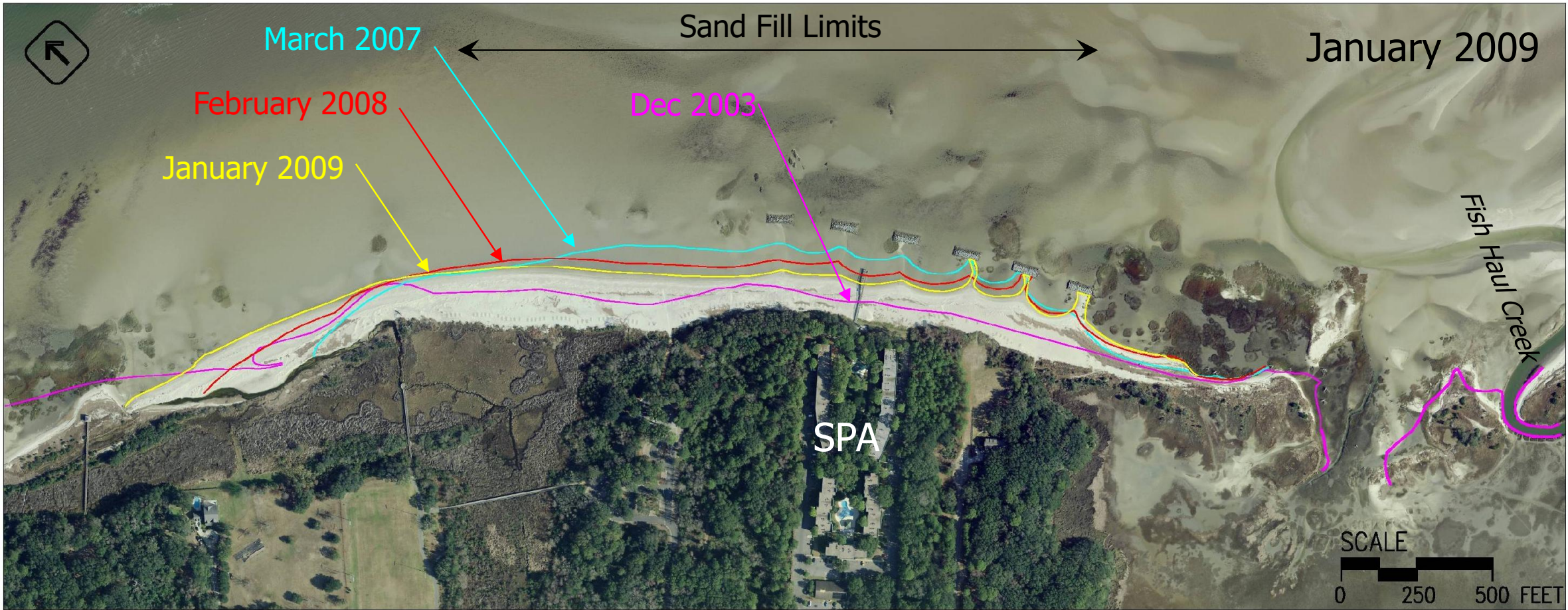
Strategic use of shore-stabilizing structures



Structure Example from Hilton Head Island



Structure Example from Hilton Head Island



Reaches 1 and 2 (South End)

- Long-term trend of accretion has changed to erosion and has recently accelerated
- There is no evidence that the recent trends will revert to historical conditions

Reaches 1 and 2 (South End)

Need

- Restoration of beach to historical conditions
- Management of current sand loss rate
- More consistent beach conditions and protection

Possible Approaches

- Comprehensive restoration with compatible sand source (offshore vs. ICWW)
- Strategic Shore-Stabilizing Structures

Terminal Groin with Beach Restoration



Terminal Groin and Breakwater with Beach Restoration

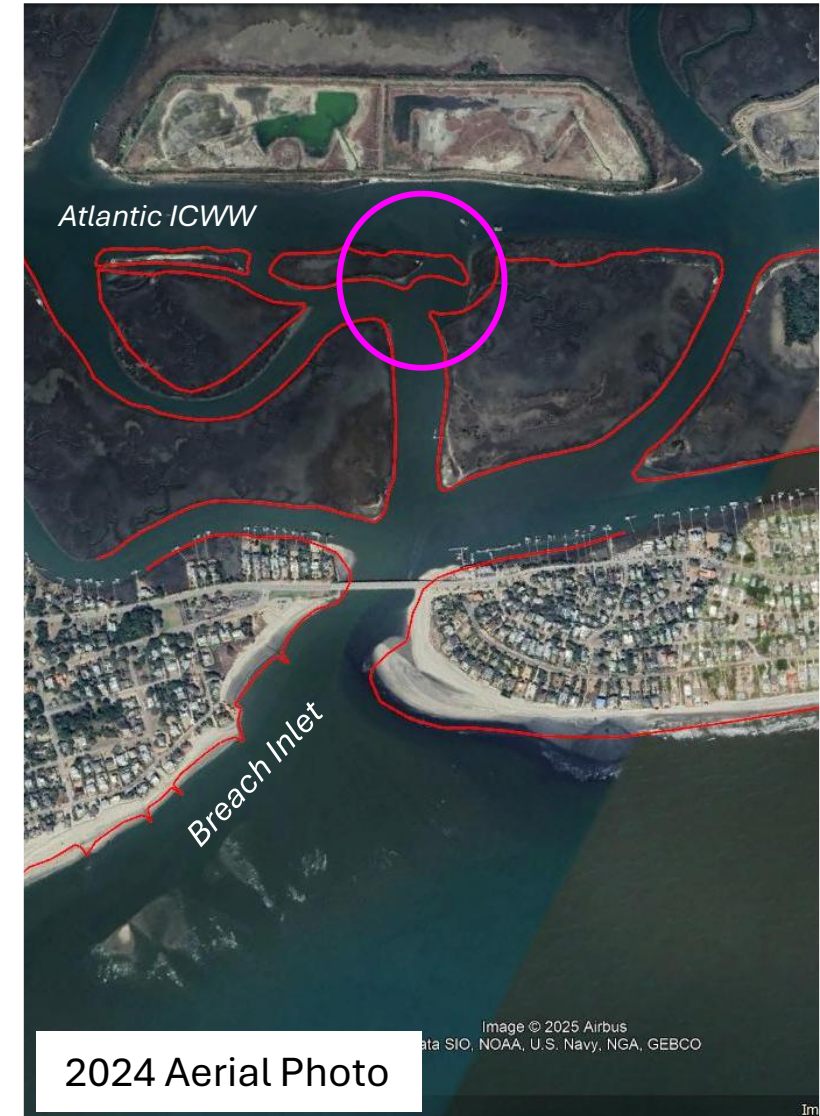
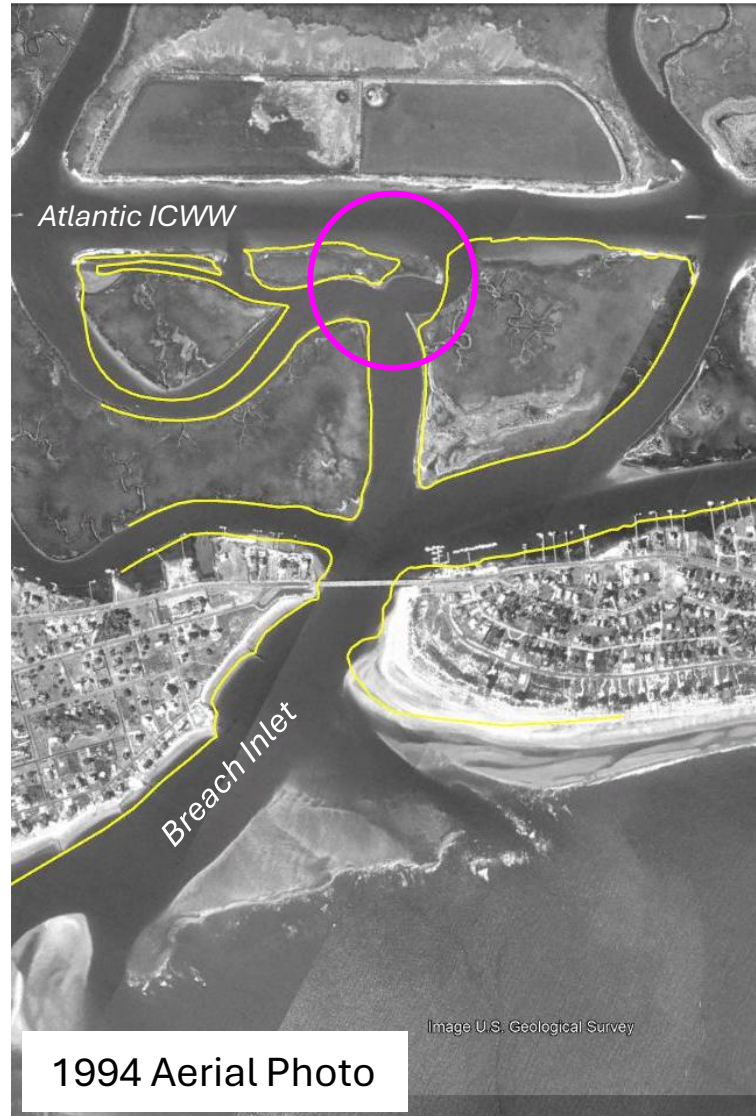


Example (terminal groin and breakwater)



Causes of Recent Changes to South End Shoreline

- Changes to Breach Inlet tidal prism and inlet shoals
- Recent hurricanes and other coastal storms
- Sea Level Rise (SLR)



Conclusions

- Sand placement alone does not appear to be an effective and sustainable beach management approach.
- The City should consider more proactive actions to compliment future sand placement.
 - Provide more reliable shoreline conditions and protection (shoal mgt / strx)
 - Reduce demand on available sand sources (resources are not unlimited)
 - Schedule renourishments for entire island to occur at one time
 - Potentially reduce the long-term cost of the beach management program



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Beach Advisory Ad Hoc Committee Meeting

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