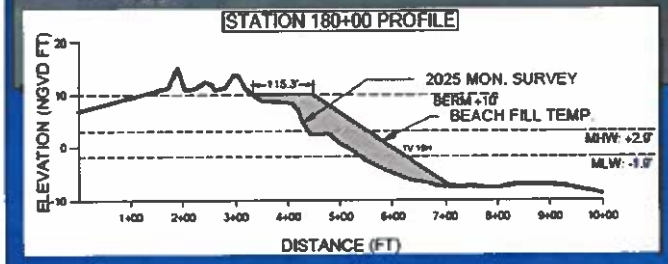
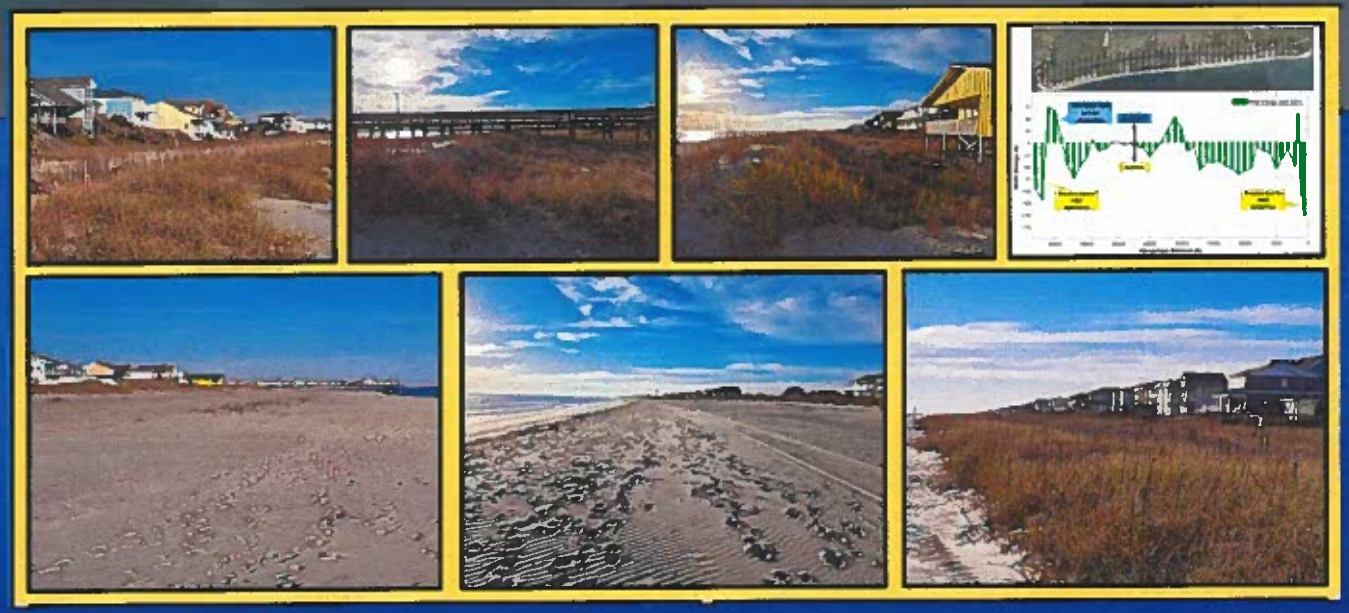


HOLDEN BEACH ANNUAL MONITORING

November 17, 2026







Geosyntec consultants

Geosyntec Consultants of NC, P.C.

*Formerly Applied Technology & Management

Annual Monitoring Analysis

- Volume Change
- Shoreline Change
- Has occurred annually since 2001
- Nourishment Planning & FEMA Eligibility

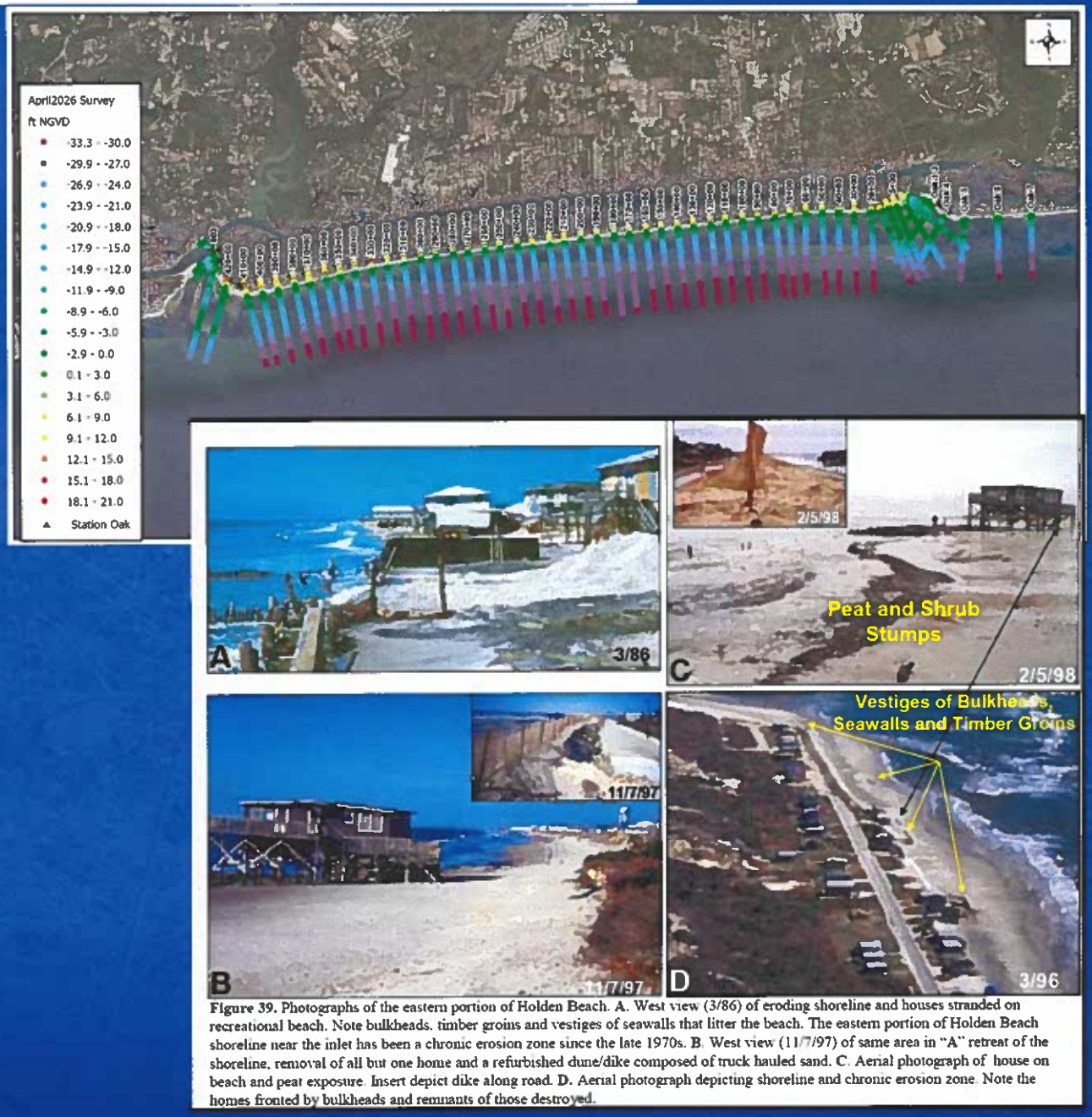
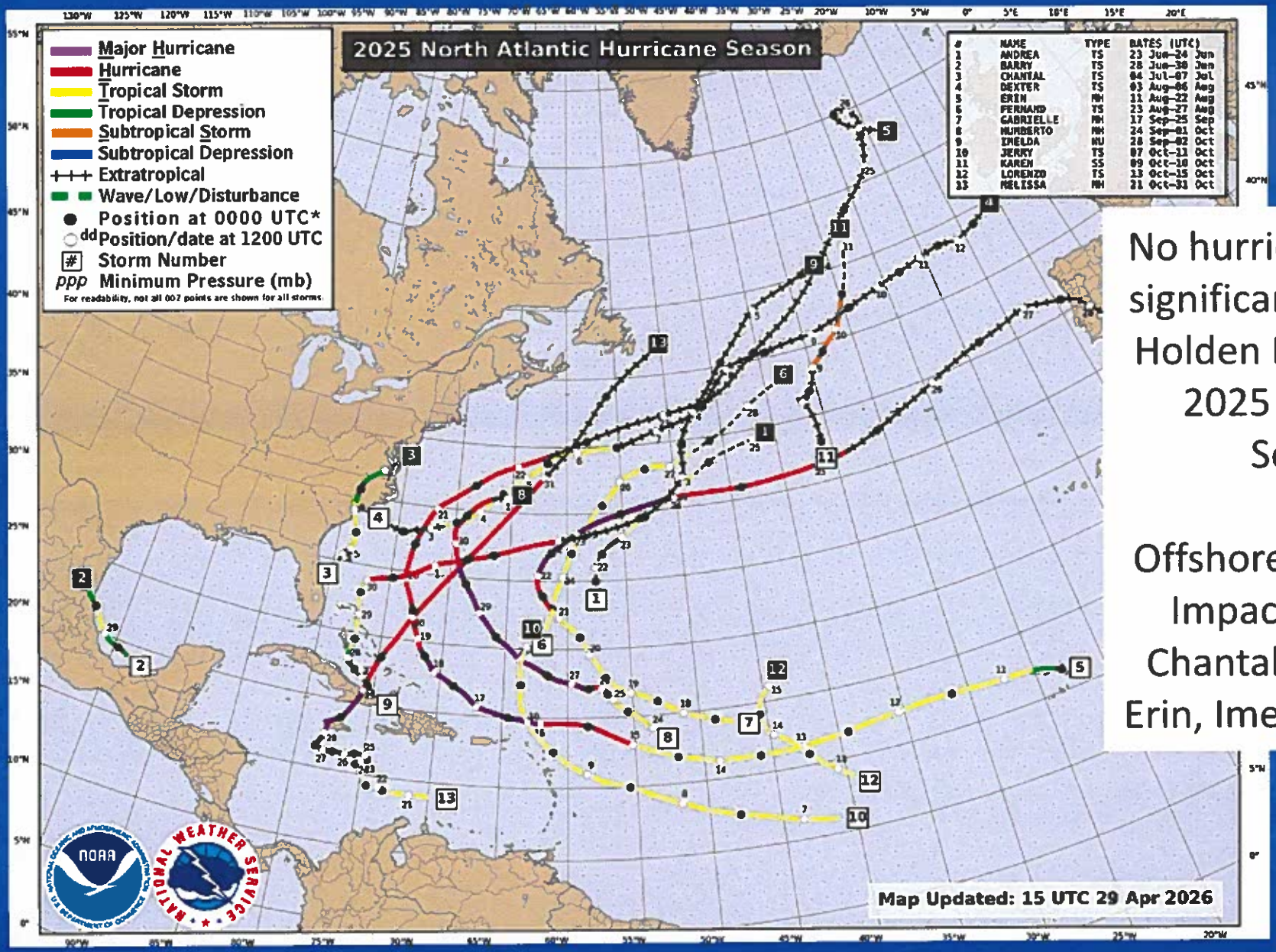


Figure 39. Photographs of the eastern portion of Holden Beach. A. West view (3/86) of eroding shoreline and houses stranded on recreational beach. Note bulkheads, timber groins and vestiges of seawalls that litter the beach. The eastern portion of Holden Beach shoreline near the inlet has been a chronic erosion zone since the late 1970s. B. West view (11/7/97) of same area in "A" retreat of the shoreline, removal of all but one home and a refurbished dune/dike composed of truck hauled sand. C. Aerial photograph of house on beach and peat exposure. Insert depict dike along road. D. Aerial photograph depicting shoreline and chronic erosion zone. Note the homes fronted by bulkheads and remnants of those destroyed.

2025 Hurricane Season

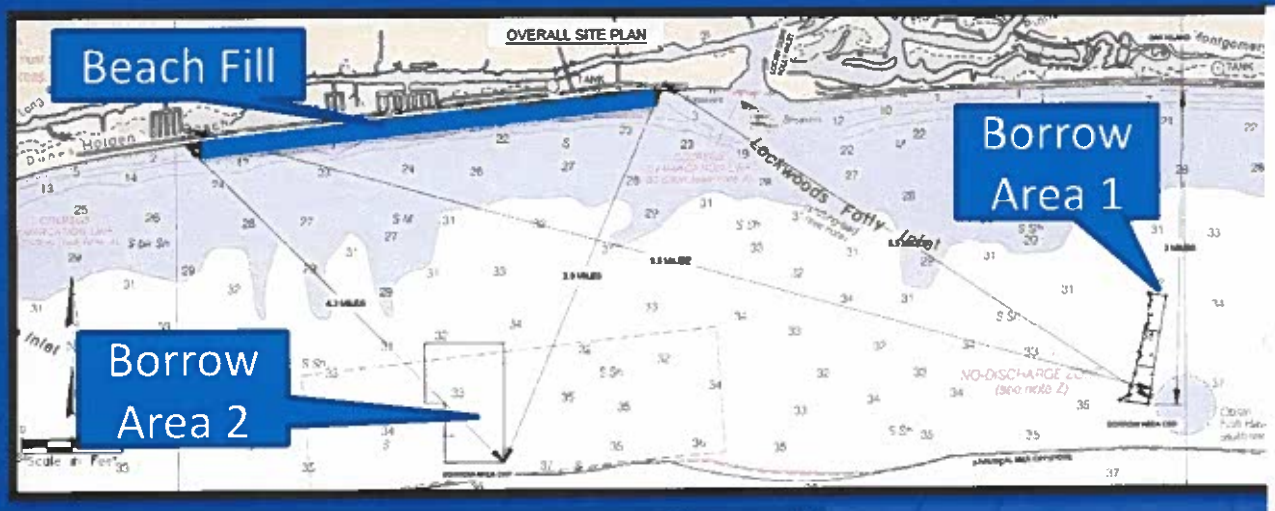


No hurricanes caused significant flooding at Holden Beach during 2025 Hurricane Season.

Offshore Swell/Surge Impacts from: TS Chantal, Hurricanes Erin, Imelda, Umberto

8 King Tide Events in NC from April 2025-April 2026

2022 Nourishment (Jan 7 to April 12)







R.N. Weeks

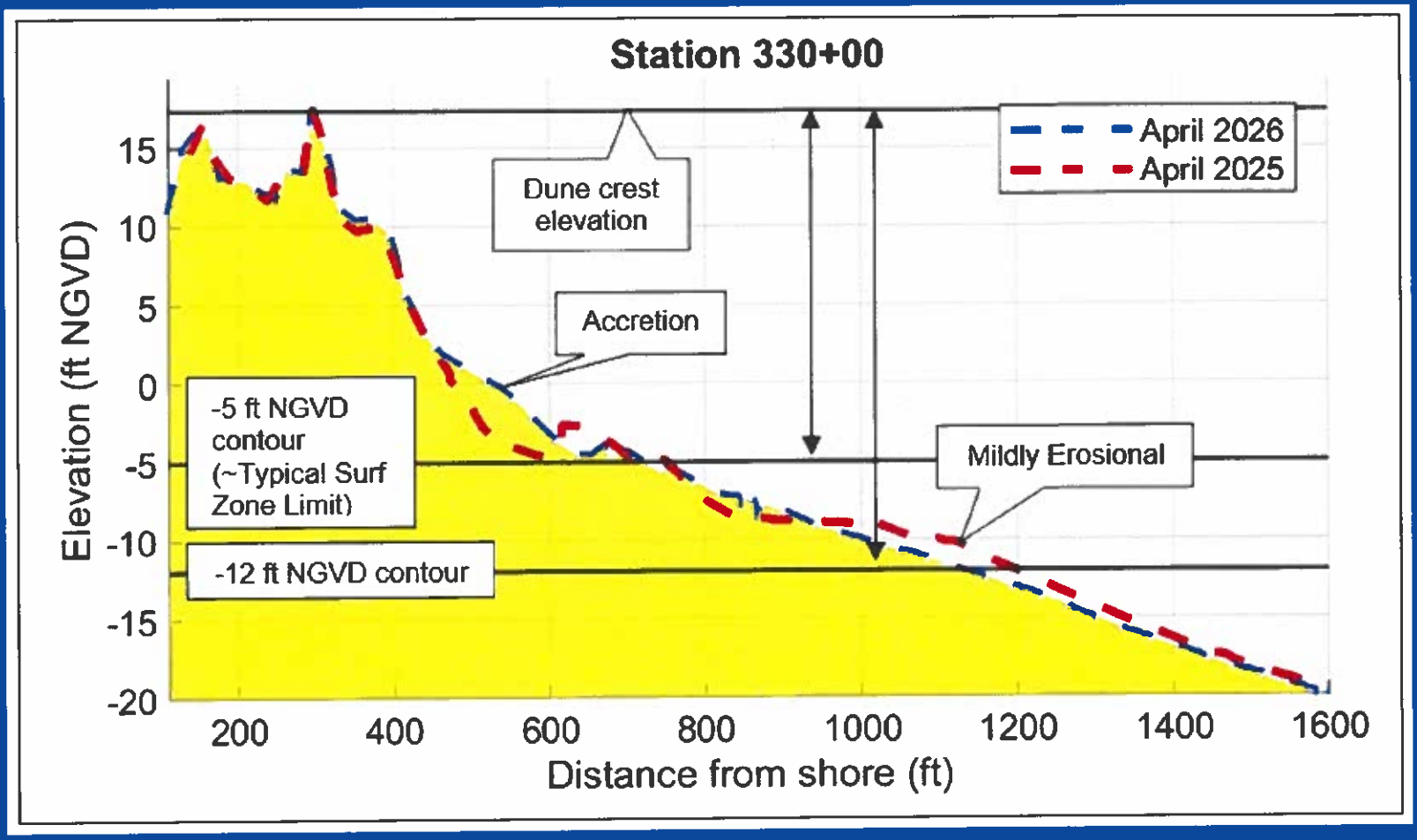




B.E. Lindholm

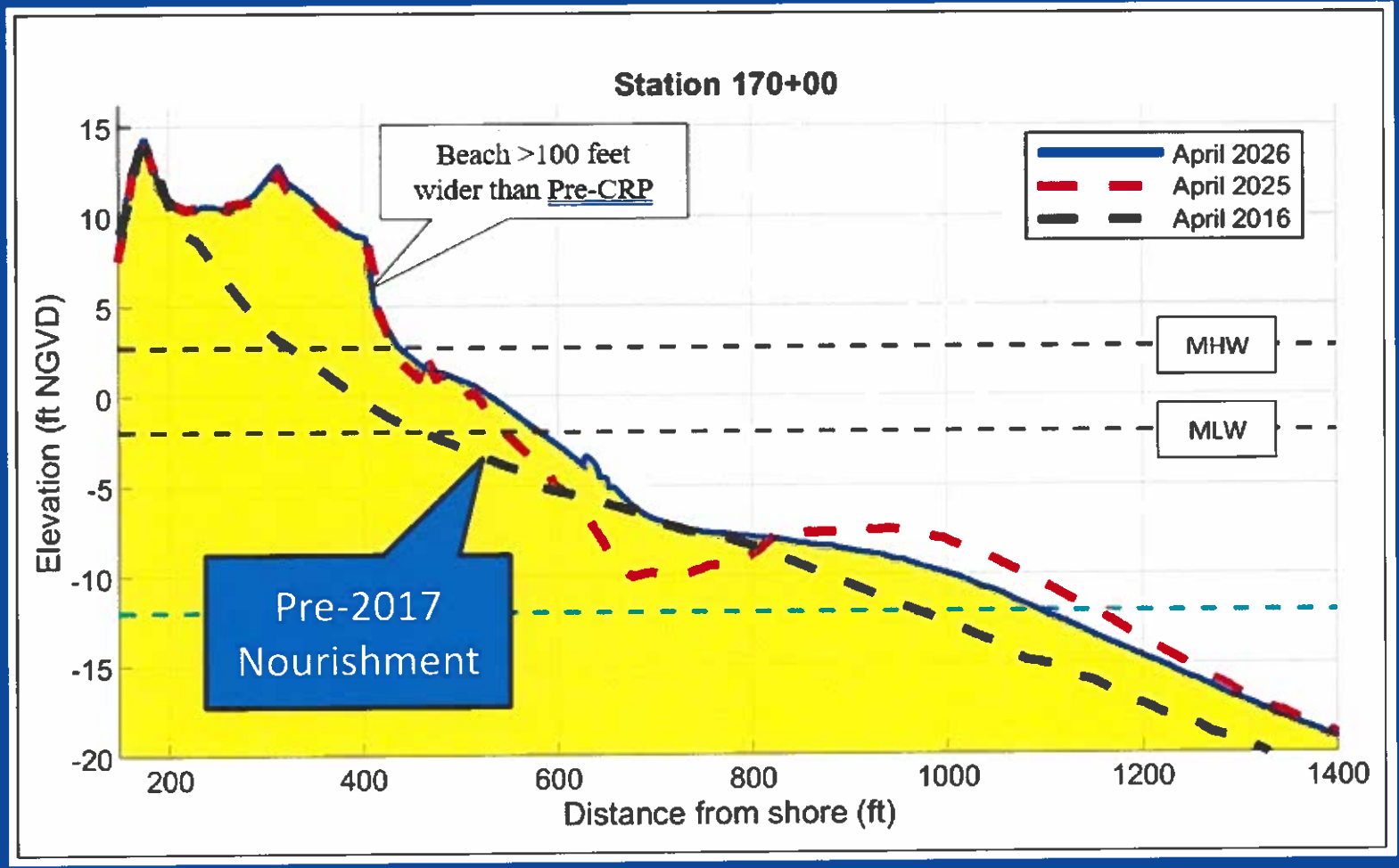
Now ~4.5 Yrs Post Project

Volume Analysis



Two Volume Calcs. From Dune to -5 ft and -12 ft

Cumulative Effect of 2017 (1.35 Million CY) and 2022 (1.55 Million CY) Nourishments



Still ~1.9 Million CY in Central Reach compared with Pre-2017 (Hurricane Matthew Conditions)

Volume Change (to -12 ft)

- ~ 4 Years Post Nourishment



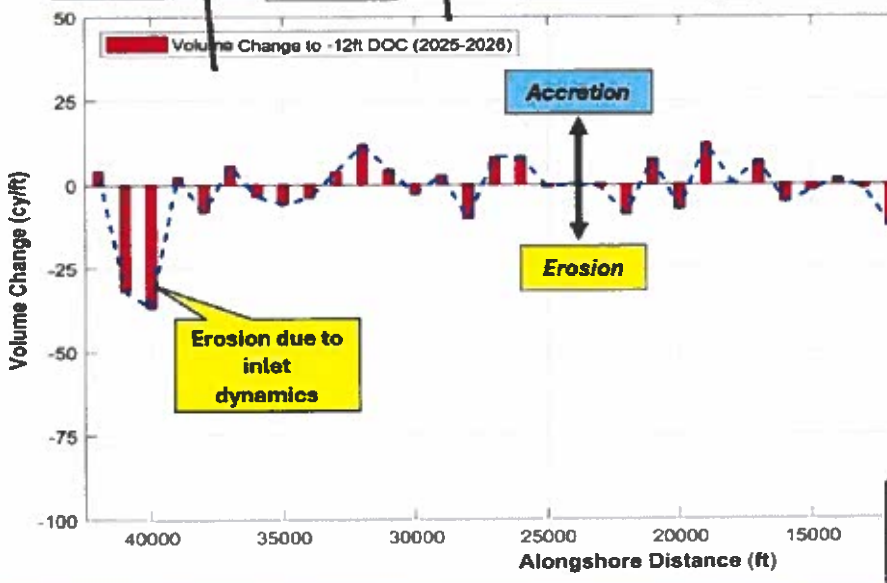


Table 3-1. Volume Change by Shoreline Reach Between 2025 and 2026 Surveys. DOC = Depth-of-Closure.

Reach Averages	Stations Included	Total Volume Change (CY) (Dune to -12 ft NGVD)	Dry Beach/Surf Zone Volume Change (CY) (Dune to -5 ft)	Surf Zone/DOC Volume Change (CY) (-5 ft to -12 ft NGVD)
LWF Inlet	5 to 15	-79,000	-27,000	-52,000
USACE East	15 to 40	52,000	85,000	-33,000
Town East	40 to 150	-88,000	6,000	-94,000
Pier	150 to 190	7,000	24,000	-17,000
Town West	190 to 290	3,000	54,000	-51,000
West Area	290 to 380	7,000	109,000	-102,000
Shallotte Inlet	380 to 420	-69,000	-14,000	-55,000
	TOTAL	**-167,000**	**237,000**	**-404,000**
Central Reach	**40 to 290**	**-78,000**	**84,000**	**-162,000**

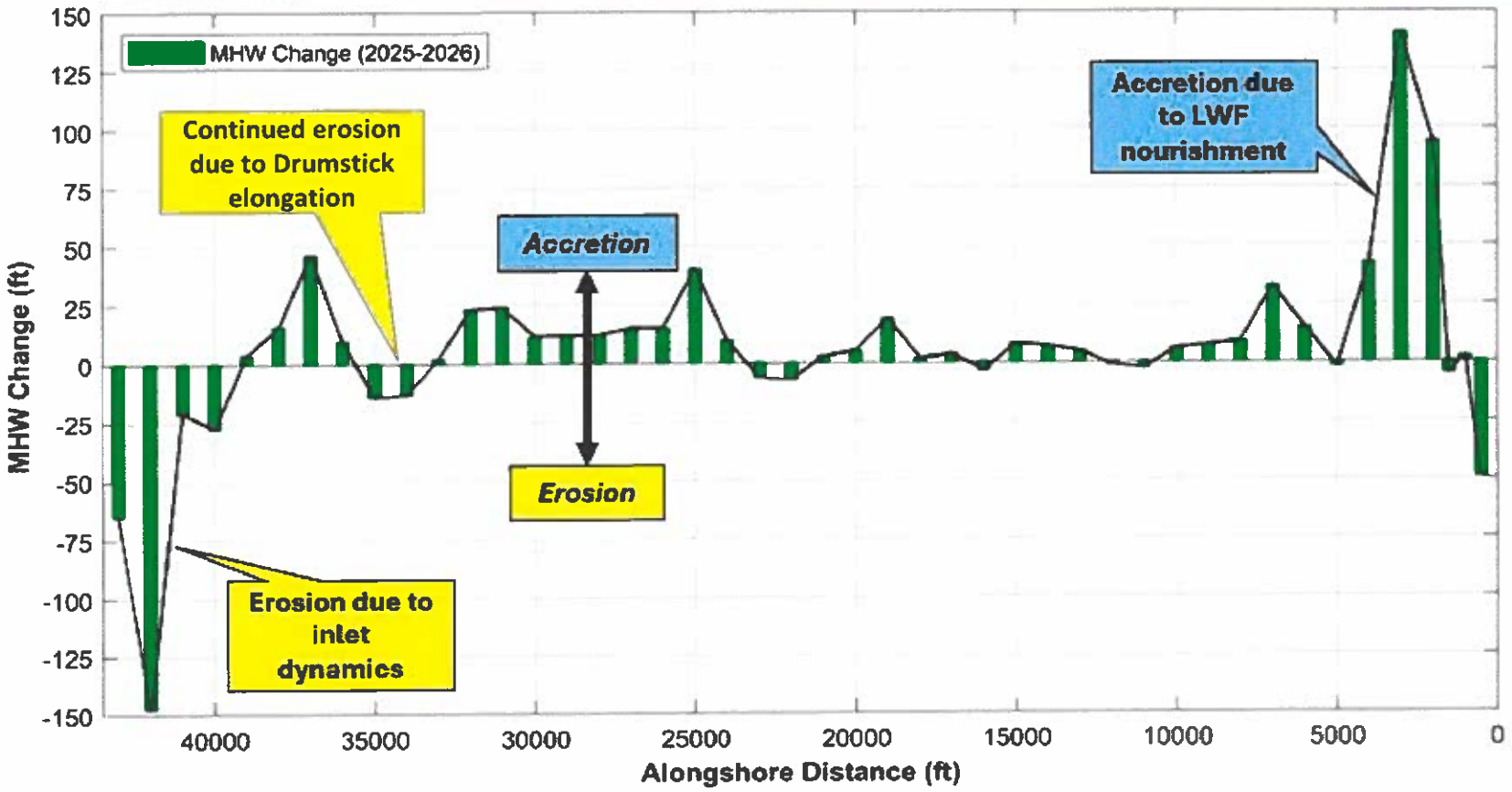
*Positive values represent accretion/gains and negative values indicate erosion/losses

Mean High Water (MHW) Shoreline Change



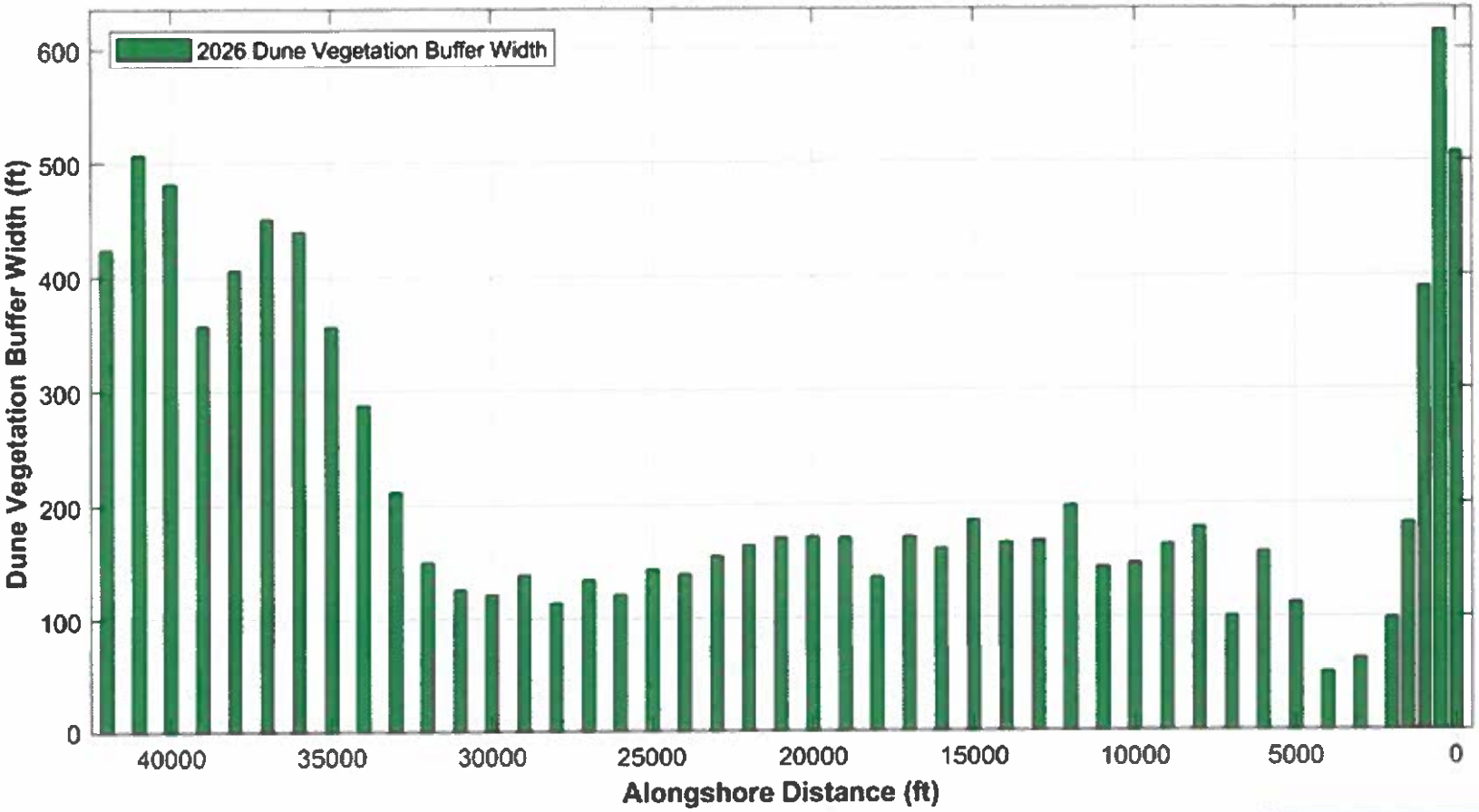
Table 3-3. MHW Shoreline Change by Reach for 2025 and 2026 Surveys.

Reach Averages	Stations Included	MHW Change (ft)
LWF Inlet	5 to 15	-17.4
USACE East	15 to 40	68.1
Town East	40 to 150	10.5
Pier	150 to 190	5.8
Town West	190 to 290	10.7
West Area	290 to 380	11.6
Shallotte Inlet	380 to 420	-35.4
Central Reach	40 to 290	9.4



DUNE VEGETATION WIDTH





DUNE VEGETATION WIDTH



Shallotte Inlet Shoreline



Jan. 2026 Aerial

Lockwood Folly Inlet Shoreline



Jan. 2026 Aerial

Ocean Isle Terminal Groin Monitoring (August 2026 Report)

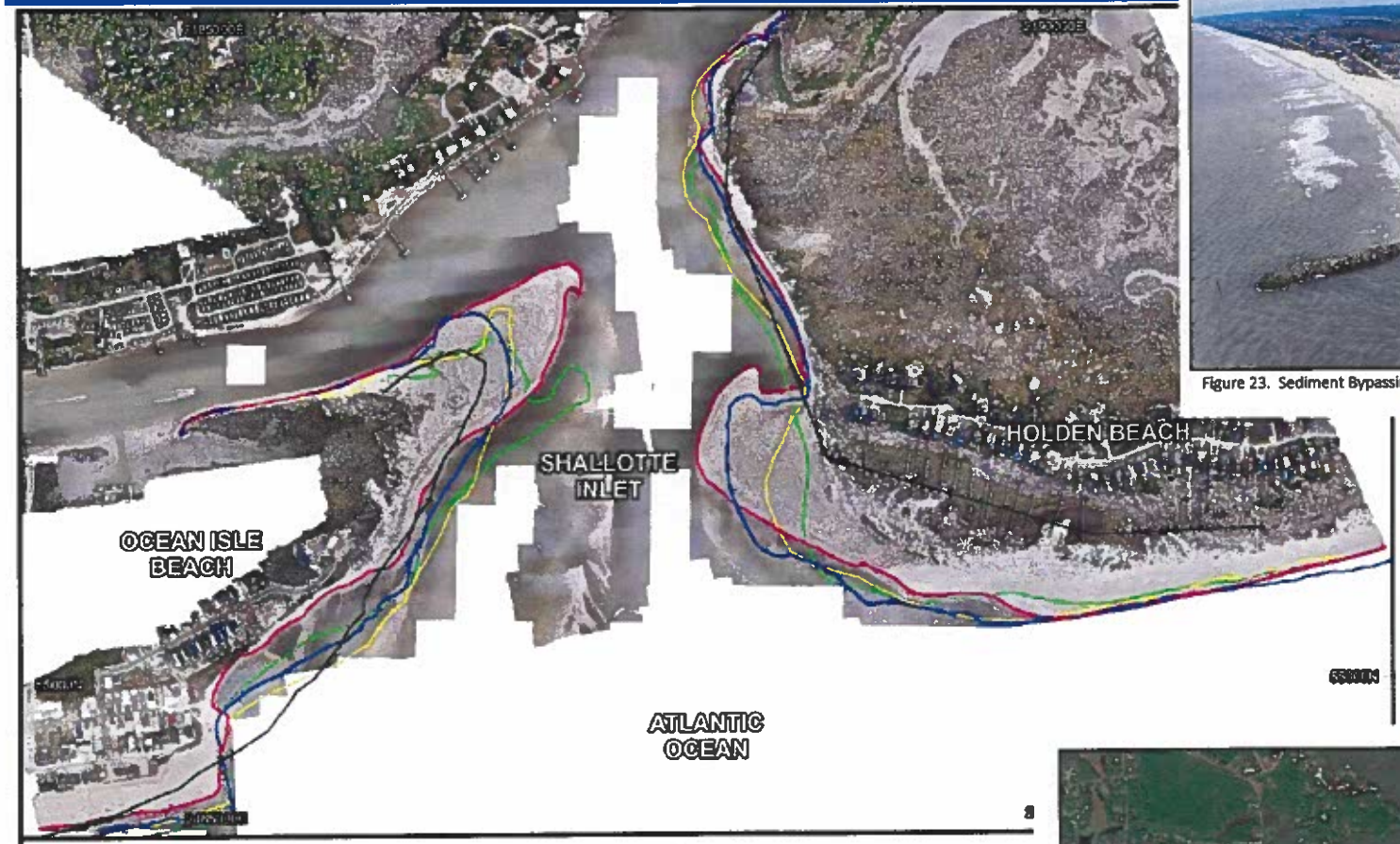


Figure 19. Shallotte Inlet Shoreline Change Plot.



Figure 23. Sediment Bypassing the Terminal Groin (top photo) May 1st, 2025, (bottom photo) May 8th, 2025.





Figure 10. Shallotte Inlet Shoreline Thresholds.

Updating Monitoring and Mitigation Plan

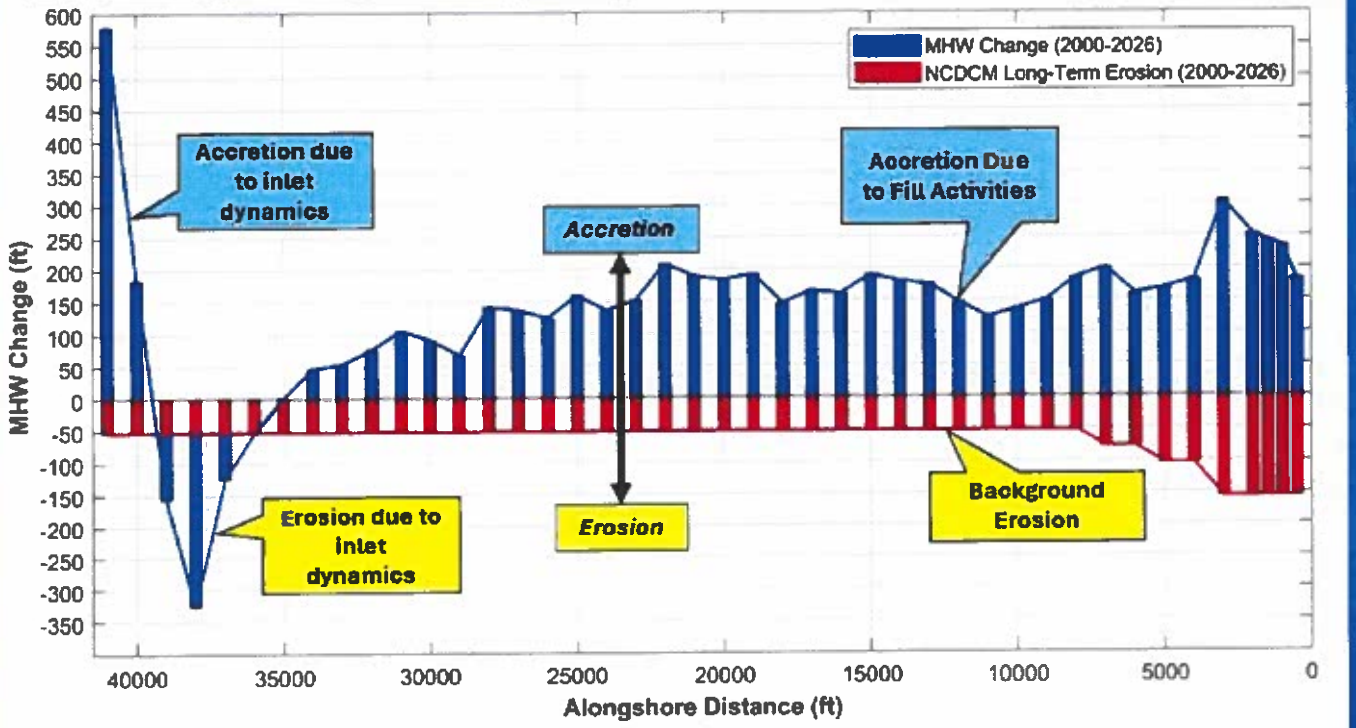
2000 to 2026

Beach much healthier now

Table 3-4. Historical MHW Shoreline Change by Reach (2000 to 2026).

Reach Averages	Stations Included	Historical MHW Change (2000 to 2026) (ft)
LWF Inlet	5 to 15	218.9
USACE East	15 to 40	244.3
Town East	40 to 150	166.3
Pier	150 to 190	170.8
Town West	190 to 290	153.3
West Area	290 to 380	-6.2
Shallotte Inlet	380 to 420	70.2
Central Reach	40 to 290	159.8





1993 to 2026

Beach much healthier now



1993 to 2026

Beach much healthier now

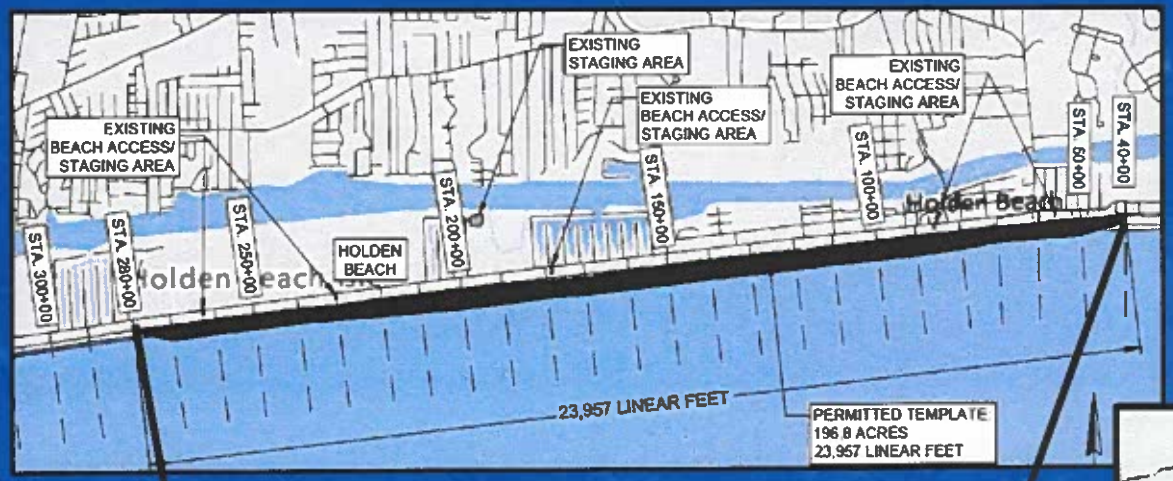


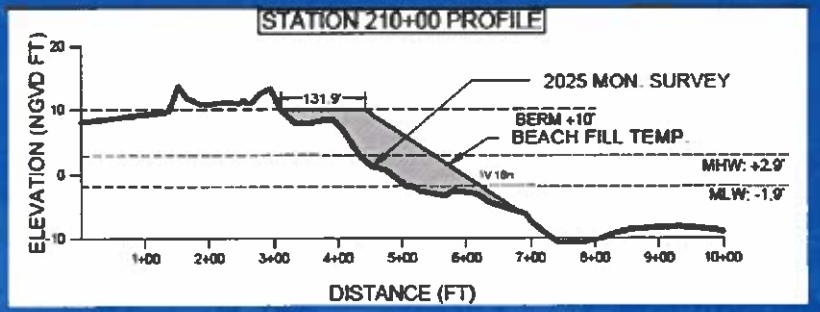
Offshore Borrow Area Permit Application Processing

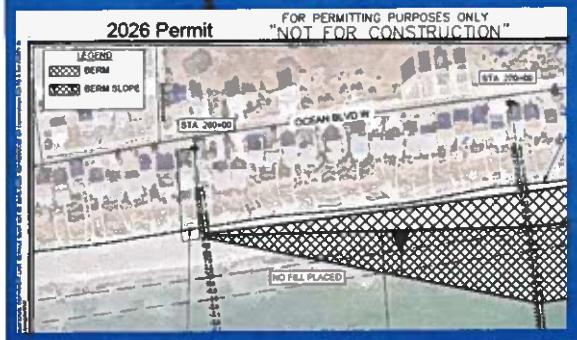
-Up to 1.2 million cubic yards along 24,000 ft (~873 OBW to ~259 OBE)

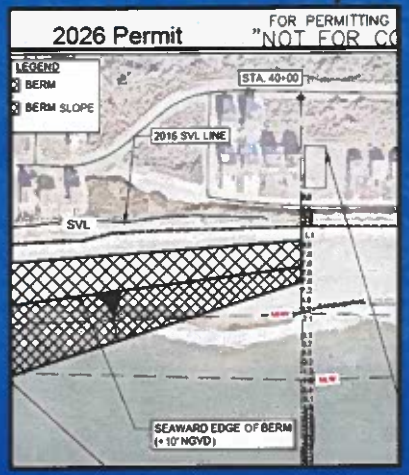
-Offshore Borrow Area (up to ~1.8 mcy available)

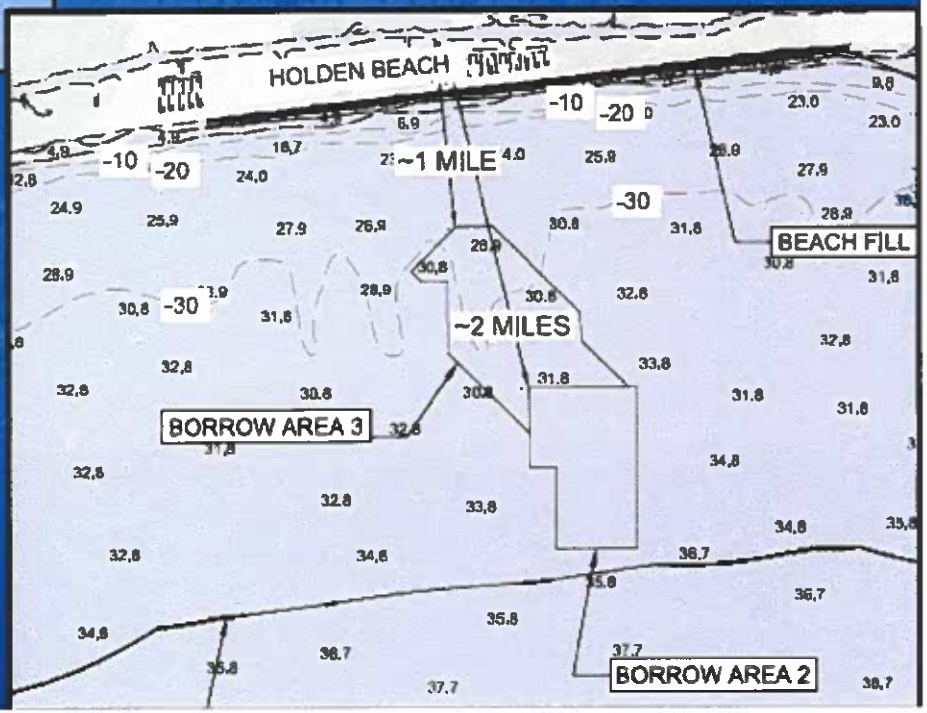
-Timing – Likely following next major storm







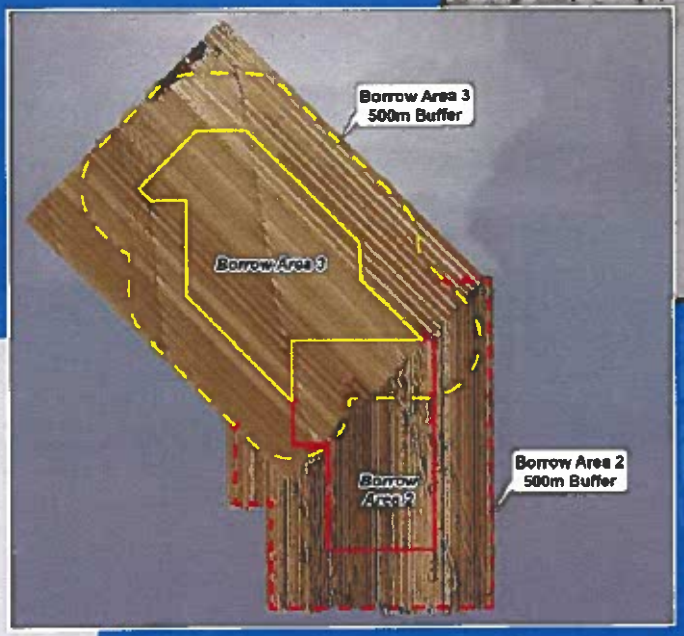


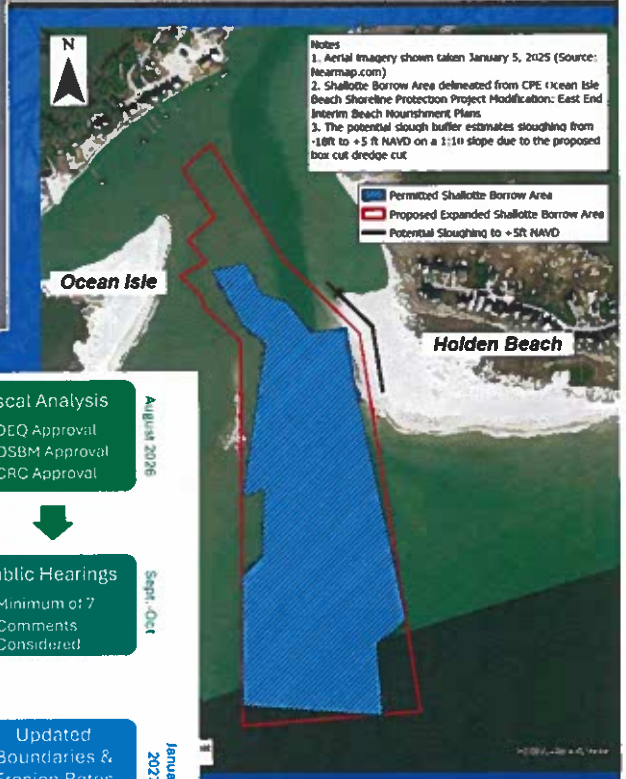


ONGOING HB BEACH MANAGEMENT ACTIVITIES









- Corps 50-yr Study Data
- FEMA Coordination (if needed)
- LWFIX & Bend-Widener
- LWF Outer Channel Dredging/Navigation
- West End Analysis (Ocean Isle Terminal Groin)
- Permit Application Processing For Next Central Reach Nourishment
- Likely Next Offshore Borrow Located (Based on Corps 50-yr Data)
- IHA updates

Rule-Making Process

