

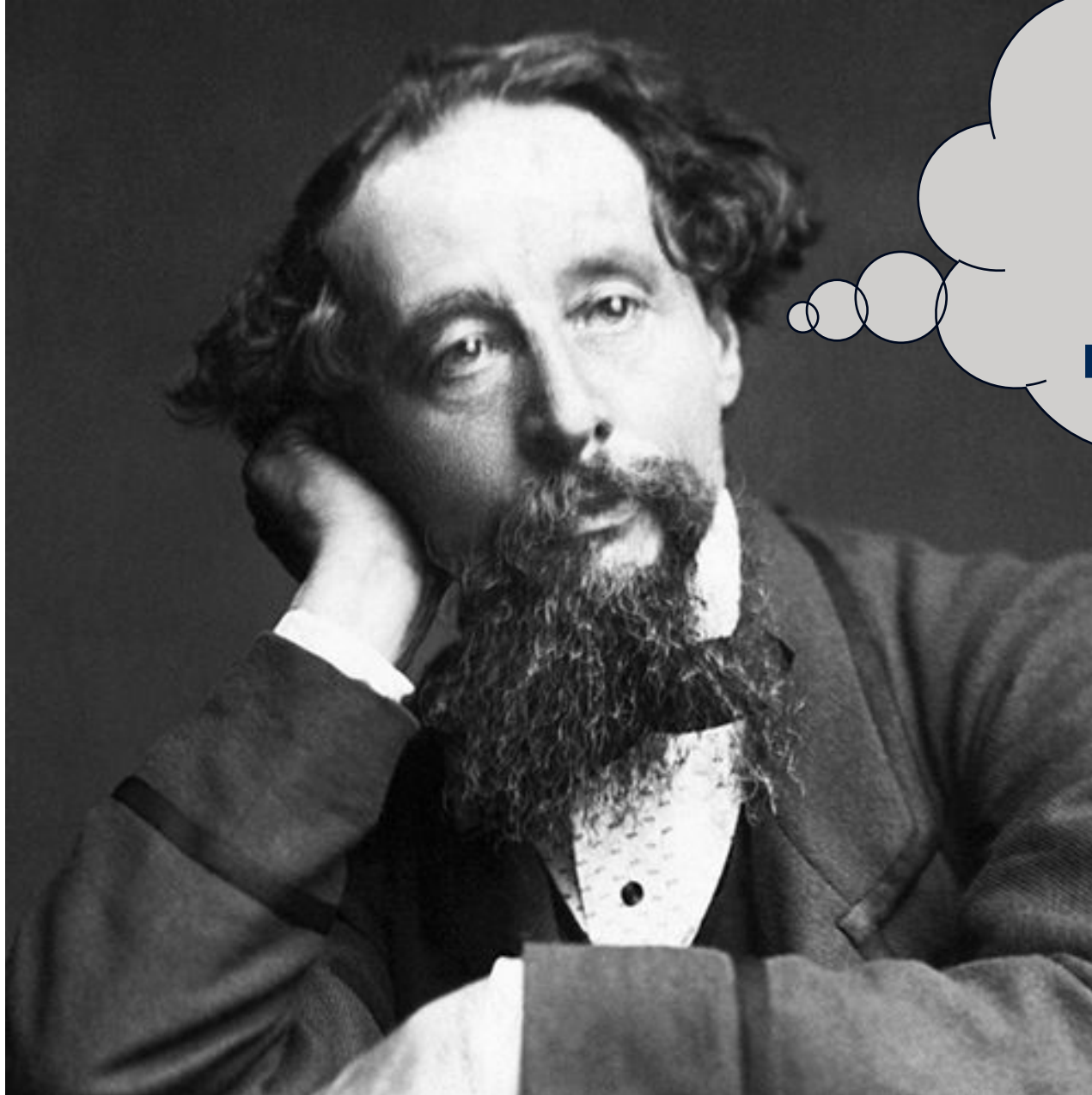


A Tale of Two Cities...And Two Storms

Nicole Sharp, P.E., Director, APTIM

John Bishop, Ph.D., Pinellas County

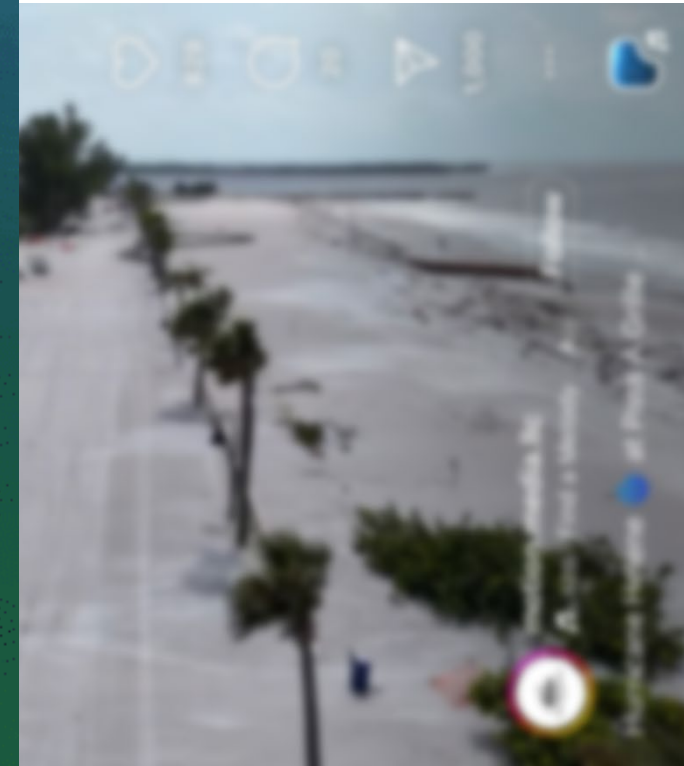
Captiva Erosion Prevention District



**How will this
engineer
butcher my
literary
masterpiece?**

- Charles Dickens

IT WAS THE BEST OF TIMES...



IT WAS THE WORST OF TIMES.



IT WAS THE BEST OF TIMES...



IT WAS THE WORST OF TIMES.

THE ANTAGONISTS



- “Horrible Hurricane Helene”
 - Major category 4 storm
 - Max. sustained winds of 140 mph
 - Landfall near Perry, FL
 - Deadliest US hurricane since Katrina



- “Monstrous Milton”
 - Category 5 major hurricane
 - Max. sustained winds of 180 mph
 - Landfall near Siesta Key, FL
 - Second most intense hurricane recorded in the Gulf of Mexico

THE PROTAGONISTS



SUPPORTING CHARACTERS



FEMA



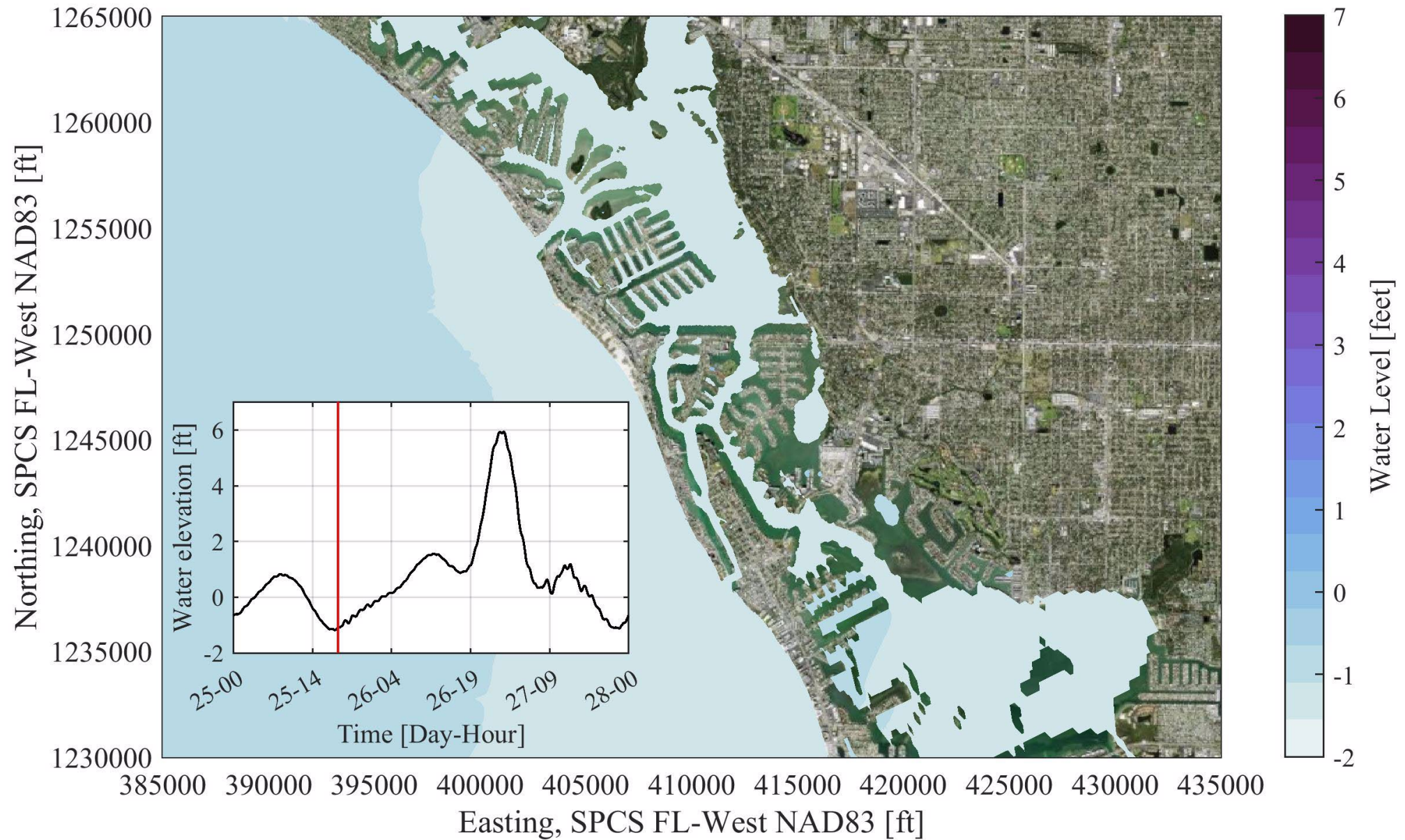
PINELLAS COUNTY





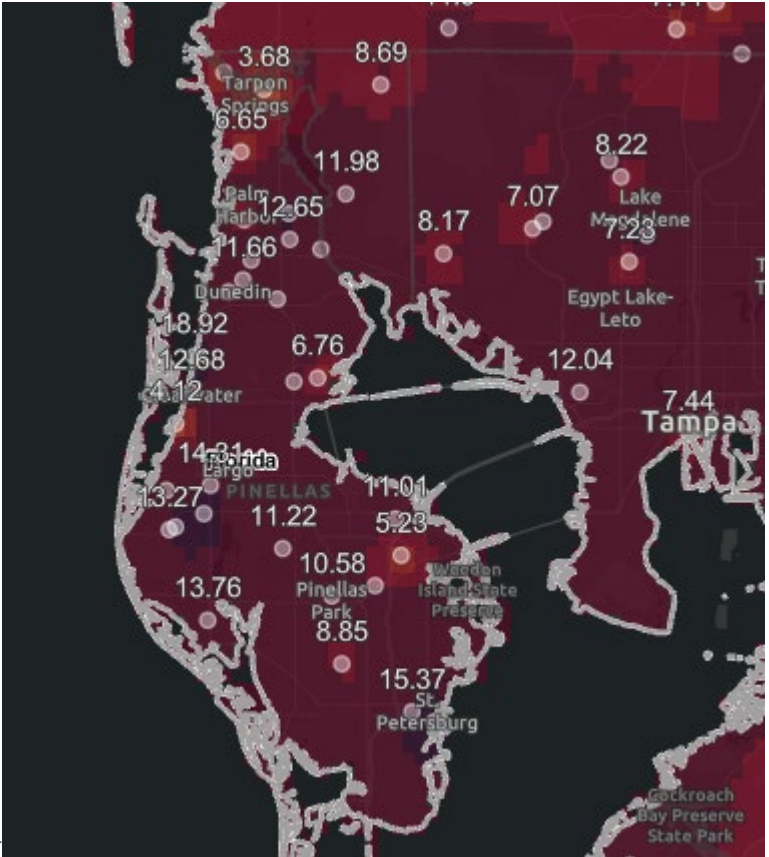
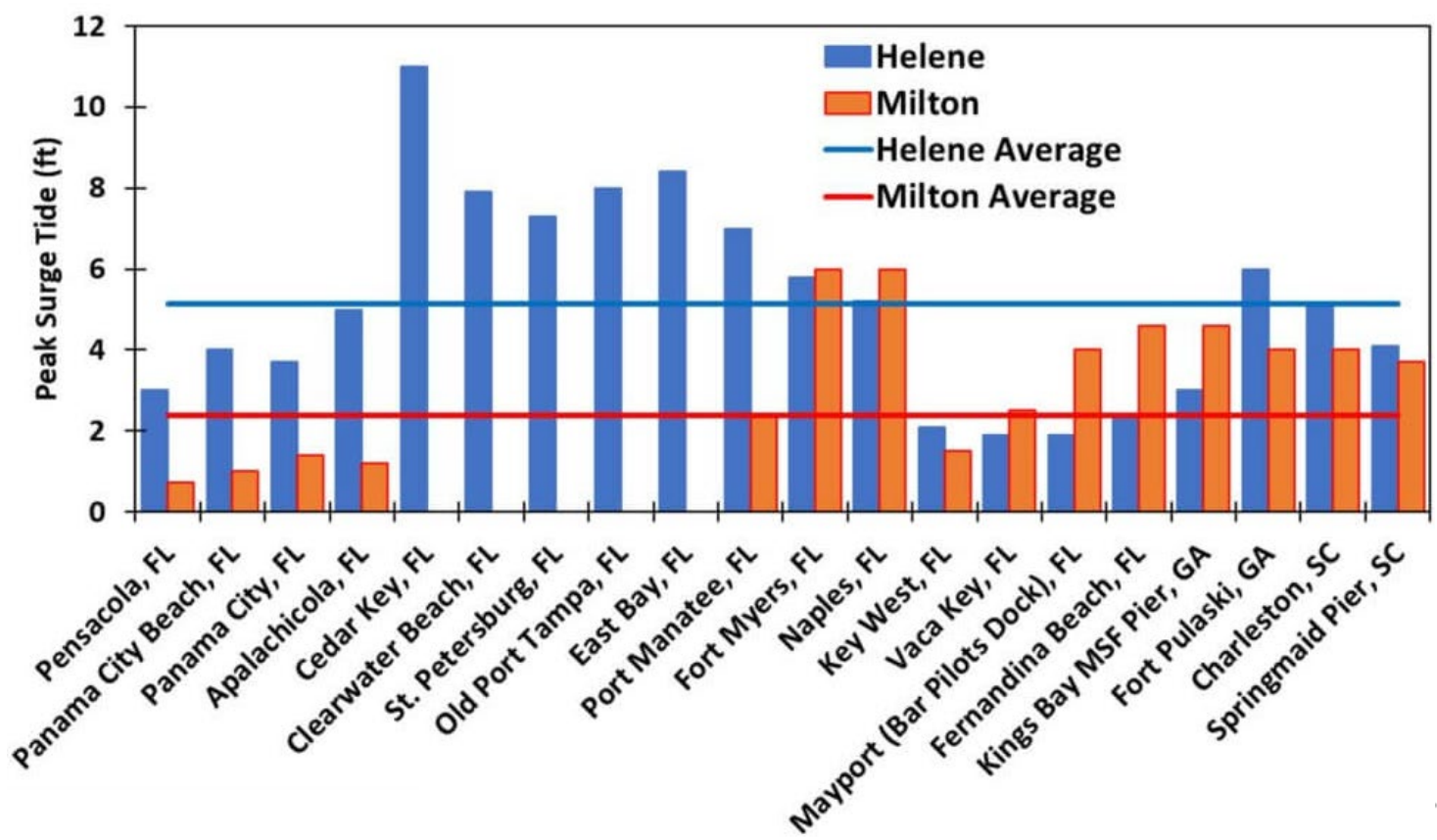
HURRICANE HELENE

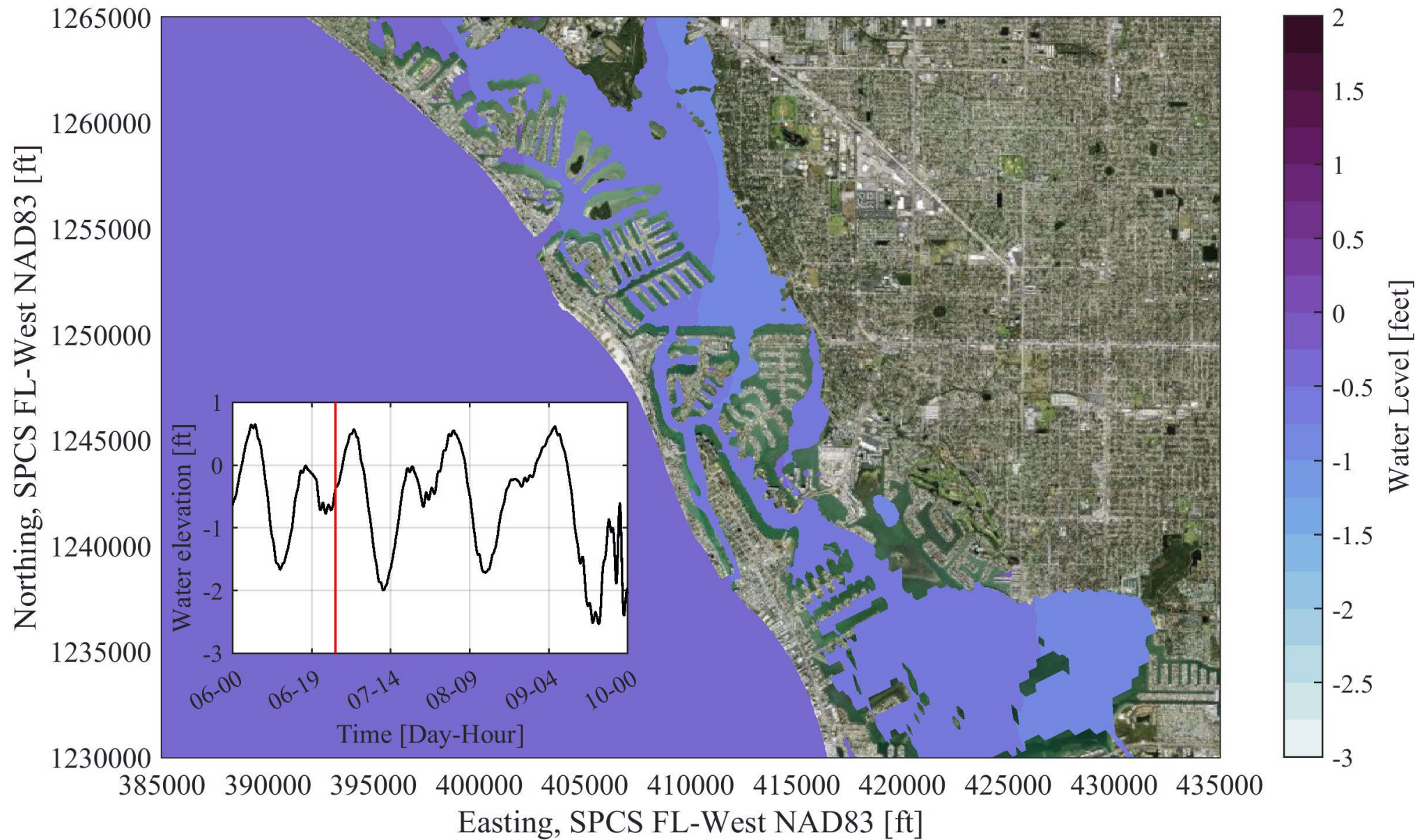
- Major surge event with overnight flooding
- Record surge levels
 - 7.2' in East Bay
 - 6.8' Old Port Tampa
 - 6.5' in Clearwater Beach
 - 6.3' in St Petersburg
- Temporary closure of barrier islands



HURRICANE MILTON

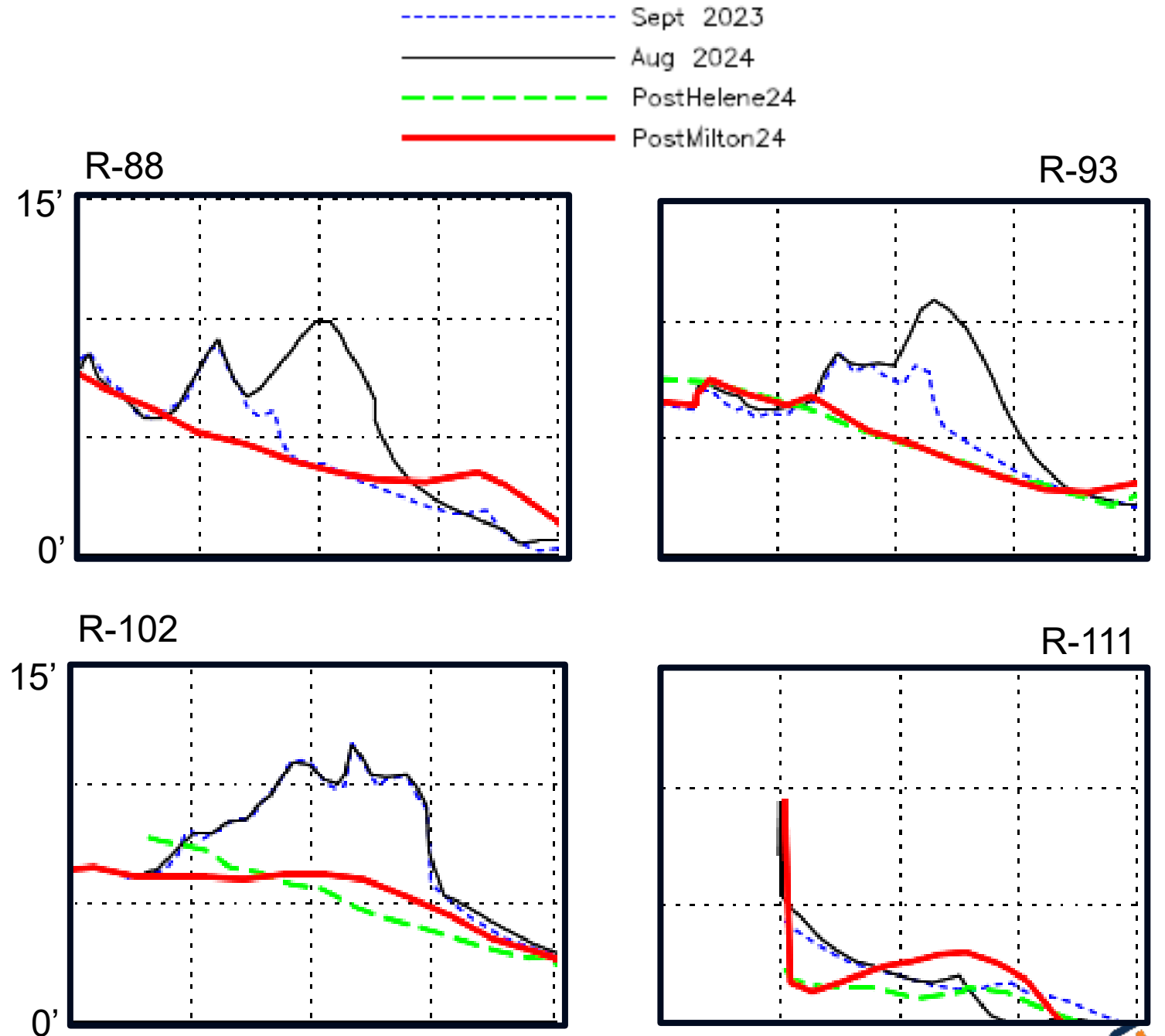
- Major wind and rainfall event
 - 18.75” at Albert Whitted Airport in 48 hours
- Avoided catastrophic storm surge





CUMULATIVE IMPACTS

- Almost total loss of dune and dune vegetation Countywide
- Extreme lowering of the beach
- Overtopping of seawalls
- Overwashed sand
- Massive debris fields
- Structural impacts



CUMULATIVE IMPACTS



CUMULATIVE IMPACTS



CUMULATIVE IMPACTS

- MHW Shoreline Changes
 - Average: -13.8 ft
 - Sand Key: -14.9 ft
 - Treasure Island: -19.9 ft
 - Long Key: -4.5 ft
- Volumetric Changes
 - Above MHW: -505,000 cy
 - Above DOC: +608,000 cy



CUMULATIVE IMPACTS



THE NEXT CHAPTER



- County is conducting emergency/expedited permitting
- Construction ASAP
- Potential 2.5 MCY project
- Busy 2025 for Captain John Bishop and crew

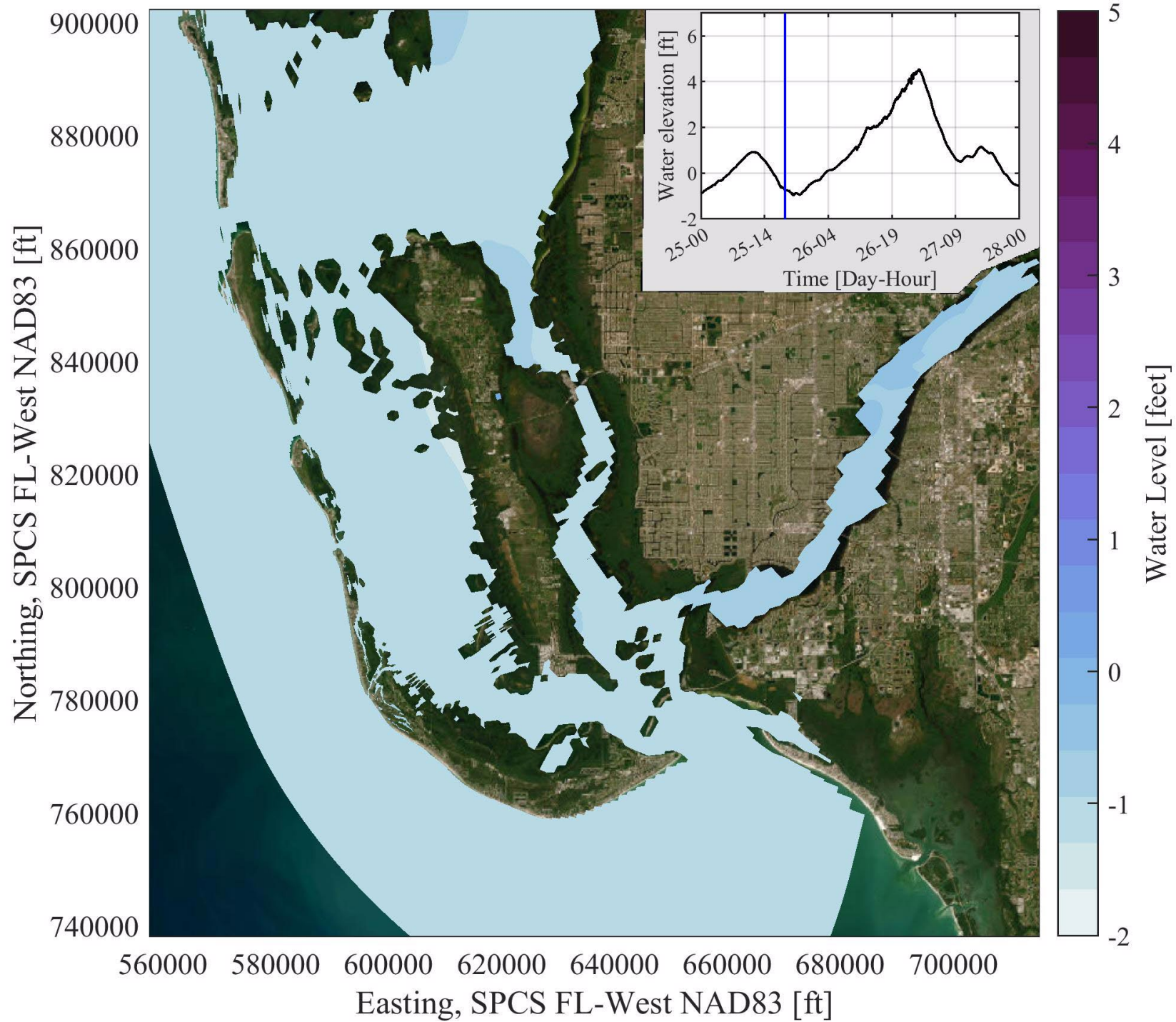
CAPTIVA ISLAND



HURRICANE HELENE

- Major surge event with overnight flooding
- Surge of between 4 to 5' along Captiva and Sanibel Islands
- Overwashed sand

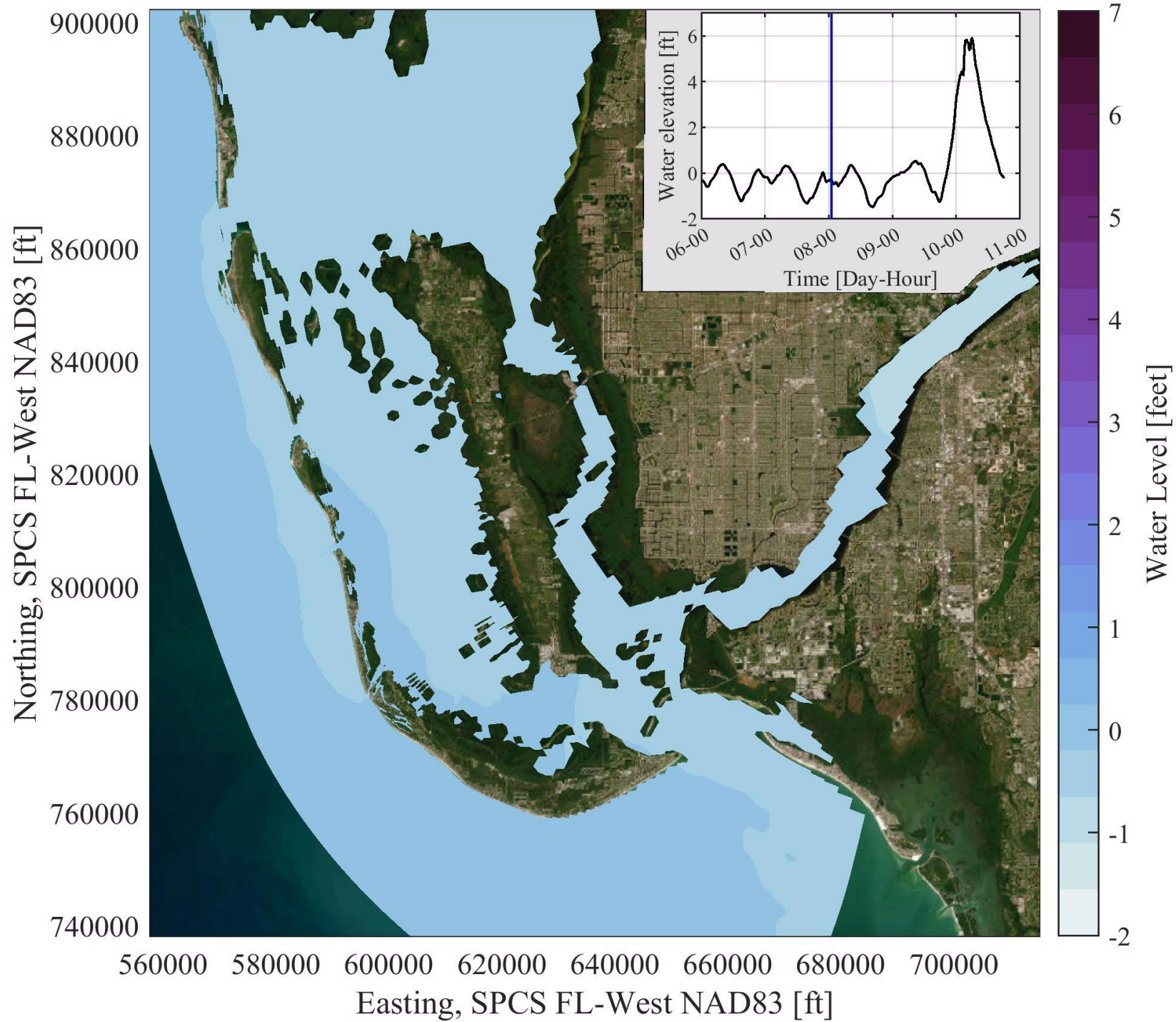




HURRICANE MILTON

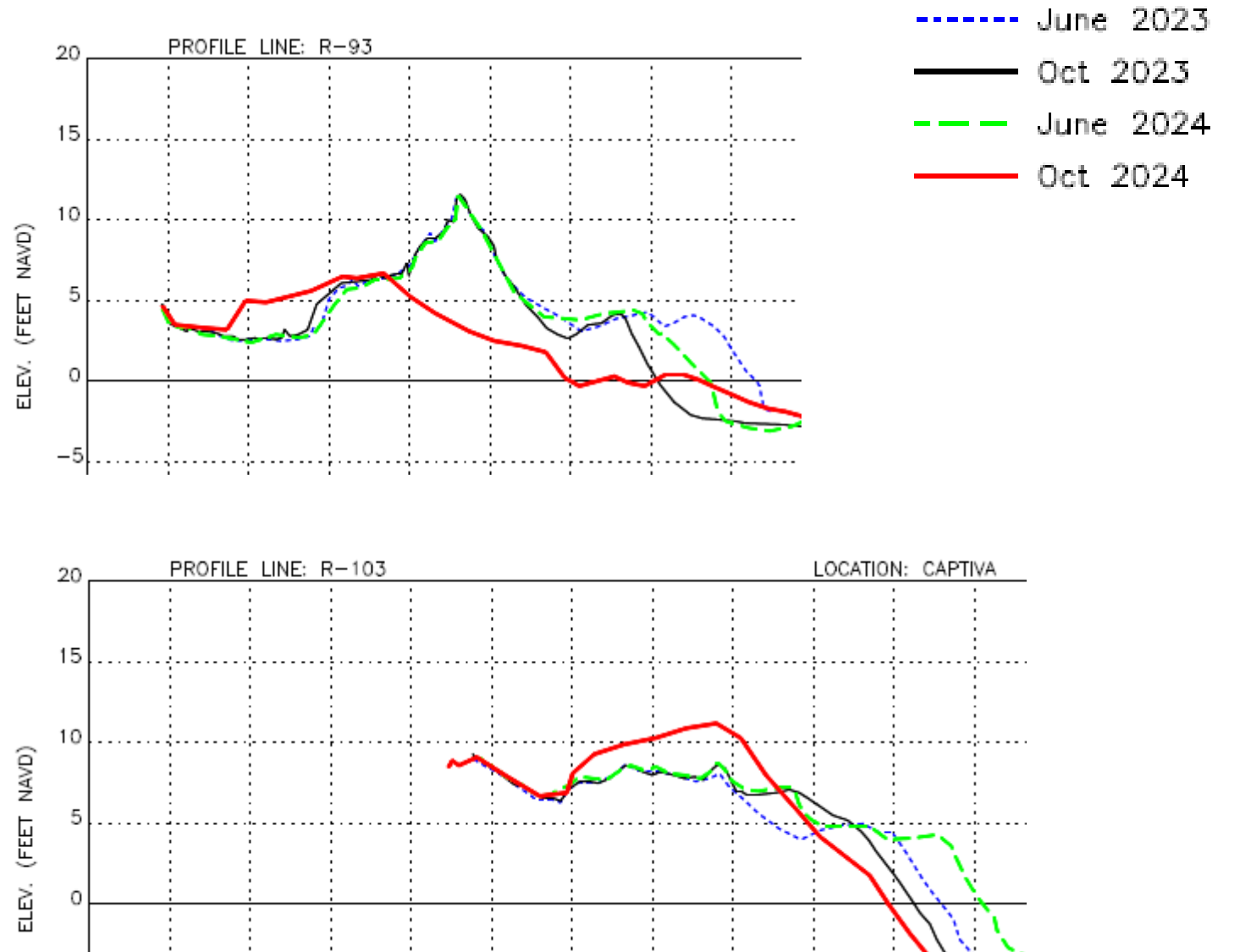
- Major surge and wave event
- Surge of between 5 to 6' along Captiva and Sanibel Islands
- Gusts of 72 mph





CUMULATIVE IMPACTS

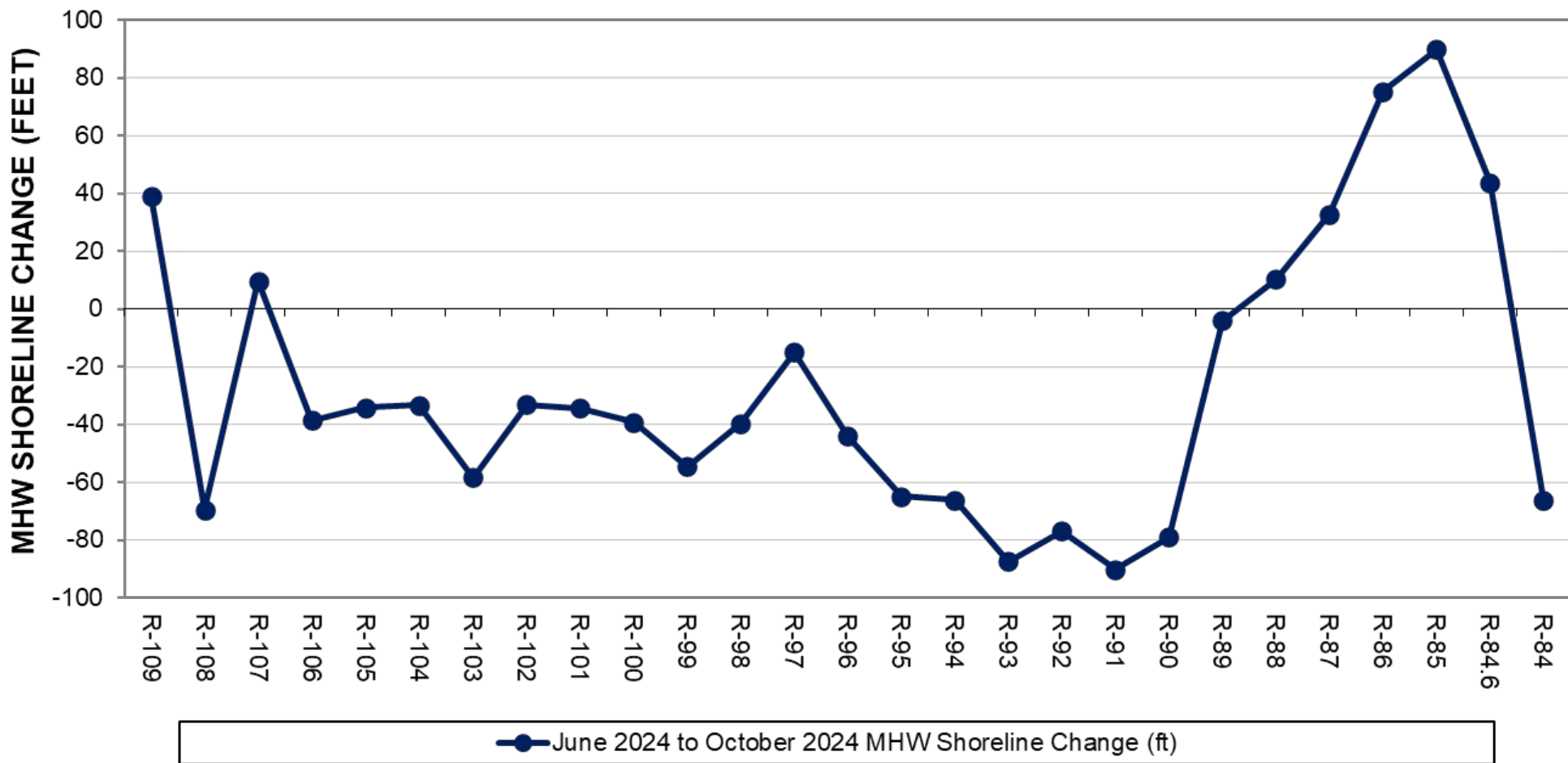
- Total loss of dune north of Tween Waters (center island)
- Extreme lowering of the beach
- Re-attachment bars
- Overwashed sand
- Loss of Australian Pines
- Structural impacts



CUMULATIVE IMPACTS

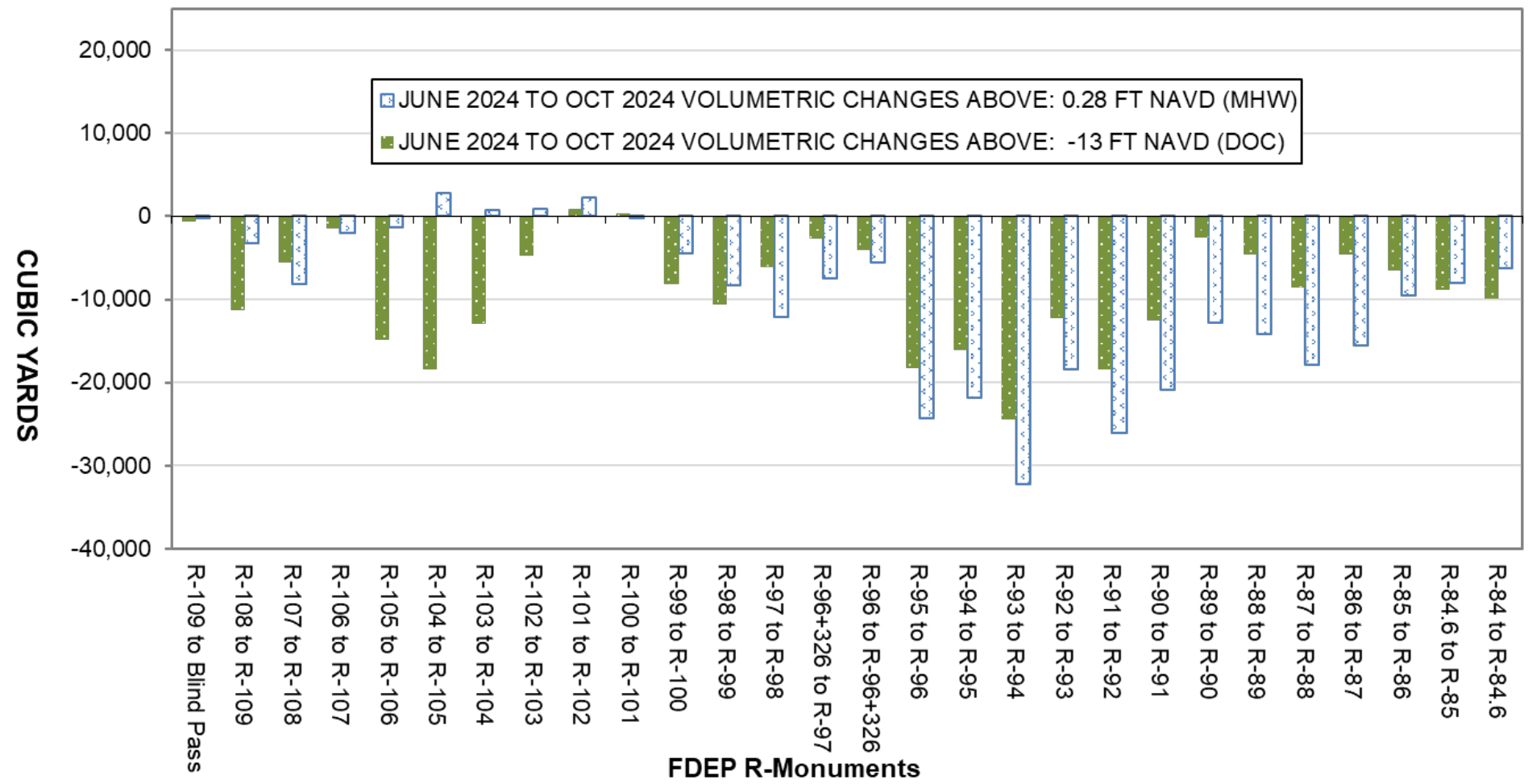
- MHW Shoreline Changes
 - Average: -27.0 ft
 - Max: -90.1 ft (R-91)
- Volumetric Changes
 - Above DOC: -247,590 cy
 - Construction Template: -381,409 cy





FDEP R-Monuments





1988 Pre-beach Management Program



Post-Nourishment (2021)



Post-Milton



1/2021



80-120 ft of mature,
vegetated dune



Jan. 2021

Oct. 2024



[illegible][illegible][illegible]

An aerial photograph of a coastal residential area. A road labeled "S Seas Plantation Rd." runs diagonally from the top right towards the bottom center. Along the left side of this road, several houses are visible, some with swimming pools. The label "Beach Homes" appears twice along the road. Two large yellow arrows point to specific locations: one at the top left near the beach, and another at the bottom center near a house with a pool. The ocean is visible on the far left, and dense vegetation is on the right. In the bottom right corner, there is a NOAA logo and the text "NOAA | ©".





CUMULATIVE IMPACTS



CUMULATIVE IMPACTS



CUMULATIVE IMPACTS



CUMULATIVE IMPACTS



CUMULATIVE IMPACTS



CUMULATIVE IMPACTS



THE NEXT CHAPTER

- Great Lakes Dredge & Dock already under contract
- Construction starting early summer
- 800,000 to 1MCY project
- Enhanced dune restoration areas



CLOSING THOUGHTS



“Pete lived for LIFE, in all its richness, beauty, and joy. He will always be our sun.”

For Pete’s sake, enjoy every moment here on these beautiful white sand beaches.”



An aerial photograph of a coastal scene. The top half shows the ocean with waves breaking onto a wide, sandy beach. The bottom half shows a row of modern, multi-story houses with flat roofs and swimming pools, situated behind a line of trees. The text "THANK YOU" is overlaid in large white letters on the left side of the image.

THANK YOU

