



# EMERGENCY BEACH RESPONSE AT BIG HICKORY ISLAND, FL

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# LOCATION MAP



# 2013 PROJECT DETAILS



- ▶ 100,000 CY nourishment from Ebb Shoal
- ▶ 7 Pile and Panel, tapered groins
- ▶ Tidal Breach closed/sealed

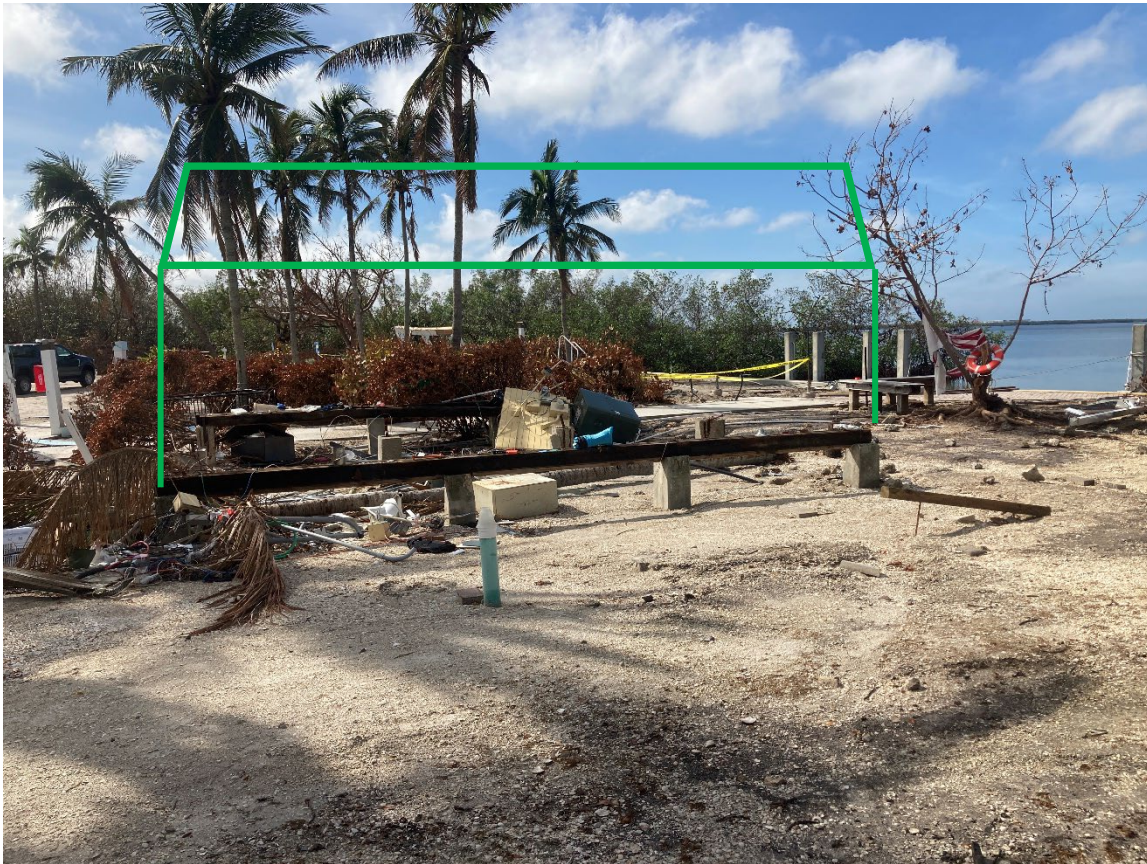


# PROJECT CHRONOLOGY

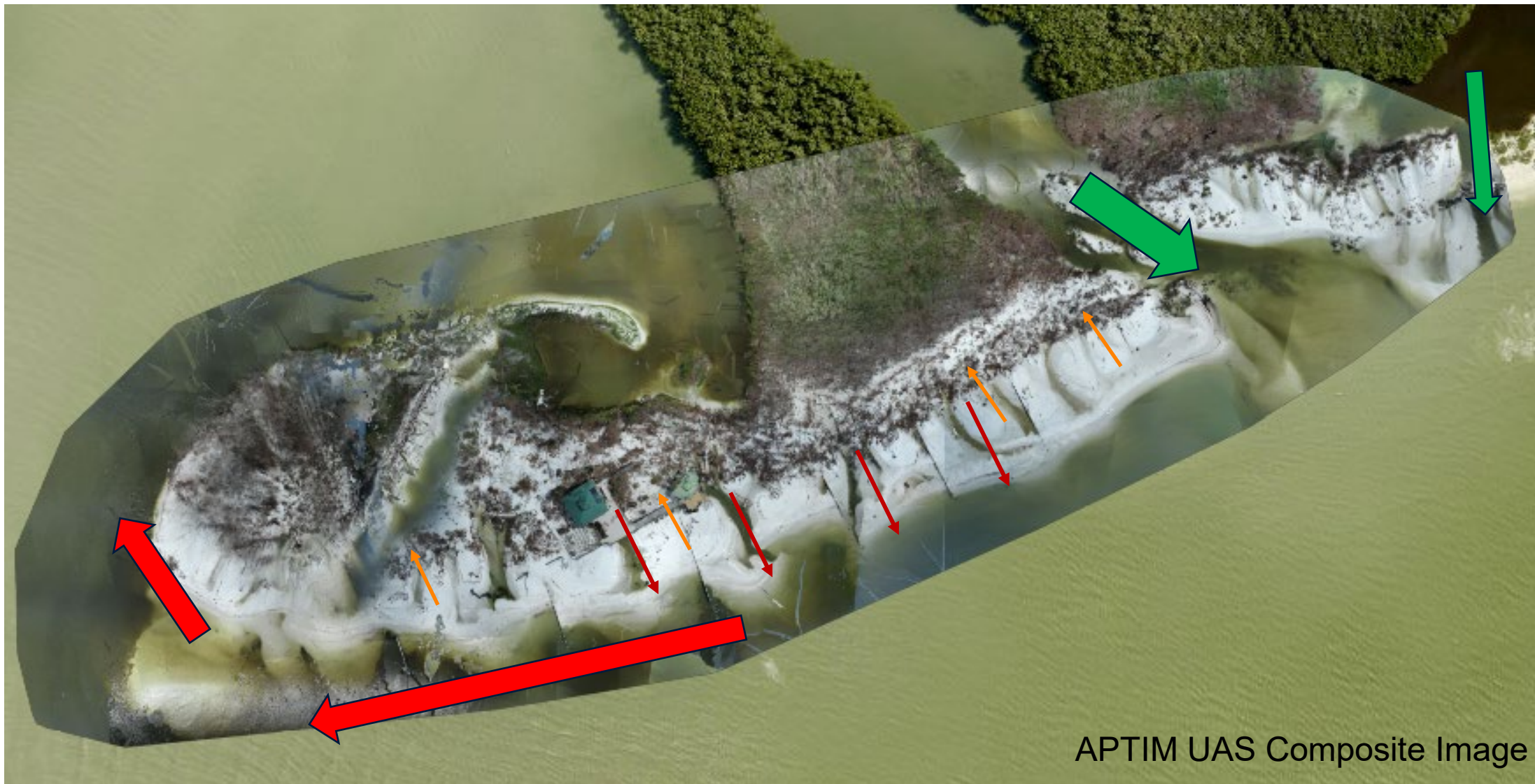
- ▶ 2021 APTIM retained by PLCA to design and permit a beach nourishment
- ▶ Summer 2022 Bidding with award to Energy Resources, Inc.
- ▶ August 2022 Preconstruction Activities
- ▶ September 15, 2022 Contractor Preconstruction Conference
- ▶ Hurricane Ian makes landfall with maximum storm surge in southern Lee County
- ▶ Adjacent bridges closed by County



# POST STORM CONDITIONS



# STORM PROCESSES



APTIM UAS Composite Image



# POST STORM CONDITIONS





# POST STORM



# BREACH



# CR 865 BRIDGE AND RIGHT OF WAY



# PROJECT CHRONOLOGY

- ▶ October 10 engineering inspection of beach
- ▶ October-November Project surveyed, and re-engineered
- ▶ Coordination with FDEP
- ▶ Bridges opened for public use
- ▶ Energy Resources, Inc. mobilizes in January 2023.
- ▶ Project completed in May 2023.



# HYBRID SAND DELIVERY SYSTEM

- ▶ Truck haul of sand from Stewart Mining (Immokalee) to the Bridge Right of Way.
- ▶ First implementation of the delivery system for beach nourishment in Florida.



# HYBRID SAND DELIVERY SYSTEM

- ▶ Fluidized sand is pumped 2500 feet to Big Hickory Island where it was hydraulically placed.



# PROS AND CONS OF HYBRID SAND DELIVERY SYSTEM

Advantages	Disadvantages
Limited Road or Beach Access	Limited production rate (transfer site size)
Eliminate offroad dump trucks	
Reduced beach construction footprint	
Hydraulic sand placement	
Reduced Labor	



# BEACH RESTORATION





# BREACH CLOSURE



# OTHER ISSUES TO REOPENING OF THE BEACH PARK

- ▶ Provide a Safe Positive Experience for All Visitors.
- ▶ Limited access for boaters



# POST STORM WATER AND ELECTRIC SERVICE



# INFRASTRUCTURE REPAIRS



# DEBRIS MANAGEMENT



# DEBRIS MANAGEMENT



# FINITE FUNDING

- ▶ Beach Restoration with Breach Closure \$3.5M
- ▶ Funding Applications



# LOCAL MUNICIPAL GOVERNMENT SUPPORT

- ▶ Emergency – Days to Weeks
- ▶ Recovery – Weeks to Months





# ACKNOWLEDGEMENTS

- ▶ Pelican Landing Community Association
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- ▶ Stephanie Doro
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- ▶ APTIM Survey Crew
- ▶ Patrick Durden, UAS Pilot





# QUESTIONS

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