

# Beach Nourishment



Geosyntec<sup>®</sup>  
consultants

ATM  
A Geosyntec Company

# Coastal Processes Overview



- Net movement of sand on our beaches is from North to South
- Lake Worth Inlet interrupts the natural flow of sand to the beaches to the south
- The program is based on maximizing sand bypassing around the inlet and nourishment to offset ongoing and historic losses
- Two major nourishment projects: Mid-Town and Phipps Park

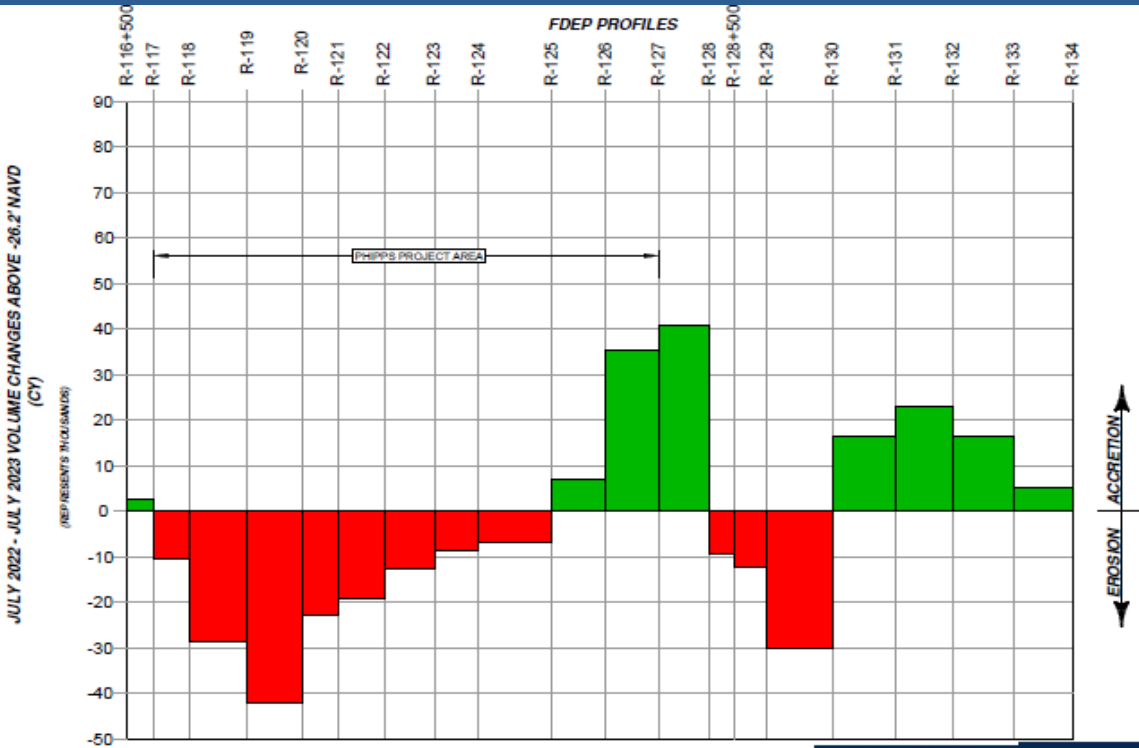


# Beach Management Agreement (BMA)

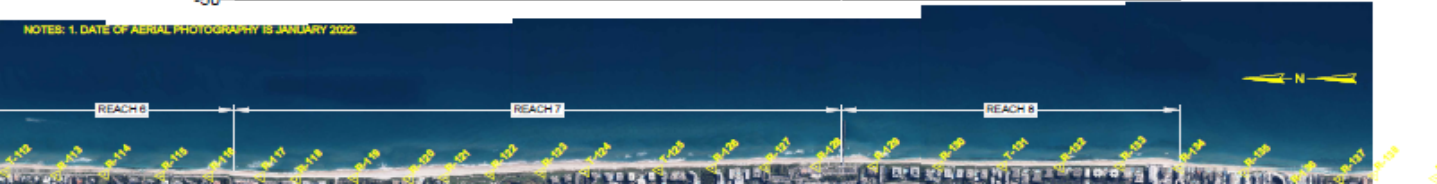
- Agreement with State regulatory agencies to provide expedited approvals for selected projects
- BMA covers coastal shoreline from Lake Worth Inlet to South Lake Worth Inlet (approx. 15 miles)
- BMA includes requirements for physical monitoring of projects and coastal system conditions
- The area is sub-divided into 10 Reaches (areas)
- Activity and annual monitoring is limited to the northern 8 Reaches (Approximately 12.2 miles)



# Reaches 7 & 8 (One Year)

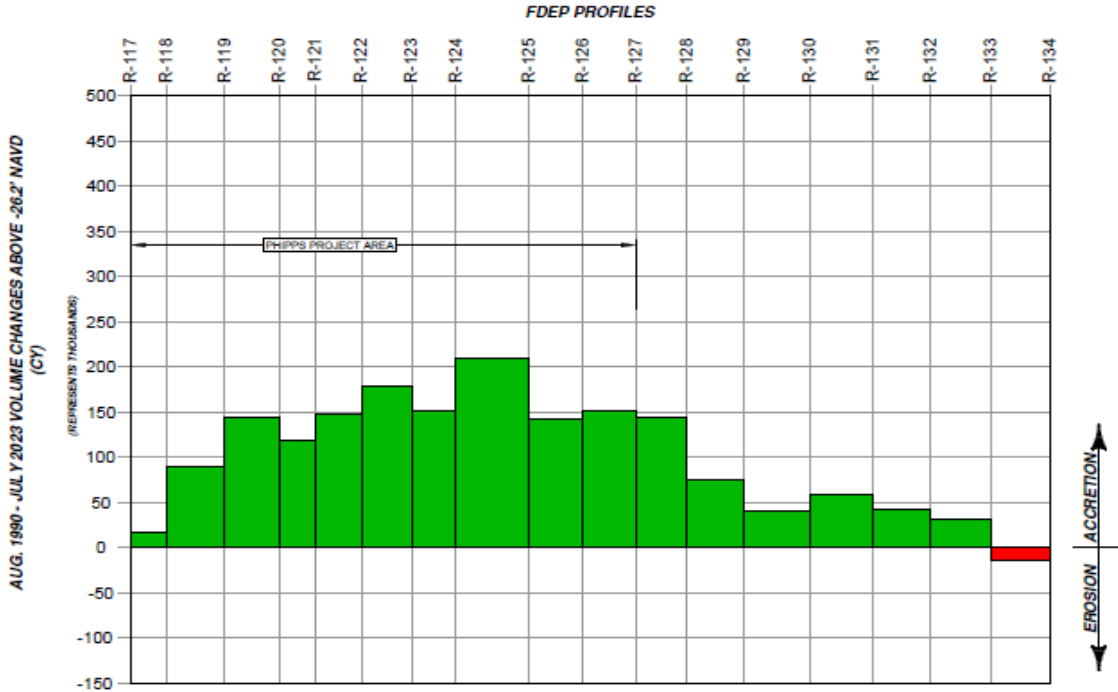


NOTES: 1. DATE OF AERIAL PHOTOGRAPHY IS JANUARY 2022.





# Reaches 7 & 8 (Since 1990)



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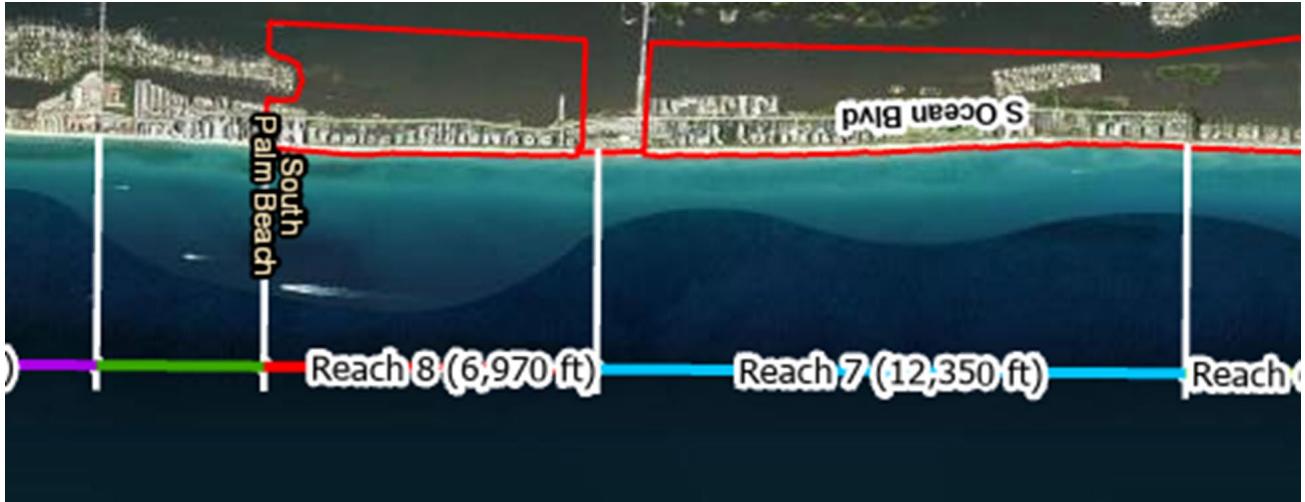


# Current Program Status (Relative to 1990 Conditions)



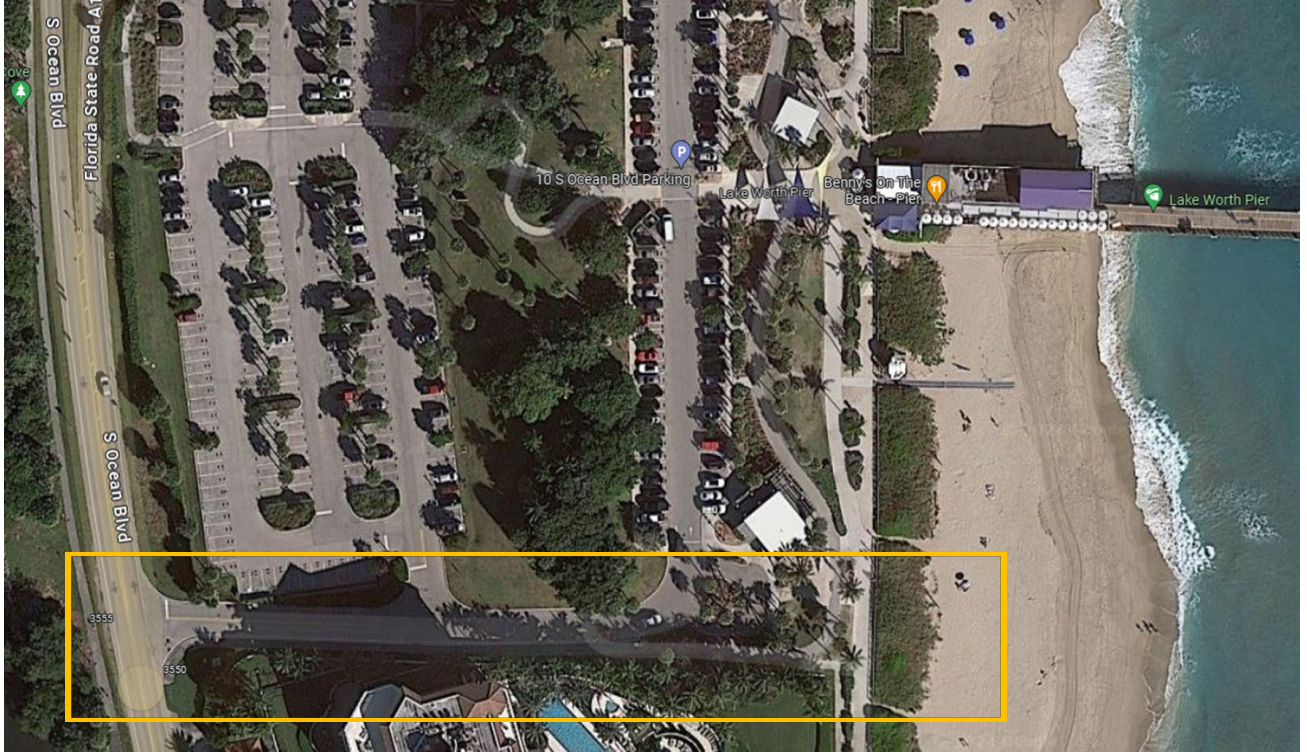
- Net Volume Gain: 5.15 Million cubic yards
- Net Shoreline Advance: +38.3 feet
- Sand is not evenly distributed throughout the Town
- Beach nourishment provides an infusion of sand in locations where permits allow
- Areas with nearshore hardbottom are harder to address
- Program is working

# Phipps Ocean Park (Reach 7 and 8 Renourishment)





# Potential Access Through Lake Worth Beach





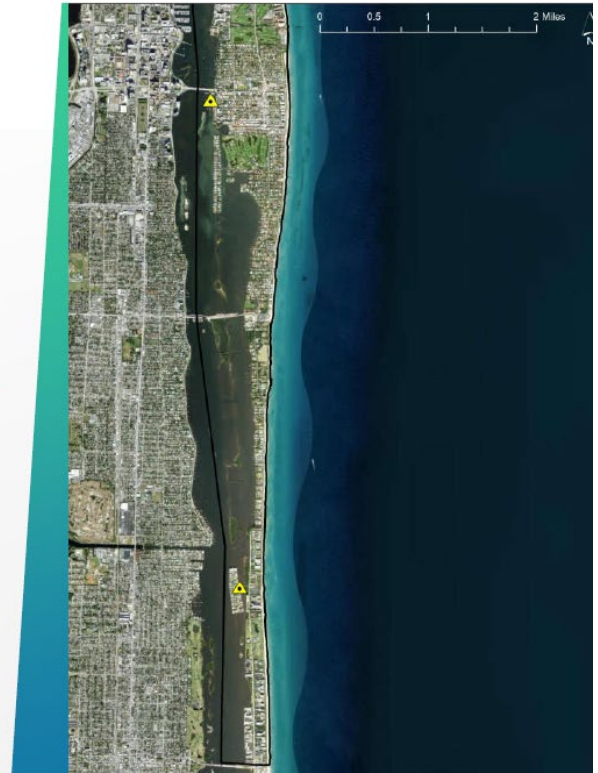
# Tidal Gauges



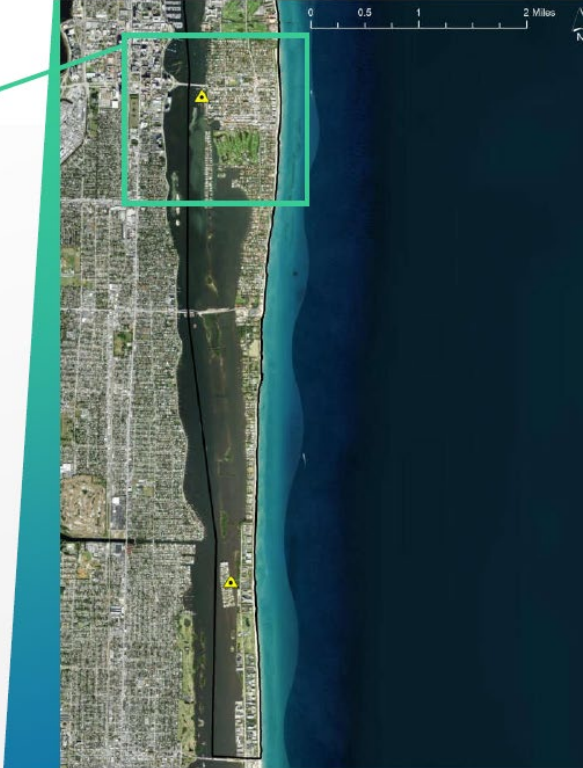


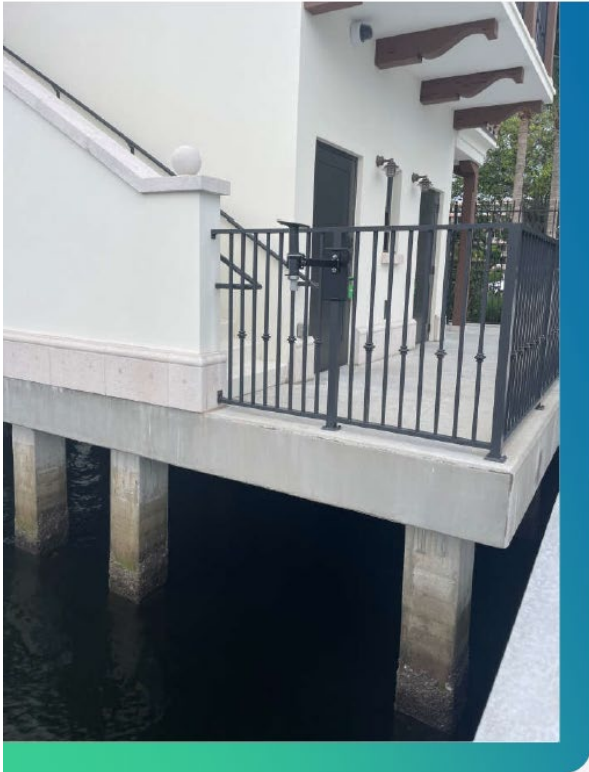
## Town of Palm Beach Water Level Monitoring

- Woods Hole Group installed two stations on the Lake Worth side of Palm Beach on December 12, 2023.
- The purpose is to provide site-specific measurements of water level where previously no data were available.
- The measurements:
  - Record actual water levels corresponding to events of interest (e.g., King Tides, sunny flooding, storms with surge in the Lake, etc.).
  - Start to build a long-term record of water level to assist with future planning and engineering in the changing climate.
  - Can be used to distinguish the influence of storms and other climate events on water levels beyond normal tides.
  - Do not forecast water levels into the future.
- Data are publicly available.



# Station 1: Brazilian Dock, Town Marina



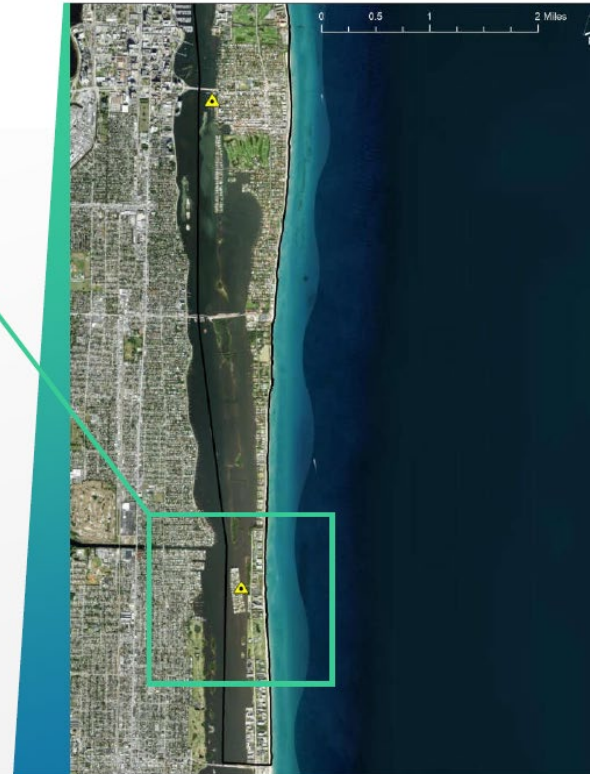


## Station 1: Brazilian Dock, Town Marina

- Water Level Sensor installed on the dock railing



## Station 2: Ibis Way Bridge





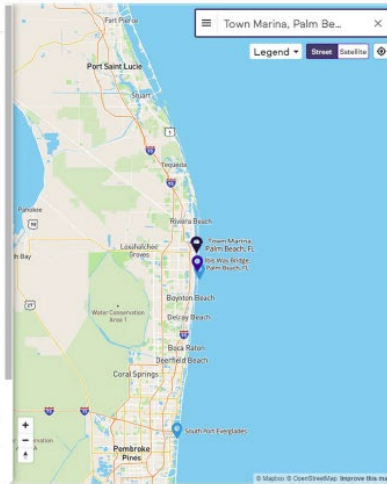
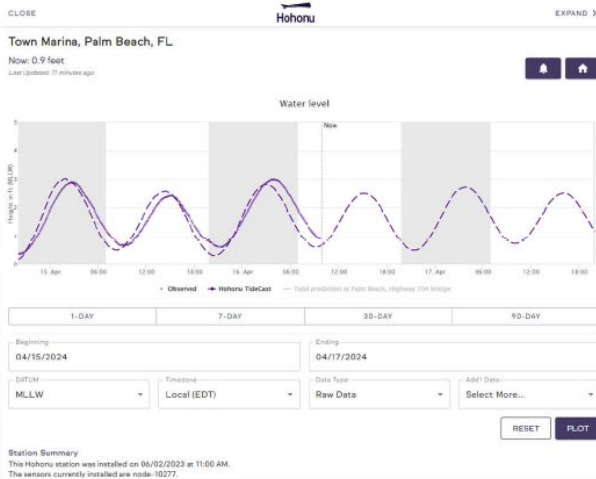
## Station 2: Ibis Way Bridge

- Installed on Ibis Way Bridge stanchion





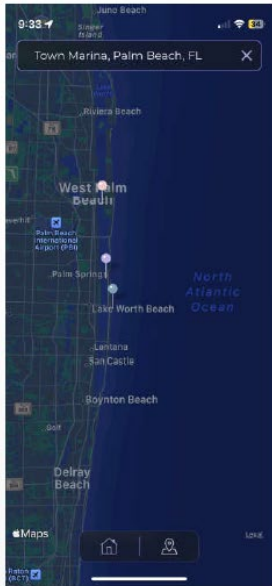
## Hohonu Real-Time Data Portal



- Free access to real-time water levels relative to station-specific MLLW datum.
- Includes a 4-day tidal prediction, specific to each station.
- Includes tide data and prediction at nearest NOAA Station at Lake Worth Pier.
- Can set up text alerts for high water levels.
- Can use API for integration to Town website.



## Hohonu Mobile (iOS) App *TideCast*



- Free *TideCast* iOS app available in Apple App Store.
- Includes live tide data, tidal predictions, and weather at each station.
- Also includes nearest NOAA stations.