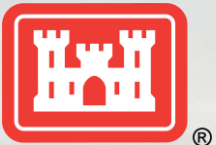


FEDERAL BEACHES 101

A Primer on Coastal Storm Risk Management Projects

1. History, Feasibility, and Authorization
2. Economic Considerations
3. Design and Implementation
4. Sediments
5. Environmental Considerations

U.S. Army Corps of Engineers
Jacksonville District
September 2020





SAND SOURCES FOR BEACH NOURISHMENT



Feasibility Study

- BEACH CHARACTERISATION
- DESKTOP STUDY
- PRELIMINARY INVESTIGATION
- PRELIMINARY BORROW AREA DESIGN

Final Design

- DESIGN LEVEL INVESTIGATIONS
- FINAL BORROW AREA DESIGN
- PERMITTING

Construction

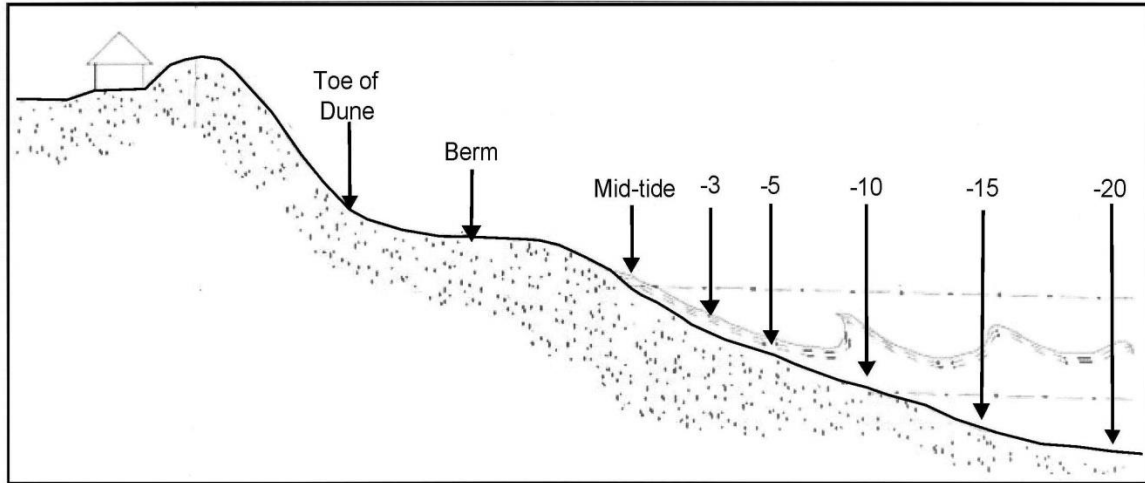
- BEACH CONSTRUCTION
- POST CONSTRUCTION SAMPLING





FEASIBILITY STUDY PHASE

BEACH CHARACTERIZATION



- Beach sample collection along R-monument profile lines
- Representative profile lines in 2,000-5,000 foot intervals
- Lab Analysis: Grainsize Analysis, Visual Shell, Calcium Carbonate Content, Munsell Color





FEASIBILITY STUDY PHASE

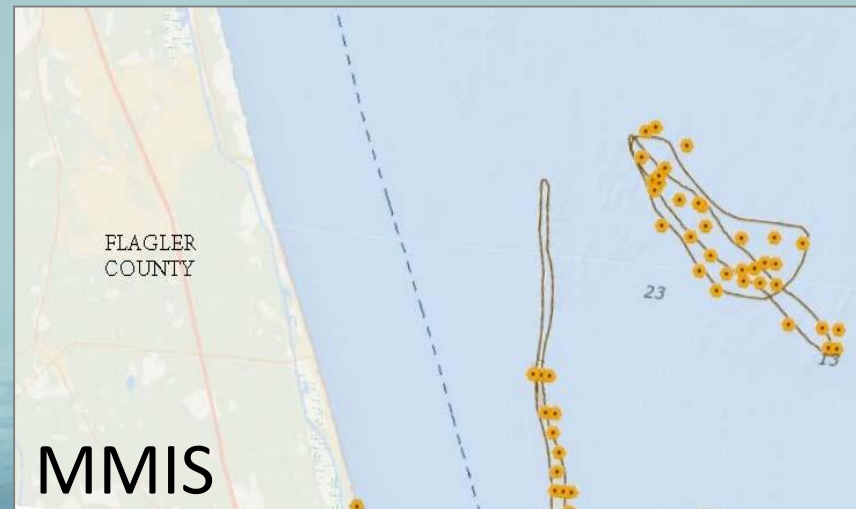
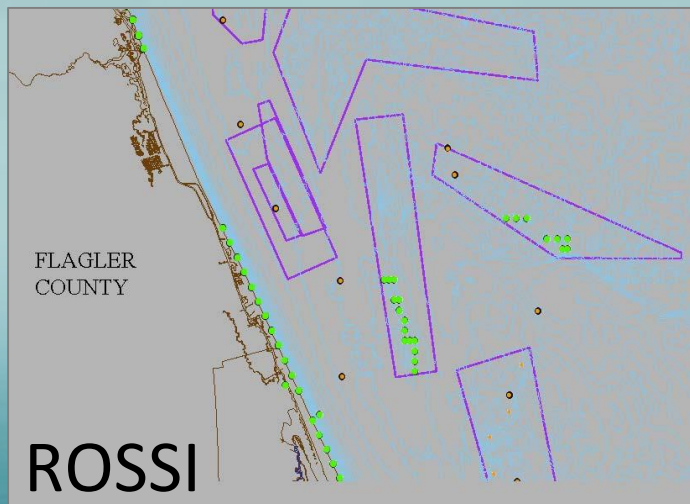
DESKTOP STUDY: SAND SOURCE SEARCH



REVIEW OF EXISTING INFORMATION:

- Regional Offshore Sand Source Inventory (Rossi)
- Marine Minerals Information System (MMIS)
- United States Geological Survey (USGS)
- National Oceanic and Atmospheric Administration (NOAA)
- Previous Investigation Reports
- Regional Sediment Management (RSM) Sources (Harbors, Inlets, Waterways)

EXAMPLE: FLAGLER COUNTY





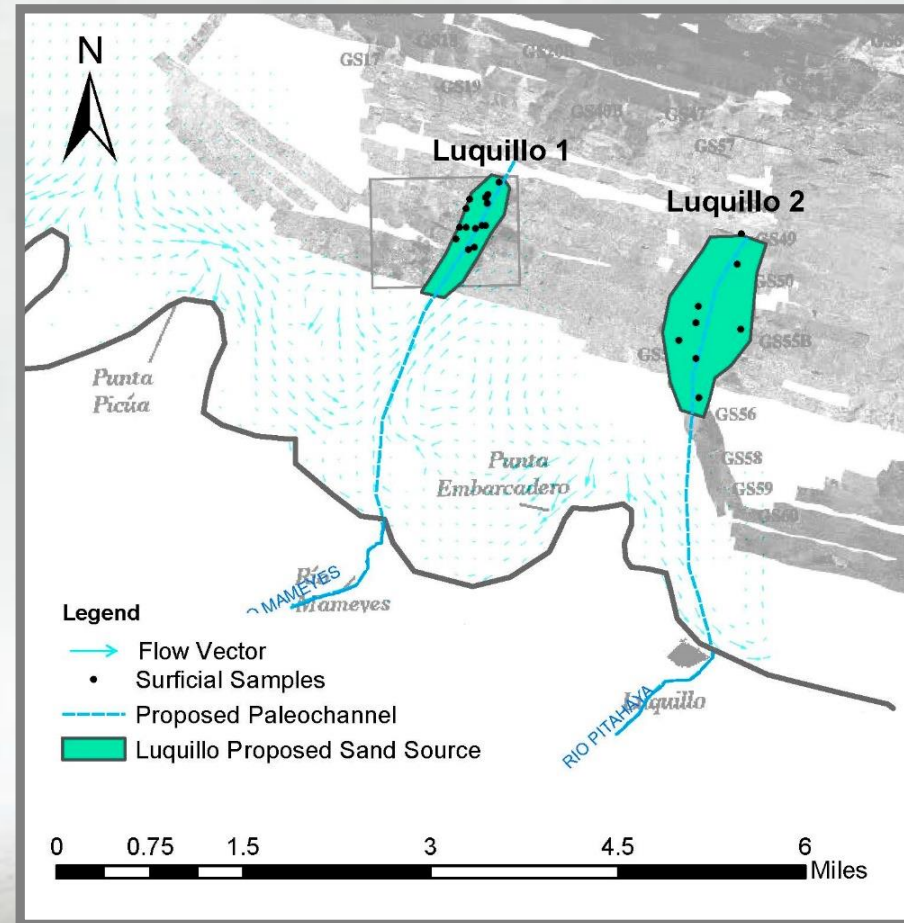
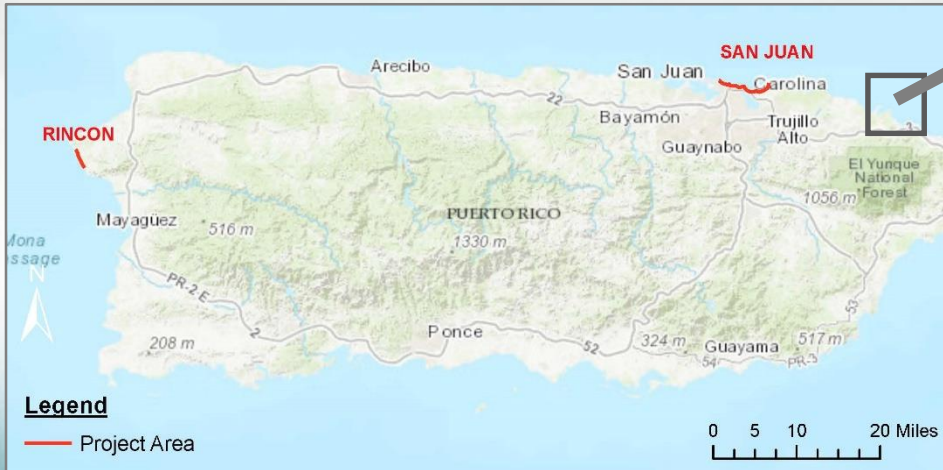
FEASIBILITY STUDY PHASE

DESKTOP STUDY: SAND SOURCE SEARCH



EXAMPLE: PUERTO RICO

- Limited Information Available
- USGS Geophysical Surveys (1996 & 1998)
- Surficial Sample Analysis
- Flow Model Data



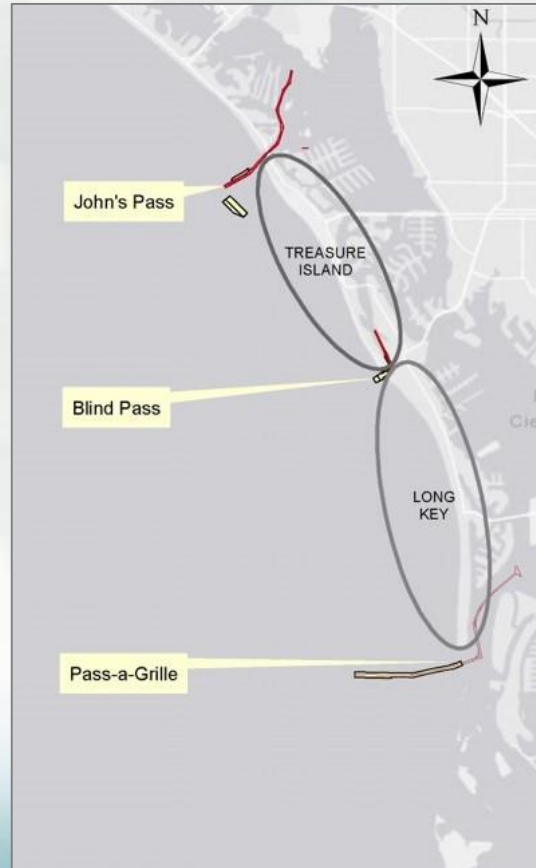


FEASIBILITY STUDY PHASE

DESKTOP STUDY: SAND SOURCE SEARCH - RSM SOURCES



EXAMPLE: PINELLAS COUNTY



EXAMPLE: PALM BEACH HARBOR





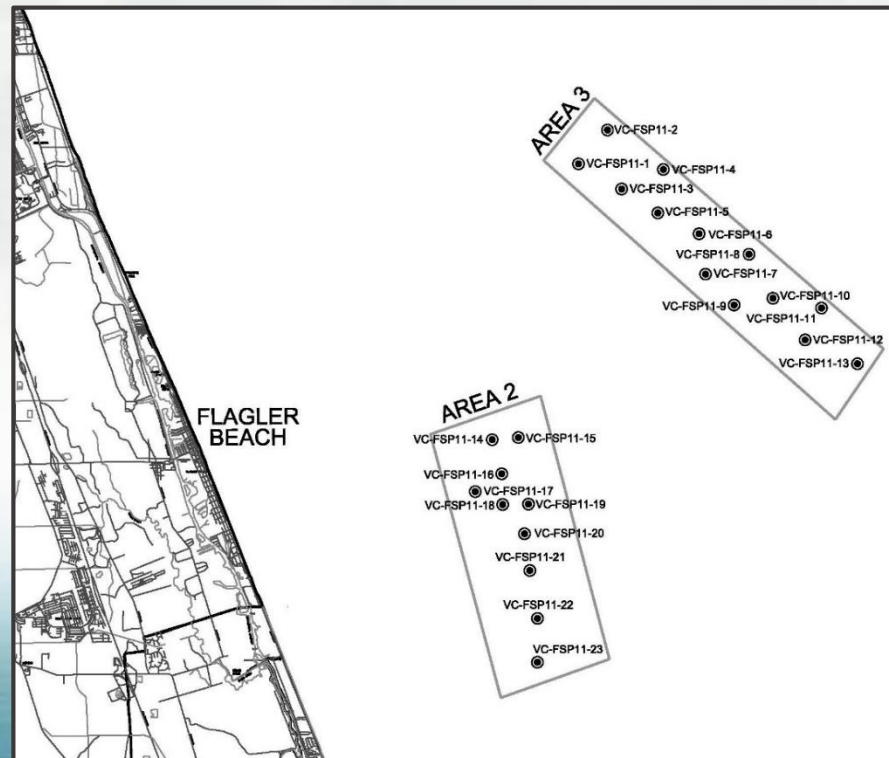
FEASIBILITY STUDY PHASE

PRELIMINARY INVESTIGATIONS & BORROW AREA DESIGN



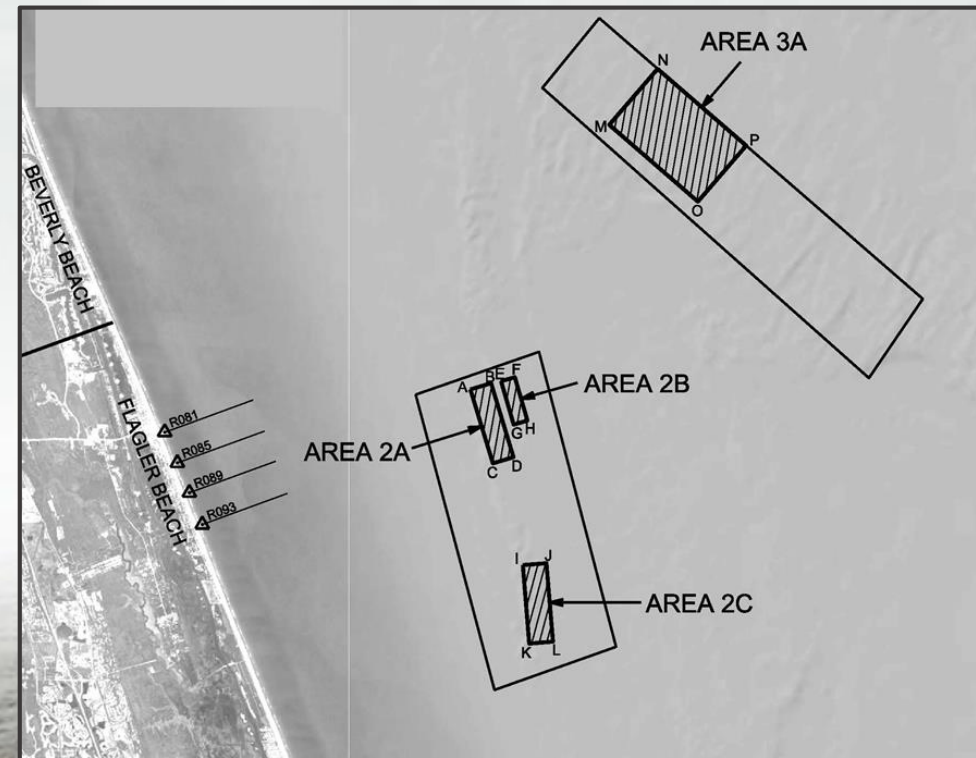
RECONNAISSANCE LEVEL INVESTIGATIONS

- Vibracore Borings (5,000 feet spacing)
- Lab Analysis of Selected Samples
- Geophysical Survey (Sub bottom Profiling)



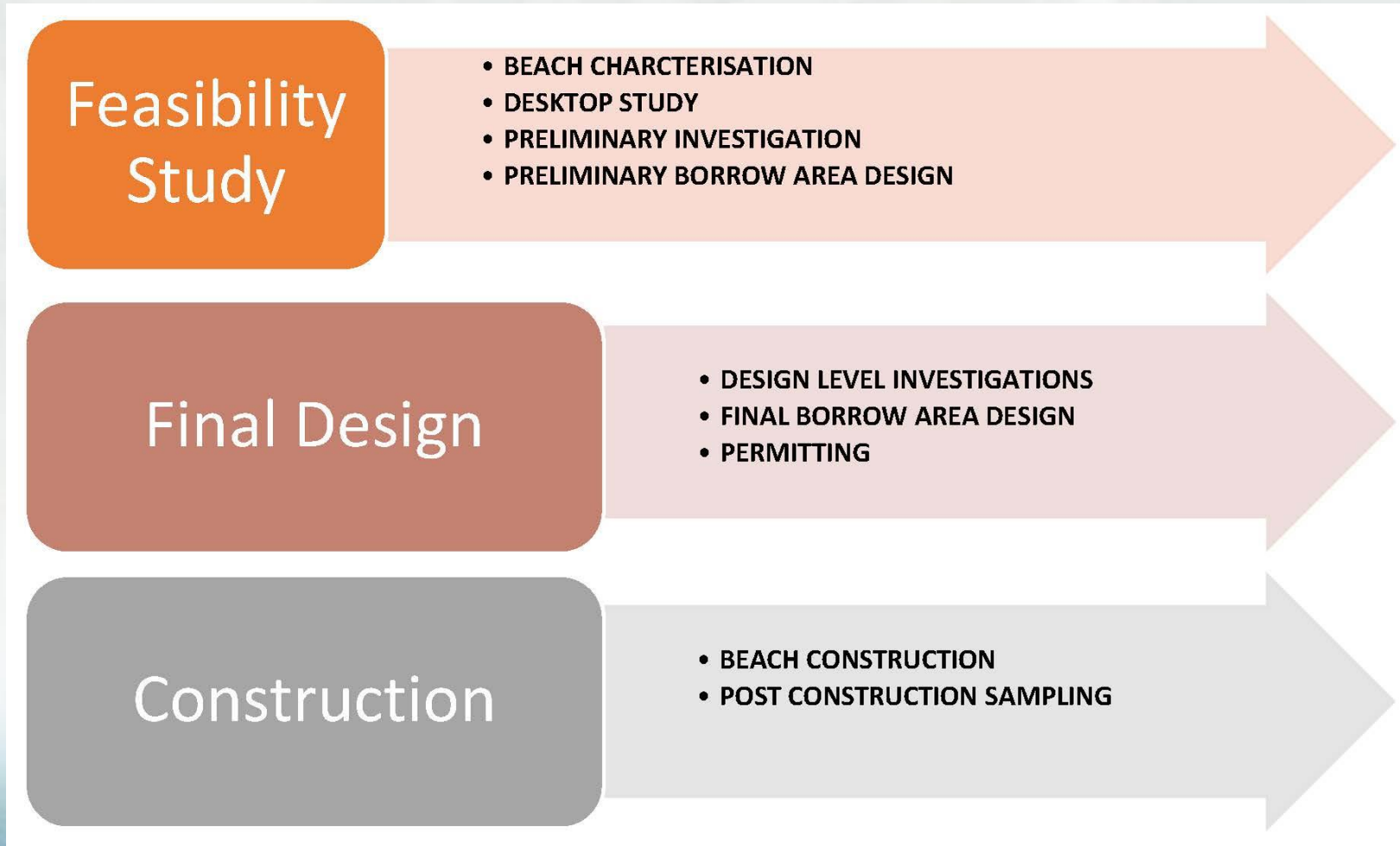
PRELIMINARY BORROW AREA DESIGN

- Compatibility with the Beach
- Economic Considerations





SAND SOURCES FOR BEACH NOURISHMENT



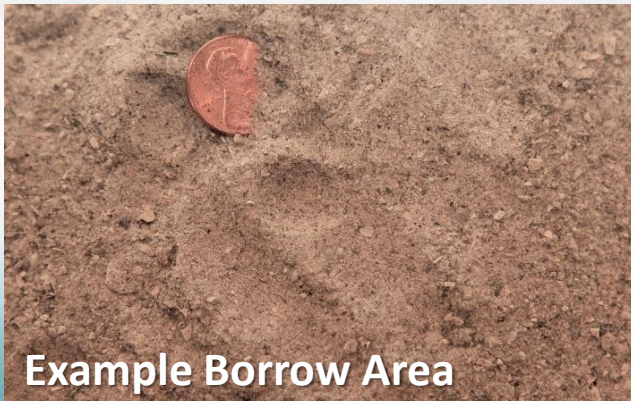


FINAL DESIGN PHASE

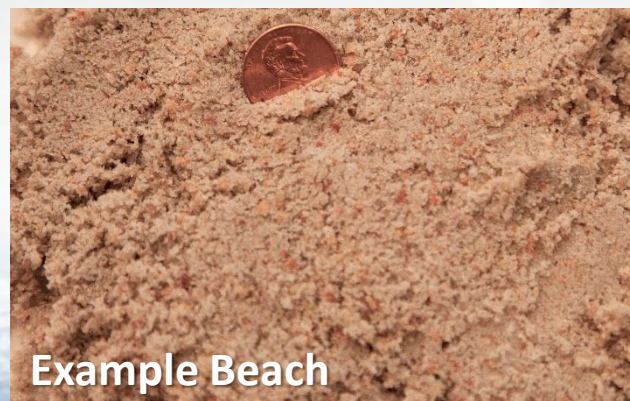
FINAL BORROW AREA DESIGN & PERMITTING



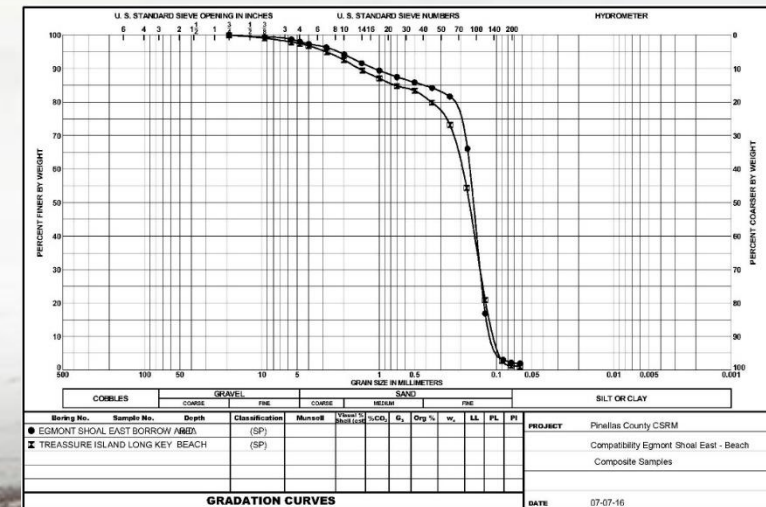
- Vibracore Collection in 1,000 feet Spacing
- Lab Analysis of Samples (grain size, components, visual shell, carbonate, color)
- Calculation of Grainsize Statistics
- Compatibility Analysis
- **Sand Source material must meet the FDEP's "SAND RULE" standards:**
Florida Administrative Code 62B-41.007(2)



Example Borrow Area



Example Beach





CONSTRUCTION PHASE

MONITORING DURING AND AFTER CONSTRUCTION





SAND SOURCES FOR BEACH NOURISHMENT

