

# ST. LUCIE COUNTY COASTAL STORM RISK MANAGEMENT (CSR) PROJECT SOUTH HUTCHISON ISLAND



## PROJECT OVERVIEW

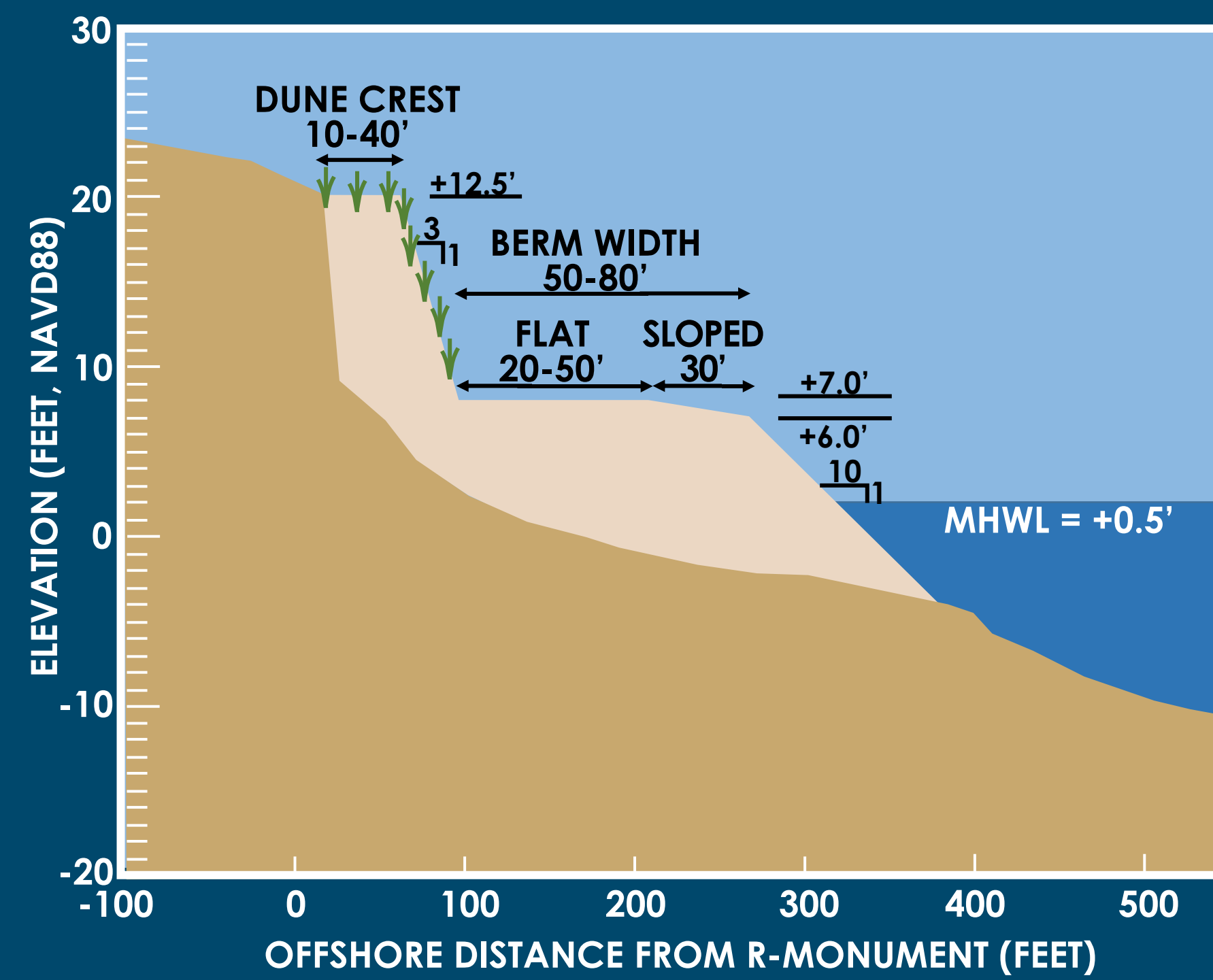
The St. Lucie County, Florida Coastal Storm Risk Management (CSR) Project is located on a natural barrier island along a shoreline vulnerable to storm-induced damages from tropical and extra-tropical storms. This project is intended to reduce the risk of damage to residential and commercial properties, recreational facilities including a regional public park, and an emergency evacuation route (State Road A1A).

Once constructed, the project will provide a holistic, environmentally-friendly defense against future storms, beach erosion, and sea level rise.

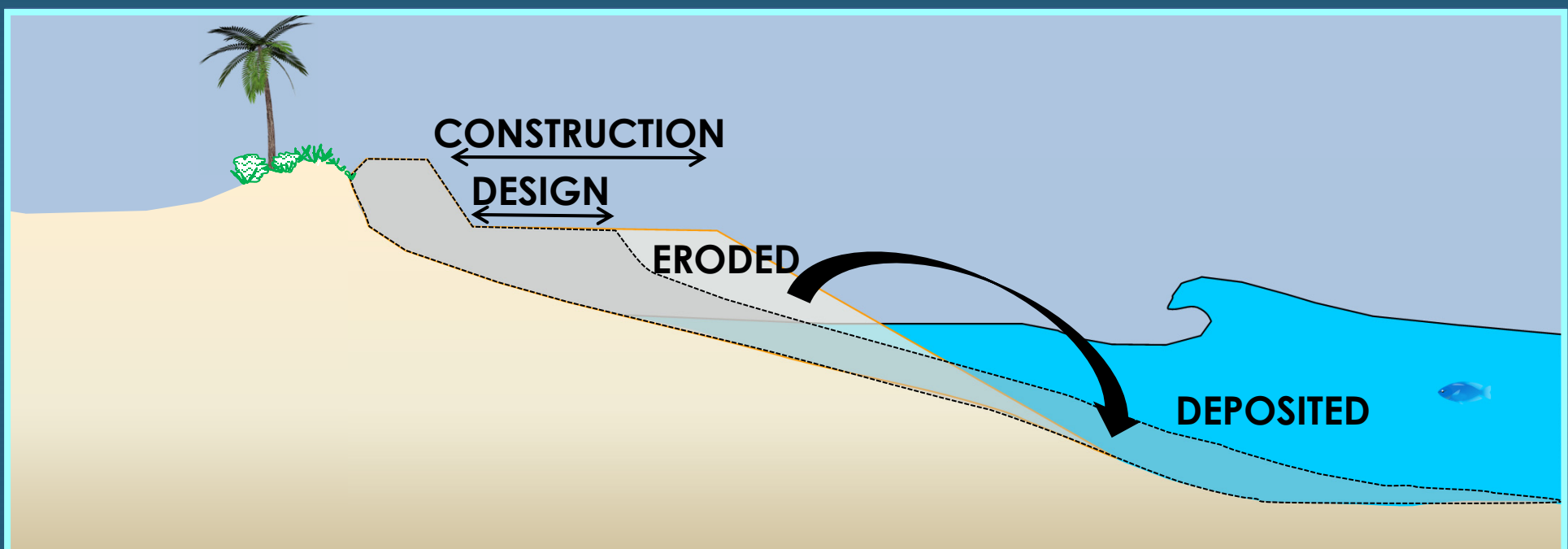


## PROJECT DESIGN

- Federal Participation: 50-year project life (after initial construction)
  - Initial Sand Volume: ~ 480,000 cubic yards
  - Borrow Sources: St. Lucie Shoals
  - Renourishment Volume: ~ 400,000 cubic yards
  - Renourishment Interval: ~ 18-years (2 over project life)
  - Typical Project Profile: The profile below reflects the average need for sand across the project area.
- ▶ Berm and Dune: 20-foot berm extension and maintenance of the existing dune profile (from +7 feet NAVD88)



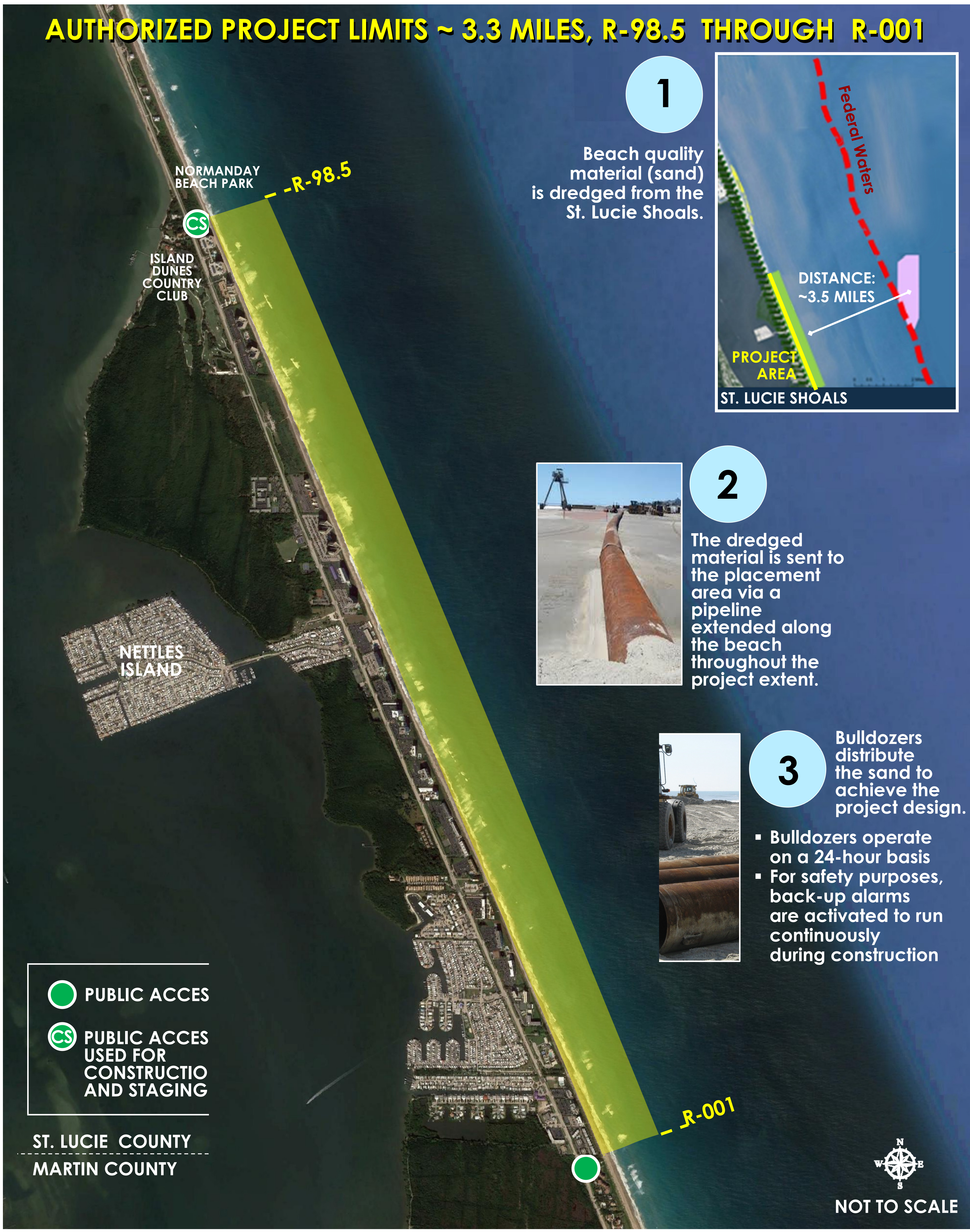
## BEACH FILL AND EQUILIBRATION



Waves and currents will reshape the constructed beach fill over time to a more natural "equilibrated" shape by transporting sand from the dry beach and depositing it offshore within the active beach profile to help dissipate wave energy and provide the intended coastal storm risk management benefits. This process begins immediately after construction, with full adjustment of the beach shape typically requiring many months or multiple significant wave events.

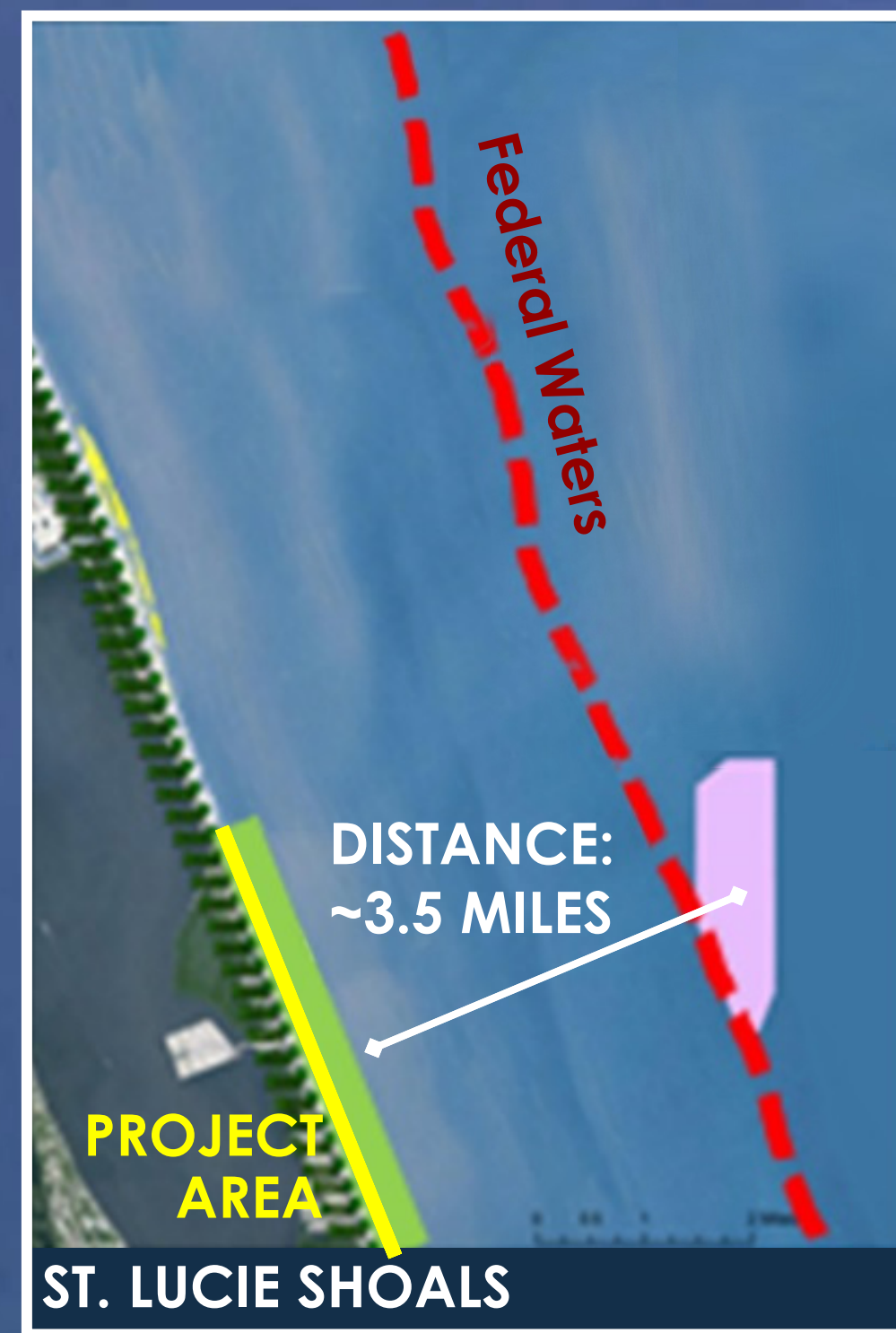
The initial equilibration process may appear to dramatically decrease the width of the dry beach, but the beach is operating as designed. Once the beach has reached an equilibrium condition, the beach is expected to recede at a slower rate.

## AUTHORIZED PROJECT LIMITS ~ 3.3 MILES, R-98.5 THROUGH R-001



1

Beach quality material (sand) is dredged from the St. Lucie Shoals.



2

The dredged material is sent to the placement area via a pipeline extended along the beach throughout the project extent.



3

Bulldozers distribute the sand to achieve the project design.

- Bulldozers operate on a 24-hour basis
- For safety purposes, back-up alarms are activated to run continuously during construction

- PUBLIC ACCES
- CS PUBLIC ACCES USED FOR CONSTRUCTION AND STAGING

ST. LUCIE COUNTY  
MARTIN COUNTY

NOT TO SCALE

## ENVIRONMENTAL CONSIDERATIONS

### ENVIRONMENTAL BENEFITS

- Minimum of 3.3 acres of continuous nesting habitat to be maintained over 50 years, benefitting threatened species such as the Loggerhead turtle, Red Knot, and Piping Plover, and endangered species such as the Leatherback and Green turtles.



Loggerhead Sea Turtle



Piping Plover and Red Knot



- Berm and dune slopes designed to closely mimic the natural beach, and the sand source is compatible with native beach sand.
- Dune to be vegetated with native plants for dune stabilization and to promote wildlife usage (shelter, food, slope change signaling turtles to nest, etc.).



Example View Post-Construction (4-Month Growth)  
Image courtesy of Coastal Management Consulting

- Reduces potential damages to hurricane evacuation route (State Road A1A).

### ENVIRONMENTAL MONITORING DURING CONSTRUCTION

- Turbidity in the water column is monitored in the borrow area, and at the placement site.
- Equipment operating in the project area is routinely monitored.
- Standard manatee and marine animal monitoring and protective measures are employed during project construction.

