



# FLAGLER COUNTY COASTAL STORM RISK MANAGEMENT (CSRSM) PROJECT



## PROJECT OVERVIEW

The Flagler County, Florida Coastal Storm Risk Management (CSRSM) project is a federally-authorized 50-year project designed to provide sustainable coastal storm risk management for property; infrastructure such as evacuation route SR A1A; environmental habitat; and provide for recreation opportunities.

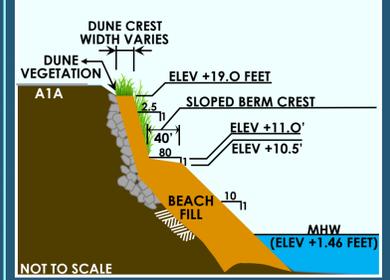
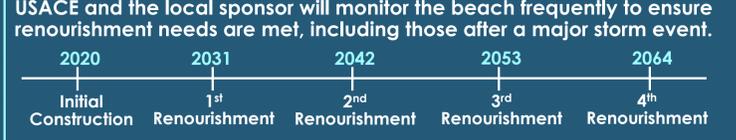


Once constructed, the project will provide a holistic, environmentally-friendly defense against future storms, beach erosion, and sea level rise. Anticipated to significantly reduce potential storm impacts than without a project, the project fosters a more resilient coastal environment and community, and in the event of a storm, a faster and less costly post-storm recovery. In addition, after initial construction, the project becomes eligible for emergency beach renourishment after significant storm events.

## PROJECT CONSTRUCTION

- Federal Participation: 50-year project life (after initial construction)
- Initial Sand Volume: ~ 550,000 cubic yards
- Borrow Source: ~10.25 nautical miles offshore
- Renourishment Volume: ~ 400,000 cubic yards
- Renourishment Interval: ~ 11 years
- Estimated Construction Duration: 4 months (August – December 2020)

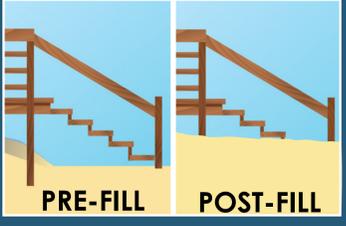
## ESTIMATED RENOURISHMENT SCHEDULE



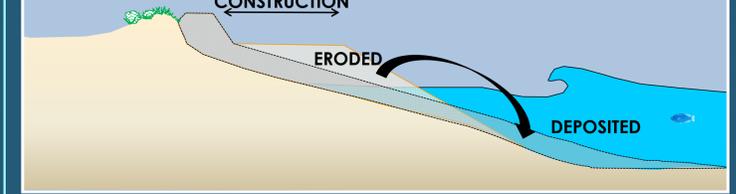
The above profile reflects the average need for sand across the project area.

## 42 PUBLIC AND PRIVATE DUNE WALKOVERS

- The contractor will place sand on, around and underneath each walkover to maintain a continuous protective dune.
- Sand will naturally equilibrate and expose walkover steps over time.
- Photos will be taken of each walkover prior to construction.
- The contractor is bonded and insured if damage occurs as a result of construction activities.



## BEACH FILL AND EQUILIBRATION



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 MILES (BEACH FILL FROM R-80 THROUGH R-94) OF FLAGLER BEACH SHORELINE (TAPERS LOCATED NORTH OF 6<sup>TH</sup> STREET AND THE SOUTHSIDE OF 28<sup>TH</sup> STREET)



Google Earth

FLAGLER COUNTY VOLUSIA COUNTY



NOT TO SCALE

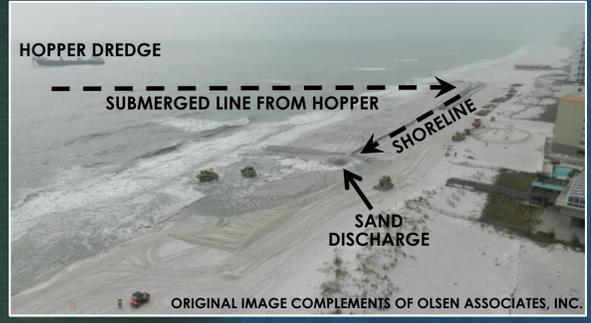
## ENVIRONMENTAL AND CULTURAL CONSIDERATIONS

### ENVIRONMENTAL AND CULTURAL BENEFITS

- Reduced damages to Scenic and Historic Coastal Byway
- Dune extension to be vegetated with native plants to stabilize the dune and promote wildlife usage:
  - ▶ Nesting habitat
  - Threatened Species: Loggerhead Turtles
  - Endangered Species: Leatherback Turtles, Green Turtles, Piping Plover
  - ▶ Shelter (protection from predators)
  - ▶ Food source (for various wildlife)
  - ▶ Biodiversity (increased plant species variety)



IMAGE COMPLEMENTS OF OLSEN ASSOCIATES, INC.



ORIGINAL IMAGE COMPLEMENTS OF OLSEN ASSOCIATES, INC.

### PLANTING RATIOS

SEA OATS 80-85%	BITTER PANIC-GRASS 10-15%
RAILROAD VINE	DUNE SUNFLOWER
COMBINED 5%	

- Biodiversity (increased plant species)
- ~ 3 acres of continuous nesting habitat (sea turtles and shore birds) over 50 years compared to zero habitat in the future without project condition



### ENVIRONMENTAL MONITORING DURING CONSTRUCTION

- Turbidity is monitored at the placement location.
- Equipment operating in the project area is routinely monitored.
- Standard manatee and marine animal monitoring and protective measures are employed during project construction.
- Beach tilling will occur after construction to remove escarpments.
- The project will be monitored and surveyed after construction to check sand volume and the condition of the beach.