

ST. LUCIE COUNTY, FLORIDA

COASTAL STORM RISK MANAGEMENT STUDY

Draft Feasibility Study & Integrated Environmental Assessment

Public Meeting

Presented by U.S. Army Corps of Engineers
Jacksonville District
June 2, 2016

*Trusted Partners Delivering Value,
Today and Tomorrow*



U.S. ARMY



US Army Corps of Engineers
BUILDING STRONG





PUBLIC MEETING AGENDA



BUILDING STRONG

6:30 to 7:00 pm

Open House, Informal Poster Sessions

7:00 to 7:20 pm

Overview Presentation for
St. Lucie Coastal Storm Risk Management
Feasibility Study and Environmental Assessment

7:20 pm to 8:00 pm

Formal Public Comment Period

8:00 to 8:30 pm

Open House, Informal Poster Sessions





MILESTONE SCHEDULE



BUILDING STRONG



Trusted Partners Delivering Value, Today and Tomorrow

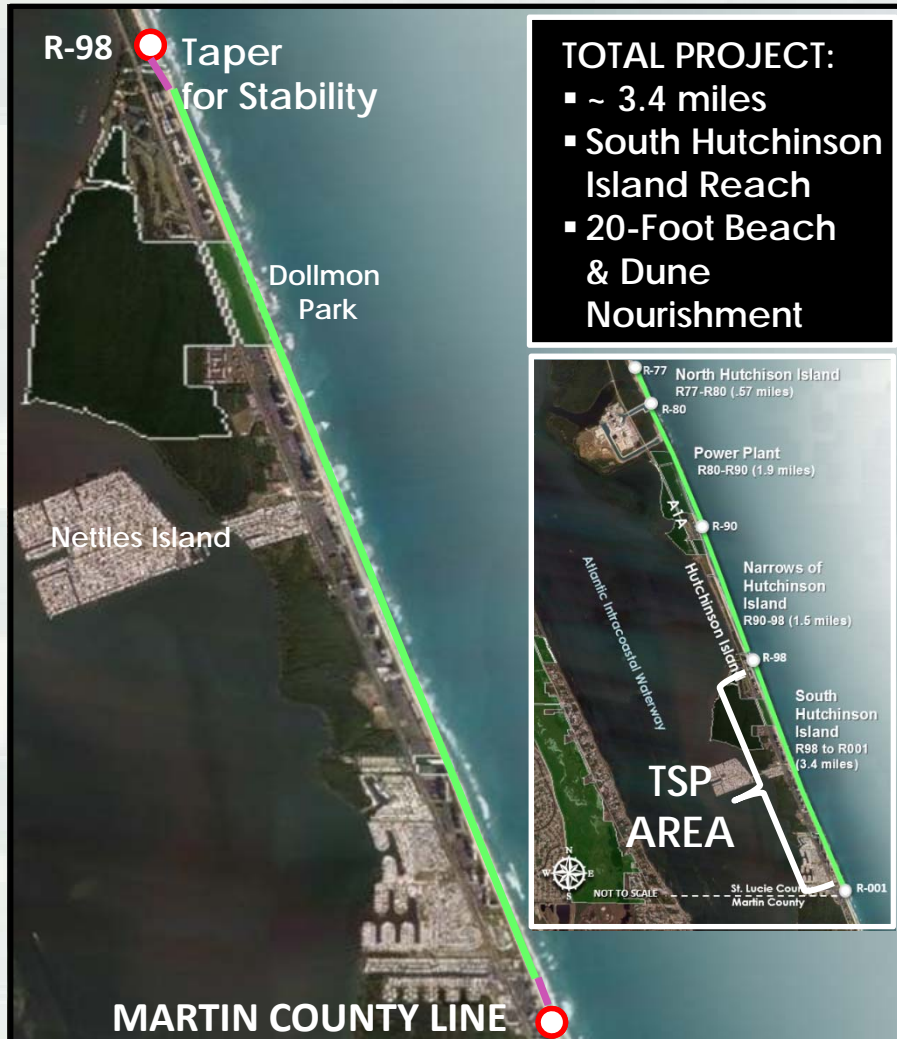


BOTTOM LINE UP FRONT

TENTATIVELY SELECTED PLAN (TSP)



BUILDING STRONG



TOTAL PROJECT:

- ~ 3.4 miles
- South Hutchinson Island Reach
- 20-Foot Beach & Dune Nourishment

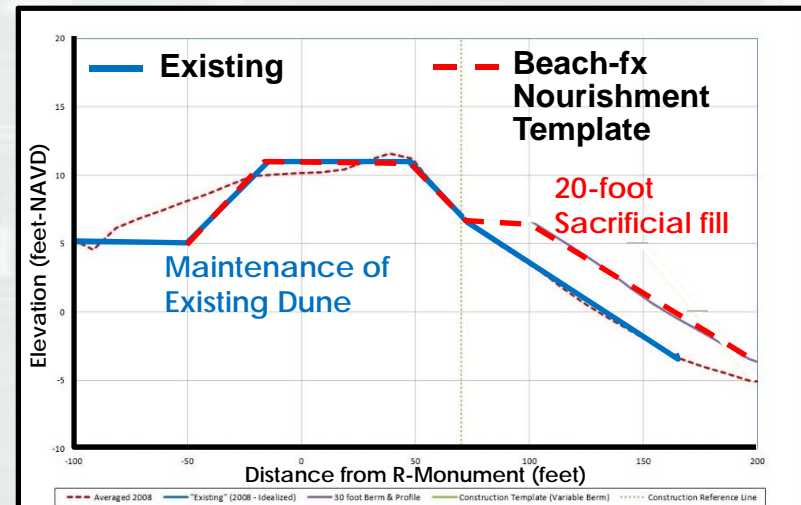
Total Project Cost:
\$72,289,000

Cost Sharing:

- Initial construction: 26% Federal / 74% non-federal
- Periodic nourishments: 21.5% Federal / 78.5% non-federal

Benefit to Cost Ratio: 2.1

Construction: Hydraulic dredge to fill template with sand from St. Lucie Shoals



Trusted Partners Delivering Value, Today and Tomorrow

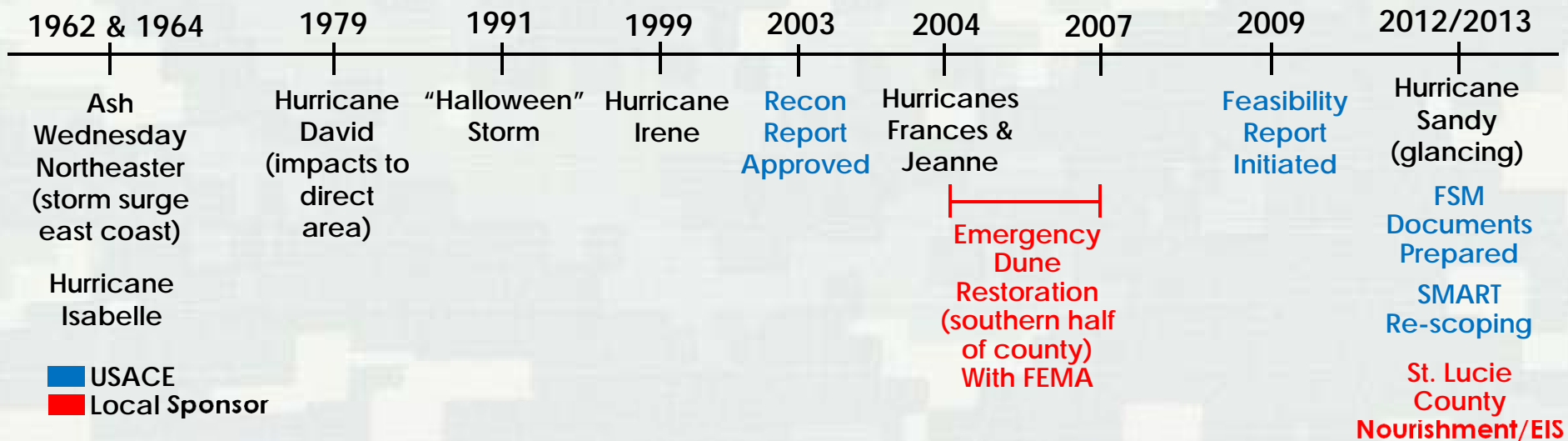


PROJECT HISTORY NEED & EFFORTS



BUILDING STRONG

55 storms have passed in the 50-mile radius over 154 year period of record.
Statistically, averaging a storm every 2.8 years.



Post-Hurricane
Frances &
Jeanne Photos
in Study Area



Atlantis Condominium
September 2004



Hutchinson Island Inn
September 2004



September 2004

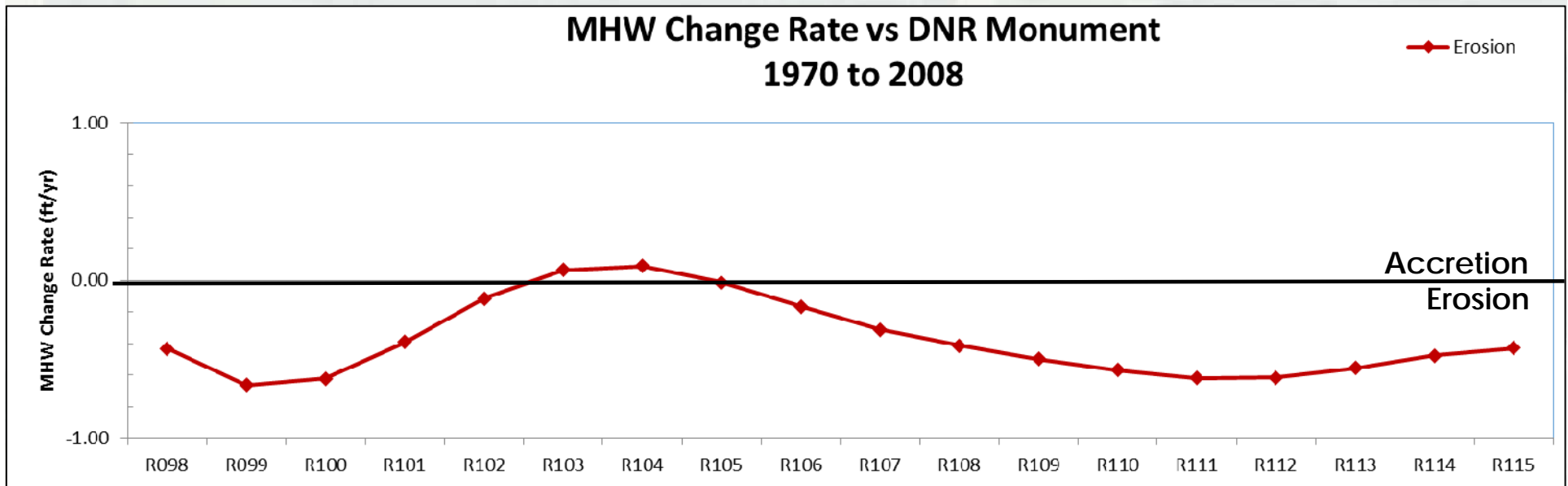
Trusted Partners Delivering Value, Today and Tomorrow



EXISTING CONDITIONS ENGINEERING



BUILDING STRONG



Average MHW Change Rates in South Hutchinson Island Reach = -0.4 feet/year





EXISTING CONDITIONS

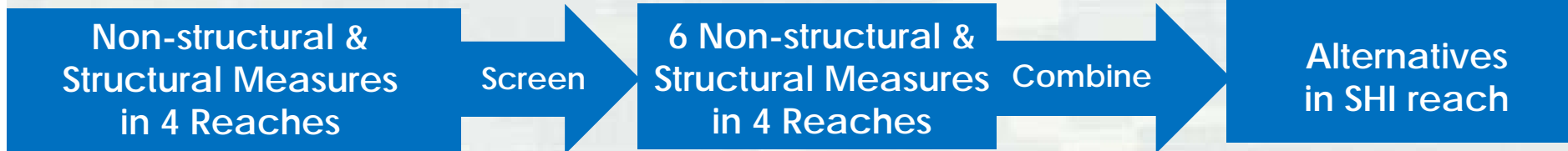
)



ALTERNATIVE MILESTONE MEETING RECAP



BUILDING STRONG



- No Action
- ~~Coastal Construction Control Line~~
- ~~Moratorium on Construction~~
- ~~No Growth Program~~
- ~~Relocation of Structures & A1A~~
- Flood proofing structures
- ~~Acquisition of land & structures~~
- ~~Seawalls~~
- ~~Revetments~~
- ~~Sand covered soft structures~~
- Beach nourishment
- Groins
- Submerged artificial reef
- ~~Nearshore placement~~
- ~~Emergent breakwaters~~
- Dunes & vegetation

- No Action
- Flood Proofing of Structures
- Beach Nourishment
- Groins
- Submerged Artificial Reef
- Dunes & Vegetation

- No Action
- Dunes & Vegetation
- Beach Nourishment
- ~~Submerged Artificial Reefs~~
- Beach Nourishment + Dunes & Vegetation
- ~~Beach Nourishment + Submerged Artificial Reefs~~
- ~~Beach Nourishment + Groins (low-profile)~~
- ~~Submerged Artificial reefs~~

Screen with preliminary costs and benefits

Table 2.2. St. Lucie County Non-Structural Management Measures for North, Center, Plant, and Harbor

Measure	North	Center	Plant	Harbor
Flood Proofing of Structures	High	High	High	High
Beach Nourishment	High	High	High	High
Groins	High	High	High	High
Submerged Artificial Reef	High	High	High	High
Dunes & Vegetation	High	High	High	High

Evaluation Matrix using 3 Planning Objectives, Constraints, and 4 Federal accounts in 4 reaches

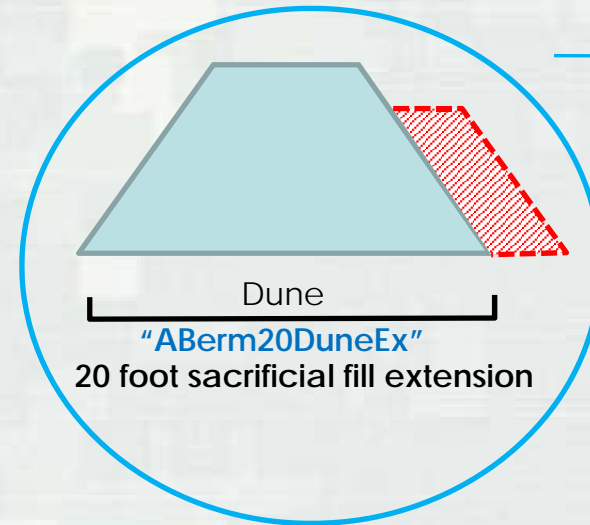
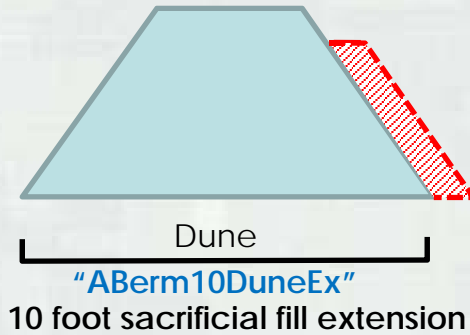


DUNE AND BERM ALTERNATIVES

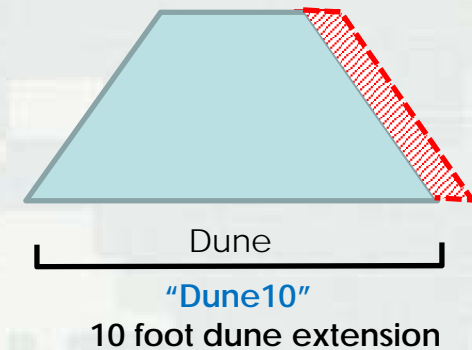
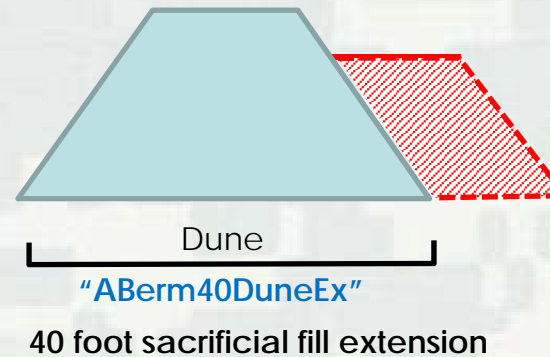
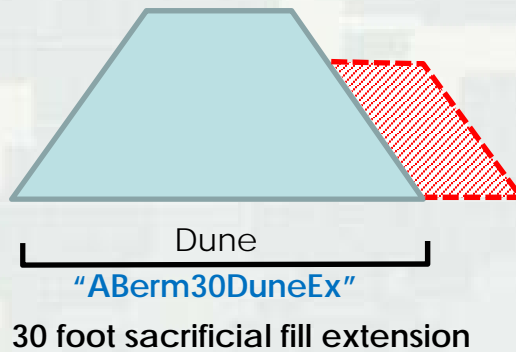


The alternatives will maintain the existing dune with...

BUILDING STRONG



→ National Economic Development (NED) Plan





TENTATIVELY SELECTED PLAN



BUILDING STRONG



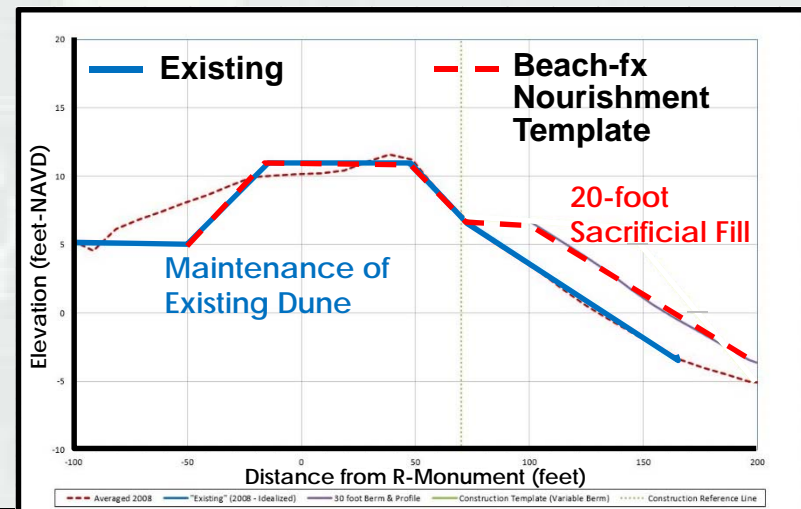
Total Project Cost:
\$72,289,000

Cost Sharing:

- Initial construction: 26% Federal / 74% non-federal
- Periodic nourishments: 21.5% Federal / 78.5% non-federal

Benefit to Cost Ratio: 2.1

Construction: Hydraulic dredge to fill template with sand from St. Lucie Shoals; initial nourishment = 530,400 cubic yards; average of 2 renourishment events (average 18-year intervals) with average of 380,000 cubic yards per renourishment



Trusted Partners Delivering Value, Today and Tomorrow



TENTATIVELY SELECTED PLAN EFFECTIVENESS



BUILDING STRONG

- **Amount of Damages:** Protects study area from 94% of economic damages over 50 years
- **Effective over time:** Only requires 2 renourishments throughout 50-year period of analysis
- **Evacuation Route:** Model iterations show flooding never exceeds 1-foot on State Road A1A with TSP
- **Conclusion:**
 - TSP nets \$2,114,809 AAEQ worth of benefits
 - 2.1 BCR (Project yields \$2.10 in benefits for every \$1.00 spent)
 - It is also robust and increasingly efficient in the face of sea level change
 - Small in scope and scale, but represents the most prudent investment of Federal and sponsor dollars



TENTATIVELY SELECTED PLAN (TSP) SAND SOURCE: ST. LUCIE SHOALS



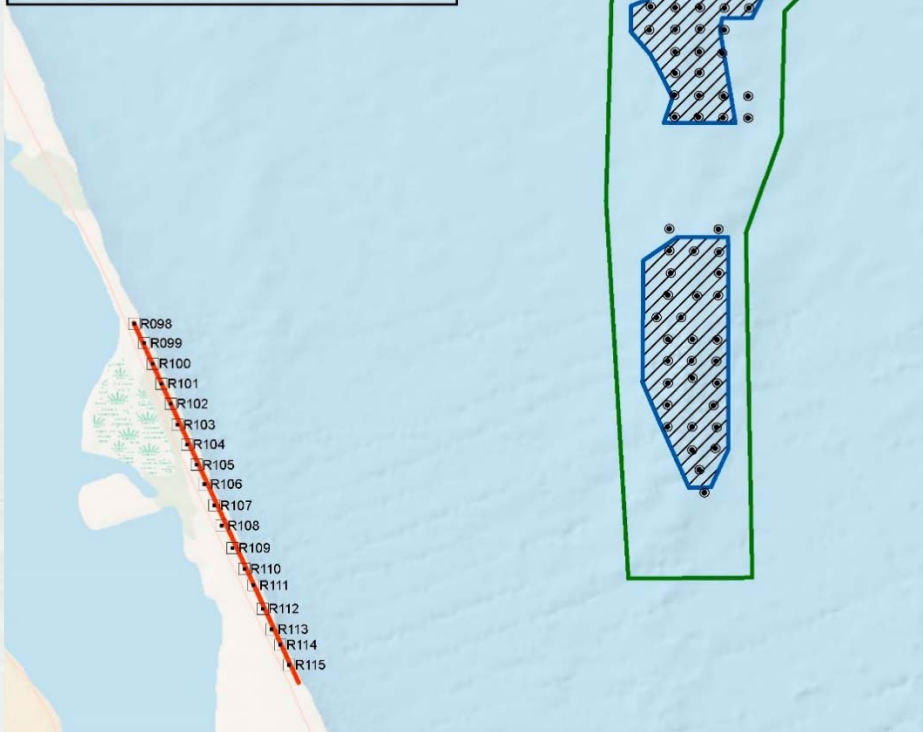
BUILDING STRONG

Legend

- Vibracore Locations
- ▣ FDEP R Monument

Fill Template

- St. Lucie Shoal Sand Sources
- ▨ Offshore Sand Source Search Area



- St. Lucie Shoals (SL4-R98) is proposed borrow area
- Sand is compatible with native sand; adequate amount for 50-year planning horizon
- Average distance = 4 miles

PUBLIC COMMENT PERIOD

Formal Public Comments:

Turn in a comment card to anyone with a Corps name tag and speak tonight (2 min)

Mail to:

U.S. Army Corps of Engineers, Jacksonville District
ATTN: Paul Stodola (CESAJ-PD-EC)
701 San Marco Boulevard, Jacksonville, FL 32207

E-mail to:

Paul.E.Stodola@usace.army.mil

Public comment period:

May 3 through June 16, 2016

The report is located at:

<http://www.saj.usace.army.mil/Missions/CivilWorks/ShoreProtection/StLucieCounty.aspx>

**For more information, visit our poster sessions after this meeting.
Thank you!**