

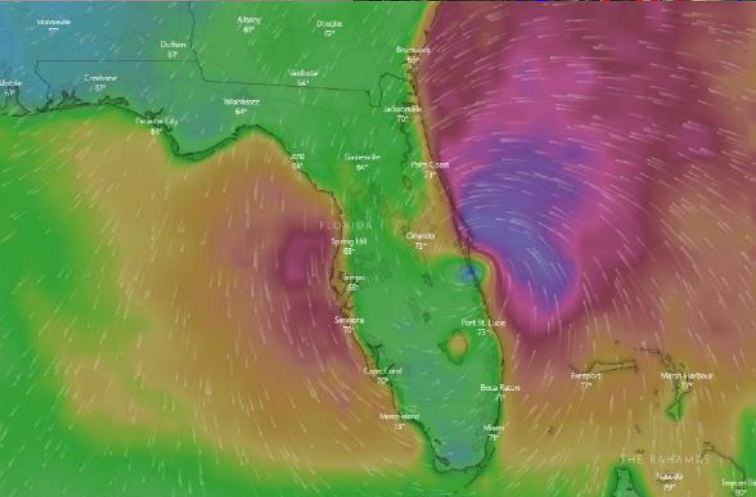
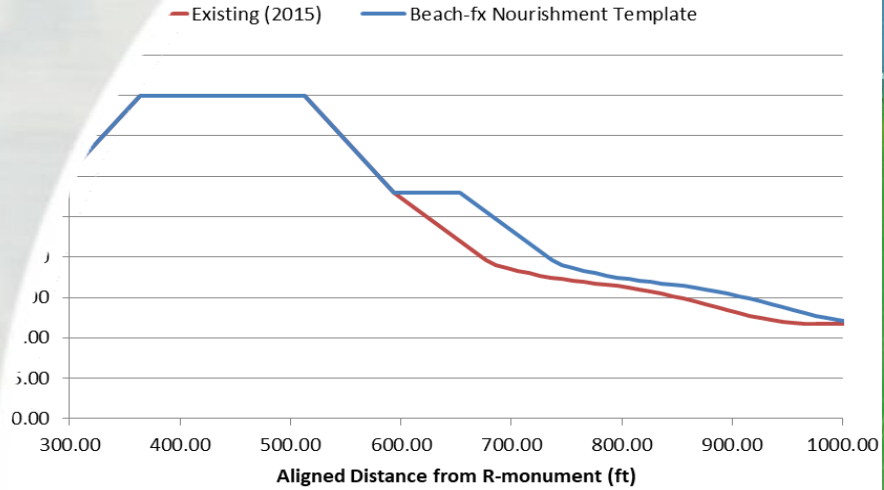
USACE Emergency Operations Mission to Assess Failing Coastal Infrastructure Caused by Hurricane Ian (and Nicole) in Volusia County, FL

Will Reilly, P.E.
Chief of Waterways Section
U.S. Army Corps of Engineers, Jacksonville District

Florida Shore & Beach Preservation Association
36th Annual National Conference on
Beach Preservation Technology

Fort Myers, FL

February 1, 2023





OUTLINE



BUILDING STRONG

- USACE Emergency Operations
- Hurricane Ian
- Mission Assignment
- Assessments and Recommendations
- Hurricane Nicole



USACE EMERGENCY OPERATIONS



BUILDING STRONG



USACE MUST HAVE BEFORE UNDERTAKING ANY DISASTER RESPONSE

- APPROPRIATE AUTHORITY 
- APPROPRIATE FUNDING SOURCE 
- APPROPRIATE REQUEST 



APPROPRIATE AUTHORITY

- 1 UNDER OUR OWN AUTHORITIES
- 2 IN SUPPORT OF **FEMA**
- 3 TO ANOTHER FEDERAL AGENCY

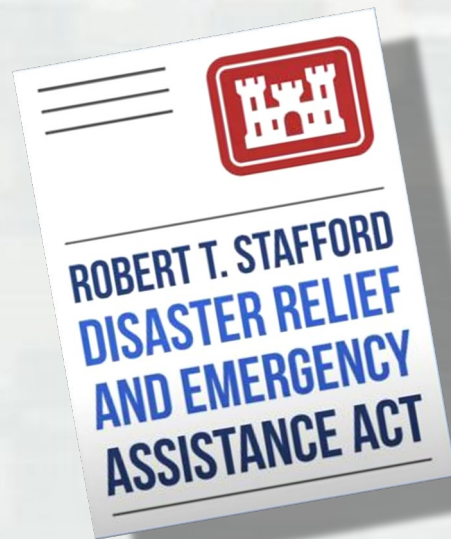




USACE EMERGENCY OPERATIONS CENTER



BUILDING STRONG



NATIONAL
RESPONSE
FRAMEWORK

→ Emergency Support Functions (ESF)



ESF#3
PUBLIC WORKS AND ENGINEERING

ESF#3 Core Mission

- Debris Removal and Clearance
- Temporary Emergency Power
- Temporary Housing & Critical Public Facilities
- Temporary Roofing
- Emergency Infrastructure Assessment

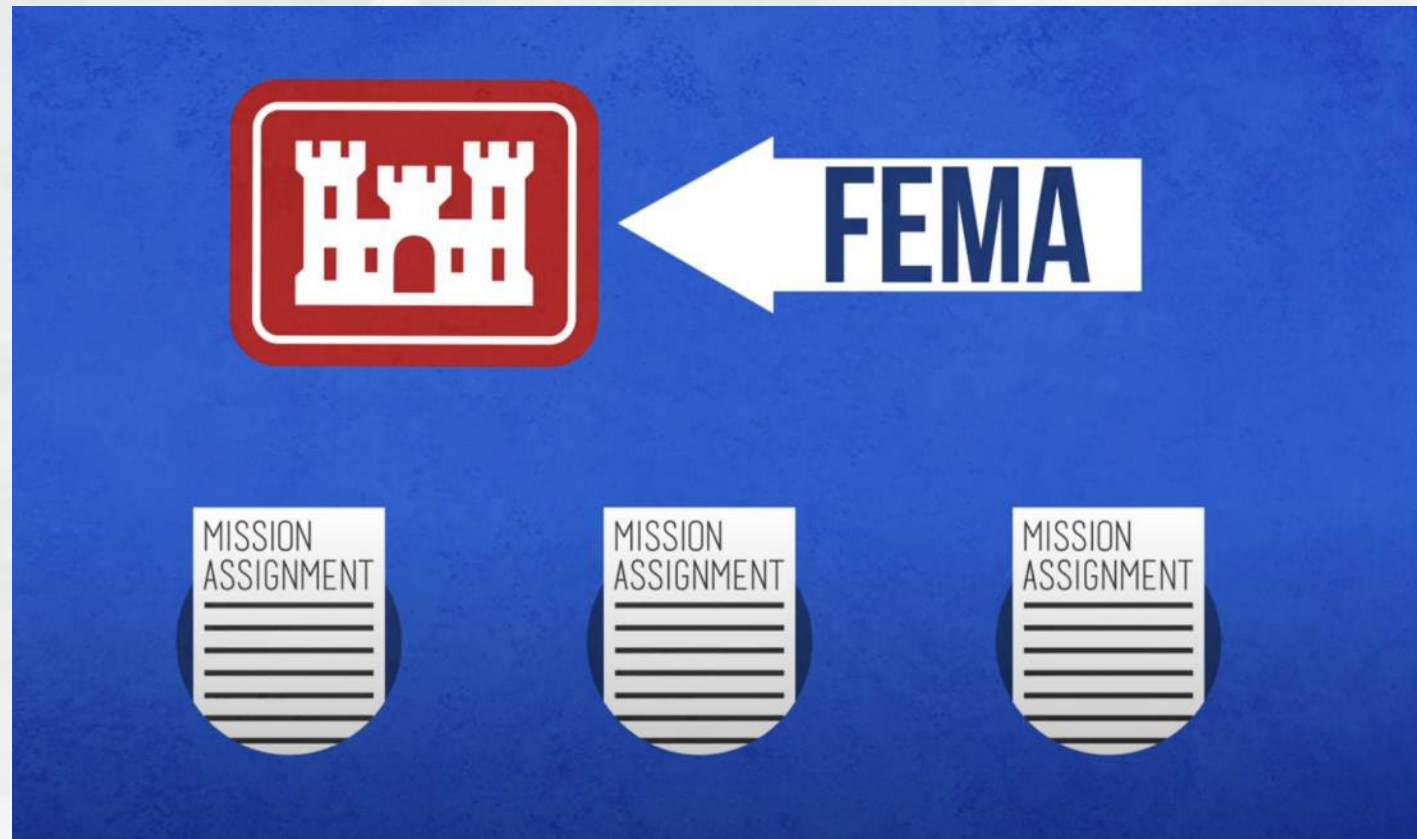
Trusted Partners Delivering Value Today for a Better Tomorrow



USACE EMERGENCY OPERATIONS CENTER



BUILDING STRONG



Local Gov. → State DEM → FEMA → USACE EOC → USACE SMEs

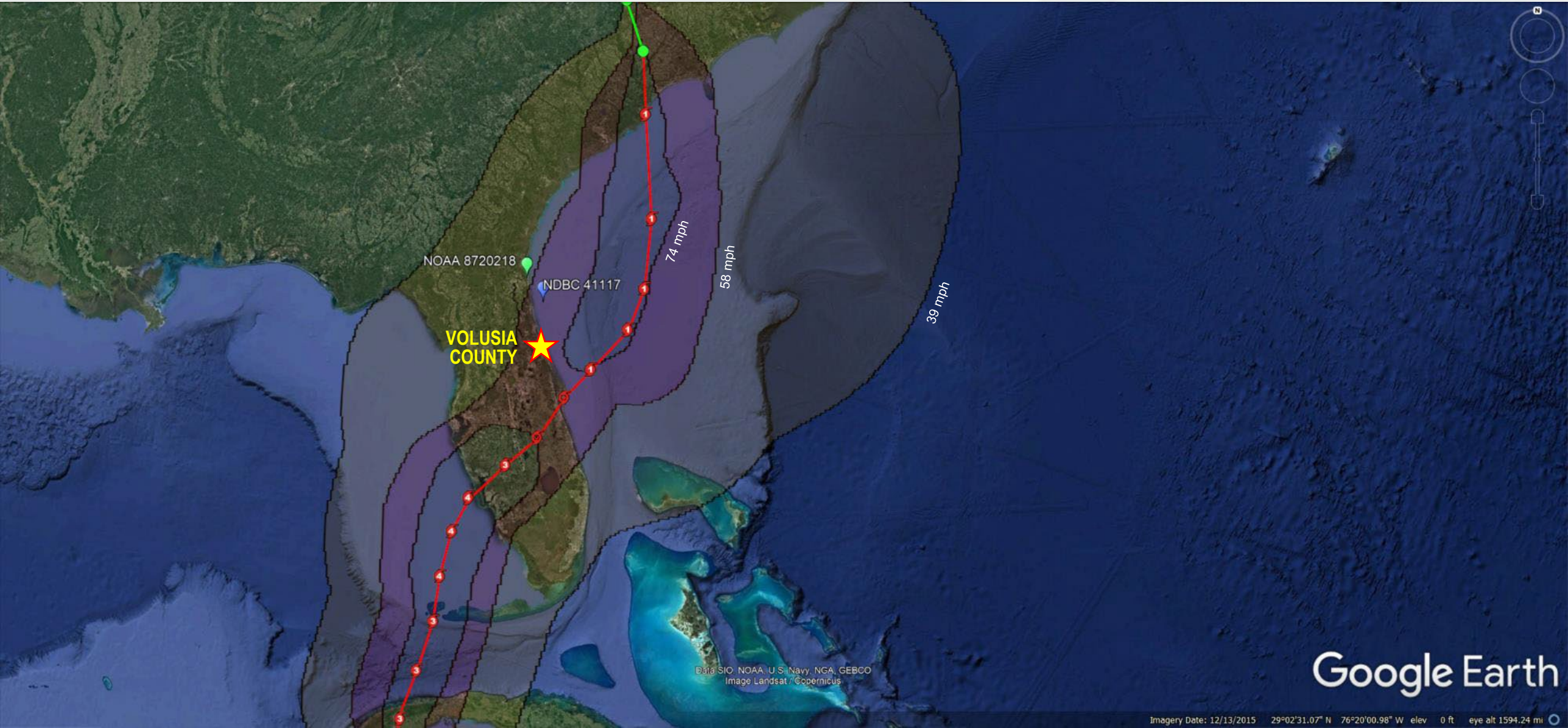
Trusted Partners Delivering Value Today for a Better Tomorrow



HURRICANE IAN



BUILDING STRONG



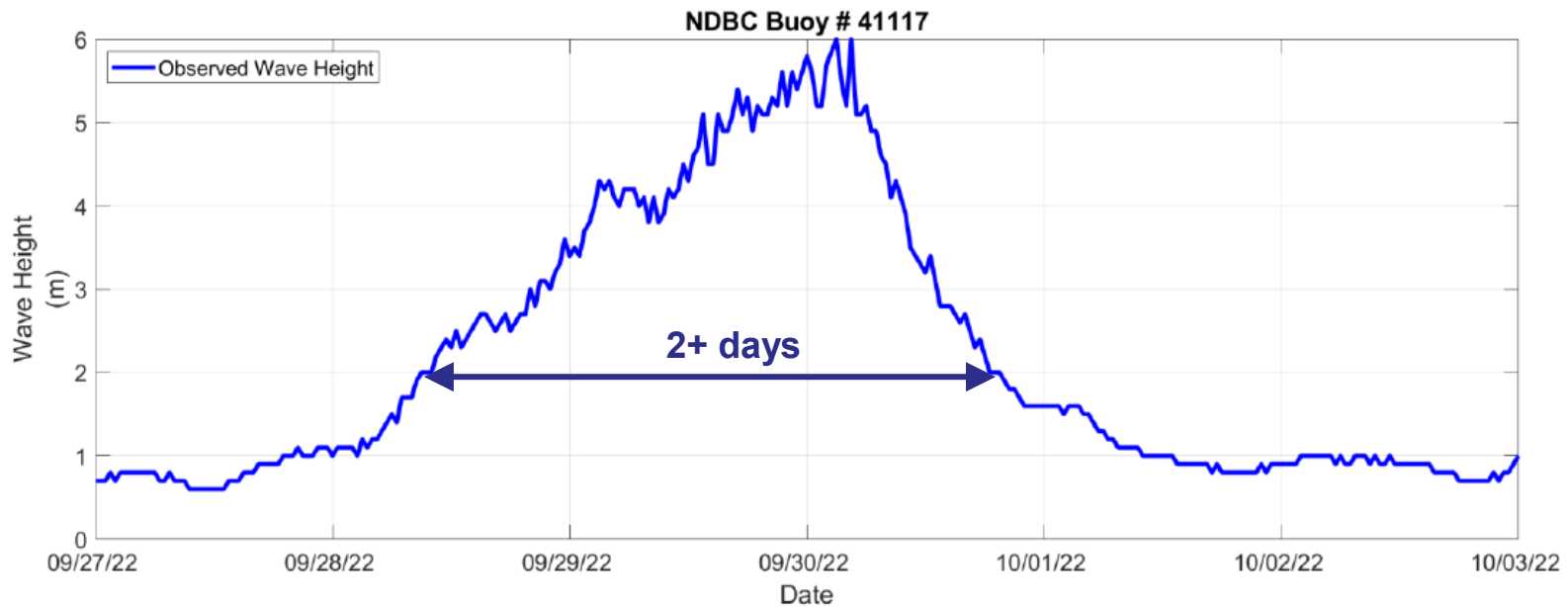
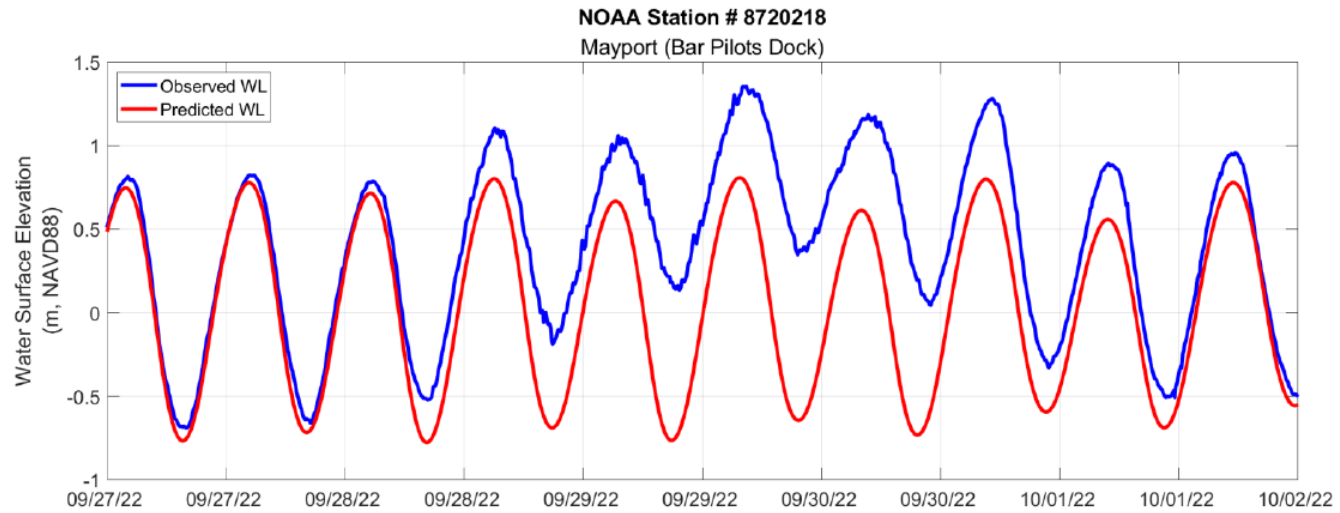
Google Earth



HURRICANE IAN



BUILDING STRONG





HURRICANE IAN



BUILDING STRONG

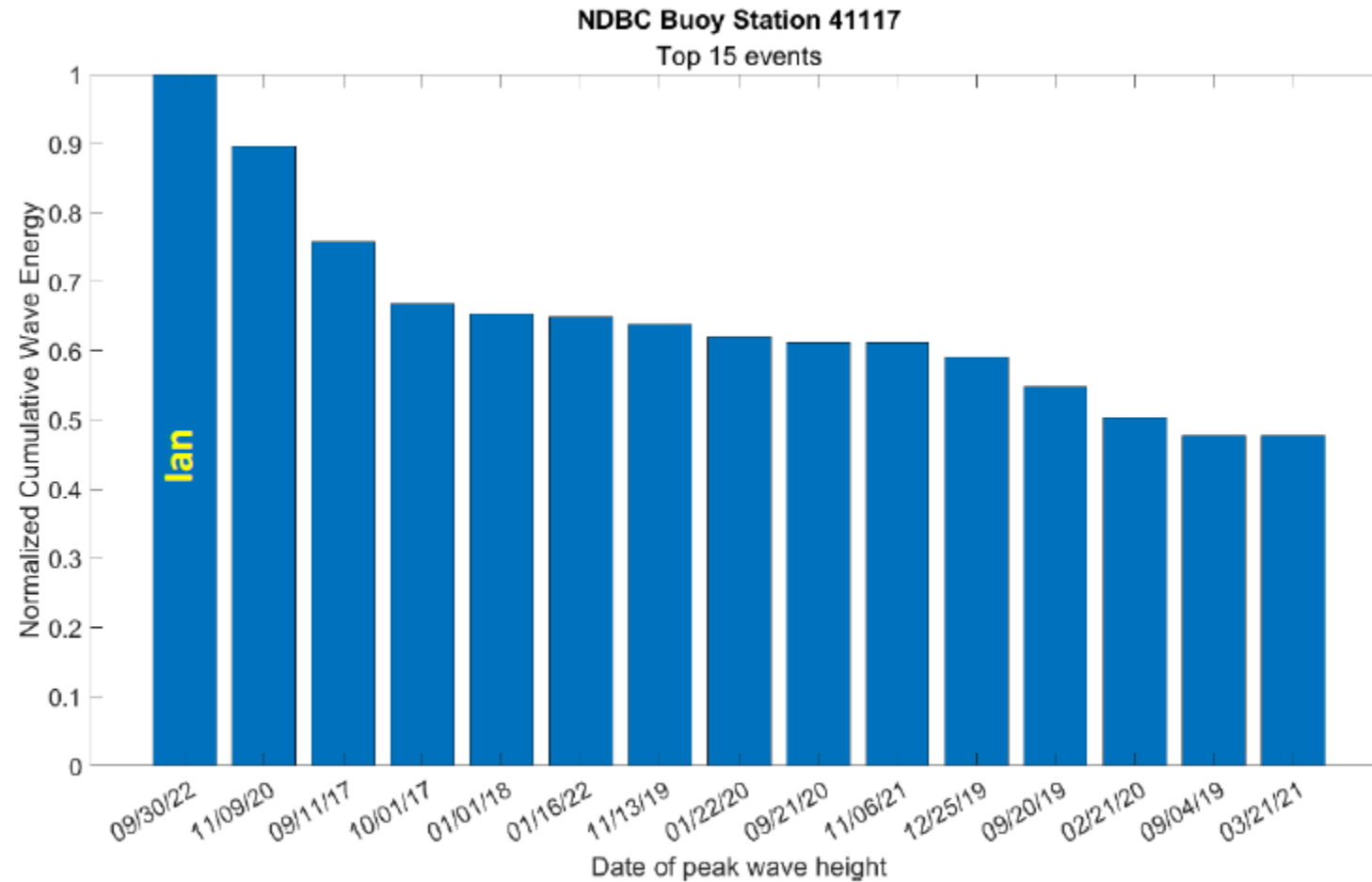


Figure 153: Top 15 storm events in terms of normalized cumulative wave energy at NDBC Buoy 41117



MISSION ASSIGNMENT



BUILDING STRONG

Mission Details
 2022 Ian
 Incident ID Number - 133
 Created By: Shannon Ball Phone: 13662541500 Email: sb.all@volusia.org
 Last Updated: 10/05/2022 12:10:39
 Approved By: Ben Bartlett Public Works Director
 Requesting Agency/Position: Volusia County CNTY Volusia LOG
 Approved By: bbartlett@volusia.org 3867175654

Mission #	Parent Mission # (if Applicable)	Incident	Requesting Agency/Position	Approved By
04381		2022 Ian	Volusia County CNTY Volusia LOG	Ben Bartlett Public Works Director bbartlett@volusia.org 3867175654

Status	Tasked To	Subtasked To	Status Assigned	Vendor
Assigned To	SERT FIELD OPERATIONS			

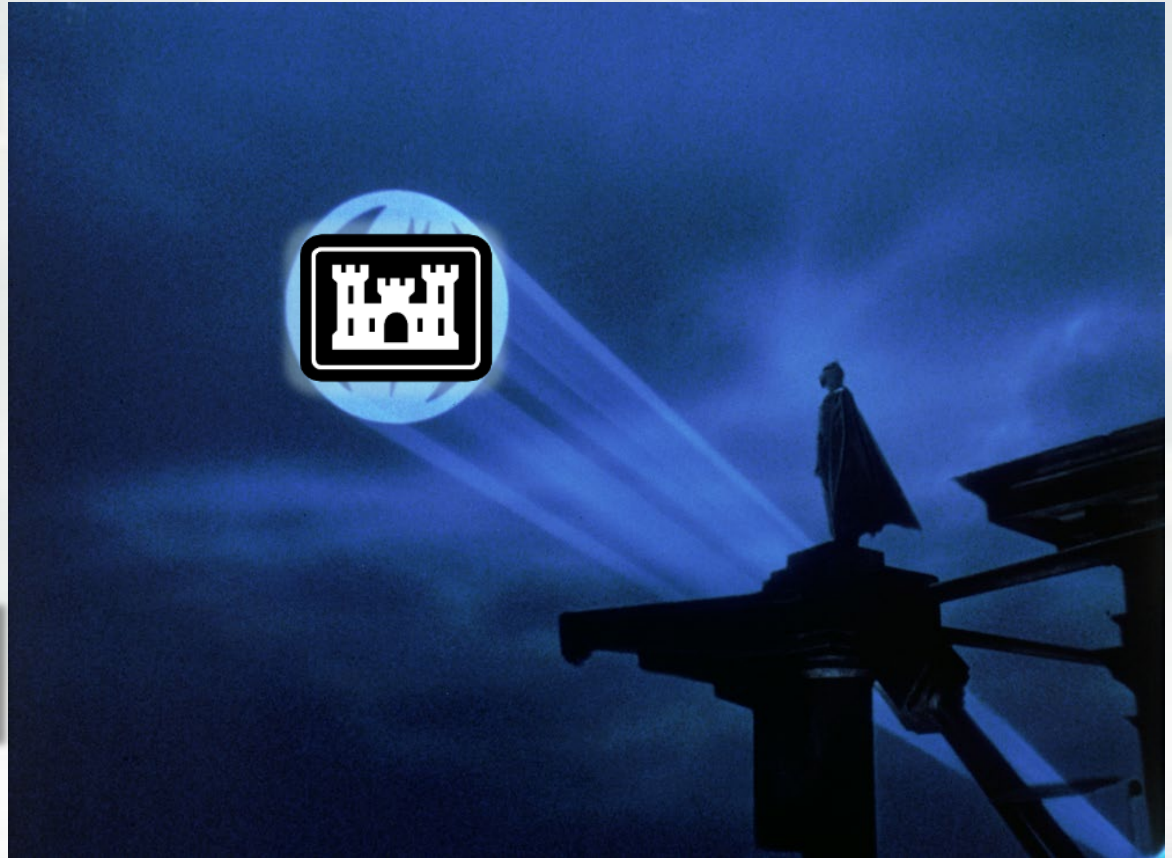
Mission Details

Title Erosion Control or Sand Berms	Primary Contact Jessica Ferrtress 3863412945 jferrtress@volusia.org	Location Region 5 - Volusia County 4200 Atlantic Ave., Port Orange, FL 32127 29.128104 -80.955875 17R NN 04292 22179
Purpose	Secondary Contact Arden Fontaine 3867179224 afontaine@volusia.org	On Scene Point of Contact Jessica Ferrtress 3863412945
Lifeline Safety and Security	Expected Outage Date 10/04/2022	Site Supported
Needed By 10/04/2022		Vaccine Supported Mission?

Description
 Approximately 30 homes effected by tidal erosion from Ian. Urgent need to protect these homes from further damage.

Delivery Details

Delivery Instructions Equipment will be onsite to unload	Warehouse NA	Trailer Qty	Loading Dock NA
Expected Delivery Date	Accept a 53ft trailer NA		Forklift/Dock Equipment NA



Trusted Partners Delivering Value Today for a Better Tomorrow

Residential Homes Wilbur-By-The-Sea



- Widespread seawall/retaining wall damage or collapse
- Significant erosion of dune bluff progressed close to several structures partially undermining the foundations

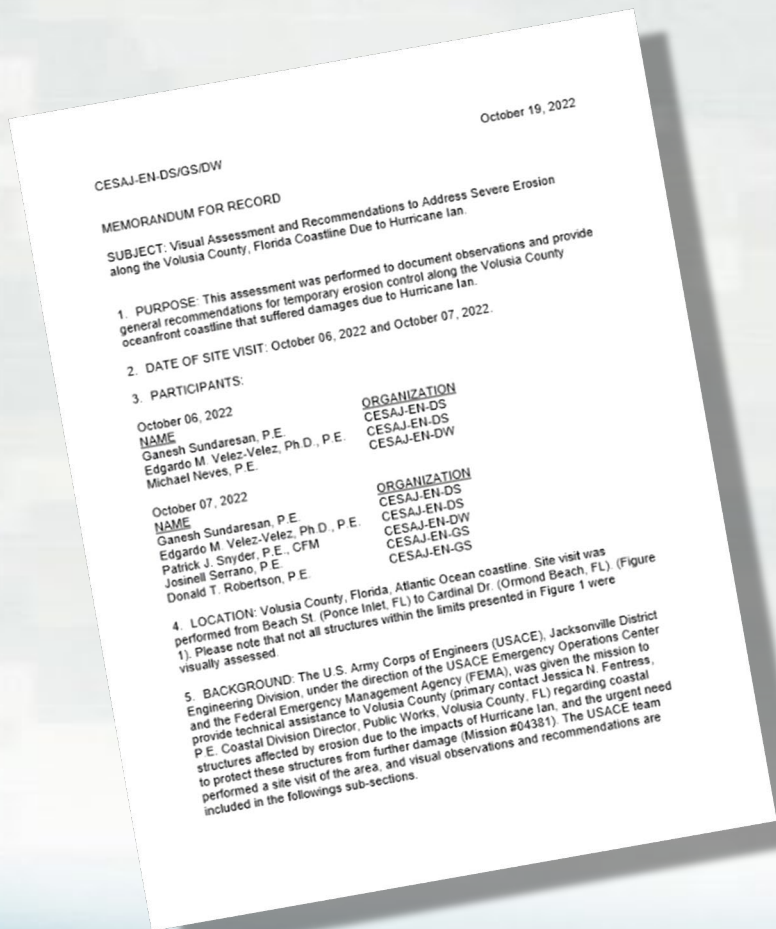
Multi-Story Buildings
Hawaiian Inn Beach Resort
Daytona Beach Shores



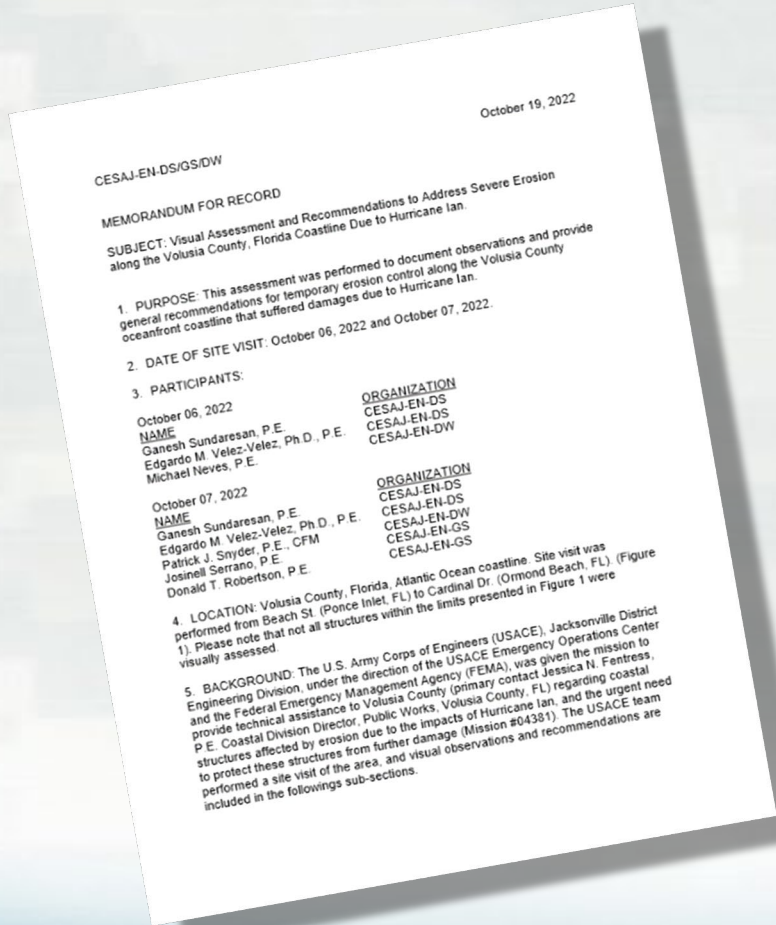
USACE
6 Oct 2022

- Widespread seawall/retaining wall damage or collapse
- Significant erosion of dune bluff progressed close to several structures partially undermining the foundations

- Concrete Seawalls/Retaining Walls



■ Concrete Seawalls/Retaining Walls



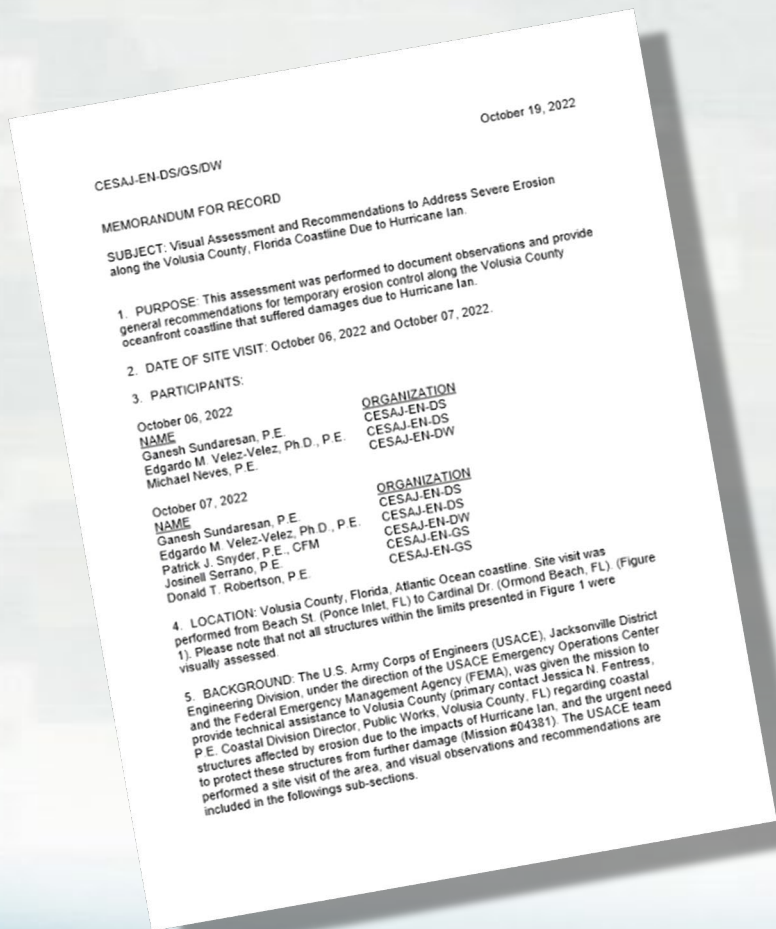


KEY FINDINGS



BUILDING STRONG

■ Concrete Seawalls/Retaining Walls



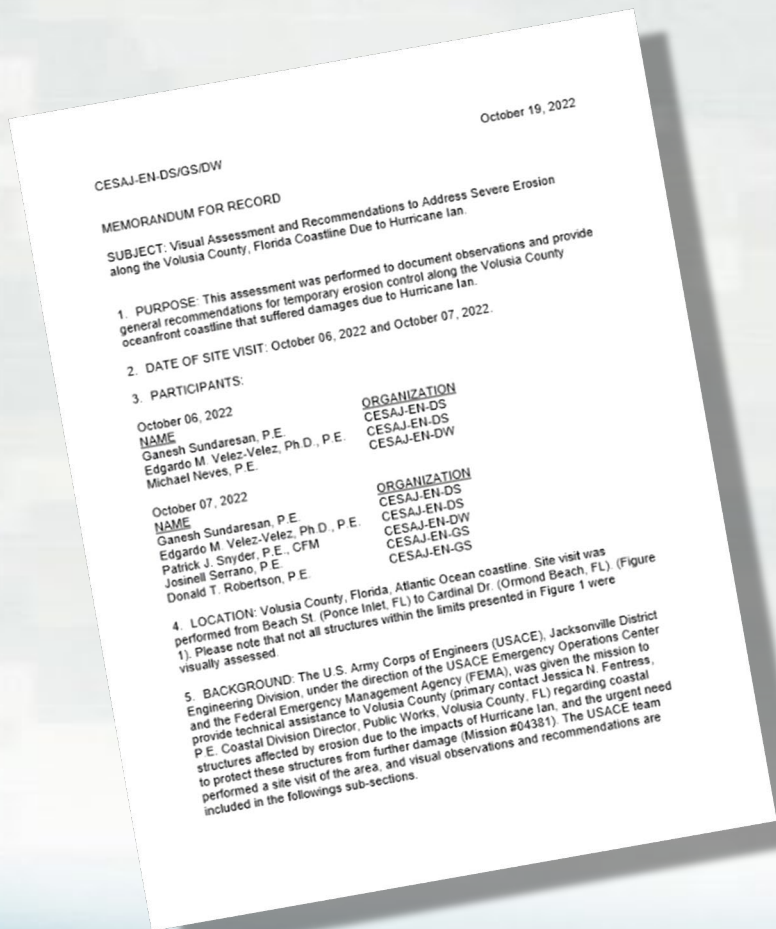


KEY FINDINGS

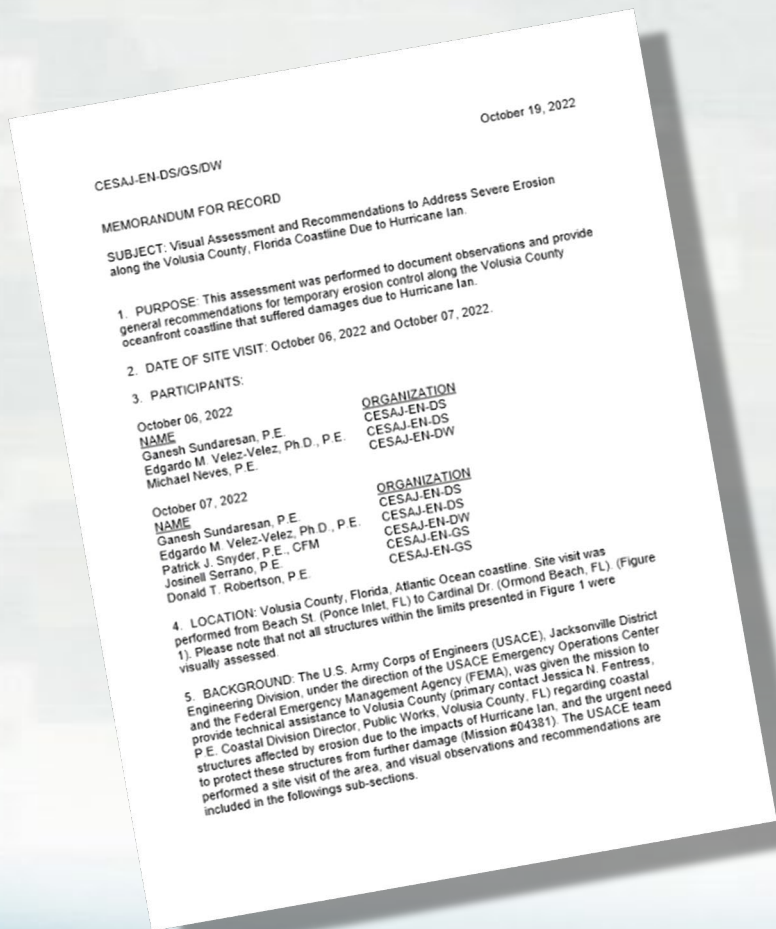


BUILDING STRONG

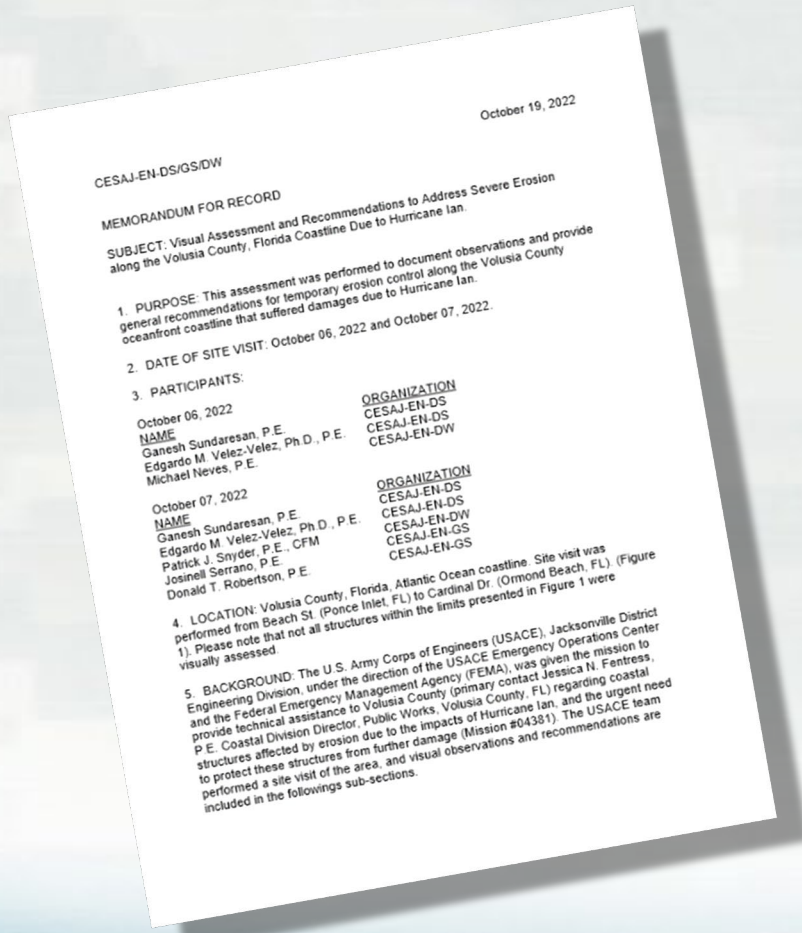
■ Concrete Seawalls/Retaining Walls



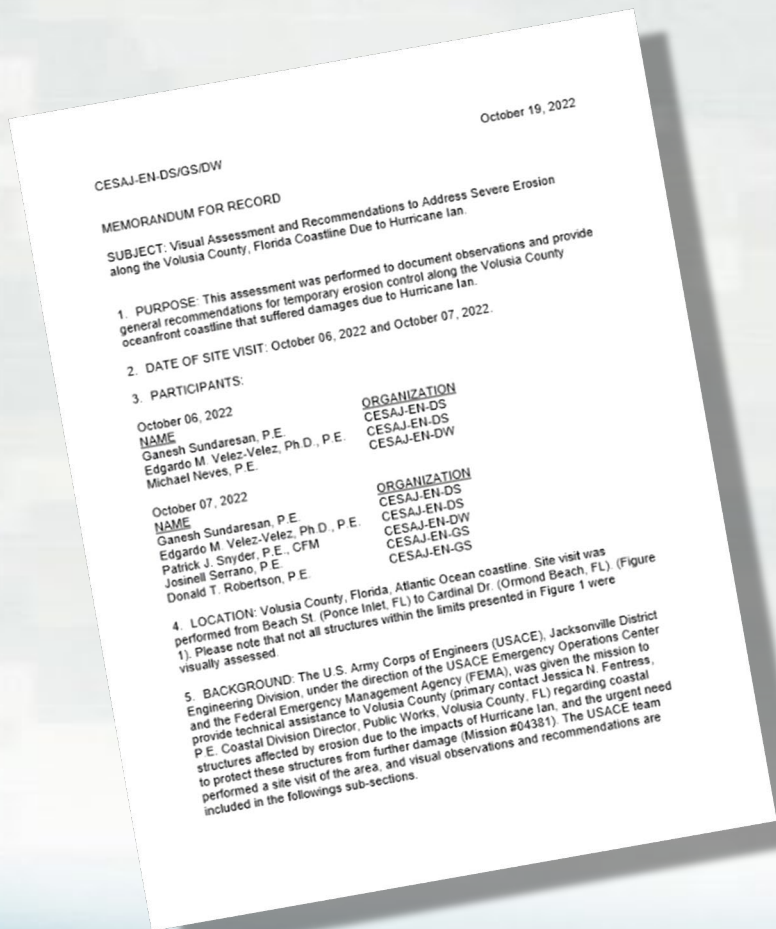
- Sheetpile Seawalls



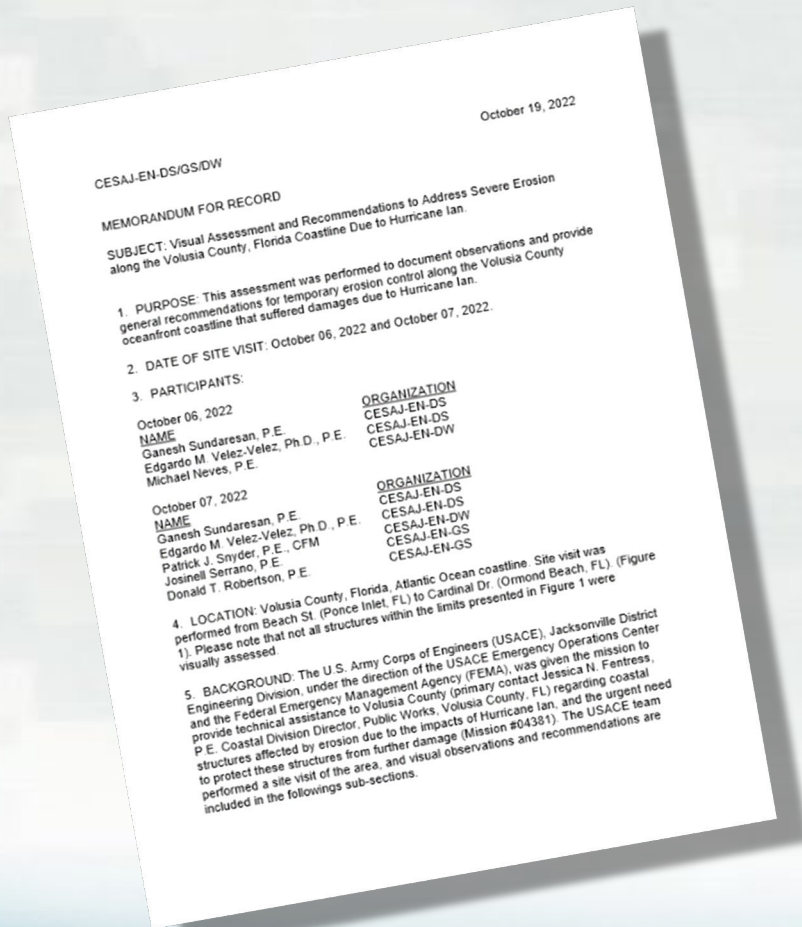
■ Sheetpile Seawalls



■ Geotubes



- Concrete lined slope



TEMPORARY EROSION CONTROL SHORT/MID-TERM ALTERNATIVES

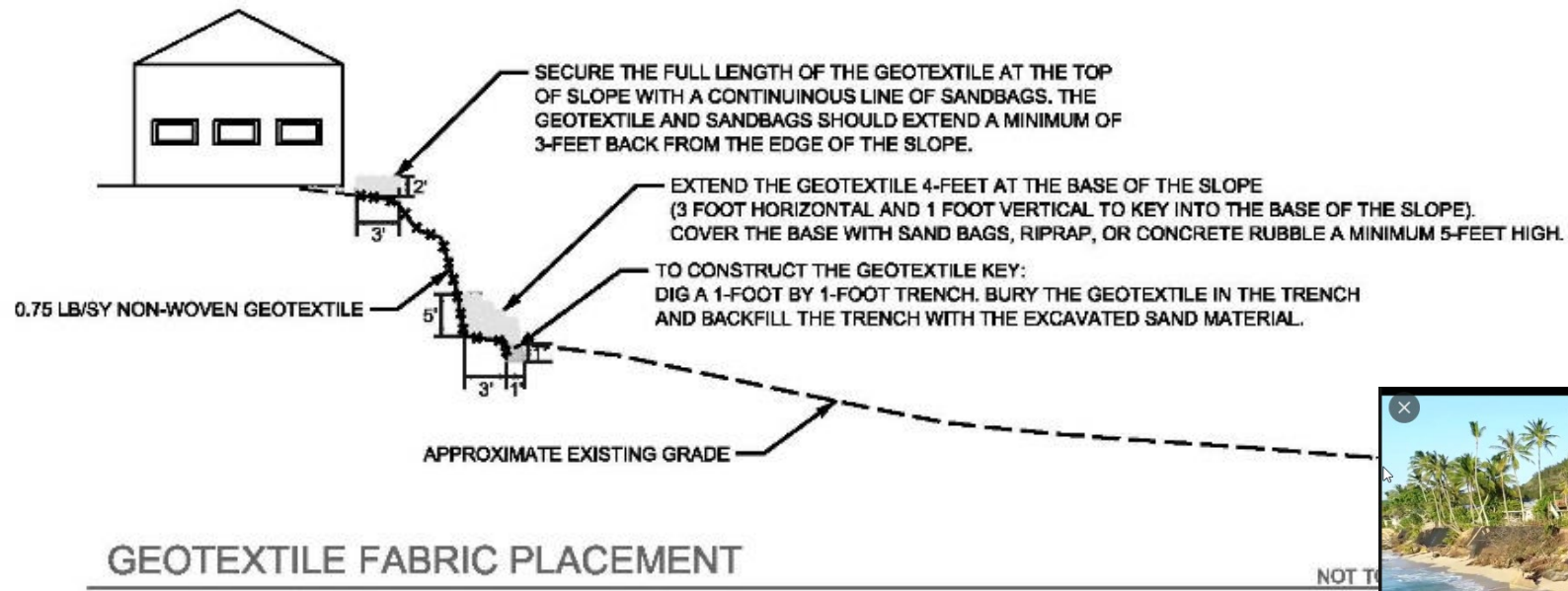


HESCO BAGS



TRAP BAGS

TEMPORARY EROSION CONTROL SHORT-TERM ALTERNATIVES (HOME DEPOT ALTERNATIVE)





RECOMMENDATIONS



BUILDING STRONG

LONG-TERM ALTERNATIVE



ENGINEERED BEACHES AND DUNES

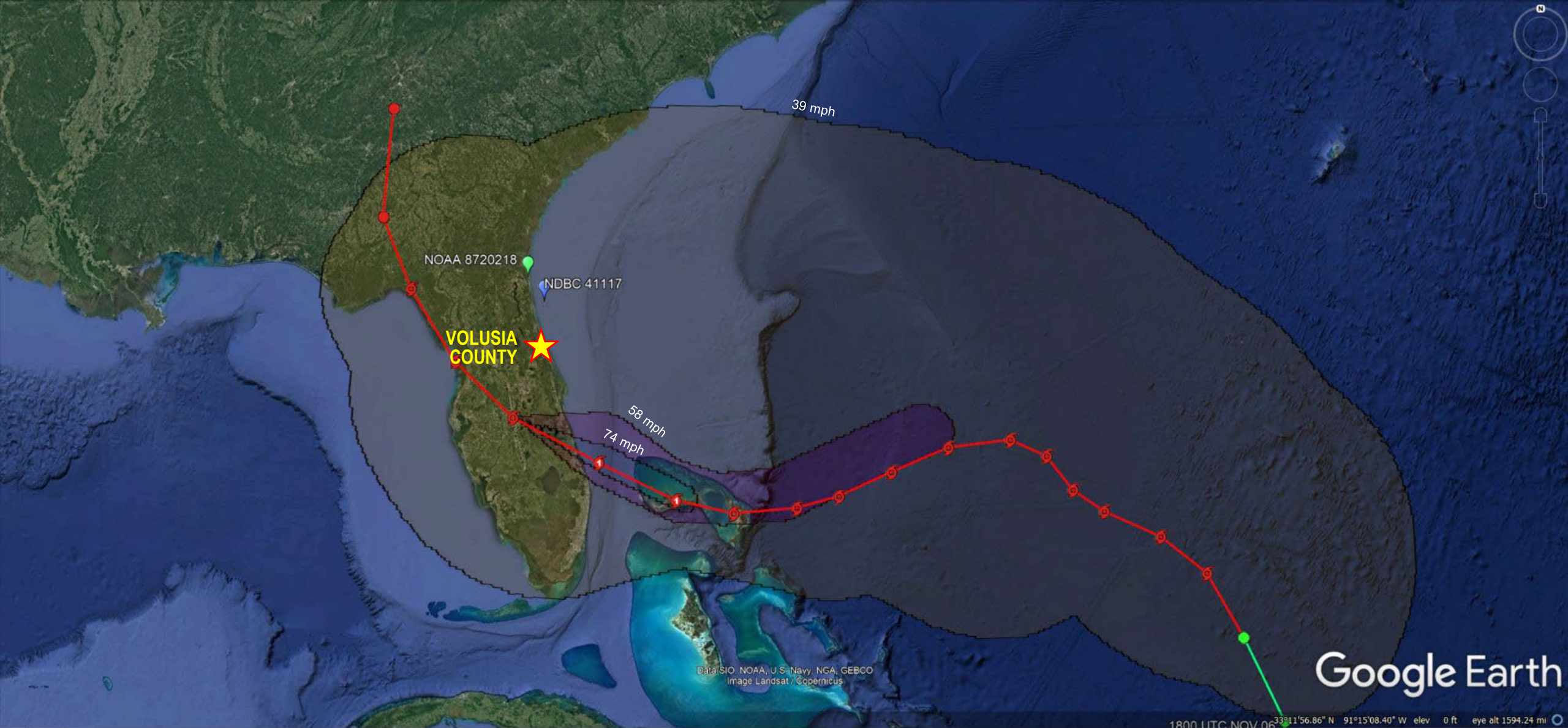
Trusted Partners Delivering Value Today for a Better Tomorrow



HURRICANE NICOLE



BUILDING STRONG

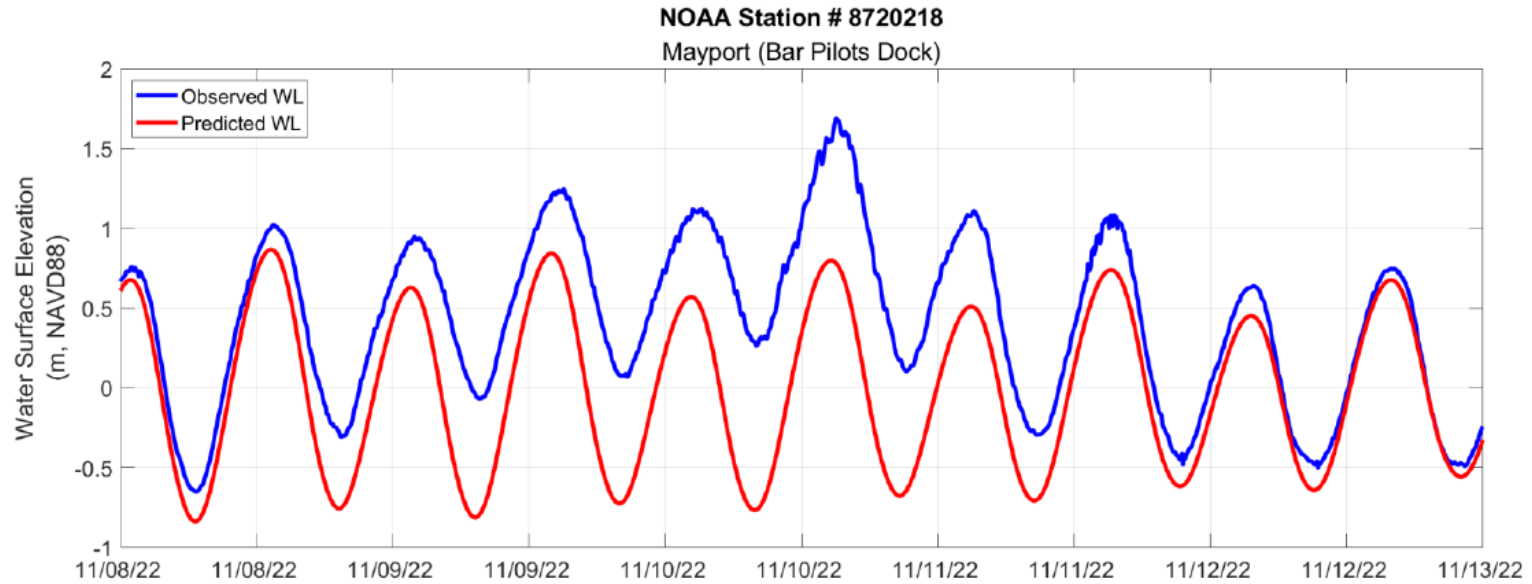




HURRICANE NICOLE



BUILDING STRONG





HURRICANE NICOLE



BUILDING STRONG

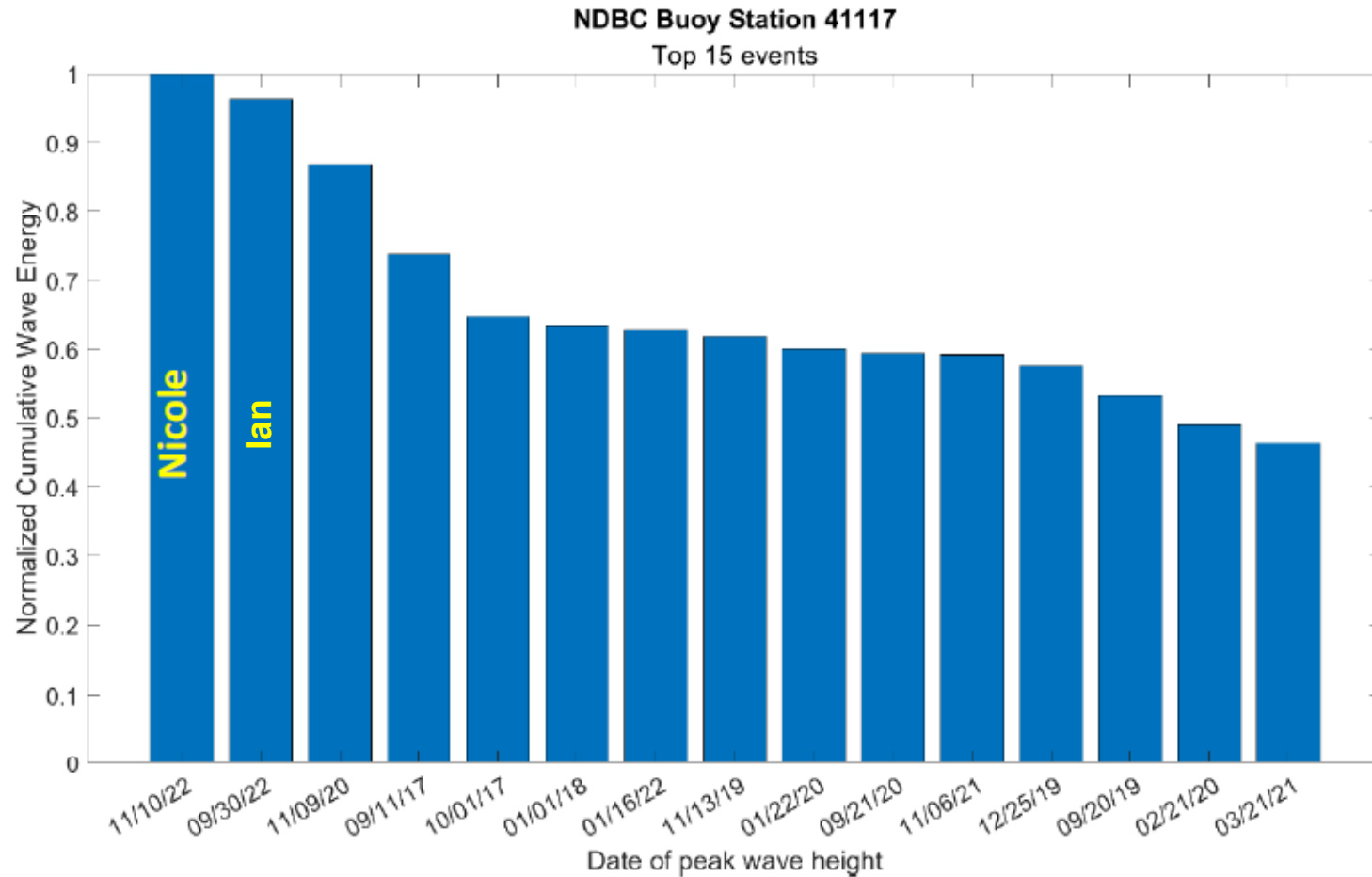


Figure 75: Top 15 storm events in terms of normalized cumulative wave energy at NDBC Buoy 41117



POST HURRICANE NICOLE



BUILDING STRONG



USACE
14 Nov 2022



USACE
14 Nov 2022

Trusted Partners Delivering Value Today for a Better Tomorrow



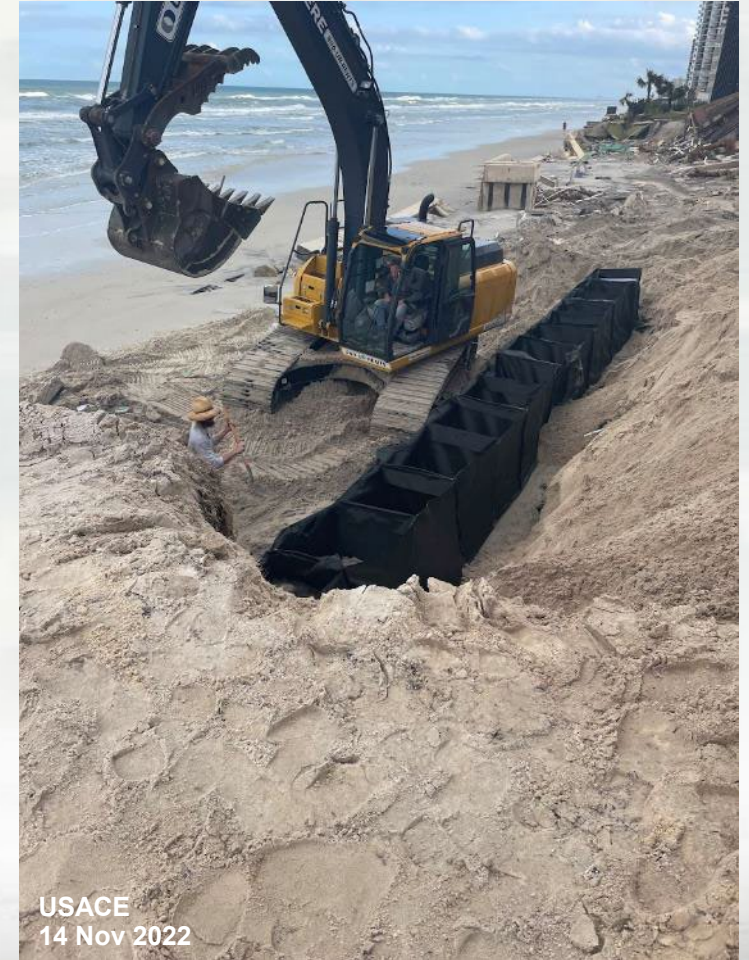
POST HURRICANE NICOLE



BUILDING STRONG



USACE
14 Nov 2022



USACE
14 Nov 2022

Trusted Partners Delivering Value Today for a Better Tomorrow



POST HURRICANE NICOLE



BUILDING STRONG



New-Journal
29 Nov 2022

Construction crews install a Tiger Dam system Tuesday, Nov. 29, 2022, south of Frank Rendon Park in Daytona Beach Shores. The system is intended to offer a temporary protection against future erosion caused by storms. *David Tucker/News-Journal*



TIGER DAM



BUILDING STRONG



Volusia County
28 Jan 2023

Trusted Partners Delivering Value Today for a Better Tomorrow



QUESTIONS



BUILDING STRONG

- Thank you!

William.L.Reilly@usace.army.mil

