

Charlotte County Beach Restoration & Inlet Management Projects

Board of County Commissioners

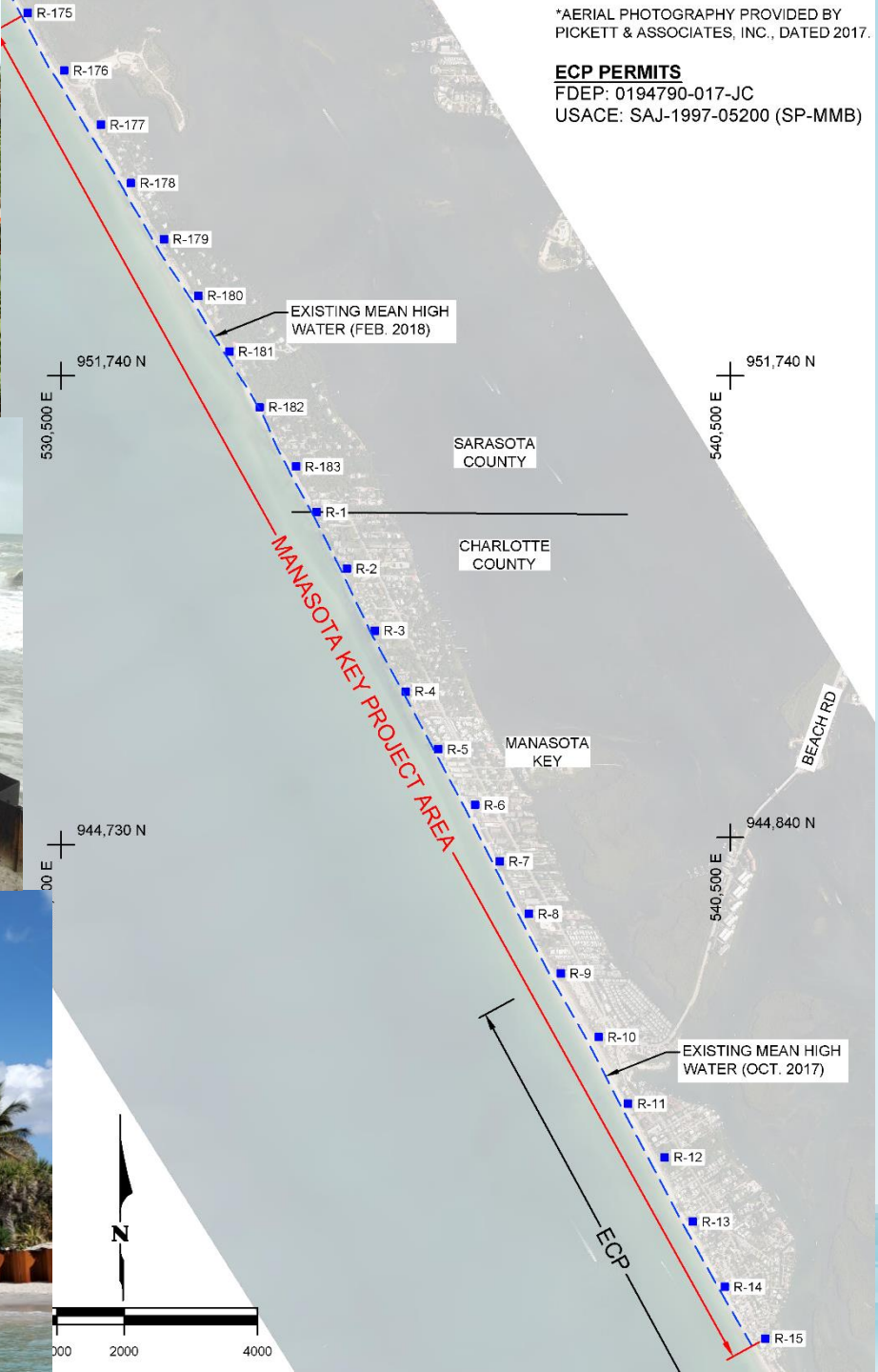
July 18, 2023



OUTLINE

- 2020 Manasota Key Beach Restoration
- 2020 South Beach Nourishment
- 2021 Mitigation Reef
- 2022 Erosion Control Project (aka Stump Pass Navigation Channel and Beach Nourishment)





Manasota Key

- Sarasota-Charlotte Joint Project (R-175 to R-15.4)
- Overlaps With Charlotte's Existing Erosion Control Project (ECP) from Englewood Beach Park to State Park (R-9 to R-15.4)
- Constructed Concurrent with South Beach Fill Nourishment on Knight-Don Pedro Island

2020 Project Facts

- Length = 3.82 Miles
- Volume Placed = 880,280 CY
- Borrow Area ~ 4.2 NM Offshore
- Contractor: Great Lakes Dredge & Dock
- Dredge Details: Padre Island, Dodge Island
- Engineer's Opinion of Cost: \$30,550,320
- Bid Range: \$30,451,850 - \$32,505,000
- Estimated "Regional" Savings ~ \$8 Mil
- Avg Production Rate ~ 18,340 CY/Day
- State Stats: Ranked 3rd(Vol), 4th(Length)



First Hopper Load from Borrow Area to Manasota Key



Cost Share ~ \$12.65 Mil (35%)

Charlotte County R-9



February 2020
Looking North



THANKS TO
Charlotte and
Sarasota BCC's,
Project Managers,
& Staff

Charlotte County R-9



May 2020
Looking North



Charlotte County R-7



February 2020
Looking North



THANKS AND PRAISE Great Lakes Dredge & Dock

Charlotte County R-7



May 2020
Looking North



Charlotte County R-6.5



February 2020
Looking North



THANKS AND PRAISE

Manasota Key Residents, Committees Ambassadors, & Stakeholders

Charlotte County R-6.5



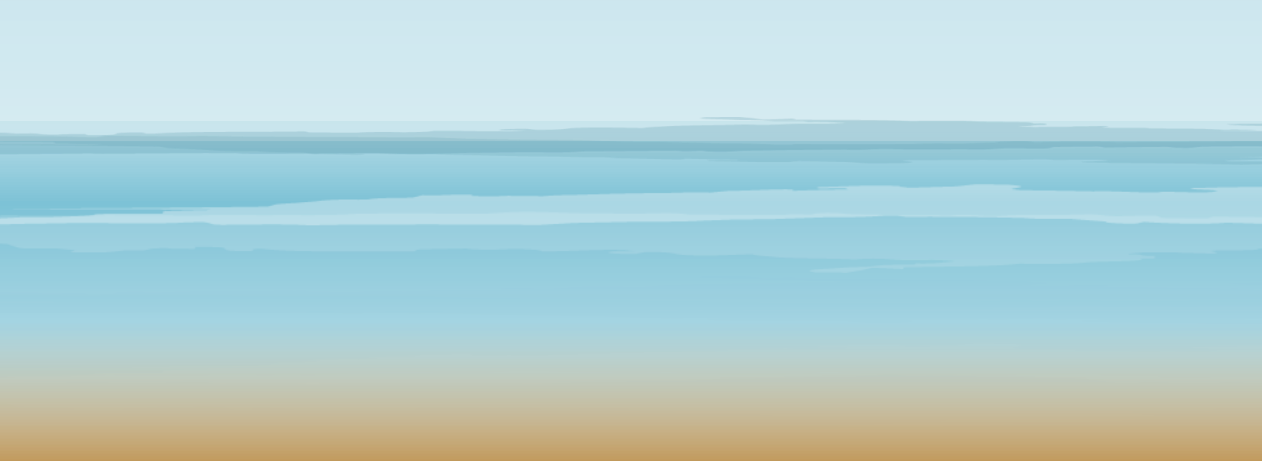
May 2020
Looking North



Charlotte County R-6



February 2020
Looking North



THANKS AND PRAISE

Our Consulting Team: CEG, OSI, RCG, AVS, Sono, and PCI

Charlotte County R-6

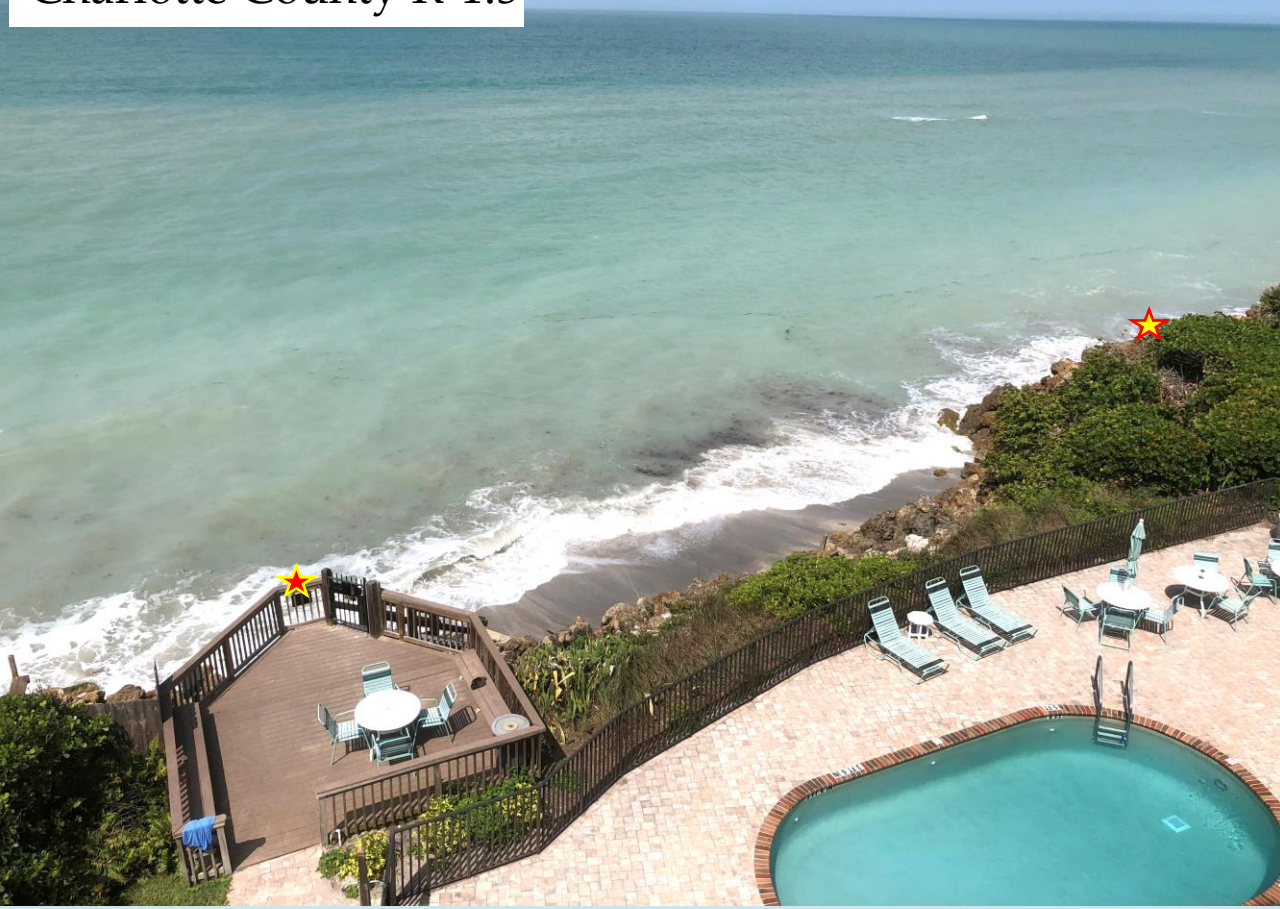


May 2020
Looking North



Charlotte County R-1.5

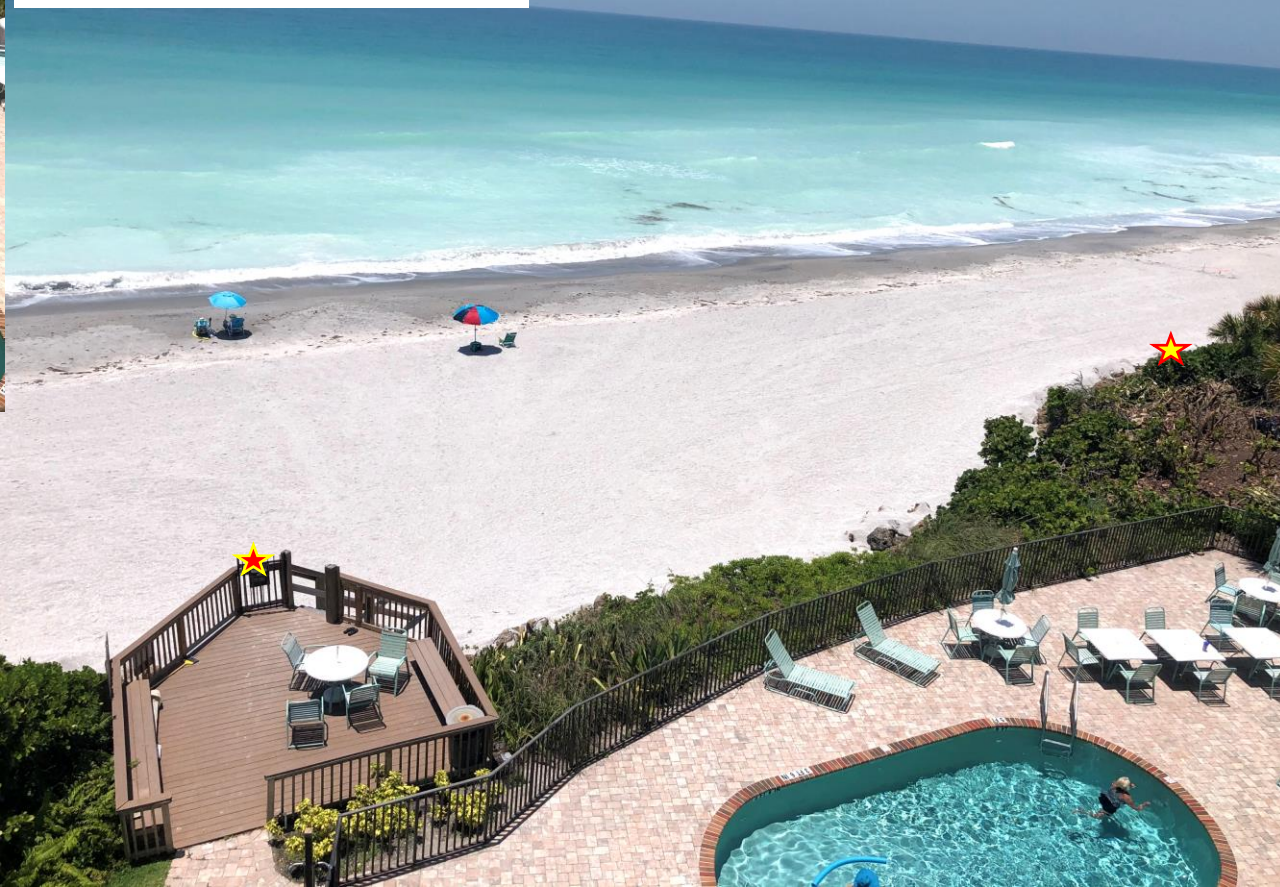
February 2020



THANKS TO
 FDEP, FFWCC, USACE,
 NMFS, & USFWS

Charlotte County R-1.5

March 2020



Photos Courtesy of Damian Ochab

South Beach Fill (2020)

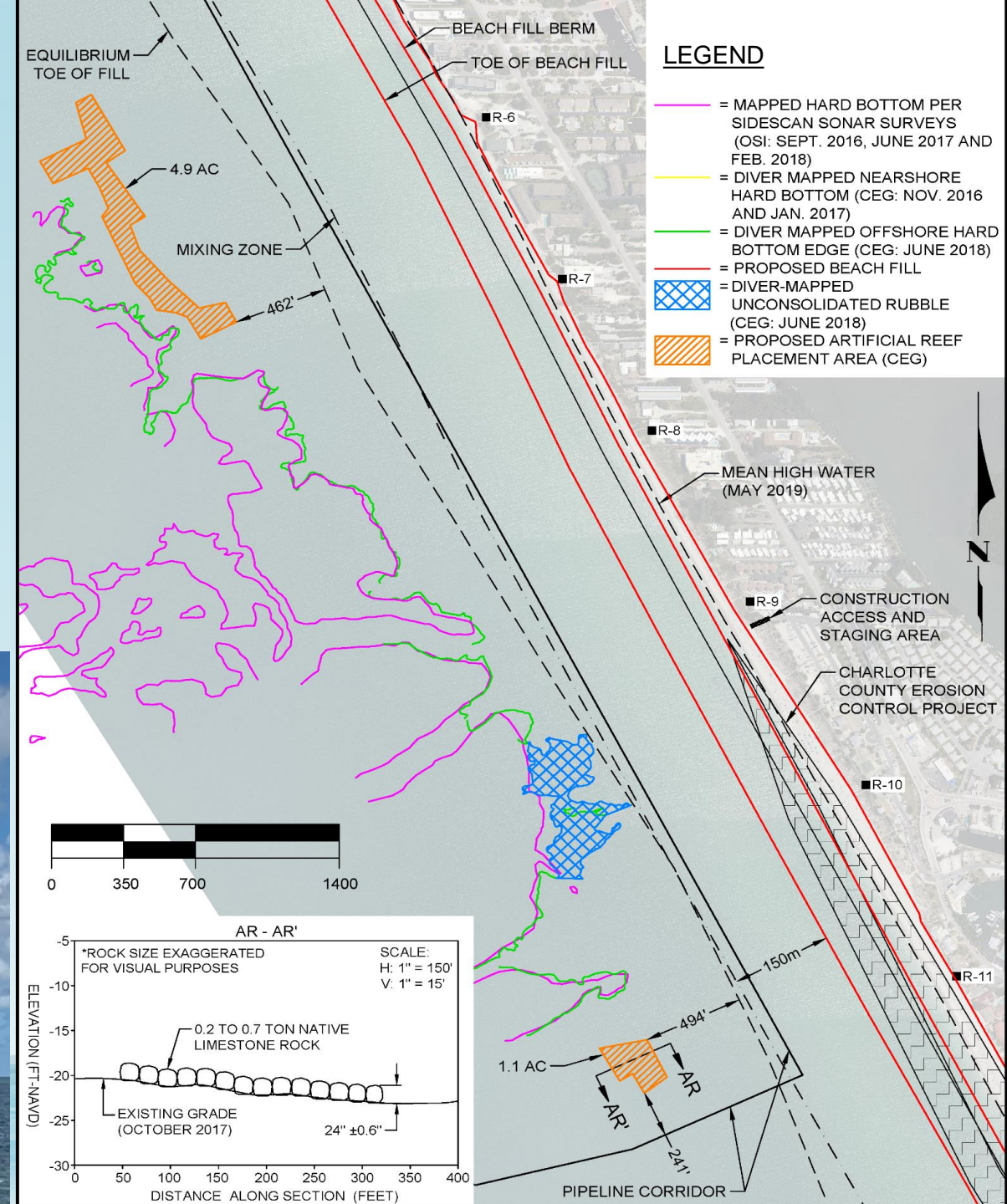
- Length = 1.65 Miles
- Volume Placed = 340,980 CY
- Borrow Area ~ 4.2 NM Offshore



Courtesy of GLDD

Mitigation Reef (2021)

- Area = 3.9 Acres (Net) (80%-N, 20%-S)
- Estimated # of Rocks = 16,472
- Location ~ 1400 Ft Offshore
- Contractor: Cayo LLC
- Engineer's Opinion of Cost: \$6,957,000
- Bid Range: \$6,817,100 - \$9,100,000



Mitigation Reef

NOTES

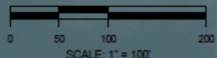
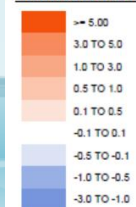
1. NEARSHORE HARDBOTTOM MAPPING SURVEY CONDUCTED BY OSI, INC. JUNE 12-19, 2017.
2. MITIGATION REEF SURVEYS CONDUCTED BY HYATT SURVEY SERVICES, INC. ON JANUARY 20, 2021 AND MARCH 9, 2021.
3. MITIGATION REEF PERIMETER SURVEY CONDUCTED BY CEG, INC. ON JANUARY 27, 2021 AND FEBRUARY 26, 2021.
4. PLANE COORDINATES ARE BASED ON THE TRANSVERSE MERCATOR PROJECTION FOR THE WEST ZONE OF FLORIDA AND REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83).
5. INFORMATION SHOWN HEREON REFLECTS CONDITIONS AS THEY EXISTED ON THE SURVEY DATE SHOWN AND CAN ONLY BE CONSIDERED INDICATIVE OF CONDITIONS AT THAT TIME.
6. AERIAL PHOTOGRAPHY PROVIDED BY PICKETT & ASSOCIATES, INC., DATED SEPTEMBER 4, 2020.



LEGEND

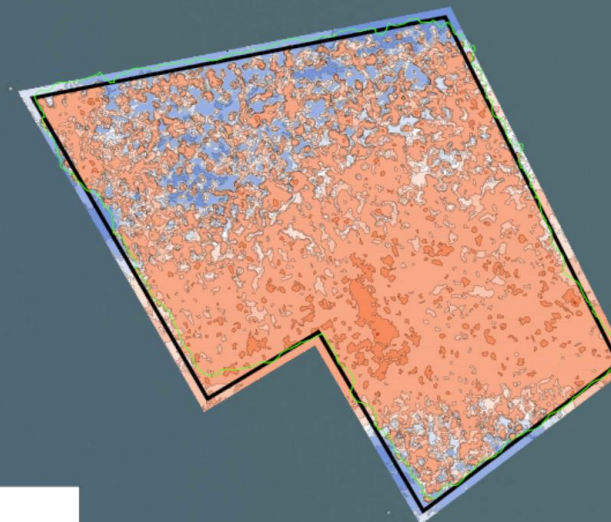
- NORTH REEF LIMITS
- SURVEYED REEF LIMITS

RELIEF CONTOURS (FT)



NOTES

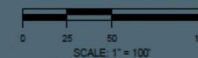
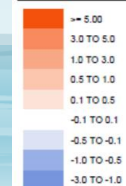
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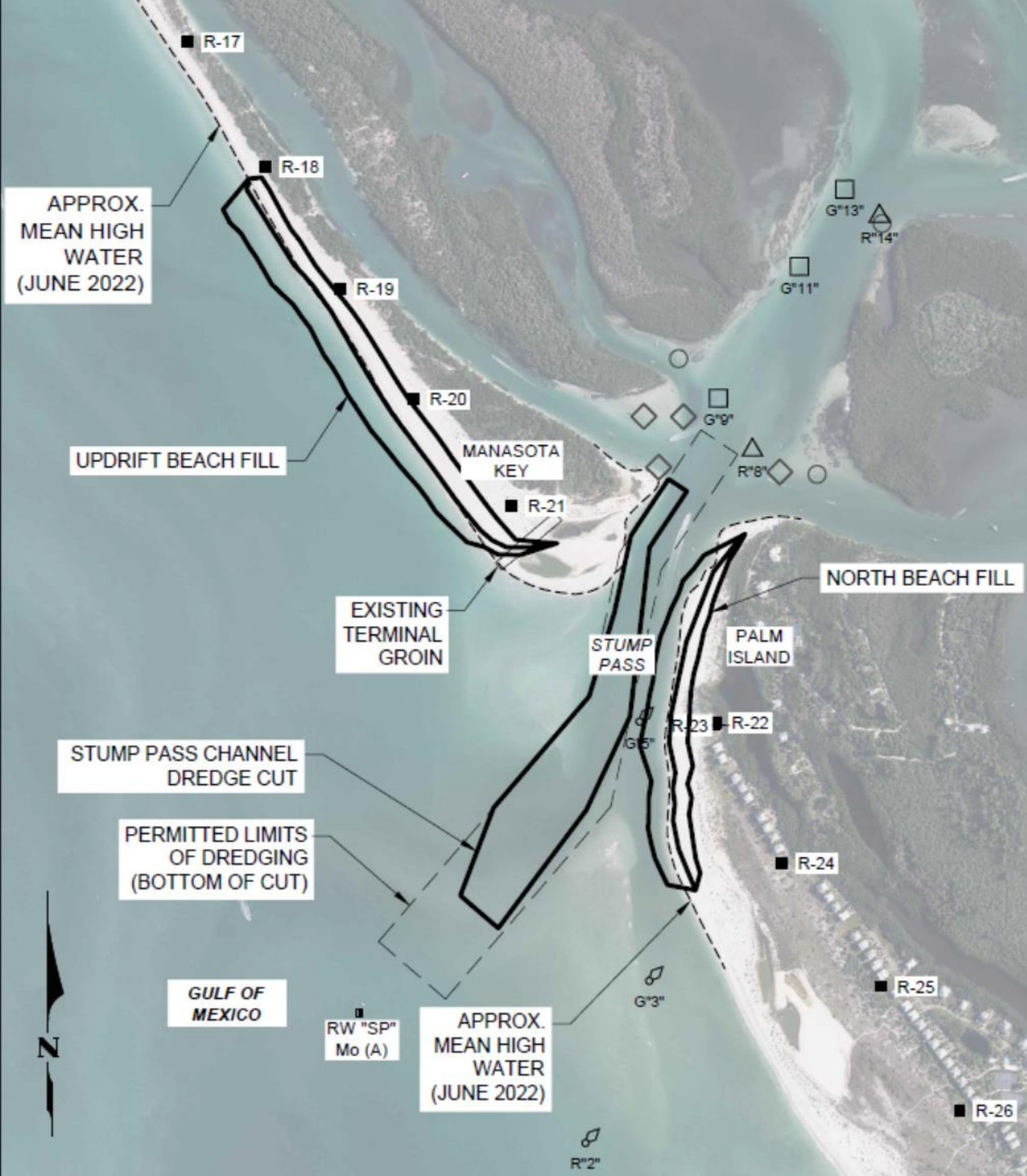
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- SURVEYED REEF LIMITS

RELIEF CONTOURS (FT)



2022 Erosion Control Project

- Updrift Beach: 107,000 CY
- North Beach: 100,000 CY
- Stump Pass: 218,000 CY (dredged)



HURRICANE IAN

- Fifth-strongest hurricane on record to strike the U.S.
- Cat 4 with maximum sustained winds of 155 mph, just shy of a Cat 5
- Made landfall near Cayo Costa on Sep. 28, 2022 at 3:05 PM EDT with maximum sustained winds of 150 mph

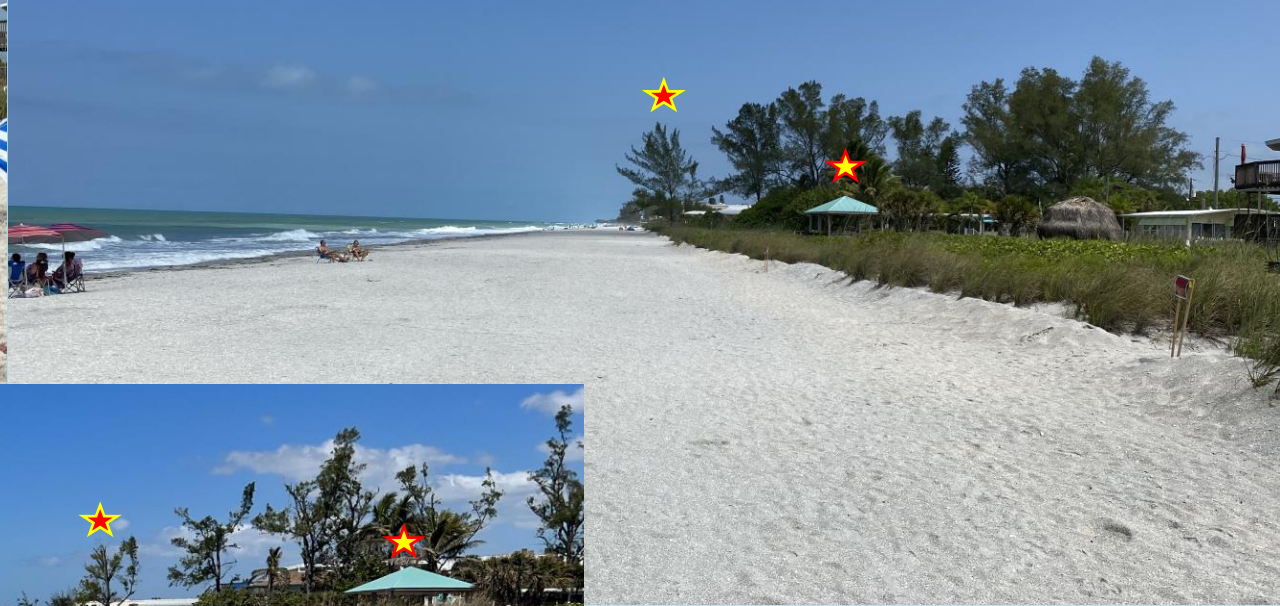


Charlotte County R-9



February 2020
Looking North

Charlotte County R-9

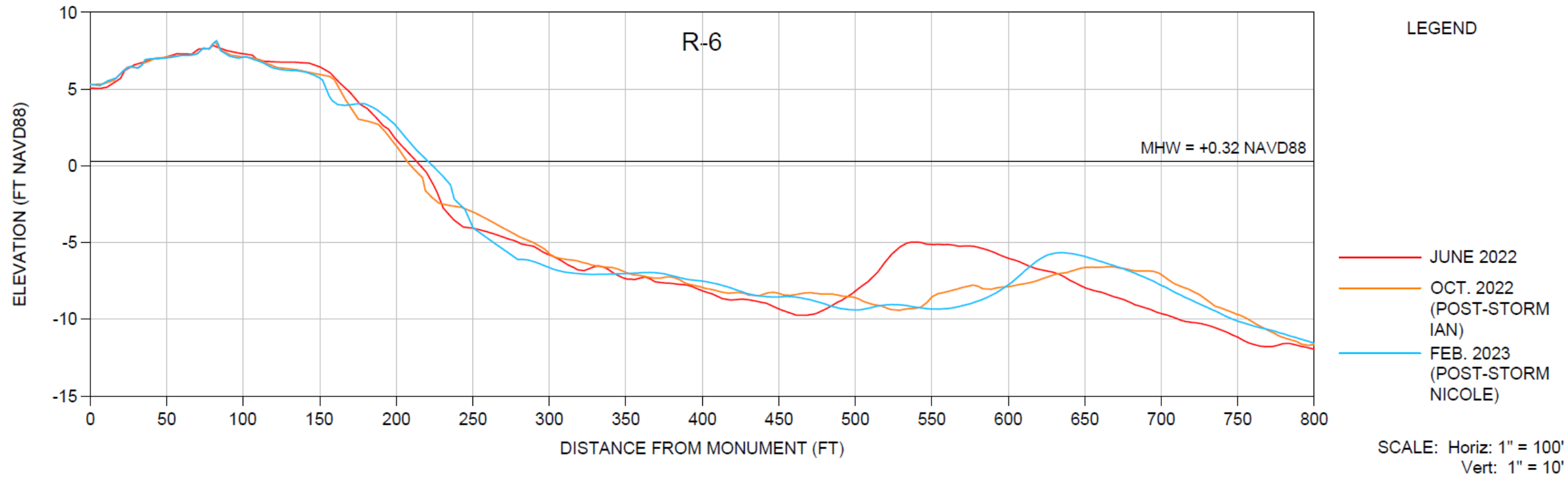


May 2020
Looking North

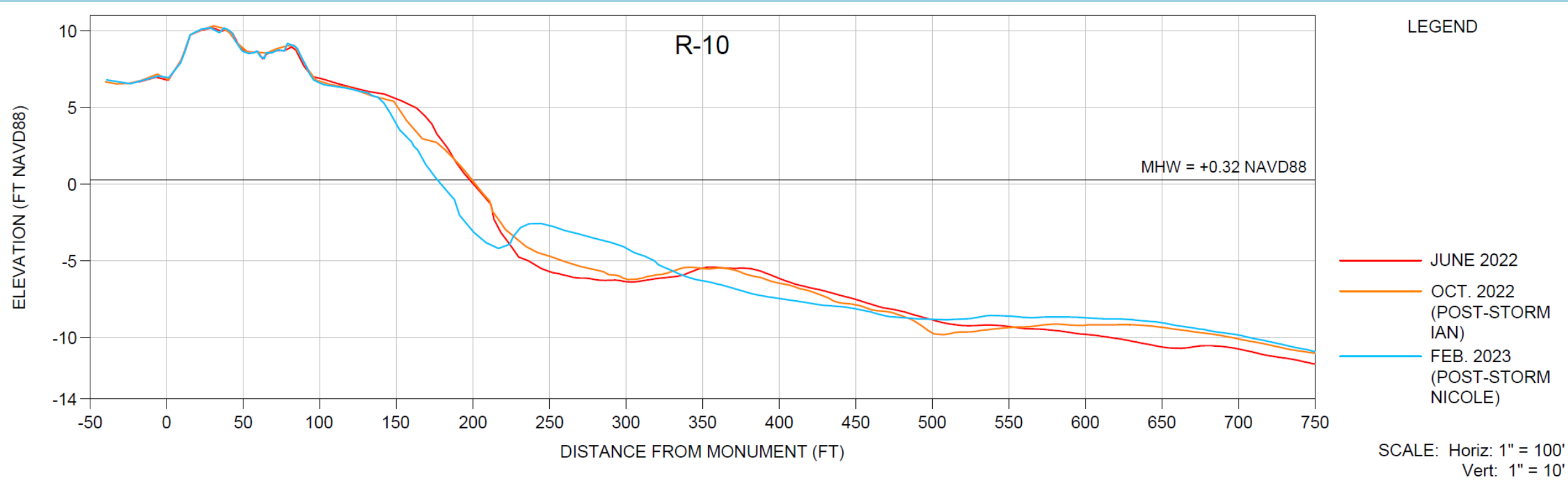


March 2023
Looking North

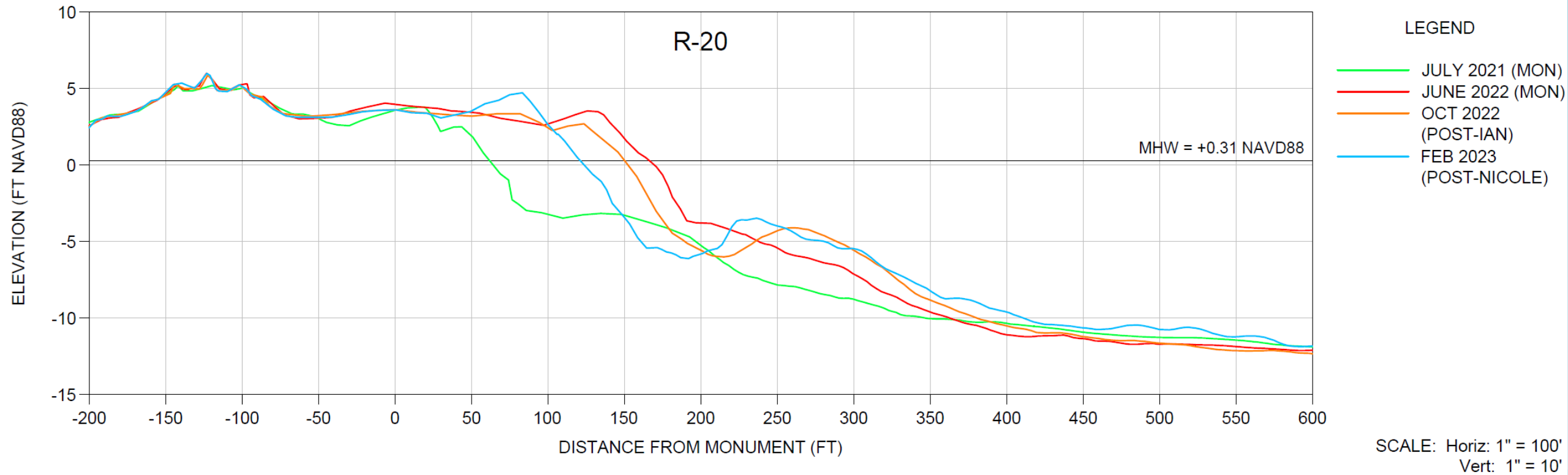
Manasota Key



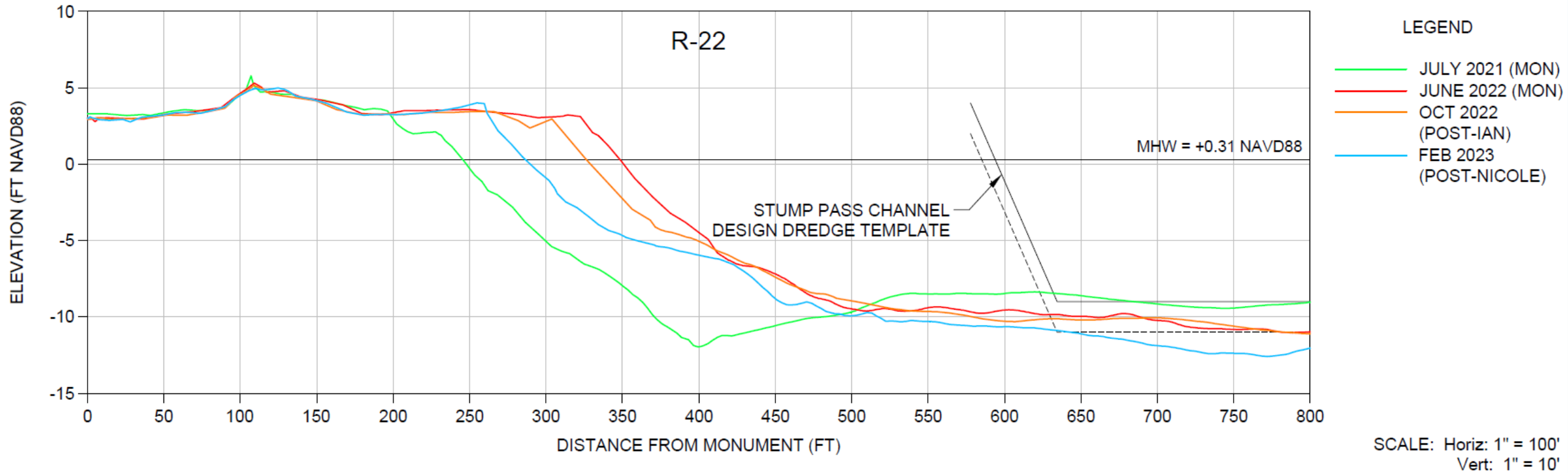
Manasota Key



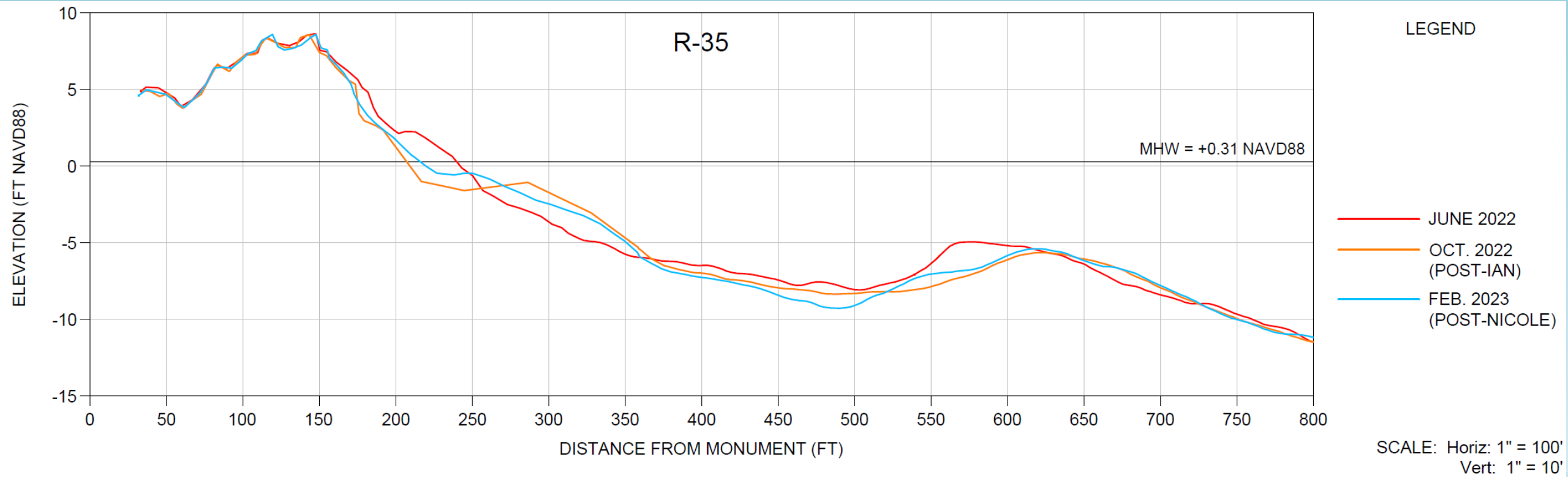
Stump Pass Beach State Park



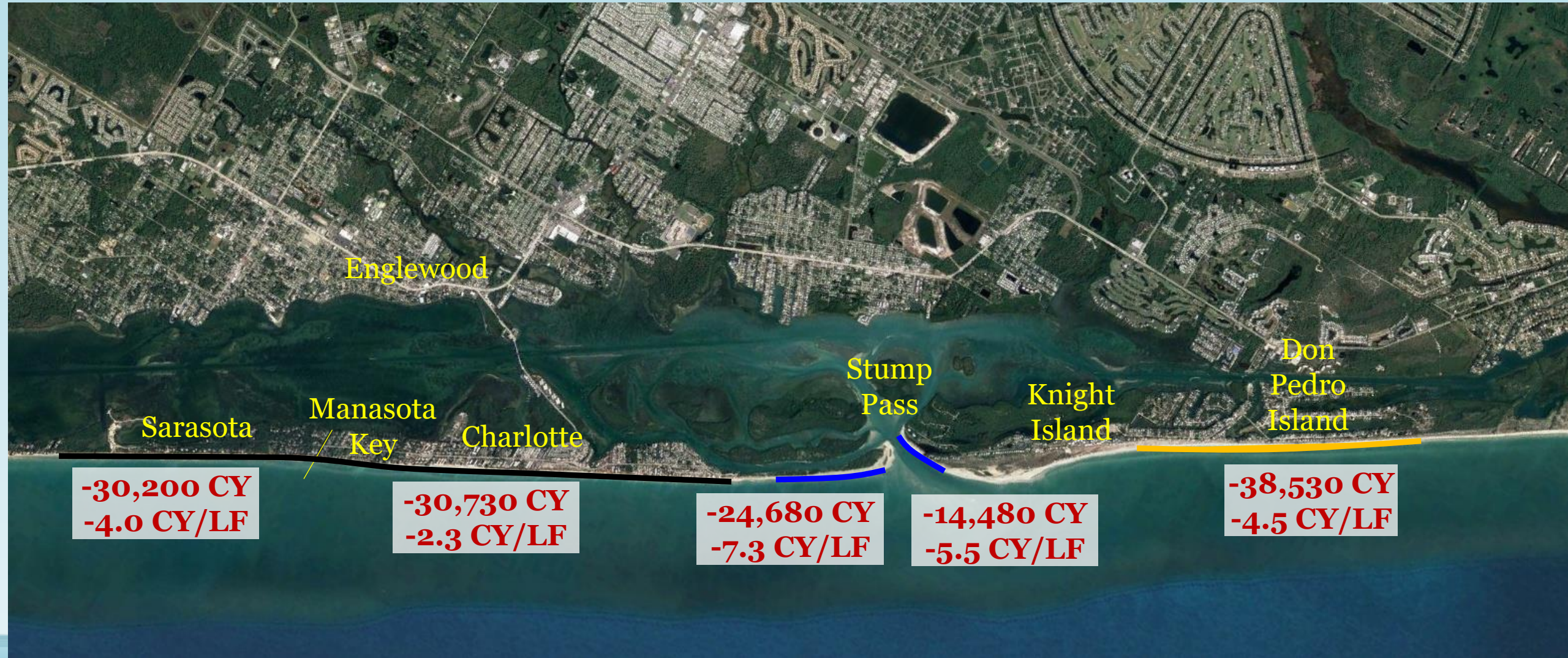
North Beach (Palm Island)



South Beach (Knight-Don Pedro)



HURRICANE IAN IMPACTS

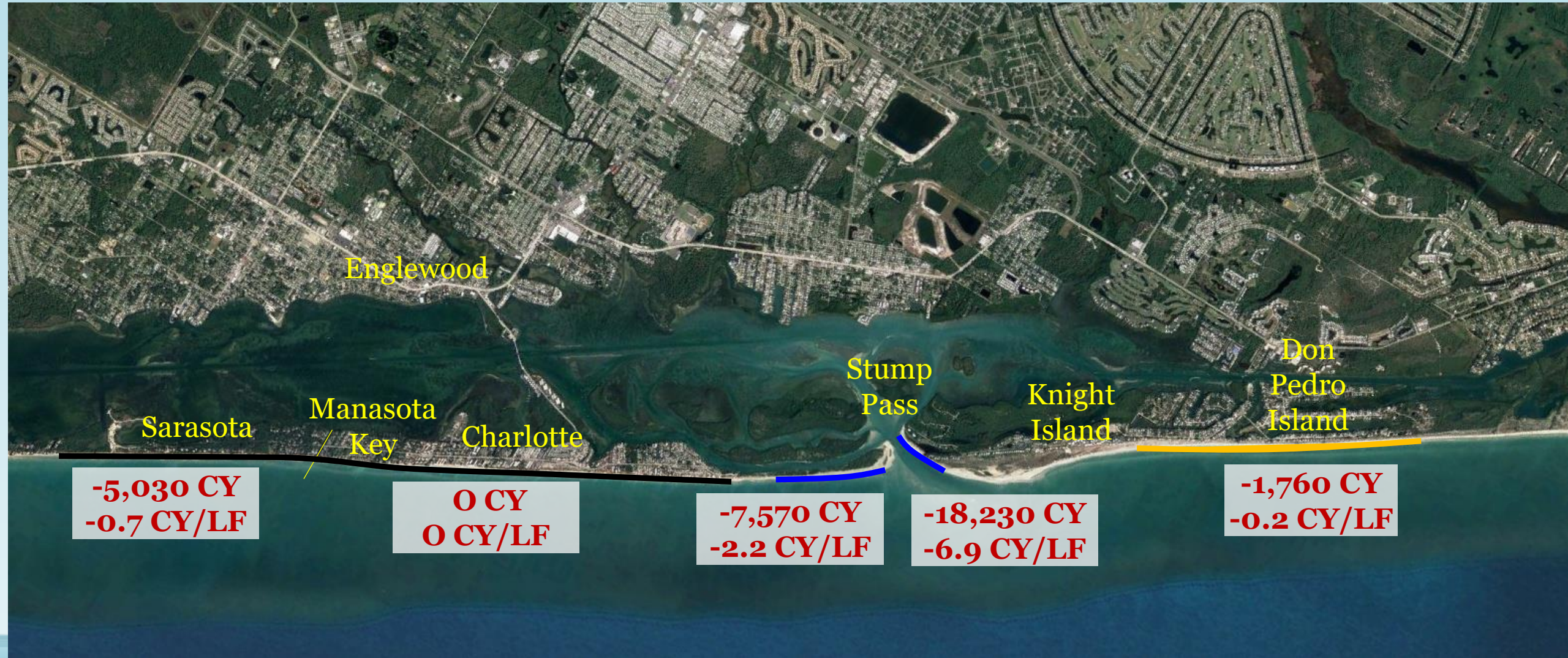


2020 Restoration

2022 Nourishment (Stump Pass)

2020 Nourishment

HURRICANE NICOLE IMPACTS



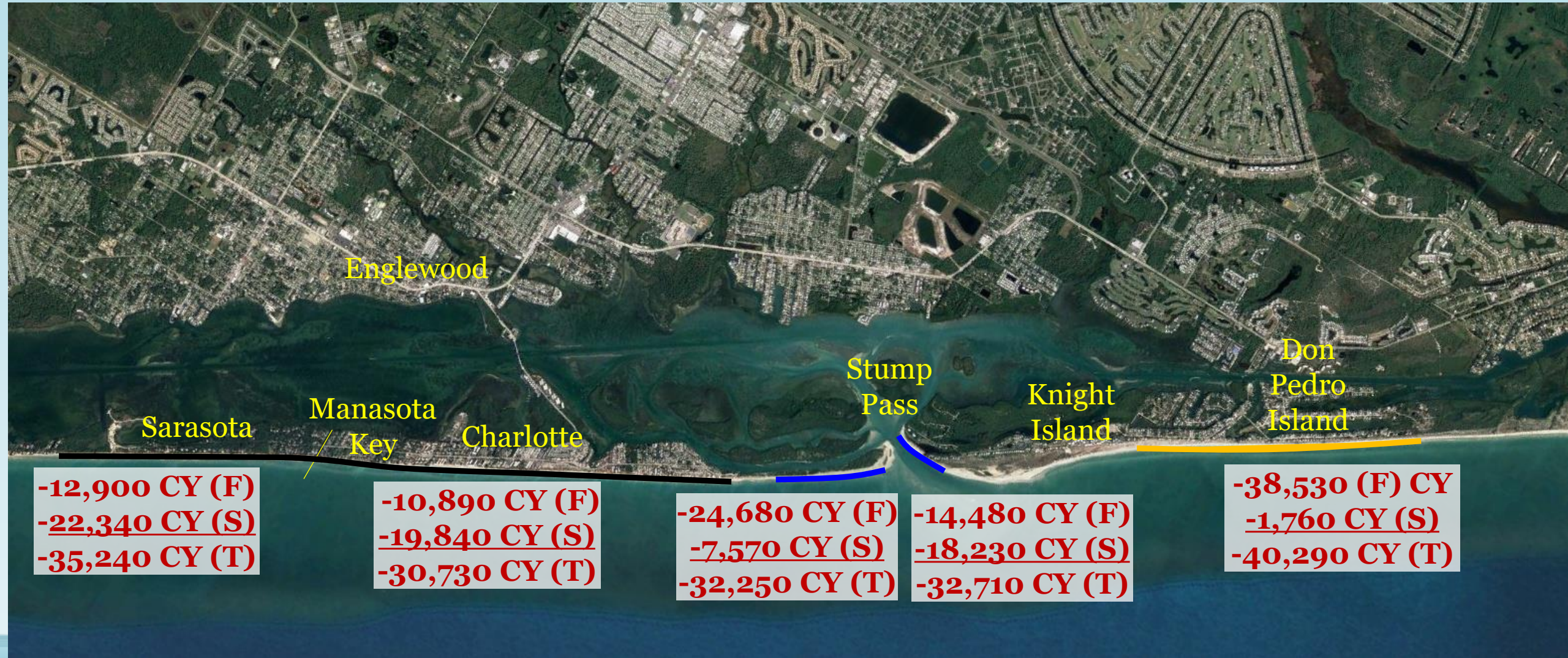
2020 Restoration **2022 Nourishment (Stump Pass)** **2020 Nourishment**

SUMMARY OF IMPACTS

F=FEMA

S=STATE OF FL

T=TOTAL LOSSES



-12,900 CY (F)
-22,340 CY (S)
-35,240 CY (T)

-10,890 CY (F)
-19,840 CY (S)
-30,730 CY (T)

-24,680 CY (F)
-7,570 CY (S)
-32,250 CY (T)

-14,480 CY (F)
-18,230 CY (S)
-32,710 CY (T)

-38,530 (F) CY
-1,760 CY (S)
-40,290 CY (T)

2020 Restoration

2022 Nourishment (Stump Pass)

2020 Nourishment

SUMMARY

- Total Volume Impact to MK over 66K CY, >30K CY on Charlotte Segment
- Total Volume Impact to ECP over 105K CY

Two Claims To FEMA (Category G) for Hurricane Ian:

MK: 10,890 CY, Cost = \$1.30 Mil (Truck Haul)

- 2024-25 Construction Window Pending FEMA Approval

ECP: 77,690 CY, Cost = \$3.04 Mil (Stump Pass)

- 2024-25 Construction Window Pending FEMA Approval

State of FL Recovery Plan (Includes Hurricanes Ian and Nicole):

MK: Cost* ~ \$2.70 Mil (Truck Haul)

ECP: Cost* ~ \$1.21 Mil (Stump)

*includes 25% local share of Category G Claim above

STUMP PASS POST-IAN CONDITION SURVEY

CHANNEL SCOUR VOLUME = -15,630 CY

LEGEND

- DEC. 2, 2021 (PRE-CON)
- JUNE 28-29, 2022 (MON)
- OCT. 8, 2022 (POST IAN)

- NOTES**
- SURVEYS CONDUCTED BY COASTAL ENGINEERING CONSULTANTS, INC ON JUNE 28-29, 2022 AND OCTOBER 8, 2022.
 - PLANE COORDINATES ARE BASED ON THE TRANSVERSE MERCATOR PROJECTION FOR THE WEST ZONE OF FLORIDA AND REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83).
 - INFORMATION SHOWN HEREON REFLECTS CONDITIONS AS THEY EXISTED ON THE SURVEY DATE SHOWN AND CAN ONLY BE CONSIDERED INDICATIVE OF CONDITIONS AT THAT TIME.
 - AERIAL PHOTOGRAPHY OBTAINED FROM NOAA DATED OCTOBER 2022.

PUBLISHED TIDAL INFORMATION

TIDAL DATUM FROM VENICE, GULF OF MEXICO, FLORIDA
BASED ON FLORIDA 872 5858 TIDAL STATION, PUBLISHED 09-15-2010

LENGTH OF SERIES = 4 MONTHS
TIDAL PERIOD = JUNE 1960 - SEPTEMBER 1960
TIDAL EPOCH = 1983 - 2001
CONTROL TIDAL STATION = NAPLES, GULF OF MEXICO (872 5110)

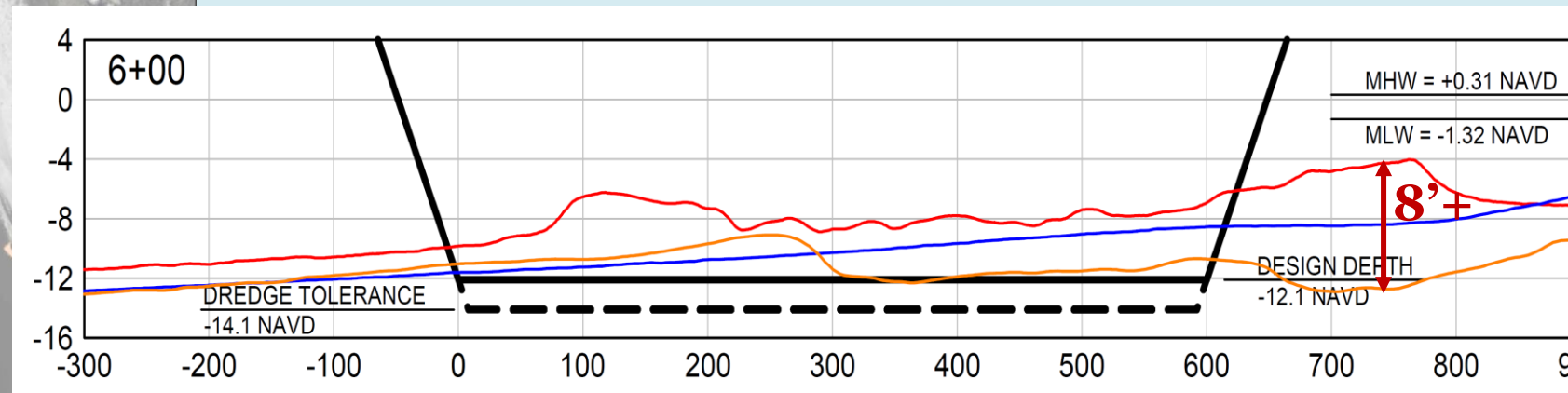
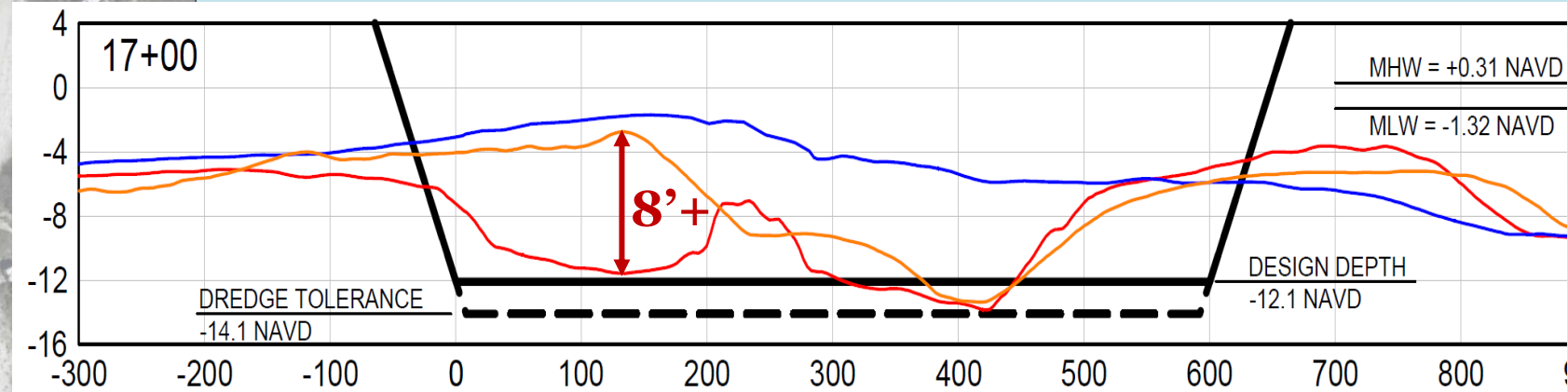
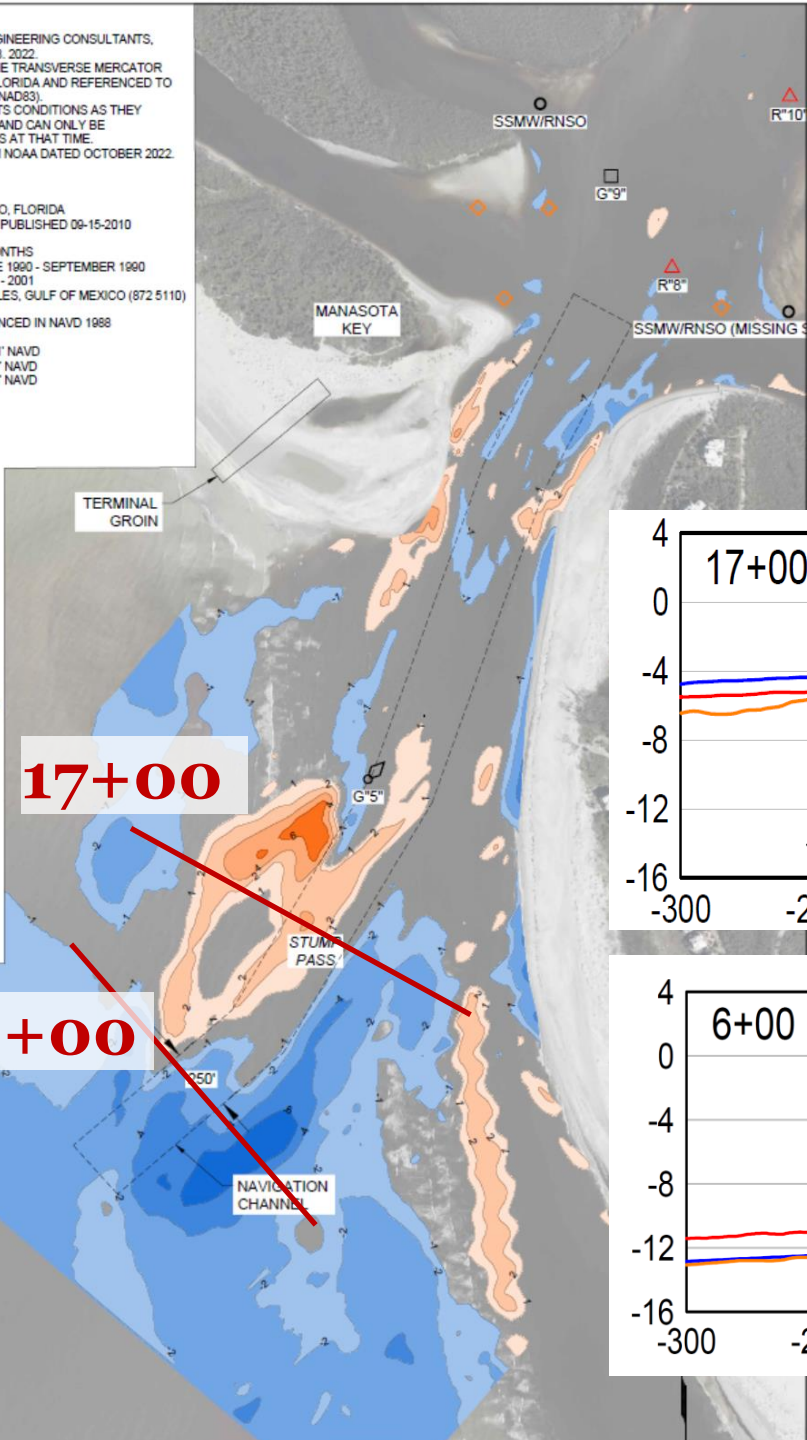
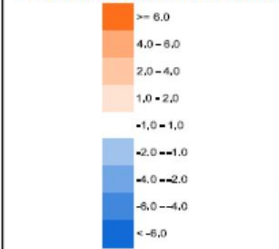
ELEVATIONS OF TIDAL DATUMS ARE REFERENCED IN NAVD 1988

MEAN HIGH WATER (MHW) = +0.31' NAVD
MEAN LOW WATER (MLW) = -1.25' NAVD
MEAN LOWER LOW WATER (MLLW) = -1.82' NAVD

LEGEND

- EXISTING CHANNEL MARKER
- EXISTING MARKER BUOY
- ◆ EXISTING PILE
- EXISTING SLOW SPEED MINIMUM WAKE

2022/06 - 2022/10 CHANGE (FT)
+ = SHOALING/FILL PLACEMENT
- = SCOURING/CHANNEL DREDGING



GULF OF MEXICO

SCHEDULE

- Post-Ian Category G Engineering Report Submittal: March 2023
- FEMA Requests for Information and Responses: March - April 2023
- Environmental and Historic Preservation Review: April - Dec 2023
- Project Worksheet and FEMA Approval: January - March 2024
- Final Design: April - June 2024
- Bid Process: July - September 2024
- Construction: November - December 2024