

**NOTICE OF SHORELINE TASK FORCE REGULAR MEETING
CITY OF SOUTH PADRE ISLAND**

TUESDAY, MAY 31, 2022

3:00 PM AT THE MUNICIPAL COMPLEX
2ND FLOOR CITY COUNCIL CHAMBERS

4601 PADRE BOULEVARD SOUTH PADRE ISLAND, TX 78597

1. Call to Order

2. Pledge of Allegiance

3. Public Comments and Announcements

This is an opportunity for citizens to speak to the board relating to agenda or non-agenda items. Speakers are required to address the Shoreline Task Force at the podium and give their name before addressing their concerns. [Note: State law will not permit the Shoreline Task Force to discuss, debate, or consider items that are not on the agenda. Citizen comments may be referred to City Staff or may be placed on the agenda of a future Shoreline Task Force meeting]

4. Regular Agenda

- 4.1. Discussion and action to approve the minutes from the regular meeting on May 10, 2022. (Boburka)
- 4.2. Discussion and action to select primary and secondary preliminary designs for the Laguna Madre living shoreline. (Hughston)
- 4.3. Updates on departmental projects: (Boburka, Hughston)
 - Coastal Management Program (CMP) Cycle 24
 - CMP Cycle 25
 - CMP Cycle 26
 - Marisol Boat Ramp (RESTORE Act & Texas Parks and Wildlife Department grants)
 - Wind and Water Sports Venue
 - Tompkins Channel
 - Regional Sediment Management Plan

5. Adjourn

NOTE:

One or more members of the City of South Padre Island City Council may attend this meeting, if so, this statement satisfies the requirements of the OPEN MEETINGS ACT.

DATED MAY 26, 2022


Angelique Soto, City Secretary

I, THE UNDERSIGNED AUTHORITY, DO HEREBY CERTIFY THAT THE ABOVE NOTICE OF MEETING OF THE SHORELINE TASK FORCE OF THE CITY OF SOUTH PADRE ISLAND, TEXAS IS A TRUE AND CORRECT COPY OF SAID NOTICE AND THAT I POSTED A TRUE AND CORRECT COPY OF SAID NOTICE ON THE BULLETIN BOARD AT CITY HALL/MUNICIPAL BUILDING ON **MAY 26, 2022**, AT/OR BEFORE 3:00 PM AND REMAINED SO POSTED CONTINUOUSLY FOR AT LEAST 72 HOURS PRECEDING THE SCHEDULED TIME OF SAID MEETING.


Angelique Soto, City Secretary

THIS FACILITY IS WHEELCHAIR ACCESSIBLE, AND ACCESSIBLE PARKING SPACES ARE AVAILABLE. REQUESTS FOR ACCOMMODATIONS OR INTERPRETIVE SERVICES MUST BE MADE 48 HOURS PRIOR TO THIS MEETING. PLEASE CONTACT BUILDING OFFICIAL, GEORGE MARTINEZ AT (956)761-8103.

Agenda: MAY 31, 2022



**CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE
AGENDA REQUEST FORM**

MEETING DATE: May 31, 2022

NAME & TITLE: Kristina Boburka, Shoreline Director

DEPARTMENT: Shoreline Department

ITEM

Discussion and action to approve the minutes from the regular meeting on May 10, 2022. (Boburka)

ITEM BACKGROUND

Approve the

BUDGET/FINANCIAL SUMMARY

None.

COMPREHENSIVE PLAN GOAL

Chapter 9: Shoreline

LEGAL REVIEW

Sent to Legal:

Approved by Legal:

RECOMMENDATIONS/COMMENTS:

**MINUTES OF REGULAR MEETING
CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE**

Tuesday, May 10th, 2022

I. CALL TO ORDER.

The Shoreline Task Force of the City of South Padre Island, Texas, held a regular meeting on Tuesday, May 10th, 2022, at the Municipal Complex Building, 2nd Floor, 4601 Padre Boulevard, South Padre Island, Texas. Chairman Robert Nixon called the meeting to order at 3:00 pm. A quorum was present with Chairman Robert Nixon, Vice Chairman Stormy Wall, Task Force Members Normal Trevino, Michael Sularz, and Carol Bolstad.

City Council Member Ken Medders was present. City staff present included Shoreline Director Kristina Boburka, City Secretary Nikki Soto, Police Chief Claudine O'Carroll, Lieutenant Gilbert Silva, Parks and Recreation Manager Debbie Huffman, and Environmental Health Director Victor Baldovinos.

II. PLEDGE OF ALLEGIANCE.

Chairman Robert Nixon led the Pledge of Allegiance.

III. PUBLIC COMMENTS AND ANNOUNCEMENTS.

Public comments were given at this time.

IV. REGULAR AGENDA

I. DISCUSSION AND ACTION TO APPROVE THE MINUTES FROM THE REGULAR MEETING ON APRIL 20TH, 2022. (HUGHSTON)

Task Force Member Wall made a motion to approve the minutes, seconded by Task Force Member Trevino. Motion passed unanimously.

II. UPDATES AND DISCUSSION ON THE LIVING SHORELINE PROJECT, PARTIALLY FUNDED THROUGH THE NATIONAL FISH AND WILDLIFE FOUNDATION (NFWF)'S NATIONAL COASTAL RESILIENCY FUND (NCRF), FROM:

- UNITED STATES GEOLOGICAL SURVEY
- HDR

The U.S. Geological Survey's South Texas Branch Chief, Doug Schnoebelen, gave an update on the data collection that has been taken and released so far. This included water quality, tidal monitoring, and biological data collection. Following his presentation, Cameron Perry and Robert Lewis with HDR Engineering presented preliminary ideas for the design of the Laguna Madre living shoreline. Discussion between HDR staff and the Shoreline Task Force occurred on the various ideas that could be utilized for the project which included artificial reefs; alternating berms created with sand, clay, and oyster shells; living breakwater system; and two containment cell designs.

III. DISCUSSION AND POSSIBLE ACTION TO PROVIDE A RECOMMENDATION TO CITY COUNCIL REGARDING VEHICLE AND TRAILER PARKING ALONG GULF BOULEVARD. (SHORELINE TASK FORCE)

An update was provided by Chairman Robert Nixon on what has occurred with this item so far including what was discussed at the last City Council meeting when this item was presented. Discussion was held. A motion to hold a joint workshop between the Shoreline Task Force and City Council was made by Task Force Member Wall and seconded by Task Force Member Bolstad. Motion carried unanimously.

IV. DISCUSSION AND ACTION TO PROVIDE A RECOMMENDATION TO CITY COUNCIL ON THE BIDS THAT WERE RECEIVED FOR THE WHITECAP CIRCLE BEACH ACCESS IMPROVEMENTS PROJECT, PARTIALLY FUNDED BY THE COASTAL MANAGEMENT PROGRAM (CMP)'S CYCLE 25. (BOBURKA, HUGHSTON)

Director Boburka gave an update on the bids that were received and explained that only one bid was valid and complete by Bryant Industrial Services for \$1,305,962.72. Task Force Member Sularz made a motion to recommend Bryant Industrial Services to City Council. The motion was seconded by Task Force Member Trevino. Motion carried unanimously.

V. DISCUSSION AND POSSIBLE ACTION TO PROVIDE A RECOMMENDATION TO CITY COUNCIL ON THE REGULATION OF ELECTRIC SCOOTERS AND ELECTRIC BICYCLES ON THE BEACH.

Chairman Robert Nixon introduced the item and gave a brief update on what the current ordinances are relating to this item. Discussion between the Task Force was held on other options or exemptions that could be in place to allow electric scooters or electric bicycles on the beach. Task Force Wall stated that this ordinance is in place for safety reasons along our beach and made a motion to recommend to City Council that the ordinance should remain as is. Task Force Member Sularz seconded the item. Motion carried unanimously.

VI. DISCUSSION AND ACTION TO RESCHEDULE OR CANCEL THE REGULAR MEETING ON MAY 24, 2022, DUE TO ELECTIONS. (BOBURKA)

Shoreline Director Boburka stated that elections will be taking place on May 24, 2022, which is the date of the next regular Task Force meeting and will need the Council Chambers to be reserved. Discussion was had to come up with a possible new date for the regular meeting. Task Force Chairman Nixon made a motion to reschedule the May 24, 2022, regular meeting to May 31, 2022. The motion was seconded by Task Force Member Trevino. Motion carried unanimously.

V. ADJORN.

There being no further business, Chairman Nixon adjourned the meeting at 4:36 p.m.

Kristina Boburka, Shoreline Director

Robert Nixon, Chairman

**CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE
AGENDA REQUEST FORM**

MEETING DATE: May 31, 2022

NAME & TITLE: Kristina Boburka, Shoreline Director

DEPARTMENT: Shoreline Department

ITEM

Discussion and action to select primary and secondary preliminary designs for the Laguna Madre living shoreline.
(Hughston)

ITEM BACKGROUND

HDR presented various preliminary layouts at the last regular meeting on May 10, 2022. To move forward, selections on what will work best for the Island need to be made.

BUDGET/FINANCIAL SUMMARY

Partial funding through the National Fish and Wildlife Foundation's National Coastal Resiliency Fund.

COMPREHENSIVE PLAN GOAL

Chapter 9: Shoreline

LEGAL REVIEW

Sent to Legal:

Approved by Legal:

RECOMMENDATIONS/COMMENTS:



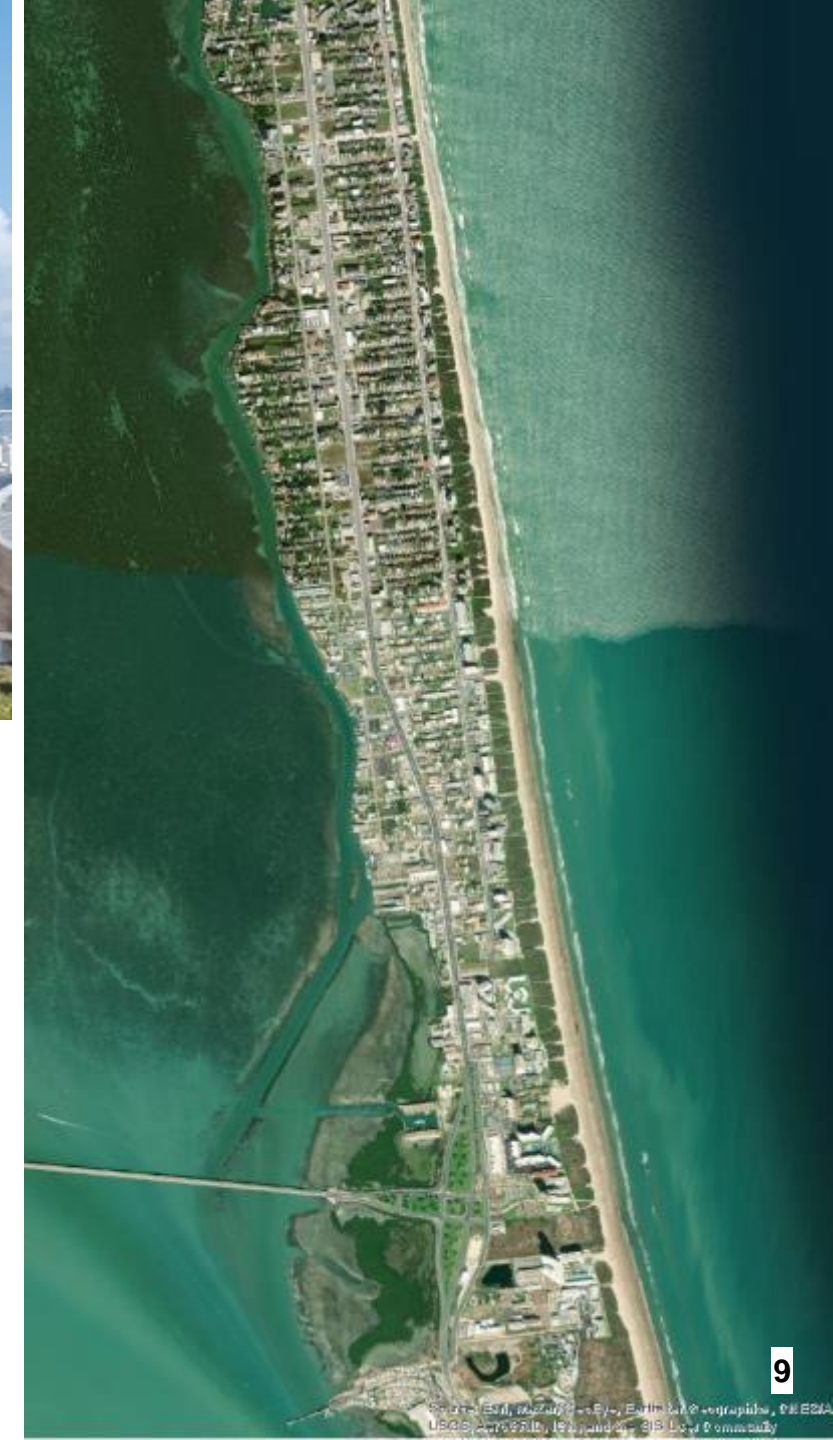


Laguna Madre Living Shoreline

Conceptual Design Alternatives Meeting



05/10/2022



- 1 Introductions
- 2 Project Summary
- 3 Design Considerations
- 4 Design Alternatives
- 5 Next Steps

Introductions

- City of South Padre
- HDR
- Stakeholder

Project Summary



05/10/2022

Project Vision

Create the first part of living shoreline infrastructure network along South Padre Island's bay shoreline.



Project Goals

➤ Protect Bayside Shoreline

- Dissipate Wave Energy
- Lessen Flooding Severity
- Reduce Erosion

➤ Bay Restoration

- Create Habitat to Increase Biodiversity
- Improve Water Quality
- Enhance Aesthetic and Recreation Value



Local Conditions & Design Considerations



05/10/2022

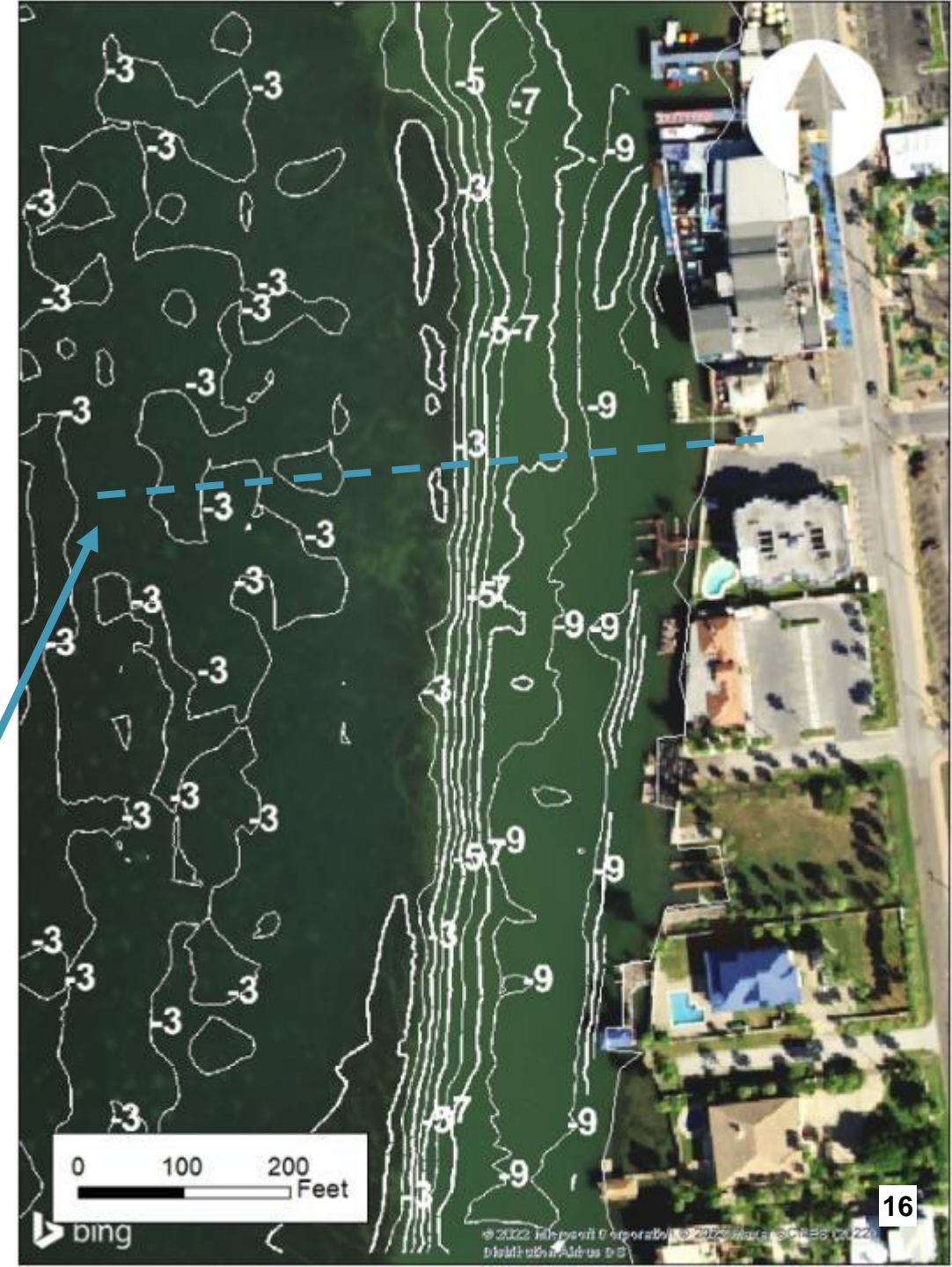
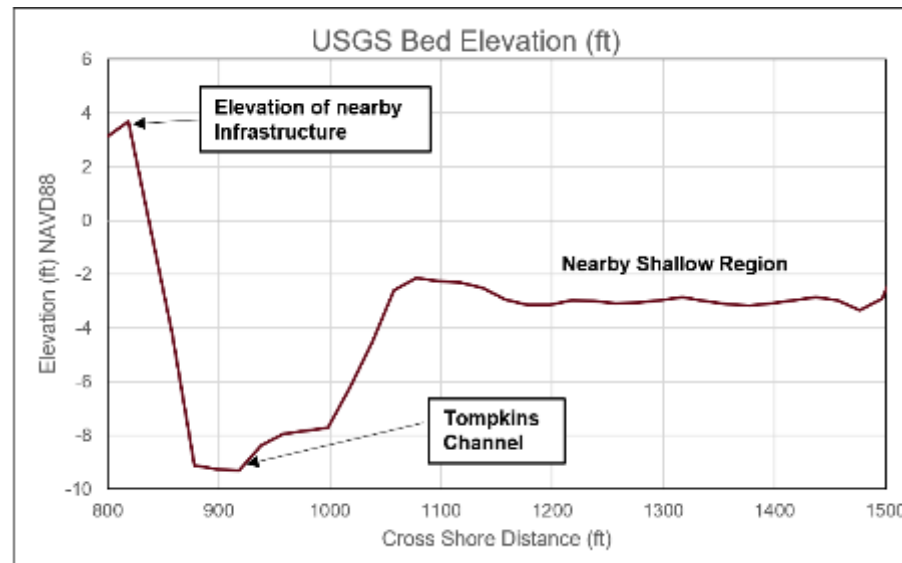
Bathymetry

➤ Project Vicinity

- NOAA topography and bathymetry data
- Typical depths between 0 to -6 ft NAVD88 (LLM)

➤ Project Area

- Recent USGS surveys of the project area.
- Average depth of -3 NAVD88.



Water Levels – Local Tides

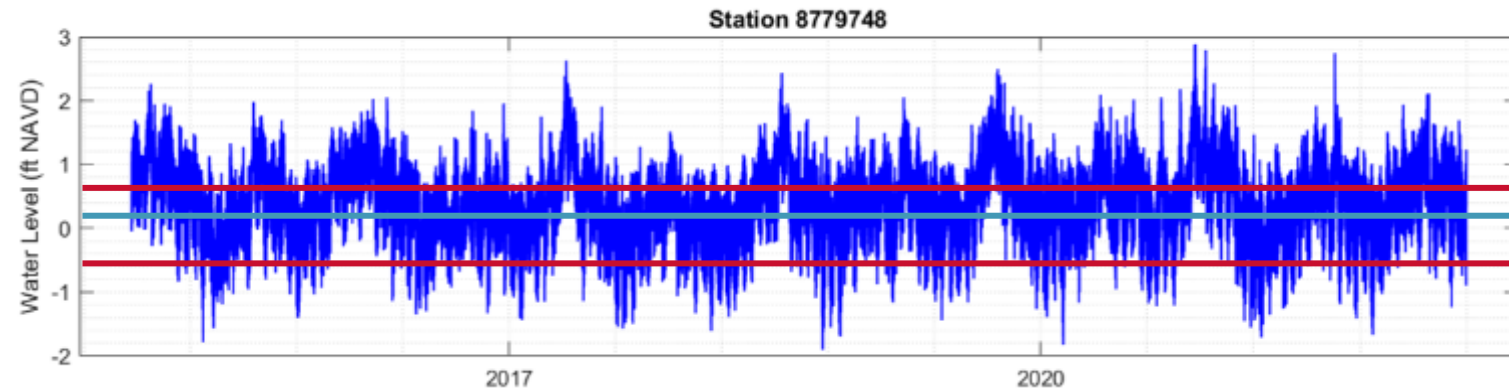
➤ Typical Tides

- MSL at -0.12 ft NAVD88
- Intertidal Range ~ 1.25 ft

➤ Seasonal Variations

- High WL's (Fall & Spring)
- Lower WL's (Winter & Summer)

South Padre Island CG Station 8779748 Astronomical Tidal Datums	
MHHW	0.44 ft
MHW	0.38 ft
MSL	-0.12 ft
MLW	-0.79 ft
MLLW	-0.93 ft
NAVD88	0.00 ft
Tidal Range	1.17 ft to 1.37 ft



Water Levels – Flooding & Storm Surge

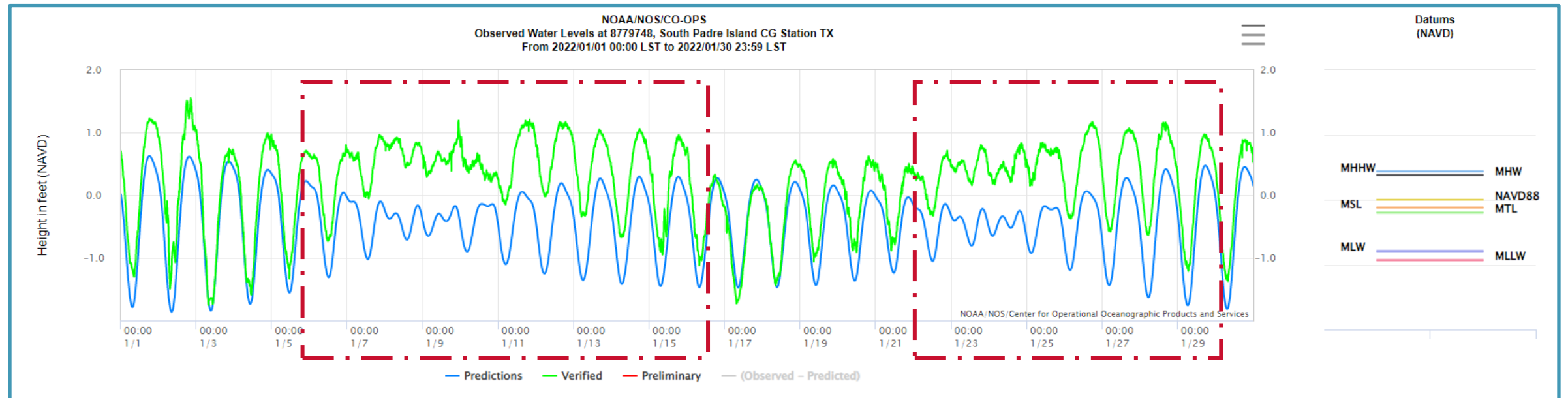
➤ Winter Storms Influence Tides

➤ Extreme Events

- Hurricanes Storm Surge
- Existing ground ~ 5 NAVD88

FEMA and NOAA extreme water level analysis

Return Periods	Water Level (ft NAVD)
FEMA 10 year	+4.10
FEMA 50 year	+7.20
FEMA 100 year	+9.20
NOAA 10 year	+3.28
NOAA 100 year	+6.90



Wind & Waves

➤ Wind Waves

- North & Northwest winds (Winter Storms)

Estimated Wave Heights and Periods at 28mph Winds

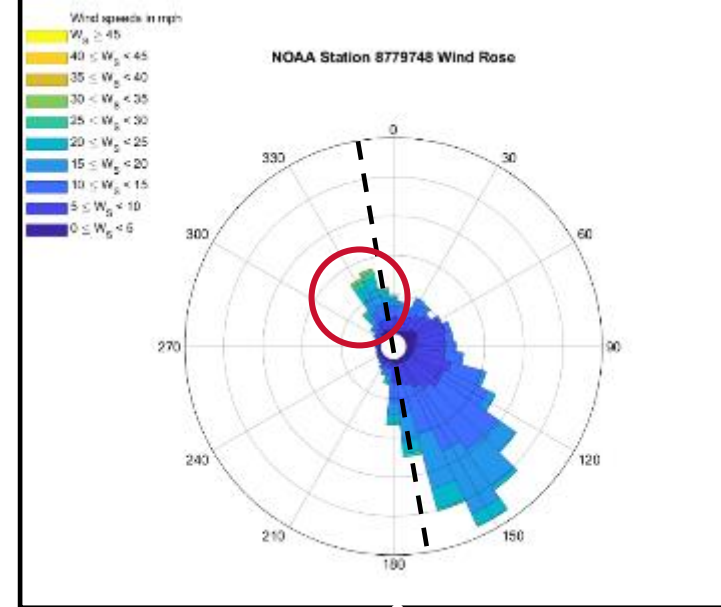
Fetch Length	Significant Wave Heights (Hmo)	Peak Periods (Tp)
13 miles	1.70 ft	3.03 s
8 miles	1.51 ft	2.68 s

➤ Boat Wakes

- GIWW Traffic

➤ Hurricanes

- Increased Wave Height (from any direction)



Hydrodynamic Design Considerations

- Typical Range
 - Marsh planting depending on intertidal range of ~ 1.25 ft
- Seasonal WL Variations
 - Designing Intertidal features for seasonal variations
- Storm Surge
 - Feature Elevations vs. WL during Extreme Events
- Waves
 - Desired Wave Attenuation

Environmental Design Considerations

➤ Existing Habitat

- Seagrass covers entire project area

➤ Mitigation Requirements

- Typical mitigation ratio – 3:1
- Possibility of separate mitigation project required for permitting

➤ Permitting

- Which designs are more likely to be permitted

➤ Habitat Creation

- Marsh grass is sensitive to planting elevation
- Oyster populations present in LLM but not prolific



Marsh Restoration (Top)
Galveston State Park, TX;
TGLO & HDR

Seagrass Coverage in
Project Area (Left)
USGS survey

Design Alternatives



05/10/2022

Living Shoreline – Artificial Reef



*Reefmaker array
– Manteo, NC*



*Oyster Castle breakwater
– Gandy's Beach, NJ*



*Reefball array
– Oyster Lake, TX*

Smaller SAV
Impact



Footprint

Bigger SAV
Impact



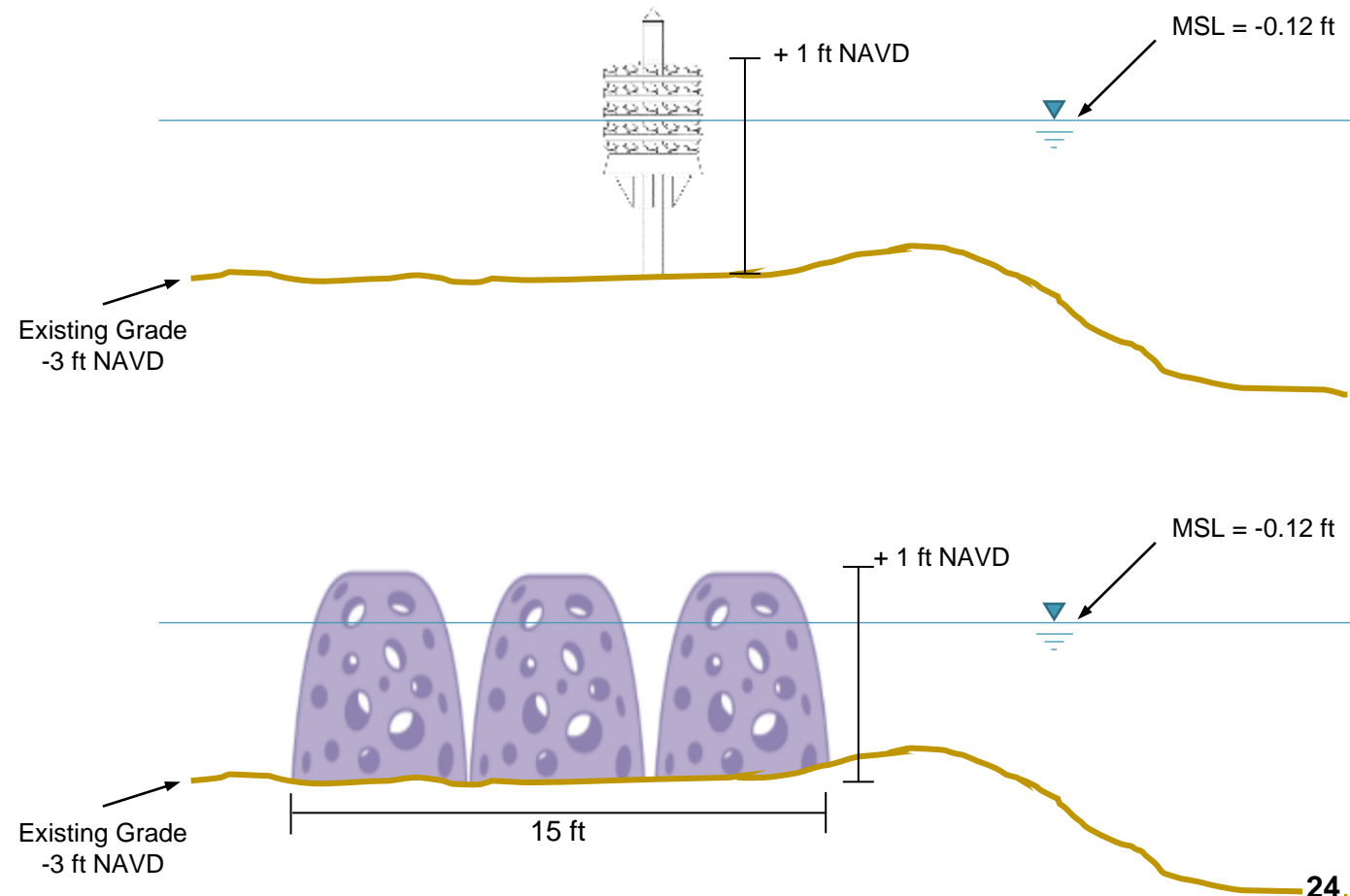
Artificial Reef Array

Description: Artificial reef units aligned to reduce wave energy and provide marine life habitat.

Products

Smaller Impact: Reefmaker Posts – 0.8 sqft/post

Bigger Impact: Ultra Reef Ball - 80 sqft/unit



Additional Considerations – Artificial Reef

➤ Desired Amount of Wave Attenuation

- Part of wave & storm surge energy transmitted through artificial reef structures
- Limited transmission information

➤ Stability

- Post Hurricane Conditions

➤ Sea Level Rise

- Reduced Wave Attenuation Efficacy



Location: St. Bernard Parish Living Shoreline Demonstration Project, Louisiana
Project Partners: CPRA, Coastal Impact Assistance Program

Living Shoreline – Intertidal Berm



*Oyster Breakwater
– Jerod Foster & TNC*

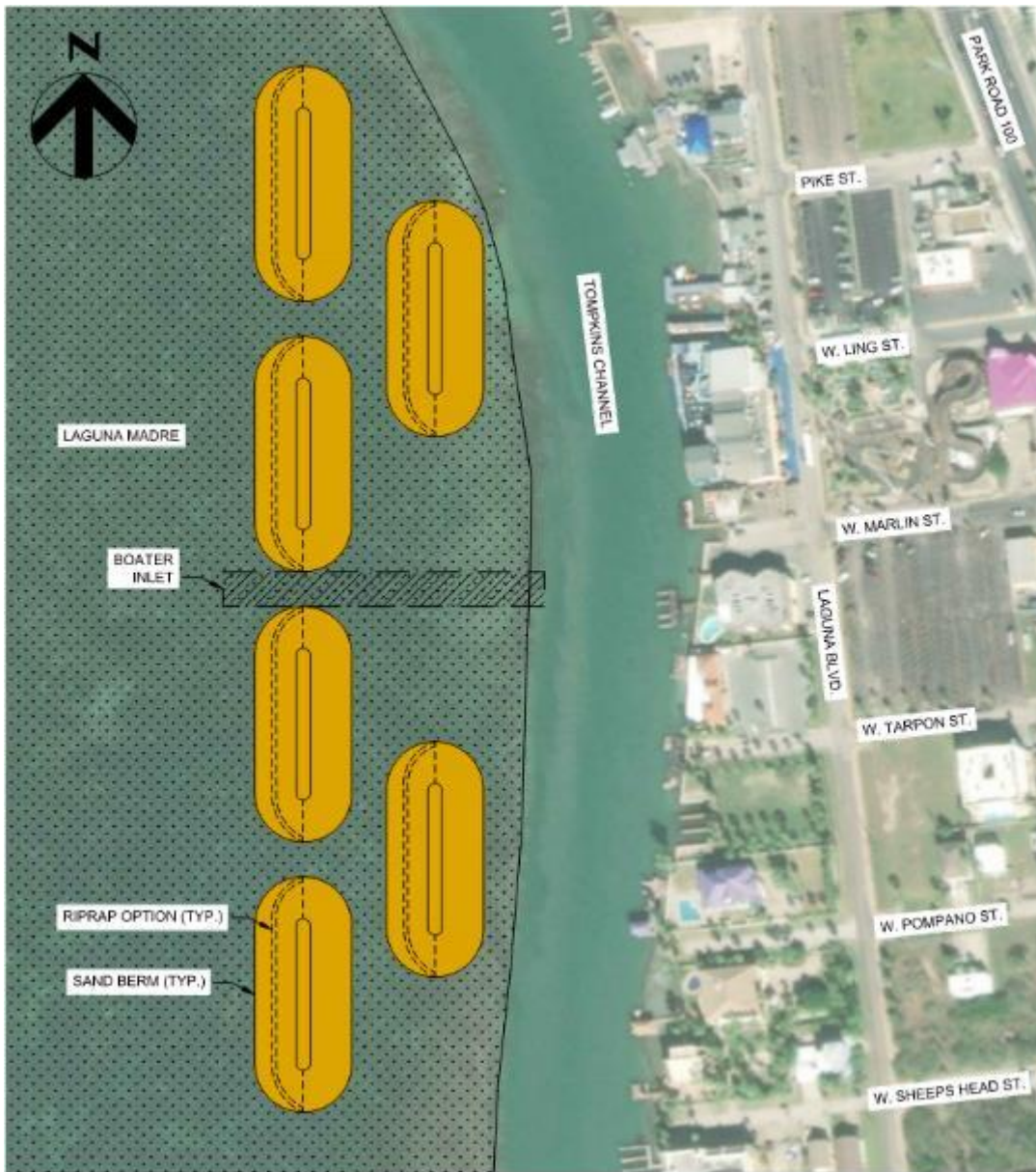


*Constructed Clay Berm
– Dollar Bay, TX*

Shell Hash
Oyster Shell

Resiliency

Sand or Clay Berm
with Armoring

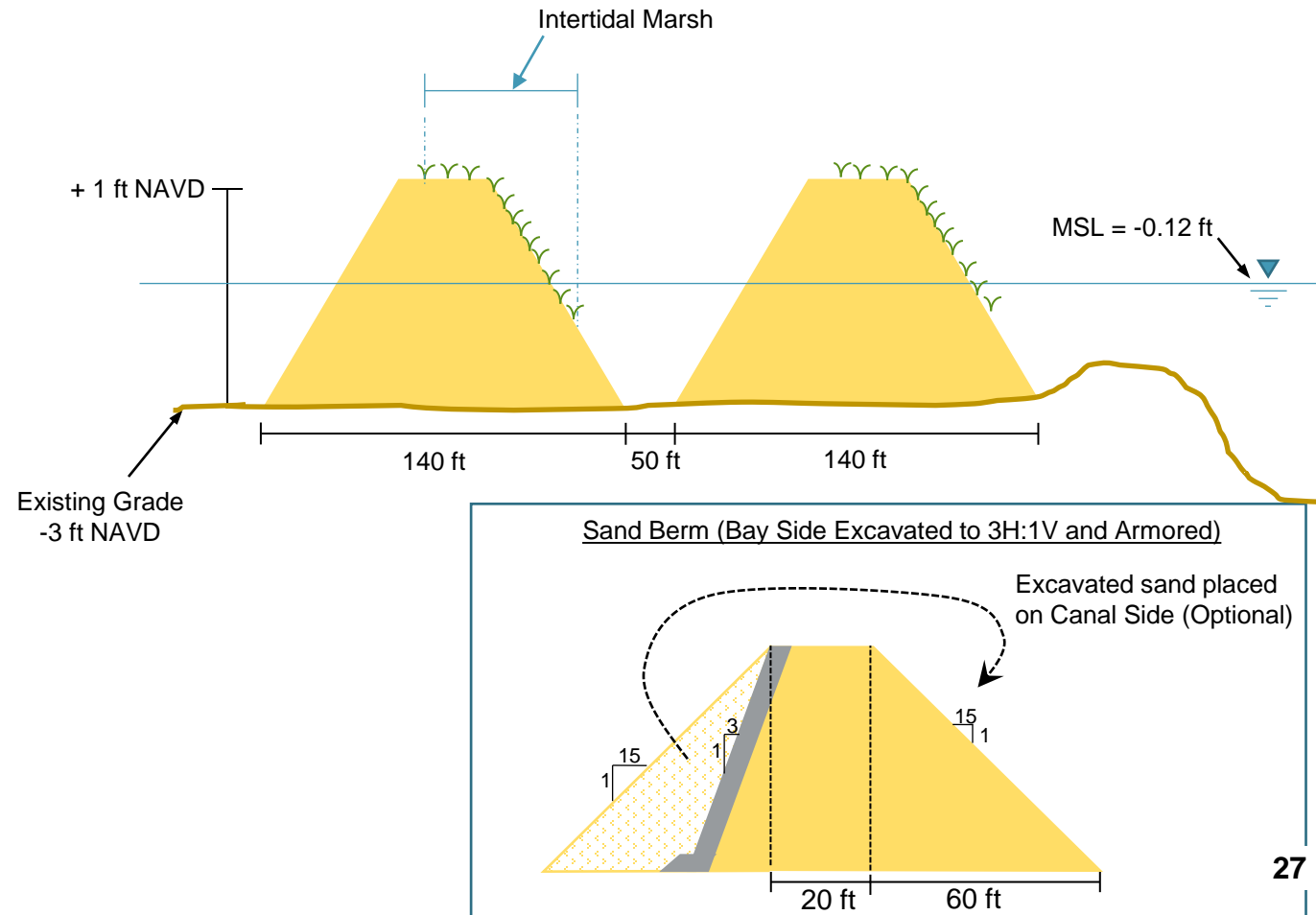


Intertidal Berm

Description: Berms of sand, clay, or shell hash. Marsh planting on canal side, possible riprap armoring on bayside to reduce erosion and footprint.

Cross-Section

Material: Sand, Clay, or Shell Hash



Additional Considerations – Intertidal Berms

➤ Source Material

- Availability and Suitability
 - Sand & Stiff Clay versus silty material
- Constructability

➤ Marsh Planting

- Establishment of vegetation
- Limited planting area
- Post-construction maintenance

➤ Erosion

- Loss of berm material over time
 - Reshaping by natural processes
- Optional armoring



*Location: Gangs Bayou Marsh Restoration, Galveston, Texas
Project Partners: TGLO & HDR*

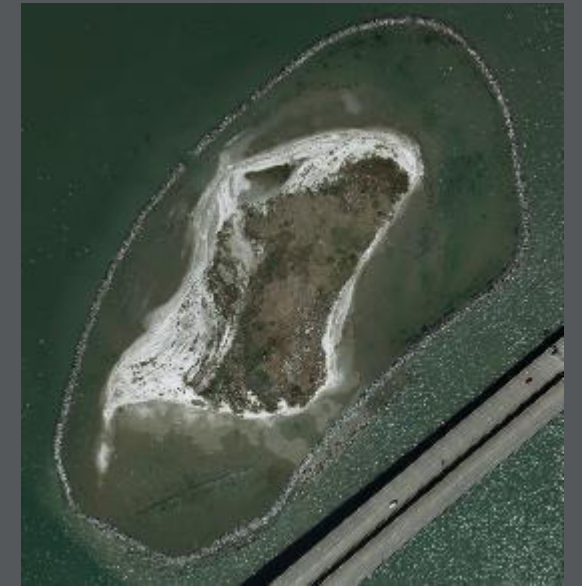
Living Breakwater and Containment Cell



Dickson Bayou
– Marsh fill with Riprap protection



Bayside, Gavelston
– Marsh Restoration with Breakwater



Causeway Rookery Island
– Containment Cell for future fill material

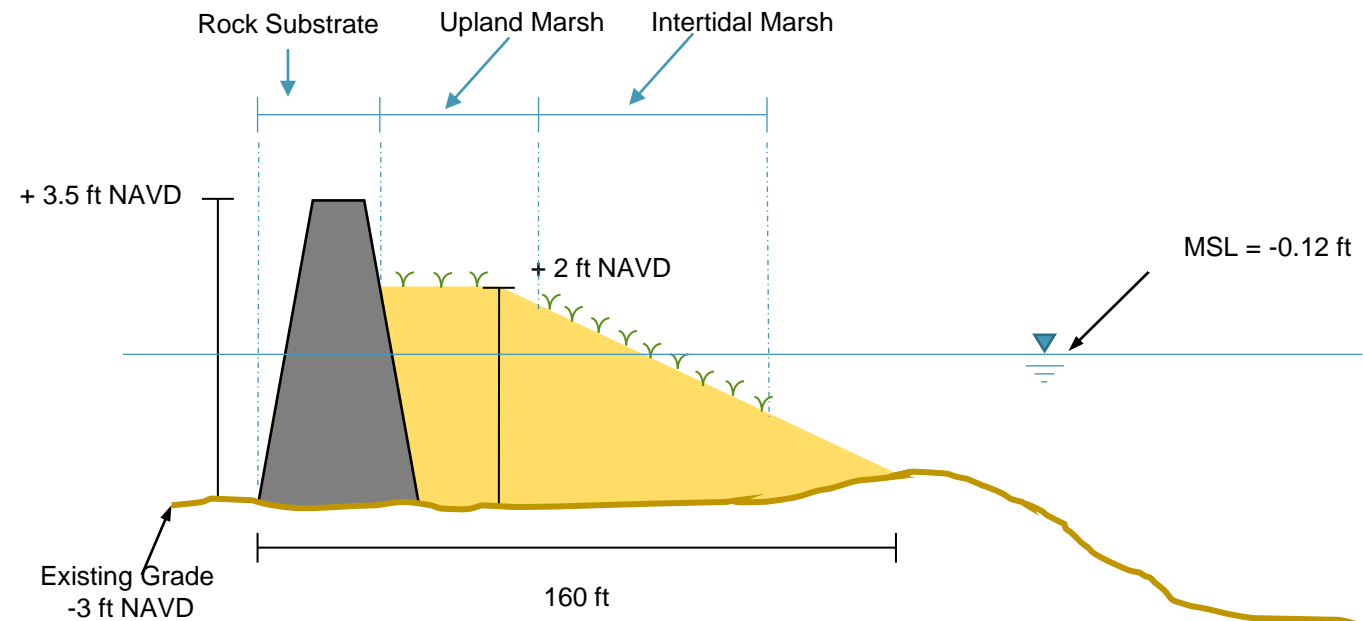


Living Shoreline

Description: Marsh planting through placement of fill material. Breakwater on bay side to protect against erosion and allow plant growth.

Cross-Section

Material: Riprap/stone, Fill material, Marsh grasses



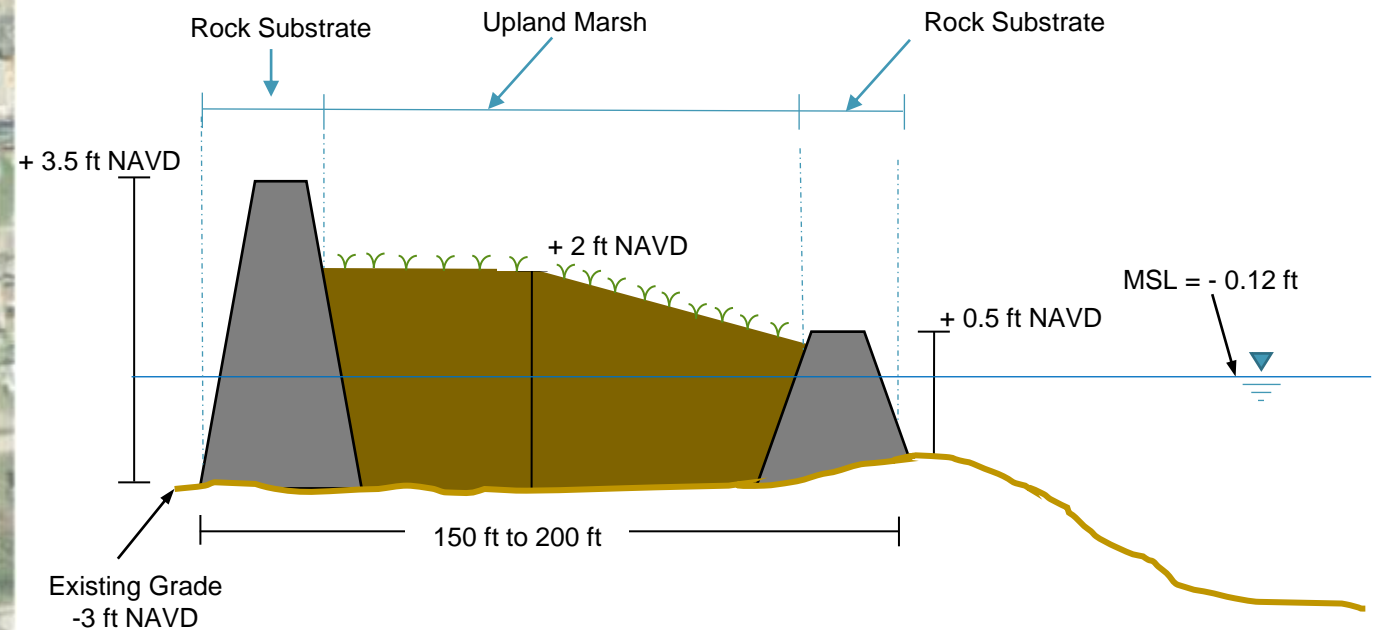


Containment Cell

Description: Containment cell with interior marsh planting. Filling of cell performed in stages; possible BU opportunities from local dredging projects.

Cross-Section

Material: Riprap/stone, Fill material, Marsh grasses



Additional Considerations - Living Shoreline/Containment Cell

➤ Footprint

- Bigger seagrass impact
 - Marsh terraces could reduce fill footprint and better control material spreading

➤ Constructability

- Accessibility in shallow water depths

➤ Marsh Planting

➤ Materials

- Possible opportunities to use artificial reef products vs. riprap

➤ Stakeholders

- Changes to view of the bay



*Location: Bayside, Galveston, Texas
Project Partners: TGLO & HDR*

Evaluation of Design Alternatives

➤ Project Goals

- Reduce wave impacts
- Decrease flooding by storm surge
- Develop wetlands and intertidal zone



➤ Evaluation of Conceptual Designs

- Energy from waves and storm surge will be reduced.
- Lessen flooding caused from rising water levels depends on scale.
 - Increased water level during Winter storms and hurricanes
 - Sea Level Rise
- Wetland development vs. Seagrass Impacts

Impact vs Cost Matrix of Design Alternatives

Design Alternative	Footprint (ac)	Relative Cost*
Artificial Reef Array	1.4	\$
Intertidal Berm w/Optional Armoring	3.9	\$\$\$
Marsh Planting w/Breakwater	4.8	\$\$\$\$
Marsh Planting Containment Cell	6.4	\$\$\$\$\$\$

*\$\$\$ means cost is roughly 3x more than the first option

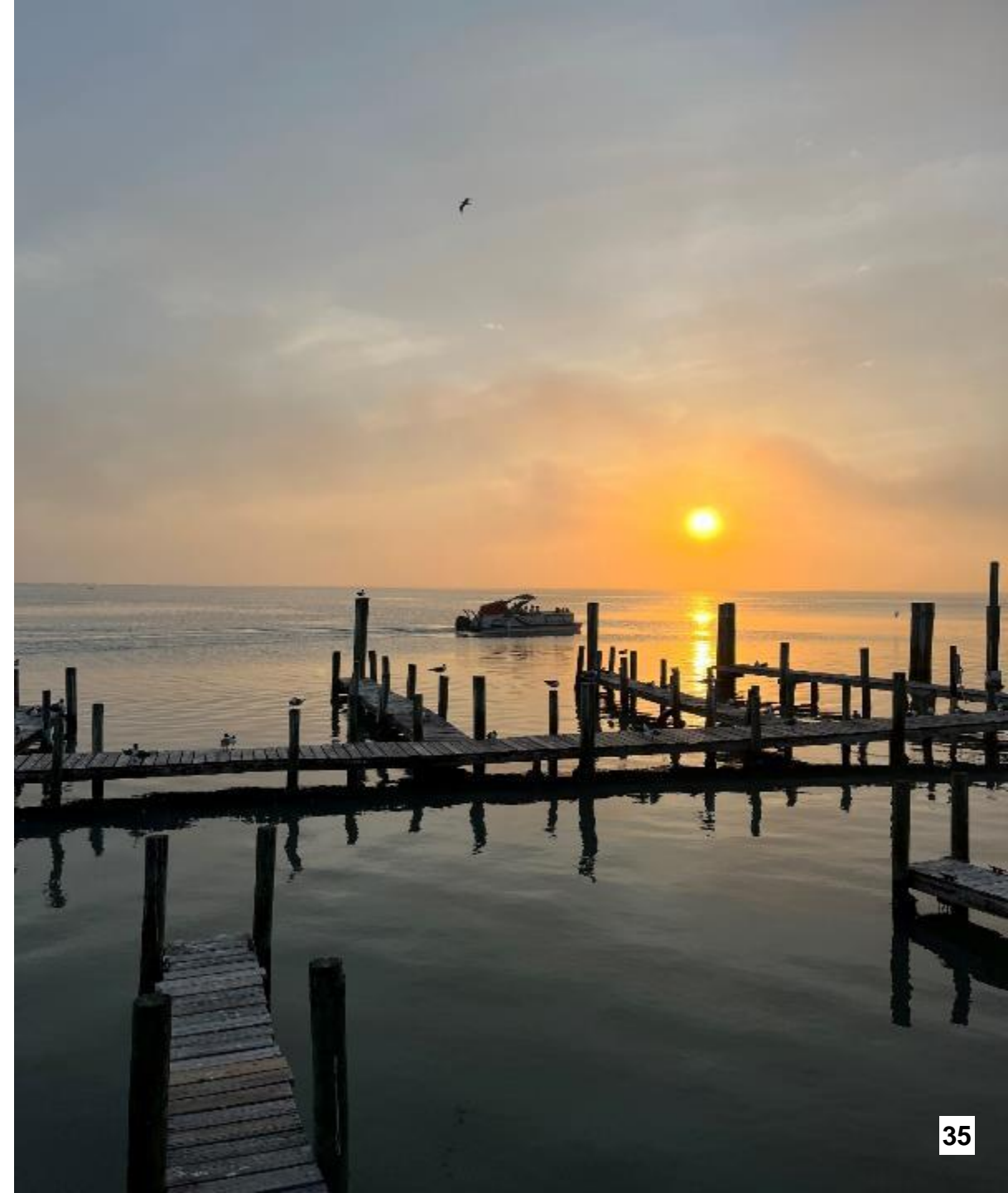
Next Steps



05/10/2022

Next Steps

- Additional Ideas/Concerns
- Select several alternatives for further assessment
- Refine layouts
- Estimated costs for construction
- USACE Joint Evaluation Meeting



**CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE
AGENDA REQUEST FORM**

MEETING DATE: May 31, 2022

NAME & TITLE: Kristina Boburka, Shoreline Director

DEPARTMENT: Shoreline Department

ITEM

Updates on departmental projects: (Boburka, Hughston)

- Coastal Management Program (CMP) Cycle 24
- CMP Cycle 25
- CMP Cycle 26
- Marisol Boat Ramp (RESTORE Act & Texas Parks and Wildlife Department grants)
- Wind and Water Sports Venue
- Tompkins Channel
- Regional Sediment Management Plan

ITEM BACKGROUND

Updates on current projects.

BUDGET/FINANCIAL SUMMARY

N/A

COMPREHENSIVE PLAN GOAL

Chapter 9: Shoreline

LEGAL REVIEW

Sent to Legal:

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RECOMMENDATIONS/COMMENTS: