AIRPORT RD. EROSION CONTROL DESIGN WORKSHOP SUMMARY
11/3/2017 8 AM – 1 PM CEDAR KEY COMMUNITY CENTER

This workshop was the third in a series of workshops about coastal erosion in Cedar Key hosted by the University of Florida. The goal of the workshop series was to introduce property owners to various concepts regarding erosion in Cedar Key's Daughtry Bayou, including the history of erosion, impacts of erosion, and potential ways to mitigate erosion. The objectives of the meeting series were as follows:

<u>Workshop 1: Coastal Erosion Visioning Workshop, 3/3/2017</u>

- Discuss erosion history in the area and preferences for shoreline uses
- Learn more about and compare various options for erosion control
- Narrow down a range of acceptable project types that promise to preserve the shoreline at G Street and Airport Rd. locations, according to preferred uses.

<u>Workshop 2: G Street Design Workshop, 10/27/2017</u>

- Review workshop 1 process & outcomes
- Answer questions that stakeholders raised at workshop 1
- Present designs based on preferences from workshop 1, discuss specifics for further refinement
- Come to agreement on best design option for follow up funding & implementation at G Street

<u>Workshop 3: Airport Rd. Design Workshop, 11/3/2017</u>

- Review workshop 1 process & outcomes
- Answer questions that stakeholders raised at workshop 1
- Present designs based on preferences from workshop 1, discuss specifics for further refinement
- Come to agreement on best design option for follow up funding & implementation at Airport Rd.

The Airport Rd. Design Workshop was attended by 15 participants and 4 project team members for a total of 19 attendees. Despite multiple efforts to increase participation from property owners, only 1 property owner was represented at the workshop (though two more had planned to attend but, at the last minute, could not). The rest of the participants were either residents of adjacent roads, City officials, County officials, or residents of Cedar Key (but not on an adjacent road).

Project team members in attendance:
Savanna Barry – UF IFAS Nature Coast Biological Station
Mark Clark – UF IFAS Soil and Water Science Department
Jon Dain – Florida Natural Resources Leadership Institute, Center for Latin American Studies
Scott Wasman – UF College of Engineering

Workshop Agenda:

AIRPORT ROAD DESIGN WORKSHOP
STAKEHOLDER INPUT ON OPTIONS FOR EROSION CONTROL IN CEDAR KEY

8am – 1pm, Nov. 3, 2017 , Cedar Key Community Center, 809 6th Street
Local Contact = Savanna Barry, UF/IFAS Extension Sea Grant Cell: 804-305-6014

AGENDA

8:00	**Coffee & Registration**
8:00 – 8:10	**WELCOME, REVIEW OF OBJECTIVES & AGENDA**
8:10 – 8:30	**LOOKING BACK: WORKSHOPS 1 & 2**
8:30 – 8:50	**FEEDBACK ON REQUEST FOR CONTEXT INFORMATION**
8:50 – 10:00	**DESIGN OPTION PRESENTATIONS**
10:00 – 10:15	**BREAK**
10:15 – 11:15	**DESIGN OPTION RANKING DISCUSSION**
11:15 – 11:45	**REFINEMENT & OPTION SELECTION**
11:45 – 12:00	**NEXT STEPS, CLOSURE & EVALUATION**
12:00 – 1:00	**LUNCH**

The workshop began with a review of the agenda and objectives for workshop 3 to orient participants to the goals for the meeting. There was a show of hands to determine who was new to the process and who had been involved in previous workshops in the series. About 25% of people raise their hands to indicate they were new to the process.

Those in the group that were part of Workshop 1 were asked to share what they remembered from the March meeting. The group remembered that history was covered, both with the aerial images of erosion over time in Airport Rd. and the timeline of everyone's experiences on Cedar Key's shorelines. The timeline was up on the wall and the new members were asked to add their names on the timeline and indicate when they moved to Cedar Key and/or important memories about the shorelines or erosion. Participants also remembered the golf cart field trip and the stops along the way. The group went over the project types and voting results, reminding all of the stakeholder preferences revealed in Workshop 1. For Airport Rd., stakeholders voted nourishment + stabilization and vegetation + breakwater as their top choices, with riprap voted as a slightly favorable option.

After going over Workshop 1, Mark addressed the questions from last time about legal issues surrounding mangroves and let the group know that we are discussing potential permit options with DEP about managing mangroves in a special way in the footprint of a living shoreline project. The project team was not able to give a definitive answer about where this exemption

might go and, even if the exception were to be granted, it is unclear who would perform such maintenance.

After a short discussion of mangrove issues, the workshop moved into the next segment where the project team presented the draft designs for Airport Rd. Before the presentation, Jon split the room into groups based on the use they identify with most closely (e.g., homeowner, fishing, kayaking, walking/biking). The group also added two groups that the project team did not have on the board: access and utilities protection. Participants were asked to grade each design from the perspective of the user-group they had chosen. Each design was presented and Mark made some comments regarding the function of each project element. Participants wrote down their grades (based on their use) and then Mark presented the "expert scorecard" for each design. The scorecard showed the grades for categories such as environmental services (habitat, wave dissipation, carbon sequestration, and water quality), longevity, cost (construction and maintenance), and likelihood of obtaining external funding. (See Appendix for copies of the design options and scorecards).

After all of the designs were presented, participants broke out into small groups to discuss and refine their grade. The goal was to have each user group present a final grade on each design that would be added to the scorecard to give a complete picture of stakeholder preferences. A few of the groups were quite small, leading a few groups to combine together for the discussion. After the discussion, the groups came back together to report out to everyone about what they had discussed or decided.

Only a few groups came to agreements on final grades for all of the designs but there were plenty of discussion points, including:

- Issues with potential for mangroves to establish if vegetation is planted
    - Main worry from property owners in town that mangroves will block access to shoreline, block view, and create a maintenance issue/cost to trimming them
    - Reiterated that you could collect the seeds from an area if you wanted to prevent anything from taking root – but this is a lot of work
- Desire for additional options that impede vegetation such as riprap or large jetty
    - The option of riprap was re-opened and discussed
        - A project like this would be in the wheelhouse of the County, not UF. Property owners and county/utility interests could work together on riprap installation if this is the final choice.
    - Similarly, the suggestion of a jetty and beach nourishment was discussed further as a potential option. It would be expensive and hard to find funding for and might be hard to permit, depending on the orientation. UF would probably not be able to take the lead on a project of this nature, similar to riprap.
- Desire for fill to come from local source (dredged) rather than trucked in
- Desire for ample access points to shoreline
    - Walkover decks, designated paths important part of design
    - Need at least 2, perhaps up to 4 – kayak and foot friendly

    - A few pointed out that when they hear “dune” they think of “stay off the dunes” – concerned about access going away if “dune” put in.
- Interest in having breakwater units be above the water at all times so boaters/kayakers can see them and not run into them, sign markers not preferable to some
    - Potential compromises to this were increasing spacing at one area and make it the designated entry point for kayakers
        - Was stated that spacing needed to be a minimum of 10 ft
    - Also the idea of staggering the reef units to make wider gaps between them
    - There was also a concern about the gaps between the reefs filling in
- Some in the group felt oysters would really improve the water quality in the bayou – others were too worried about safety concerns posed by oysters for tourists or navigation
- Group in general did not like the culvert pipe material but were open to the other material types
- There did not seem to be a strong preference for curved vs. straight reef shapes
- There were a few in the group that were worried about anything that could cause Goose Cove to fill in or to get any more oysters in it
    - Project team pointed out that oysters only recruit on hard substrate so unless more hard substrate was added to Goose Cove, no new oyster area would establish there
    - Also, anything that would control erosion on Airport Rd would tend to reduce sediment transport to Goose Cove because you would be slowing down erosion

At the end of the meeting, each attendee was asked to go around and say what they preferred:
1 person voted for option 2
3 people voted for option 4
2 people said they were unsure or would accept trying option 4 and then doing riprap later if it failed
2 people voted for riprap
Several attendees abstained or made a comment with no vote
Comments: natural solutions are complicated but prettier, mangroves are a “deal breaker” for some, riprap is simple and quick but who pays?, is riprap dangerous and would it increase filling in of goose cove?, some felt that riprap should be viewed as “phase 5” and should be done if the other options fail

CONCLUSION
Options 2/4 or riprap seemed to be the most favorable to the group but there was not a clear consensus for moving forward with any of the projects. The overall conclusions of the meeting were:

1) We needed to keep moving forward (i.e., “Do nothing” is not acceptable) – the road is #1
2) Property owners must have another meeting before anything can be done
    a. Neighbors will help recruit others
3) All want protection but also safe access that is as natural-looking as possible

Airport Rd. Design Workshop Design Options

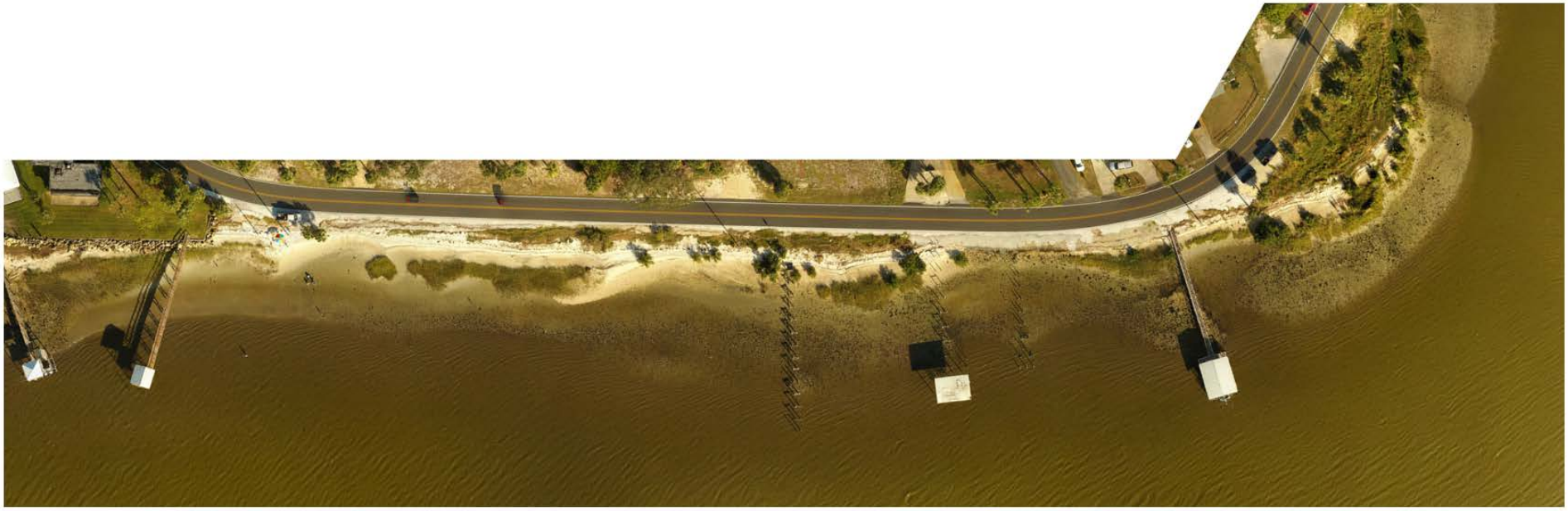
November 3, 2017

Cedar Key Community Center

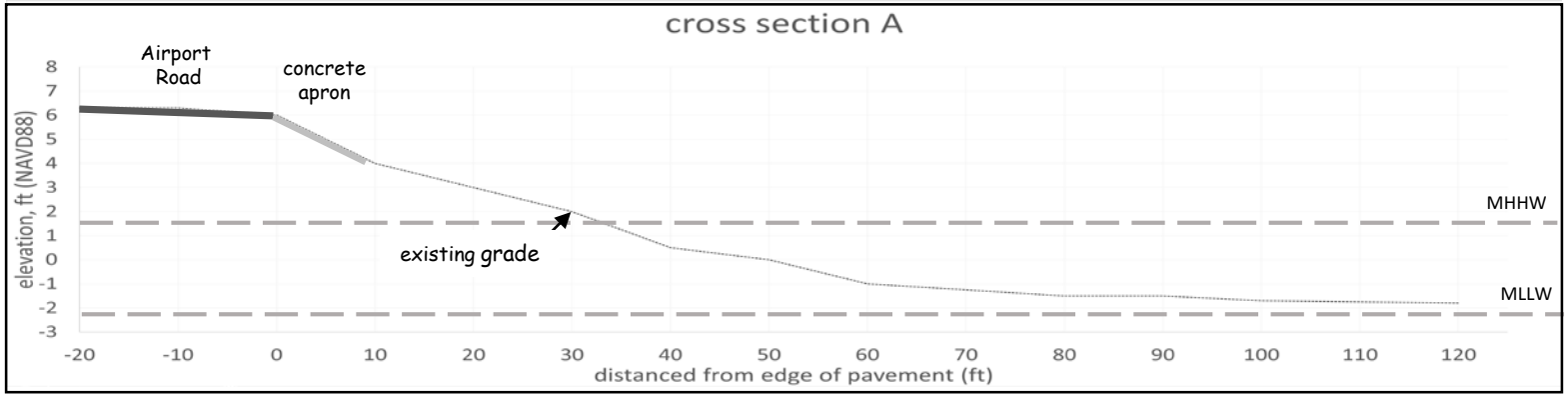
Mark Clark, UF IFAS Soil and Water Science Department

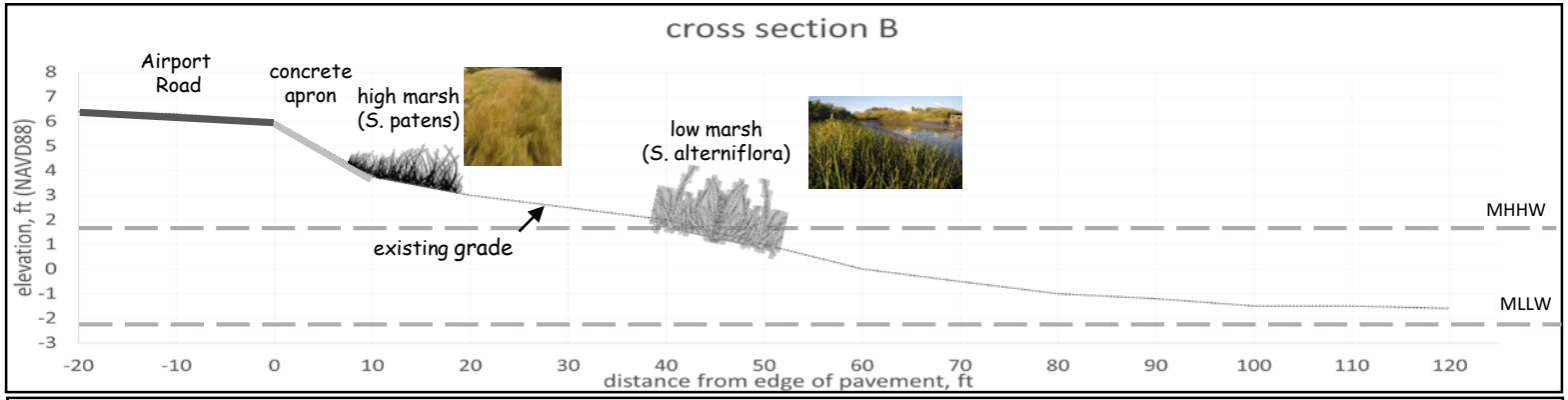
Savanna Barry, UF IFAS Nature Coast Biological Station

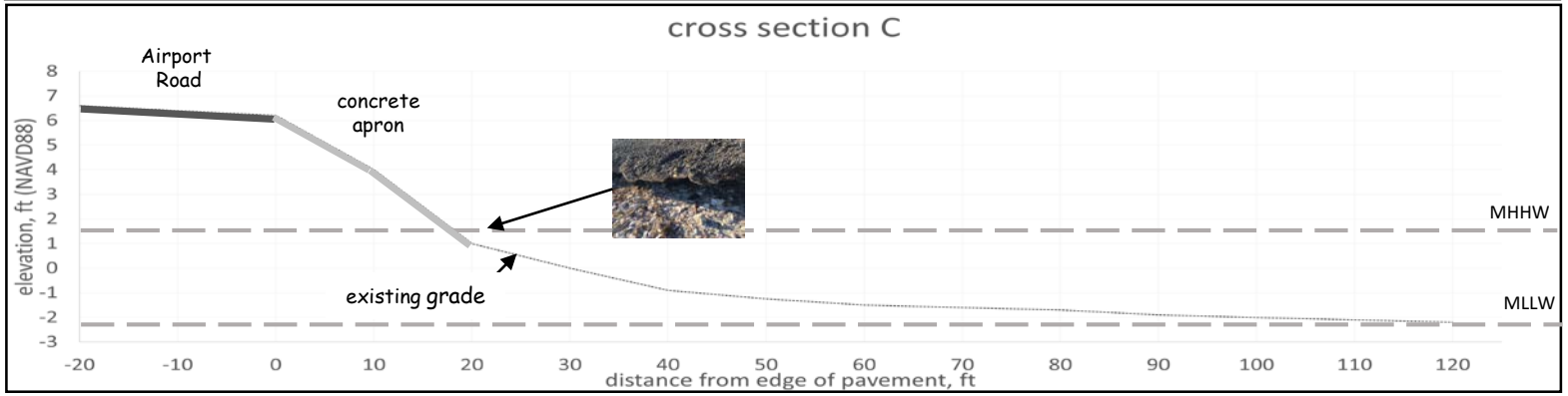
Present Condition



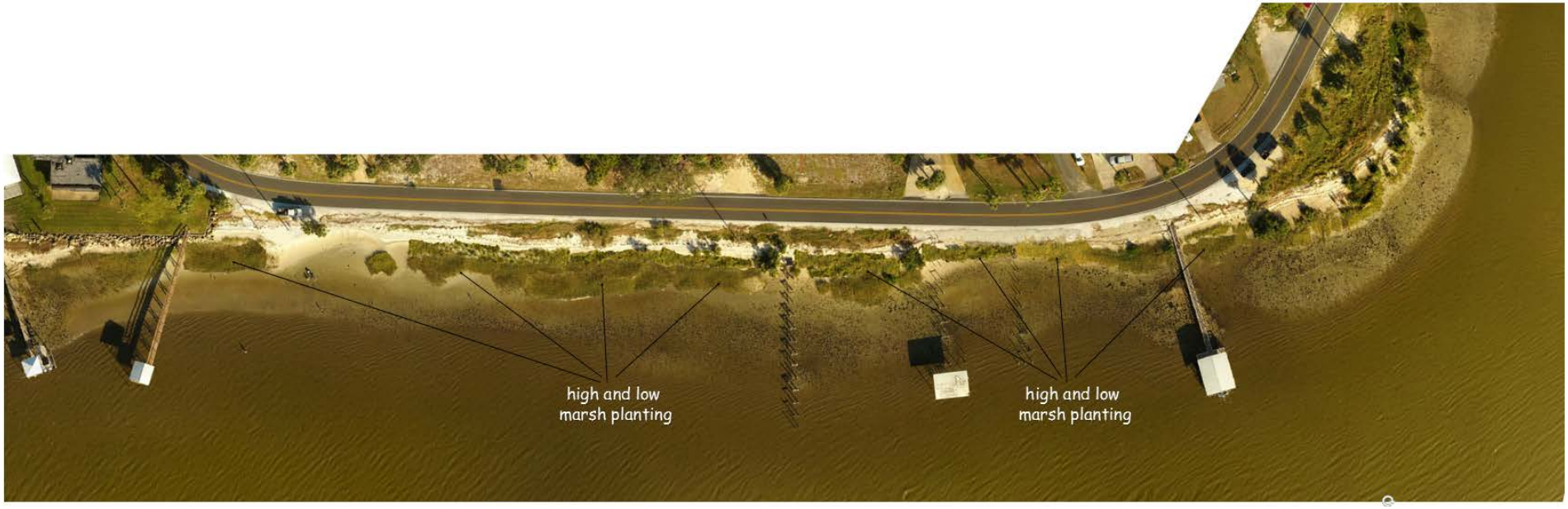
Present Conditions
Shoreline cross sections



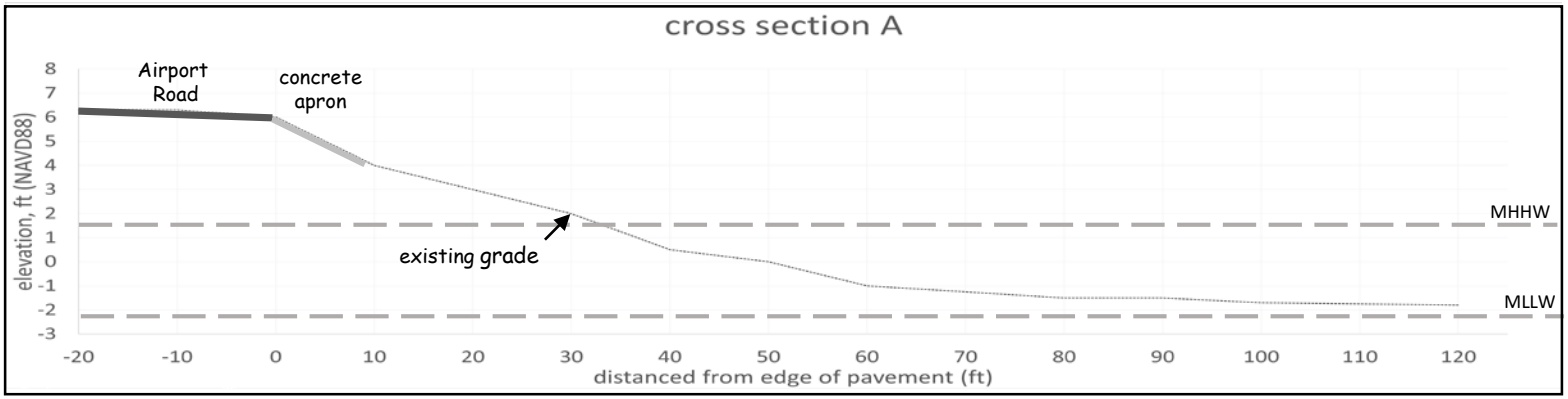


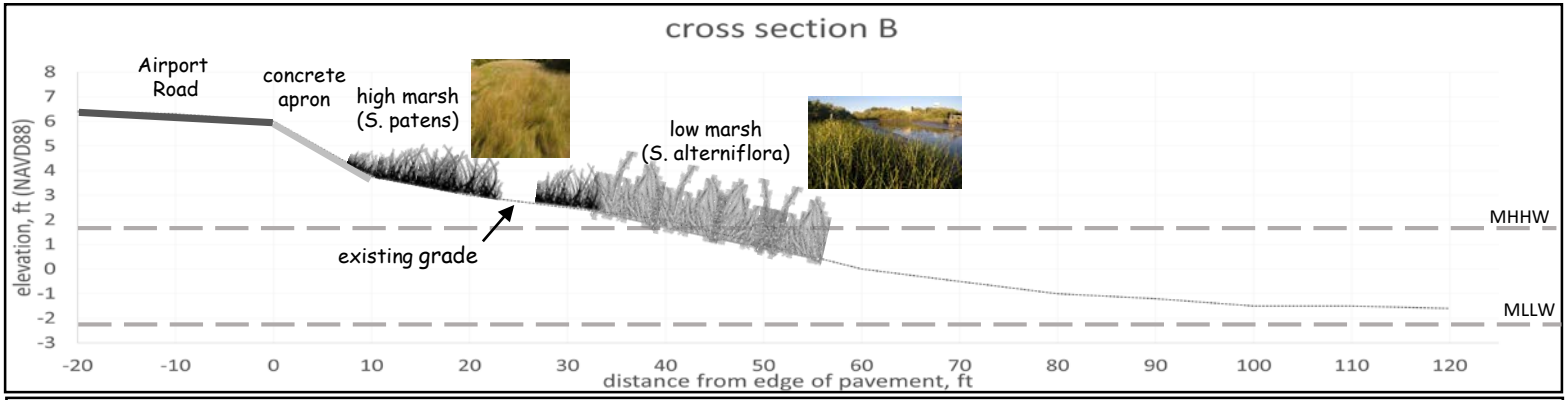


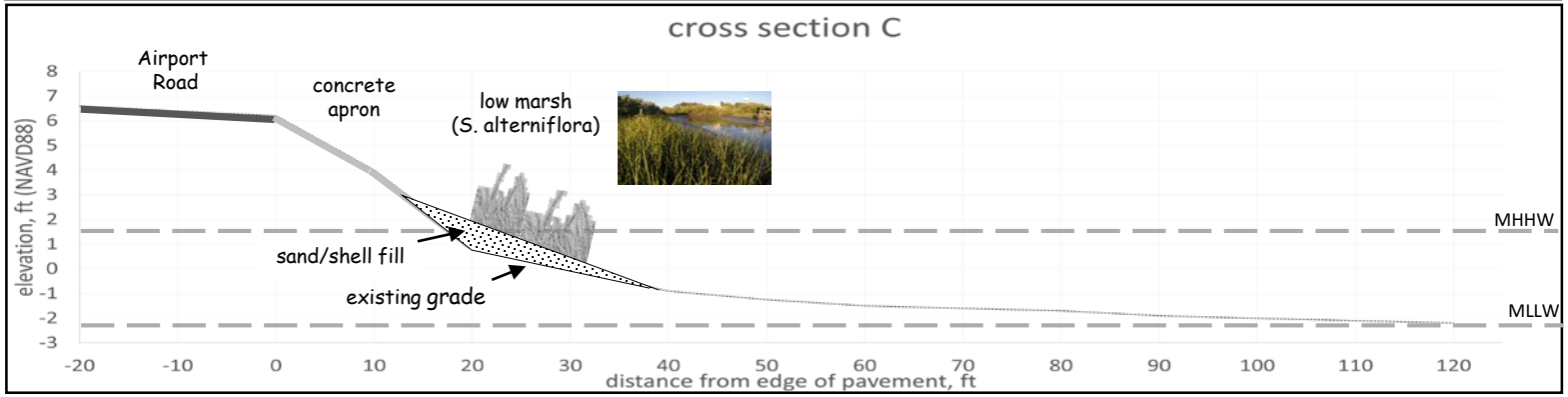
Phase 1: Vegetation



Phase I:
Vegetation Stabilization with Minor Fill
Shoreline cross sections







Phase 1: Vegetation

1)Environmental Service (C- = negative, B = no change, A+ = most improved)

a)Carbon Sequestration	A-
b)Wave dissipation	A-
c)Water quality	A-
d)Habitat/Biodiversity	A-
category average	***A-***

2)Cost (C- = high, A+ = low)

a)Construction cost	A+
b)Maintenance cost	A
category average	***A+***

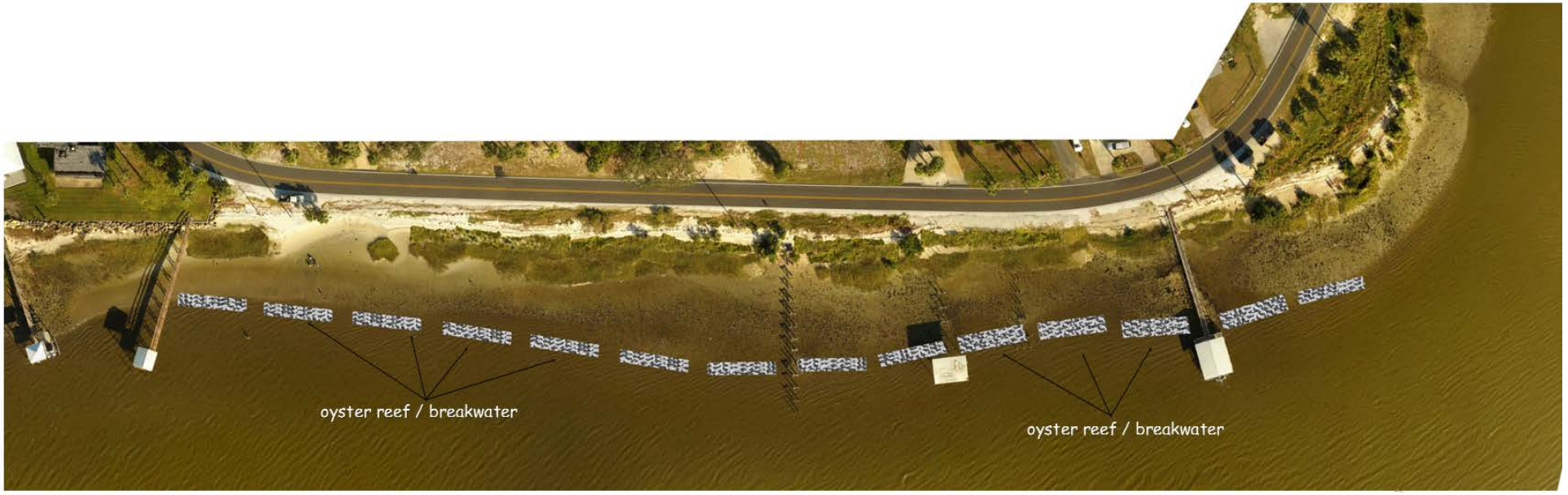
3)Project longevity (C- = shortest time, A+ = longest time)

A-

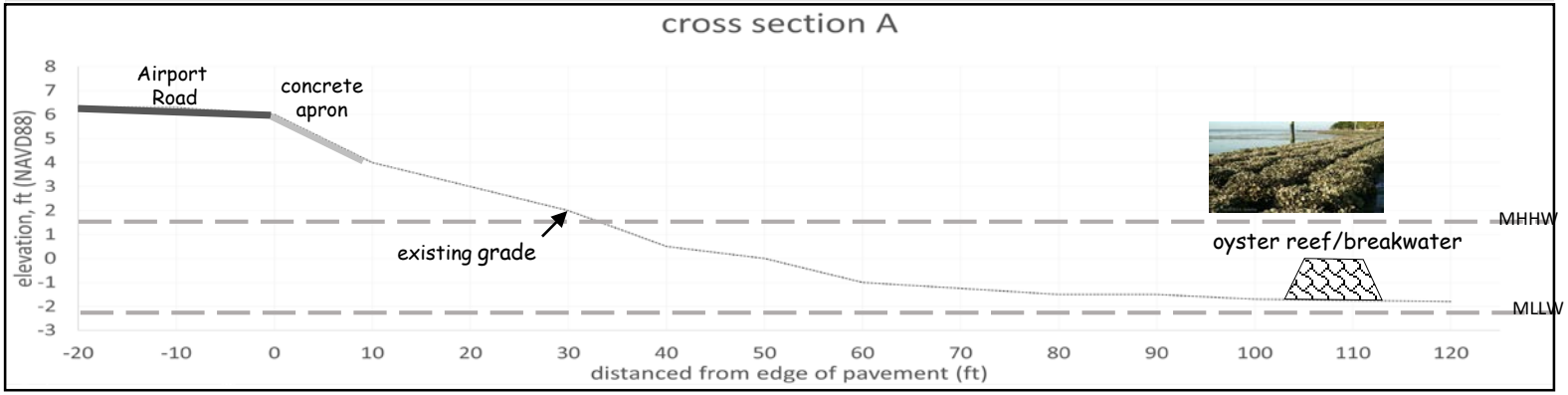
4)Likelihood of obtaining external funding (A+ = high, C- = low)

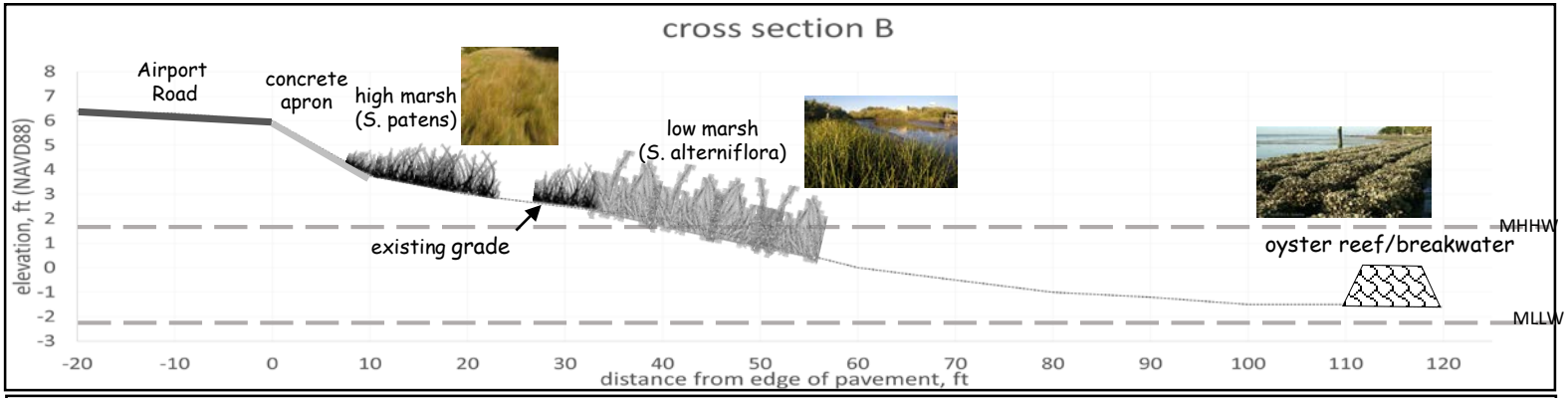
A

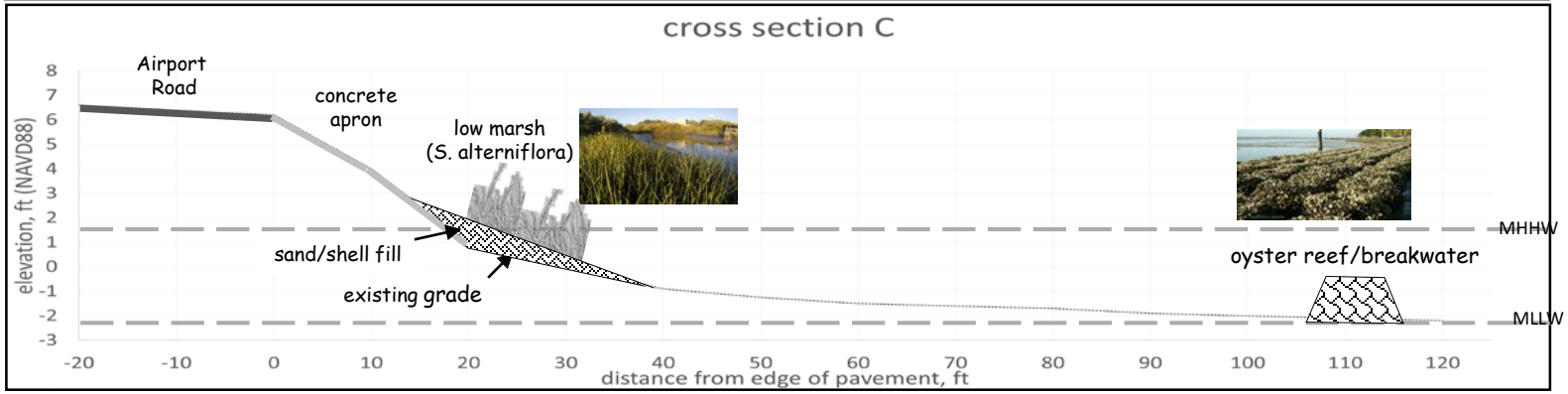
Phase 2: Vegetation + Breakwater



Phase 2:
Vegetation + Breakwater
Shoreline cross sections







Materials Options for Phase 2:

Shape Options for Phase 2:

STRAIGHT

ANGULAR

CURVED

Phase 2: Vegetation + Breakwater

1)Environmental Service (C- = negative, B = no change, A+ = most improved)

a)Carbon Sequestration	A+
b)Wave dissipation	A
c)Water quality	A+
d)Habitat/Biodiversity	A
category average	***A+****

**assuming oyster recruitment on the breakwaters*

2)Cost (C- = high, A+ = low)

a)Construction cost	B
b)Maintenance cost	B+
category average	***B***

3)Project longevity (C- = shortest time, A+ = longest time)

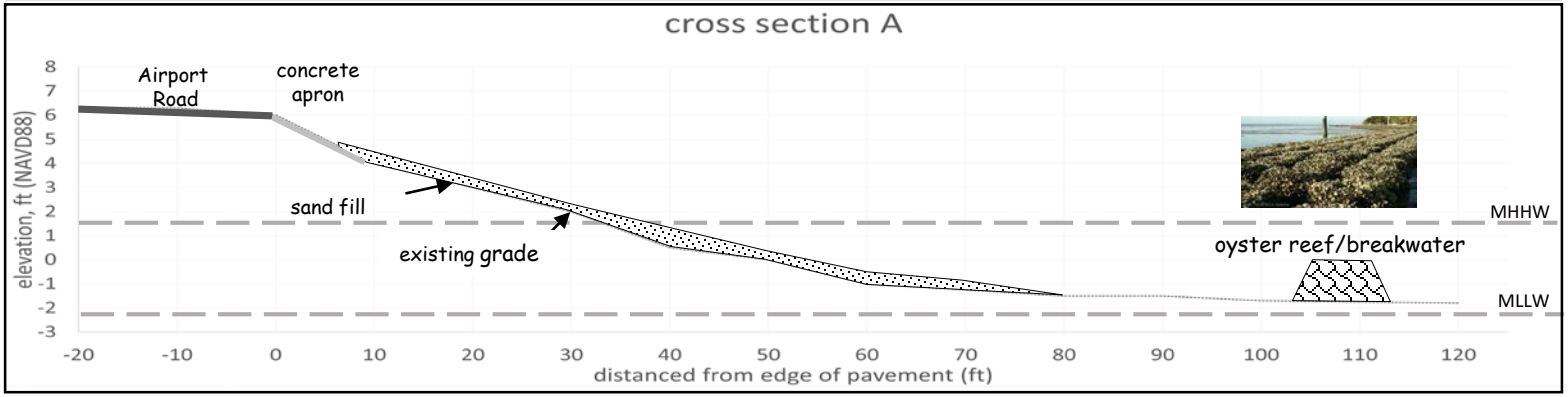
A+

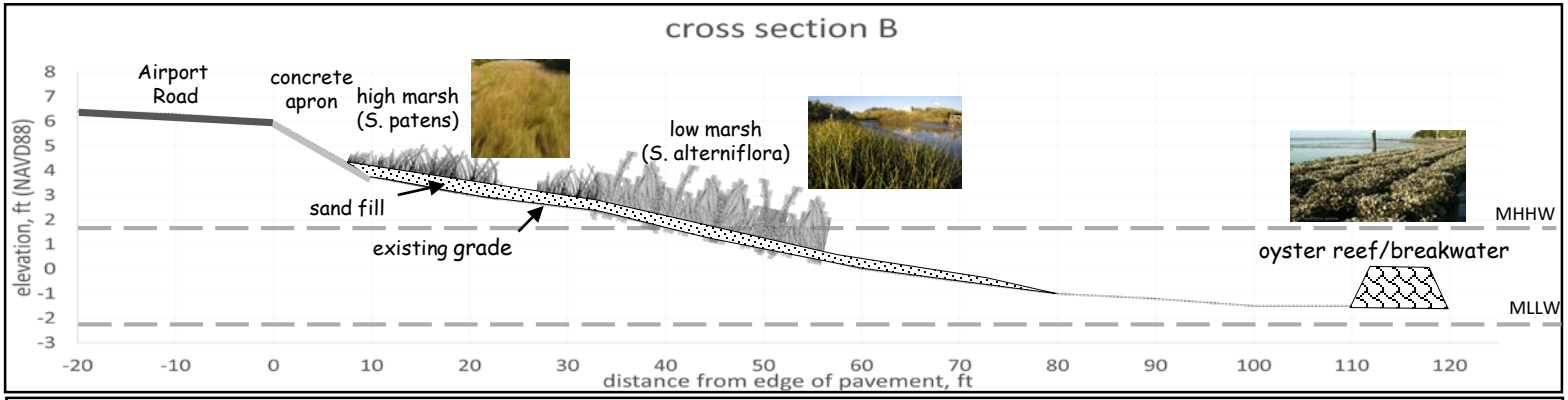
4)Likelihood of obtaining external funding (A+ = high, C- = low)

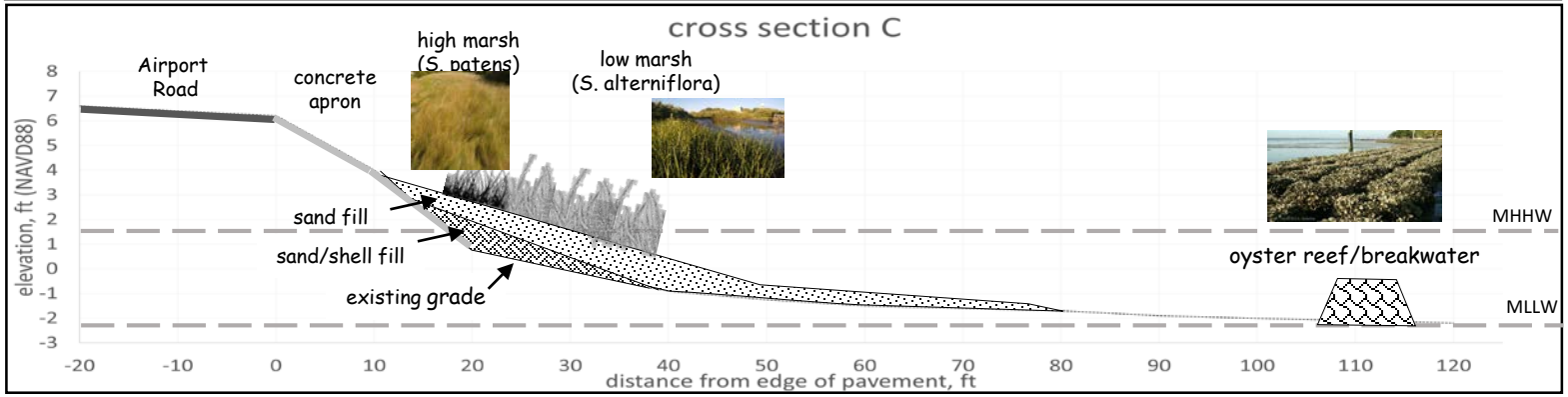
B-

Phase 3: Vegetation + Breakwater + Thin Fill

Phase 3:
Vegetation + Breakwater + Thin Fill
Shoreline cross sections







Phase 3: Vegetation + Breakwater + Thin Fill

1)Environmental Service (C- = negative, B = no change, A+ = most improved)

a)Carbon Sequestration	A+
b)Wave dissipation	A+
c)Water quality	A+
d)Habitat/Biodiversity	A+
category average	***A+***

2)Cost (C- = high, A+ = low)

a)Construction cost	C+
b)Maintenance cost	B+
category average	***B-***

3)Project longevity (C- = shortest time, A+ = longest time)

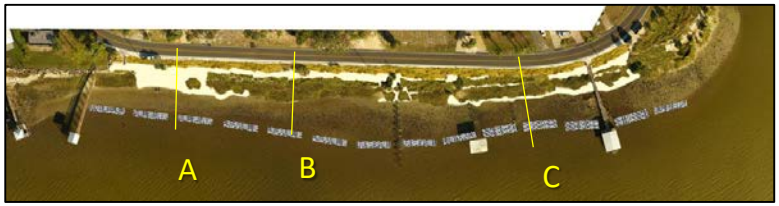
A+

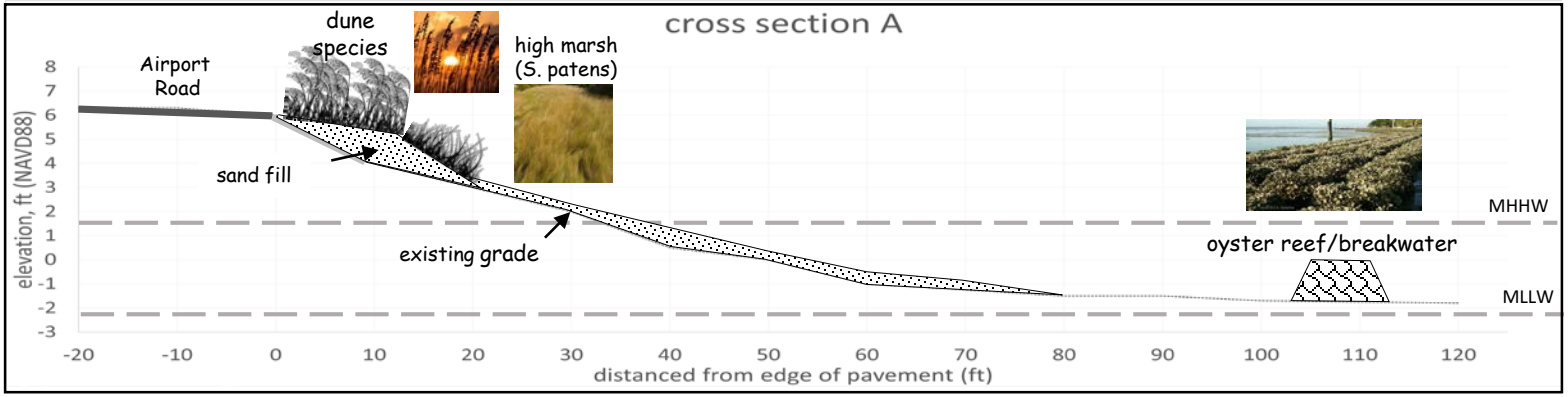
4)Likelihood of obtaining external funding (A+ = high, C- = low)

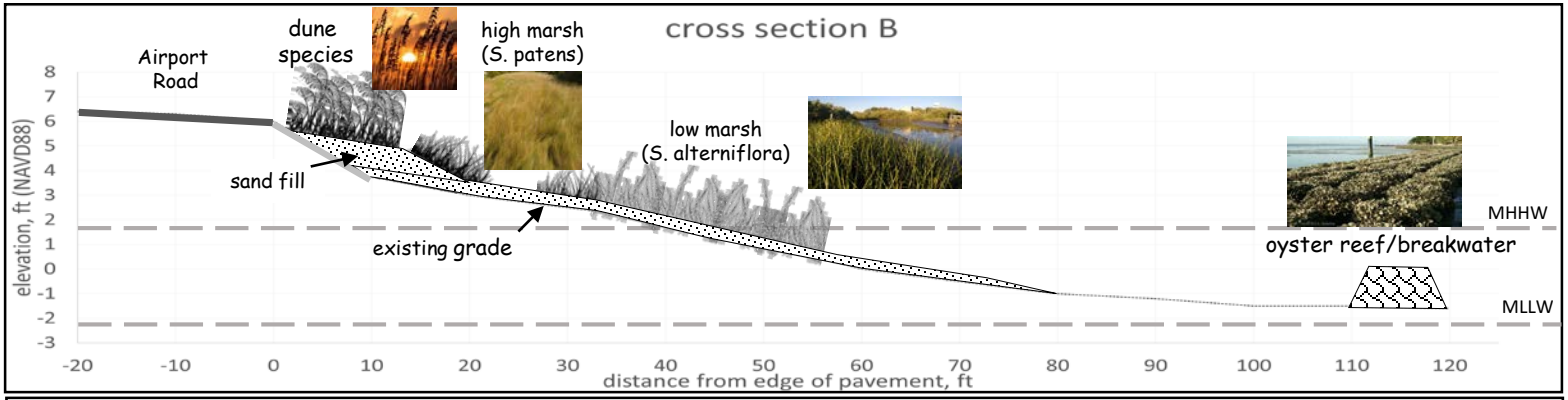
B

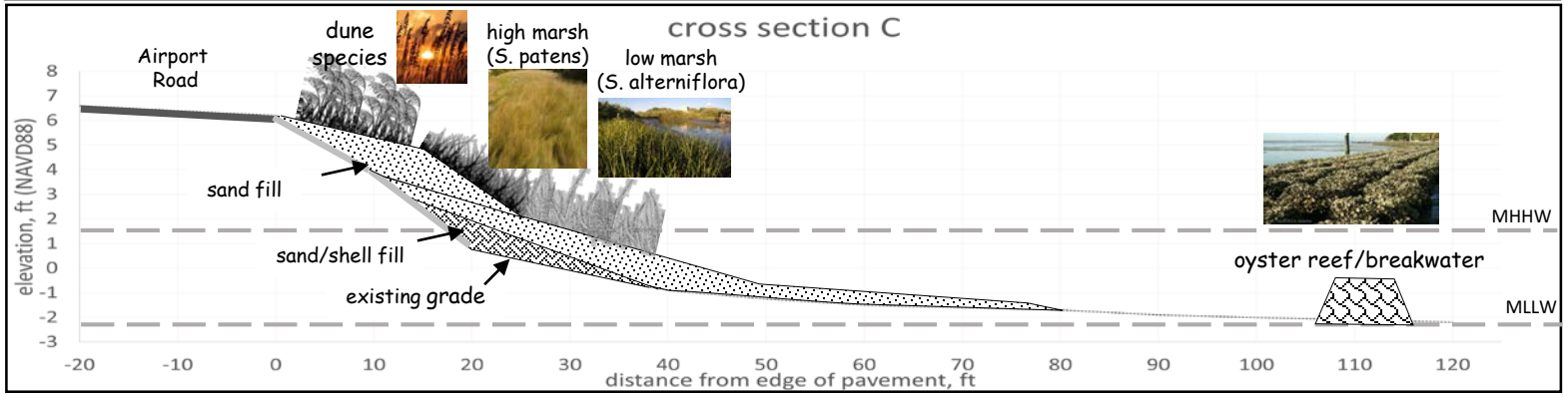
Phase 4: Vegetation + Breakwater + Thin Fill + Dune Fill/Planting

Phase 4:
Vegetation + Breakwater + Thin Fill + Dune
Shoreline cross sections









Phase 4: Vegetation + Breakwater + Thin Fill + Dune Fill/Planting

1)Environmental Service (C- = negative, B = no change, A+ = most improved)

a)Carbon Sequestration	A+
b)Wave dissipation	A++
c)Water quality	A+
d)Habitat/Biodiversity	A++
category average	***A++***

2)Cost (C- = high, A+ = low)

a)Construction cost	C+
b)Maintenance cost	B+
category average	***B-***

3)Project longevity (C- = shortest time, A+ = longest time)

A+

4)Likelihood of obtaining external funding (A+ = high, C- = low)

A-

Detailed Expert Scorecard Summary

	Phase 1	Phase 2	Phase 3	Phase 4	Do Nothing
1)Environmental Service (C- = negative, B = no change, A+ = most improved)					
a)Carbon Sequestration	A-	A+	A+	A+	↓
b)Wave dissipation	A-	A	A+	A++	↓
c)Water quality	A-	A+	A+	A+	↓
d)Habitat/Biodiversity	A-	A	A+	A++	↓
category average	***A-***	***A+***	***A+***	***A++***	↓
2)Cost (C- = high, A+ = low)					
a)Construction cost	A+	B	C+	C+	–
b)Maintenance cost	A	B+	B+	B+	–
category average	***A+***	***B***	***B-***	***B-***	–
3)Project longevity (C- = shortest time, A+ = longest time)					
	A-	A+	A+	A+	↓
4)Likelihood of obtaining external funding (A+ = high, C- = low)					
	A	B-	B	A-	–