

# Estuarine Shoreline Management Plan

## Advisory Committee #2 Summary & Notes

### ESTUARINE SHORELINE MANAGEMENT PLAN

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#### Engineering update and initial Survey

Monday March 7, 2022

Engineering Report Summary – (Jessica Hardesty Norris & Jeff Sheldon)

**There are three components to the Engineering Report, which is our next deliverable. They are the Wave Energy Model (WeMo), a Digital Shoreline Analysis System, and the field and remote categorization of shoreline character (e.g. wood bulkhead vs. marsh). These three elements will be used to generate a coherent scheme to characterize the entire shoreline and come up with suggestions for all of it based on typologies. From there, a technical approach will narrow site options to 10 sites, from which three final sites will be selected for concept-level development with opinion of cost.**

#### **WeMo Model Analysis Summary**

- WeMo uses nearby wind stations and newly measured depth (bathymetry) to understand how wave energy affects each segment of shoreline
- Expresses risk in 1, 5, and 10% exceedance of wave height thresholds for regular, recurring events as well as large storms (hurricane storms are based on training the model on 60 historic storms)
- Discussion: Preliminary results agree with local experience; discussion of variable water level; discussion of technical reportage and final plans
- Question on Wind direction changes: some are documented as shifting regionally, discussion of measurements over recent years, especially NW winds, both from measurement stations and less so in anecdotal accounts. Weatherflow data from Jockey's ridge could be informative, and what does the windrose from last 1-3 years reflect? The dunefield confirms the wind direction thinking, because it's been migrating SE at accelerated rates recently.
- Question to modeling team: what would the effect of shifting the wind direction be in terms of design? Answer: may be negligible in terms of design specification.
- Question: Why is there more exposed beach here than elsewhere? Jockey's Ridge as a source of sand is locally influential. Discussion of dredge efforts and material.

#### **Summary of shoreline erosion analysis process & shoreline character**

- Question: Records to understand when bulkheads came in? Answer: TONH has records for applications and CAMA can source some records

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### Advisory Committee Meeting - The Town of Nags Head

- Question: How big will three final sites be? Answer: Remains to be determined

### Survey & Outreach Conversation (Dawn York)

**Prioritization will proceed informed by technical analysis, but also by a suite of values as expressed by public input and TONH. Accordingly, the first survey is to try uncover some of those concerns and threats that residents, tourists, and users experience. Are there properties or areas we should focus on? Therefore a 10-minute survey will be shared first with the Advisory Committee for feedback, and then with the public.**

- Project prioritization depends on the engineering analysis as summarized, but also by community values
- Group tested and discussed two sample questions from the survey: Rate your concern about these management issues, and Which of the following estuarine shoreline benefits are most important to you?
- Feedback included some clarification about terminology around concerns (current or future). Visual appearance is of concern in some places, but not in others. Question should be clarified.
- Discussed information to communicate effects of bulkheads. Discussed adding graphics to infuse the survey in public education on the issue as well as pieces of information, such as total land area lost in recent decades
- Discussion of bulkheads as adding turbulence for recreational uses - could be part of educational elements included in survey. Erin F from Coastal Federation discussed how porous breakwaters associated with living shorelines allow energy to pass through (less rebound)
- Will add definitions.
- Discussion of treatment of existing bulkheads to recover ecological functions