

To: NTB Board of Aldermen

Subject: BISAC 5-year BIMP update

From: Larry Strother, Chair

Date: November 1, 2023

Prologue: BISAC is charged with development of a draft 5-year beach management plan to be presented for approval to the BOA as well as a 30-year beach, inlet, management plan for the BOA that eventually will be approved by the Department of Coastal Management as part of DCM requirements for coastal communities. At the August BISAC meeting, Chris Gibson, president of TI Coastal Engineering and advisor to BISAC made an oral presentation of his vision for the 5-yr plan. Unfortunately, due to health problems, Chris has been delayed in providing a 5-yr beach management plan document although this is not expected to delay beach projects as the town currently has beach projects scheduled for the next several years already. Thus, we wanted to give the BOA a synopsis of Chris' plan as presented to us orally earlier this year.

Synopsis: Because the cost of nourishing all 11+ miles of shoreline in North Topsail Beach at one time was economically prohibitive previous coastal engineers working with the Town in the 1990's and early 2000's divided the 11 miles into five phases. Presently, beach re-nourishment is occurring in Phase 5 with FEMA funding for Hurricane Florence. As previously reported with Chris' insight he suggested to BISAC that the Town expand the Phase 5 work to include Phase 4 with funds from the state Coastal Storm Damage Mitigation Fund. Indeed, Manager Derian applied for, and the Town was the recipient of a \$10.5 million dollar grant for Phase 4. Work in Phase 4 is expected to start in March of 2024 after the completion of the Phase 5 FEMA work.

In analyzing/thinking about the 5-year plan, Chris noted the work in Phase 5 and 4 creating "engineered beaches¹" so the 5-yr focus should be on Phases 1-3 to create the same status.

Fran Wray summarized this recently:

The 2015 project established Phase 5 as a FEMA "engineered beach" and this is incredibly valuable. As you noted, FEMA funds were available for Florence and Dorian (over 600,000 cy total) (75% FEMA funding, 25% state). **Anytime a significant storm comes through, and FEMA is involved, mitigation is likely. So, this section of beach is being funded largely by federal dollars, they are just from FEMA and not the Corps. And this will continue to occur.**

Chris noted that Town funded (USDA loan) work in Phase 5 while successful and created an engineered beach and has created tens of millions of dollars in benefits (see Phase 5 FEMA work) because of some issues with rocks in the offshore borrow site coming along with the dredged sand, that site may not be the best option. This borrow site was one of 12 designated by previous survey work for the proposed Army Corps Federal Project for Surf City and North

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Topsail Beach. Chris noted that each of these potential 12 borrow sites may have the same rock issues which can damage dredge equipment and increase costs as rocks must be screened out of the dredge material coming to the beach. Therefore, Chris's proposed plan does not include this offshore sand. Instead, Chris has the novel idea of using sand from Disposal Area 143 (DA143) that lies at the northwest corner of Cedar Bush Cut in the New River Inlet and the shoreline of the Intercoastal Waterway to the southwest. This disposal area has approx. 2 million cubic yards(cy) of sand of which Chris feels 1 million cy are beach quality sand. The plan would use a dredge to harvest the sand and pump it to the beach in Phases 1-3. He noted that dredged sand costs about \$11/cy whereas truck-hauled sand is currently costing the Town \$45/cy. Given these savings, Chris estimated that the project might cost \$35 million dollars but noted that the Shallow Draft Inlet Fund and possible other grant sources could limit Town costs to \$3-5 million of the total needed. Of course, there are a lot of variables in the plan, one of which would be the possible need for a permit for and the added cost of a steel sheet-pile retention barrier along the New River Inlet portion of Phase 1.

At this time Fund 30 income is mostly committed to payment of the SOBs for the 2015 Phase 5 nourishment project for the next 4-5 years as Alderman Grant pointed out last month in his activities update to the BOA. Thus, adoption of a 5-yr plan can be methodical once BISAC gets Chris' plan and we evaluate each of the components. Then moving forward, once BOA approves a 5-yr plan, we can begin to work on permitting even though construction could be several years in the future.