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# MEMORANDUM

**To:** **Susan Parker, Town Administrator, Town of Sunset Beach**

**From:** **Robert Neal, PE**

**Date:** **September 01, 2017**

**Subject:** 2016 Shoreline Management and Pre-Dredge Analysis
**Project Status, Updated Project Estimate, and BEAT Response**

**M&N Job No.:**9269

The following is offered as an update on the project status for the dredge analysis and includes a revised construction cost estimate and a response to the recent concerns expressed by BEAT (the Brunswick Environmental Action Team). This memo may serve as a guide for the upcoming September 5th council meeting and covers the following items:

- Initial Results of the Jinks Creek Shellfish Survey & Site Meeting with Agency Staff;
- DCM's Request to Keep Jinks Creek Together as One (1) Permit Application;
- Current Status of the Permit Submittal for Mary's Creek, Turtle Creek, the Feeder Canal & Finger Canals, and the Bay Area;
- Coordination Efforts with the Town of Ocean Isle Beach for Beneficial Use Material Placement
- Revised Construction Estimate;
- Response to concerns expressed by BEAT.

**Initial Results of Jinks Creek Shellfish Survey**

M&N completed an initial assessment of the shellfish habitat in Jinks Creek during the week of July 21st. The results generally indicate three (3) different stratums of oyster and clam habitats within Jinks Creek. The shellfish survey comprises of approximately 55 transects and 1,182 sample sites aligned in Jinks Creek between the AIWW and Riverside Drive. The initial survey covered approximately 18 transects strategically spaced across the sample area to help identify trends or areas of uniform shellfish presence. Figure 1 shows the transects included in the initial assessment along with a general outline of the three (3) stratums of shellfish presence. Generally, the oyster presence increases traveling from the AIWW to Riverside Drive. However, the initial survey indicated only Area 1 (near the AIWW) contained oyster resources within the expected dredge footprint. Within Area's 2 & 3 the oyster locations were limited to the intertidal region along the shoreline. So although the survey identified a significant presence of oyster within area's 2 & 3, they remain predominately outside the construction footprint and may not be impacted by the dredging. Within Area 1 the survey identified oyster resources in all regions of the channel, inclusive of the dredging footprint. Therefore, the project will most likely not be able to avoid impacting some oyster resources within this area. The survey identified clams throughout Area's 1 & 2; however, their density decreased moving towards Riverside Drive. M&N intends to complete the survey during the week of September 5th and provide a report of the findings by the end of September.

**Figure 1. Jinks Creek Shellfish Survey Initial Results**

**Jinks Creek Agency Site Meeting**

M&N reviewed the initial shellfish results with the environmental agencies in attendance at the July 21st site meeting. The agencies seemed to generally acknowledge the results, however; the agencies indicated the full survey would need to be completed prior to moving forward. **A significant result from the site meeting entailed the National Marine Fisheries Service (NMFS) stating they supported the project and expected a permit could be issued for northern Jinks Creek. Most likely the permit will have to include some type of minimization and mitigation efforts, but NMFS did not expect to deny the permit if the Town was willing to include the mitigation.** The NC Division of Marine Fisheries (DMF) staff also stated they did not see an immediate need or cause to deny the permit. However, DMF staff noted the permit review process could result in a denial due to the presence of shellfish observed in Jinks Creek. Additional topics discussed beyond the survey results include the following:

- Dredging depths greater than the surrounding water bodies.
  - DCM staff initially indicated dredging in Jinks Channel would need to connect to deeper water bodies within Tubbs Inlet and the AIWW. However, later conversations suggested this would not be the case. This issue will most likely be addressed at the next agency coordination meeting.
- The USACE currently does not allow sediment placement on their islands.
  - Due to new policy guidance the USACE is not offering easements for non-compatible material placement within an AIWW spoil Island. As a result, the Town will need to negotiate with the underlying property owner for use. **A meeting with the property owner is tentatively planned during the week of Sept. 5th.**
- Dredging in the Bay Area.
  - Agency staff noted the work within the Bay Area would need to avoid the existing spartina (cord grass). M&N noted the comment and the channel alignment will not interfere with the existing grass.
- Dredging in the Feeder Canal.
  - Agency staff also noted the dredging in the Feeder Canal could not impact the existing grasses if the footprint expanded beyond the previously permitting (2002) work area. In order to document the grasses current limits, M&N will map the water-ward boundary during the week of Sept. 5th. **If the current footprint encapsulate some of the existing grass, the footprint may be reduced or moved to avoid the impact.** The mapping work is required in order to complete the CAMA major permit application for the Feeder Canal.
- The Number of Permit Submittals
  - The resource agencies requested for separate permit applications to be provided for the maintenance areas. The agencies requested one permit application to cover Mary's & Turtle Creek and the second application to include the Feeder Canal and Bay Area. The reasoning was to keep the future permits consistent in scope with the 2002 permits. (The agencies noted the 2002 permits did not include the Bay Area, however, all in attendance considered the Bay Area work as maintenance work since the canal was man-made.)

**DCM's Request to Keep Jinks Creek Together as One (1) Permit Application.**

During follow-up discussion from the Jinks Creek Agency site meeting, NC Division of Coastal Management (DCM) staff requested for southern Jinks Creek to be included with Northern Jinks Creek as part of the permit package. How the permits are structured is irrelevant to the construction process and to the cost for permitting each site. The environmental documentation required for one permit can be used for all, especially if this condition is established during the planning phase. [Please note a filing fee of $475 (paid directly to DCM) will apply for each permit submittal.]

Constructing the project in individual or small sections can increase the overall costs by requiring multiple mobilizations. However, multiple permit areas can be incorporated into 1 construction contract. The current thought process involves constructing the project over two (2) dredge seasons (Nov 16 – March 31). The permit agencies generally do not allow dredging in coastal waters during the summer months and the project is too big to complete in 1 season by a single small dredge. The mobilization cost may be minimized if the Town allows the contractor 2 seasons to complete the work. The Contractor could plan to store some equipment on-site during the summer months and return to work in November.

It should be noted, some additional cost should be anticipated for permitting northern Jinks Creek. The permit agencies have stated an Environmental Assessment (EA) will most likely be required to permit northern Jinks Creek due to the shellfish presence. Therefore, the additional cost would be required regardless of how the permits are structured. (The current permitting only involves a Biological Assessment. A Biological Assessment evaluates if impacts are likely to listed or endangered species known to use the project area. An EA evaluates how the project will impact all environmental resources present in the work area. For northern Jinks Creek this primarily entails evaluating the impacts to the oysters identified in the shellfish survey.)

**Current Status of the Permit Submittal for Mary's Creek, Turtle Creek, the Feeder Canal & Finger Canals, and the Bay Area**

The CAMA major permit application for dredging the above referenced sites should be submitted in early November. Completion of the permit application requires the following items:

- Essential Fish Habitat Assessment (EFH)
- Biological Assessment (BA)
- Cultural Resource Review
- Material Placement Site Identification
- CAMA Major Permit Application

The EFH, BA, and cultural resource review should be completed within September; however the CAMA permit application cannot be completed until all other items are finalized. The main outstanding item for the application is identification of an upland material placement site. An upland site must be identified as part of the permitting process for dredging the non-compatible material. Two (2) potential islands shown in the figure below are being considered for the work. Although typically a use agreement would come through the USACE, recent guidance prevents the USACE from issuing any agreements or easements. Therefore, the Town will need to negotiate with the legal property owner for use of the islands. (The USACE manages the islands but they are privately owned.) Only 1 island should be required for the project but significant site improvements will most likely be needed. The vegetation must be removed from the island to allow drainage of the dredge slurry and an earthen dike must be constructed to contain the slurry. Both islands appear to meet the needs of the project from the initial evaluation. However, surveys will most likely be required to verify the current dike condition and to document overall pre-construction conditions. A tentative meeting with the property owner is scheduled for the week of September 5th to begin discussions

regarding the island's use. **(Please note, the permit status assumes south Jinks Creek will not be included in the application. If included, a material placement site for the beach compatible material must also be secured. )**

**Figure 2. Material Placement Islands 310 & 311.**

**Coordination Efforts with the Town of Ocean Isle Beach for Beneficial Use Material Placement**

Representative of the Town of Sunset Beach (Town) and Ocean Isle Beach (OIB) met on July 24th to discuss the potential for placement of the beach compatible material on Ocean Isle Beach. All parties were receptive to the idea of placing material on OIB; however, a cost share agreement seemed unlikely. OIB stated the request would need to be formally submitted to their Board for consideration. The request should provide the anticipated volume (CY) and estimated cost of the work. OIB was very appreciative of the Town's efforts to include them in the early discussions of the project. OIB supported the project and expected many of their residents would see the project as a positive. However, they also requested to continue to be updated on the progress and expressed they have concerns about the project. Generally the concerns focused on how Tubbs Inlet would react to the dredging of Jinks Creek. OIB stated they would most likely request some type of monitoring to help show the project would not impact them.

**Revised Construction Estimate**

In efforts to help the negotiations with OIB and to update the Town on the likely cost of the overall dredging project, the following table shows a revised cost estimate. The estimate assumes the project will have two (2) mobilization costs for a small dredge and will occur over 2 seasons. If a suitable storage site for pipe and materials can be identified the mobilization may be reduced to some degree. This will be dependent on the Contractor and if they realize a cost savings by storing the equipment on-site during the summer months. The estimate shows the cost for compatible and non-compatible material dredge and fill work. The cost for non-compatible material assumes a $5.00 / cubic yard tipping fee as required by the USACE. In addition a 15% contingency has been added to the total estimated cost.

**Table 1. Estimate of Construction Costs**

| Item | Unit Cost | Quantity | Cost |
|---|---|---|---|
| **Mobilization[1]** | LS | 1 | $800,000 |
| **Bonds / Insurance** | LS | 1 | $15,000 |
| **Spoil Island Improvements** | LS | 1 | $127,000 |
| **Dredge & Fill[2, 3] Non-Compatible Material (Inclusive of Tipping Fee)** | $12.42 / CY | 111,585 CY | $1,385,698 |
| **Dredge & Fill[2] Compatible Material (Beneficial Use Placement)** | $12.50 / CY | 68,660 CY | $858,250 |
| **Sub-Total** | | | **$3,185,948** |
| Contingency (15%) | | | $477,900 |
| **Total** | | | **$3,663,848** |

1. Costs assume two (2) mobilizations will be required to construct the project over multiple dredge seasons.
2. Estimate include overdredge tolerances.
3. Estimates include $5/CY tipping fee.

**Response to BEAT Concerns**

The Brunswick Environmental Action Team (BEAT) expressed concern over the environmental situation and dredging of Jinks Creek on or about August 29th. The concerns focused on the project's legality and the precedent it would establish. The BEAT references NC General Statute (NCGS) 113-229 as prohibiting the taking or selling of sand from one barrier island to another and further states North Carolina law prohibits new dredging in a tidal creek.

Please note, NCGS 113-229 (h1) states "…*beach-quality sand may be placed on the affected downdrift ocean beaches or, if placed elsewhere, an equivalent quality and quantity of sand from another location shall be placed on the downdrift ocean beaches*". This statute generally applies to inlets or ebb shoals and prohibits anyone from interrupting or removing sediment from the littoral system that feeds a downdrift shoreline. This action does not apply to Jinks Creek where material will be dredged from the interior waterways. Material placement on Ocean Isle Beach or Sunset Beach would return the shoaled material in Jinks Creek to the littoral system. NCGS 113-229 (h2) continues by mandating beach quality sand must be maintained within the littoral system. The referenced statute states "*Clean, beach quality material dredged from navigational channels within the active nearshore, beach or inlet shoal systems shall not be removed permanently from the active nearshore, beach or inlet shoal system. This dredged material shall be disposed of on the ocean beach or shallow active nearshore area where it is environmentally acceptable and compatible with other uses of the beach".*

In regards to the claim that NC law prohibits new dredging in a tidal creek, any dredging activity will require state and federal authorization. The applicable state and federal agencies tasked with approving or denying any such authorization have been involved with the Jinks Creek project since at least March 2016. At no time has any agency representative indicated the project would be prohibited under state law. Agency participation has been encouraged throughout the project in order to develop a least impactive environmental solution that meets the navigation goals for Jinks Creek.

Beat also expressed a concern the project would establish a precedent for new dredging in a tidal creek. However, Jinks Creek provides navigation access from the residential canals on Sunset Beach to the AIWW and Tubbs Inlet. As a navigable waterway connecting to a tidal inlet, the potential need for maintenance dredging will always exist. All parties involved in the project have worked together to minimize the environmental impacts and have encouraged outside participation in this efforts. The project team understands the need to avoid and minimize potential impacts and will continue to work with all parties involved. However, the need to maintain navigation access also has to be considered in order to achieve a successful project. The Town has consistently moved forward seeking input from the resource agencies, and that approach should continue in an effort to balance the potential project impacts with the established goals.