

MEMORANDUM

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

From: Robert Neal, PE

Date: June 21, 2017

Subject: 2016 Shoreline Management and Pre-Dredge Analysis
Jinks Creek Shellfish Survey

M&N Job No.:9269

The following recommendation outlines a process to complete the field work and investigative studies believed necessary to evaluate the task of permitting a navigation dredging project for Jinks Creek. The recommendation stems from comments and discussions held at the project's 2nd Agency Coordination meeting conducted on May 5, 2017. Comments from the referenced meeting identified the Jinks Creek shellfish survey as the primary concern and only known remaining field task with the potential to significantly influence the decision of moving forward for the project. Therefore, Moffatt & Nichol (M&N) recommends the Town of Sunset Beach (Town) conducts the shellfish survey to evaluate the overall project implications provided by the results.

M&N understands and agrees with the Town's goal to proceed in a step-wise manner with the dredging study. This process should allow for close coordination with the permitting agencies and a full understanding of the required tasks. For this reason, M&N believes the next step should concentrate on the shellfish survey to identify if any potential mitigation or relocation efforts may be necessary. Based on comments received from the permitting agencies, the areas of work outside of Jinks Creek should move forward without the need for additional field studies. The remaining areas include Mary's and Turtle Creek, the Bay Area, and the Feeder Canal along with the adjoining finger canals A through D. However, it is noted the resource agencies did not stipulate the requirement for a shellfish survey of Jinks Creek until the 2nd coordination meeting. Therefore, a potential always exists for the resource agencies to add additional requirements.

The outline below provides the anticipated tasks necessary to complete the shellfish survey and present the results to the resource agencies. The outline includes a field meeting to discuss the shellfish survey findings in addition to a 3rd coordination meeting to discuss permitting the complete project. Agency staff have indicated a willingness to meet in the field during the survey to personally observe the shellfish presence. This should aid in the discussion of how the project may avoid the shellfish resources. The field meeting should also allow the coordination meeting to focus on discussing the permitting path for the overall project.

At the May 5th coordination meeting, agency staff appeared uncertain on the best or most effective permitting path for the overall project. In specific, the need for an Environmental Assessment (EA) or Biological Assessment (BA) remains unresolved. [A seagrass or submerged aquatic vegetation (SAV) survey was also referenced as a potential but the agencies expressed very little concern towards its need.] The determination for the federal authorization to fall under a nationwide general permit (GP) or an USACE Individual Permit (IP) also went unresolved.

For reference, the schedule for the Jinks Creek shellfish survey should extend through August 2017, or for 2 months. This will allow for the 3rd agency coordination meeting to be held in September 2017. The survey timeframe is expected to extend over 2 months in order to conduct the work during low tide periods.

TASK 1 - PROJECT COORDINATION

M&N will continue to provide coordination efforts through the next phase of the project, anticipated for a 3 month duration. The efforts include written progress reports documenting the project status and current work efforts on a monthly basis. M&N staff will also remain available for conference calls and email correspondence at the Town's convenience to discuss the project and answer any questions that may arise. M&N anticipates two (2) Town council meetings during this phase of work. The first meeting will be to present the shellfish survey results and the second will be to present the results of the 3rd Agency Coordination meeting. M&N will prepare for and attend these meetings at the request of the Town.

Total Lump Sum Cost for Task 1 - Project Coordination: \$4,393.⁰⁰

TASK 2 – JINKS CREEK SHELLFISH SURVEY

M&N will conduct a shellfish survey of Jinks Creek to address agency concerns expressed at the May 5th coordination meeting. The survey will be conducted in accordance with a modified scope approved by the North Carolina Division of Marine Fisheries (DMF) and the National Marine Fisheries Service (NMFS). Attachment A shows the scope and site plan for the survey. The survey limits were also established in coordination with DMF and NMFS. The modified scope was proposed to expedite the survey timeframe due to the large coverage area of Jinks Creek. Approximately 1,053 locations will be sampled within the approximate 42 acre survey site to classify the size and density of any oyster or clam resources. Upon completion of in-field sampling, a report of findings will be provided to the Town, DMF, NMFS, and other relevant agencies for review. If necessary based on agency review and comments, M&N staff will research and propose appropriate mitigation options for the Town's consideration.

Total Lump Sum Cost for Task 2 – Jinks Creek Shellfish Survey: \$79,196.⁰⁰

TASK 3 – JINKS CREEK SITE MEETING

M&N management staff will meet on-site with agency personnel during the Jinks Creek shellfish survey work to discuss the findings and potential mitigation or relocation methods. The site visit is proposed to help acclimate the stakeholders with the site and available resources. The on-site observations should help expedite discussions at the next coordination meeting and allow efforts to focus on the path for permitting the overall project. M&N will provide a written summary of the site meeting and the discussions of any potential shellfish mitigation or relocation efforts.

Total Lump Sum Cost for Task 3 – Jinks Creek Site Meeting: \$4,102.⁰⁰

TASK 4 – 3rd AGENCY COORDINATION MEETING

Based on the results of the Jinks Creek shellfish survey, M&N will request and chair a 3rd agency coordination meeting with representatives of the Town, DMF, NMFS, USACE, DCM, and others to discuss permitting the project. M&N will present the Jinks Creek shellfish survey findings in an effort to resolve the most efficient permitting path for the overall project. **(The shellfish survey is considered the last field study required to identify the potential environmental concerns for the project.)** A copy of the survey results and meeting materials will be provided to the attendees a minimum of 1 week prior to the meeting



to allow each member ample review. A written summary of the meeting will be provided to all participants along with contact information for each attendee.

The Lump Sum Cost for Task 4 – 3rd Agency Coordination Meeting is: \$4,854.⁰⁰

The above information is provided to help the Town of Sunset Beach evaluate moving forward with the proposed work. The table below summarizes the estimated costs associated with the Jinks Creek shellfish survey and the 3rd agency coordination meeting.

Actions Recommended for the Jinks Creek Shellfish Survey

Task	Estimated Cost
1. Project Coordination	\$4,393. ⁰⁰
2. Jinks Creek Shellfish Survey	\$79,196. ⁰⁰
3. Jinks Creek Site Meeting	\$4,102. ⁰⁰
4. 3 rd Agency Coordination Meeting	\$4,854. ⁰⁰
Total	\$92,545.⁰⁰

M&N appreciates the opportunity to assist the Town of Sunset Beach and would be happy to discuss this proposed path or provide additional information regarding our understanding of the project. Please let me know if I may provide any additional clarification.



Attachment A – Jinks Creek Recommended Shellfish Sampling Protocols & Site Plan

Methods - Sample at the rate of at least 25 one-meter square samples per acre with no less than 10 samples per project site. Samples should be taken on a depth-stratified basis, either randomly or along transects. Sampling will be taken as close to low tide as reasonable to limit water depth. For locations below MLW and with poor visibility, sampling will be conducted using a clam rake or oyster tongs with attached pole in an approximate one-meter square area. If shellfish are found, a count (if able to be safely performed) will be performed at the sample location. For areas within the intertidal zone where there is less than 50% shellfish coverage of the meter square, a full count of individual shellfish will be performed. In samples that are above 90% shellfish coverage, a 25cm or a ¼ meter quadrat subsample will be sampled with the number of individual shellfish (type and species) extrapolated to the full one-meter square. Data presented in the survey report will generally be the same for intertidal and subtidal areas, with detailed notes on method of survey (rake, tongs, visual count, estimated count for deeper areas) included for each sample. The tidal zone of each sample (supratidal, intertidal or subtidal) will also be clearly indicated on the field data sheet.

Data Collection- Samples should include at least the following data:

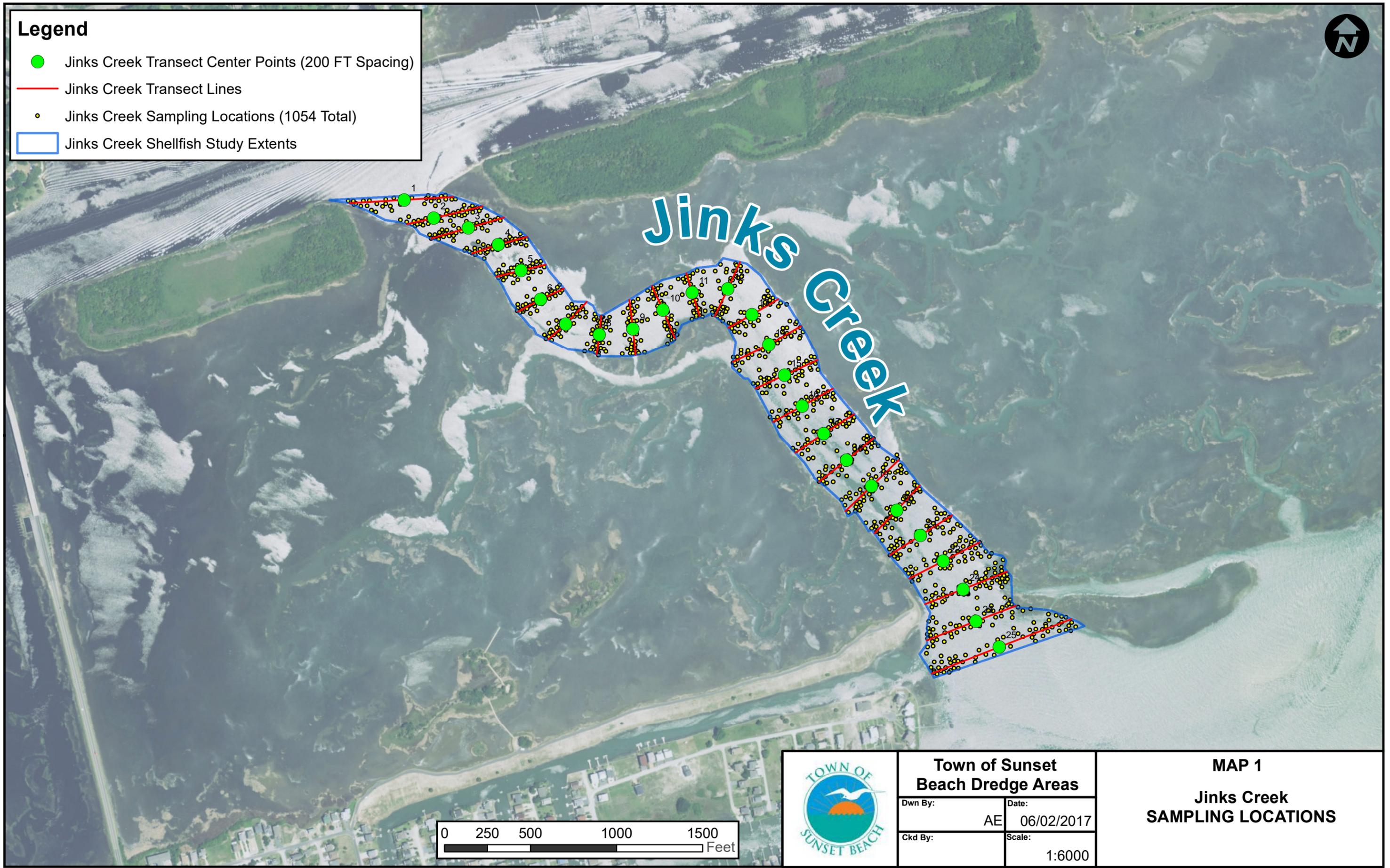
- Location for every sample on a map of the site
- Date and approximate local time of sampling work
- Depth (and lunar tide stage where applicable)
- Bottom salinity and water temperature – will take daily start of work measurements in the approximate area where surveys are being performed. The daily tidal point at which the measurement was taken will be included on the field data sheet.

For each sample:

- General bottom type (estimate: mud, sandy mud, muddy sand, sand, shell, SAV, macroalgae)
- Numbers of oysters and/or hard clams for each sample
- Optional data:
- Shell length (umbo to lip) in mm for each oyster and clam collected. – A categorical classification of spat/sublegal/legal oysters will be made based on NCDMF protocol.
- Other pertinent observations (such as SAV presence)

Legend

- Jinks Creek Transect Center Points (200 FT Spacing)
- Jinks Creek Transect Lines
- Jinks Creek Sampling Locations (1054 Total)
- Jinks Creek Shellfish Study Extents



Town of Sunset Beach Dredge Areas	
Dwn By:	Date:
AE	06/02/2017
Ckd By:	Scale:
	1:6000

MAP 1
**Jinks Creek
SAMPLING LOCATIONS**