

TOWN OF SUNSET BEACH  
2016 SHORELINE MANAGEMENT AND PRE-DREDGE ANALYSIS  
PHASE 2 - DESIGN

PROGRESS REPORT DATE  
SEPTEMBER 7, 2016

**Report Period: August 01 thru August 31, 2016**

The items below provide a description of key elements related to the current progress, including outstanding items and anticipated resolutions, for completing the work known as Town of Sunset Beach, 2016 Shoreline Management and Pre-Dredge Analysis, Phase 2 - Design.

**Acronyms:** M&N – Moffatt & Nichol  
NCDEQ – North Carolina Department of Environmental Quality  
NOAA – National Oceanic & Atmospheric Administration  
USACE – US Army Corps of Engineers (Wilmington District)  
USFWS – U.S. Fish & Wildlife Service.

**Phase 1 – Feasibility Analysis** (100% complete)

**Items Previously Completed:** (100%)

The Town of Sunset Beach (Town) and M&N initiated a contract on February 19<sup>th</sup> to study the feasibility of conducting approximately 3.5 miles of navigation dredging within the Town limits. The work areas include Mary’s Creek, Turtle Creek, Jinks Creek, the North Shore Drive feeder and adjoining finger canals and the Canal Drive bay area. The results of the analysis were positive and the Town elected to move forward with the design and modeling of the proposed work on June 7<sup>th</sup>. The design work was authorized to begin July 1, 2016.

**Phase 2 –Design** (25.78 % complete)

**Items Previously Completed** (0%)

1.0 Project Coordination

- The Town of Sunset Beach authorized M&N to begin the design work on July 1, 2016. The first priority was to secure a Water Resource Development Grant through the State’s Shallow Draft Navigation Fund. The grant was secured on August 1 and reimburses the Town 2/3’s of the project cost up to \$2,779,327.

2.0 Refined Design

- M&N initiated design work for to refine the Jinks Creek alignment in July to provide adequate vessel access while avoiding impacts to the adjacent environmentally sensitive lands. A modeling analysis will be conducted to investigate the potential of the proposed alignment to negatively impact the existing ecosystem. The analysis will evaluate if the proposed alignment will allow increased tidal velocities through Jinks Creek. If the modeling finds that tidal velocities are likely to increase, the analysis will evaluate the increased potential for scour along the channel banks and additional shoaling within the AIWW. The potential for the new alignment in Jinks Creek to adversely affect the stability of Tubbs Inlet will also be reviewed.

**Progress this Period:** (22.05 % of total task)

1.0 Project Coordination

- M&N continues to coordinate with the Town regarding the project status and the available alternatives for beneficial reuse of the dredge material. This includes beach placement for cost share potential with Ocean Isle or dune restoration adjacent to Bird Island for storm protection and habitat restoration. In addition, the dredge material may also be used for a possible living shorelines project to restore marsh or intertidal habitat for invertebrates and shorebirds. A site visit to explore potential sites for a living shoreline or dune restoration project is scheduled for September 15<sup>th</sup>. A possible next step forward will be presented after the site visit to consider the identified options.

2.0 Refined Design

- M&N continued work on the refined alignment for Jinks Creek in addition to the Canal Drive Bay Area. The alignments will be provided to the Town for review prior to September 15<sup>th</sup>.
- Geodynamics completed the hydrographic surveying efforts adjacent to Tubbs Inlet and the AIWW on August 25<sup>th</sup>. The data will be used to describe the current conditions of the inlet and AIWW for the modeling analysis. (Final deliverables from the survey will be provided to the Town prior to September 15<sup>th</sup>.)

3.0 Sediment Testing

- Catlin Engineers completed the field work for the sediment testing on August 25<sup>th</sup>. Catlin collected approximately 26 core samples and 2 grab samples from the project area. The samples will be tested for grain size, chemical composition, and silt content to define if the proposed dredge material is beach compatible in accordance with state and federal guidelines. Compatible material may be beneficially reused for habitat restoration or storm protection projects. Non-compatible material may have to be placed in an upland containment site, such as a USACE material placement island.

**Outstanding Items and Anticipated Completion Dates:**

1.0 Project Coordination

- A public meeting is scheduled for Saturday, October 8<sup>th</sup> to present the proposed dredge alignments and anticipated project schedule through construction. The project goals and potential impacts will also be discussed.
- M&N will provide a recommendation for possible habitat restoration projects (including dune and marsh restoration) based on the results of the sediment testing analysis and the September 15<sup>th</sup> site visit scheduled to review potential restoration areas.

2.0 Refined Design

- M&N will provide a preliminary alignment for the proposed work areas for the Town's review in September. The proposed dredge volume for each work area will also be provided with the submittal. After review by the Town M&N will complete the modeling analysis for Jinks Creek. The proposed alignment for Jinks Creek will be revised if needed based on the modeling results.

3.0 Sediment Testing

- The sediment samples will be analyzed for grain size and silt content for evaluation of the sediment composition. The results of the sediment tests are anticipated in late September and will allow a better estimate of how the dredge material may be reused to benefit the project.

4.0 USACE Disposal Locations

- M&N will conduct an inspection of the available USACE material confinement islands located along the AIWW to determine the least cost option for placing any necessary dredge material. The inspection results will be provided to the Town prior to October 2016.

5.0 Oyster Survey

- M&N will conduct a survey within Mary's and Turtle Creek to identify any oyster beds that must be relocated prior to the dredging of these systems. M&N will also coordinate with the appropriate resource agencies to identify acceptable mitigation options that may be required for disturbing or impacting the oyster resources. The survey will be conducted during the week of October 3<sup>rd</sup>. The survey results and potential mitigation options will be provided for the Town's consideration prior to December 2016.

6.0 Agency Coordination Meeting

- M&N will request a second Agency Coordination Meeting to present and discuss the dredge alignments, modeling results, and any potential mitigation requirements with the state and federal agencies responsible for permitting the project. M&N will work with the Town and the agencies to provide an acceptable dredge alignment for the project. The Agency coordination meeting is anticipated prior to December 2016.

7.0 Conceptual Cost Estimate

- M&N will provide an updated construction cost estimate for the proposed dredging based on the accepted design of the project. The cost estimate will be provided as the final task for the design phase and is anticipated in December 2016.

**TOWN OF SUNSET BEACH  
2016 SHORELINE MANAGEMENT & PRE-DREDGE ANALYSIS - DESIGN PHASE**

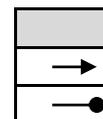
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**Progress Schedule**

Tasks	2016																																				2017												2018											
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept																								
Pre-Dredge Analysis Design Phase																																																												
Project Coordination		→																																																										
Public Meeting																																																												
Refined Design		→																																																										
Modeling Analysis																																																												
Sediment Testing		→																																																										
Hydrographic Survey		●																																																										
USACE Disposal Locations																																																												
Oyster Survey																																																												
Agency Coordination Meeting																																																												
Conceptual Cost Estimate																																																												



Primary Task  
Anticipated timeframe to complete task.  
Anticipated overrun in task.



Sub-Task  
Work in progress (WIP) for task.  
Actual timeframe to complete task.