

**DIVISION OF COASTAL MANAGEMENT  
FIELD INVESTIGATION REPORT**

1. **APPLICANT'S NAME:** North Carolina State Ports Authority (Turning Basin Expansion)
2. **LOCATION OF PROJECT SITE:** The project is located at 1 Shipyard Blvd., adjacent to the Cape Fear River, in Wilmington, New Hanover County.

**Photo Index - 2006:** 204-6656: A-H, 3-5      **Latitude:** 34°12'35.79"N      **Longitude:** 77°57'17.34"W

3. **INVESTIGATION TYPE:** CAMA/ D & F
4. **INVESTIGATIVE PROCEDURE:** **Dates of Site Visit** – October 29, 2018  
**Was Applicant Present** – No
5. **PROCESSING PROCEDURE:** **Application Received** – October 29, 2018  
**Application Completed** – October 29, 2018  
**Office** – Wilmington

6. **SITE DESCRIPTION:**
  - (A) **Local Land Use Plan** – City of Wilmington/New Hanover County  
**Land Classification From LUP** – Conservation/Developed
  - (B) **AEC(s) Involved:** EW, ES, PTA, CW, PNA  
**Water Dependent:** Yes
  - (D) **Intended Use:** Commercial/Industrial
  - (E) **Wastewater Treatment:** **Existing:** Municipal  
**Planned:** None
  - (F) **Type of Structures:**  
**Existing** – Wooden pier, storage tanks, office buildings, roads and rail line  
**Planned** – Removal of an existing wooden pier, installation of a toe wall, and expansion of dredging limits to accommodate larger ships.
  - (G) **Estimated Annual Rate of Erosion:** N/A  
**Source** - N/A

7. **HABITAT DESCRIPTION:**

|  | [AREA]  |        |       |
|--|---------|--------|-------|
|  | DREDGED | FILLED | OTHER |

|  | [AREA]      |        |       |
|--|-------------|--------|-------|
|  | DREDGED     | FILLED | OTHER |
| (A) Vegetated Wetlands                   | 1.4 acres   |        |       |
| (B) Non-Vegetated Wetlands (Soft bottom) | 17.76 acres |        |       |
| (C) Other – Highground                   |             |        |       |

- (D) **Total Area Disturbed:** ~835,001 sq. ft. (~19.16 acres)
- (E) **Primary Nursery Area:** Yes
- (F) **Water Classification:** SC      **Open:** No

8. **PROJECT SUMMARY:** The N.C. State Ports Authority proposes a **Major Modification** to State Permit No. 47-87 to allow for the removal of an existing wooden pier, installation of a toe wall, and expansion of dredging limits to accommodate larger ships.

9. PROJECT DESCRIPTION

The project site is located at the northern portion of the N.C. State Port Authority (NCSPA) property, adjacent to the Cape Fear River, in Wilmington, New Hanover County. To locate the property from College Road traveling south from Wilmington, turn right onto Shipyard Blvd. Travel west on Shipyard Blvd. until you reach Burnett Blvd. located on the right-hand side of the road, just before the main entrance to the NCSPA at 1 Shipyard Blvd. Merge right onto Burnett Blvd. and travel north until you reach the project site, which will be located on the left located at the NCSPA North Gate General Cargo facility entrance. Once you through security at the entrance continue until you reach the Kinder Morgan facility which currently leases the northern area from NCSPA. To access the northernmost project area, continue north on Burnett Street and merge left on to S. Front Street. Continue on S. Front Street and turn left on to Greenfield Street. Greenfield Street ends at the NCSPA north property. If you plan to do a site visit at the NCSPA property, please contact **Mr. Todd Walton at 910-251-5678** to arrange the site visit with security. Work is also proposed at the Eagle Island confined disposal facility (CDF) which lies directly west of the NCSPA on the opposite side of the Cape Fear River. Permission to access this site requires US Army Corps of Engineers approval.

Existing structures on the highground of the NCSPA owned properties consists of office buildings, gravel and asphalt roads, rail line, storage tanks, and conveyors for bulk liquid storage. There is an existing timber pier located at the northwest corner of the Kinder Morgan owned property (formerly Vopak) that measures approximately 6' wide and 316' long with a "T-Head" that measures approximately 40' wide by 40' long. Greenfield Creek is located between the NCSPA north property and the Kinder Morgan property and connects the Cape Fear River to Greenfield Lake. Water flow is controlled by a tidal gate located at the mouth of the creek. The NCSPA north property is vacant. The project site includes the existing NCSPA turning basin located adjacent to the Kinder Morgan leased and owned properties and adjacent to the USACE turning basin located adjacent to the USACE owned Eagle Island confined disposal facility. Eagle Island is vacant of any structures (See Sheet 1 and 2 of 16).

Vegetation along the east bank of the project site, landward of the upland berm, consists of Live Oak (*Quercus virginiana*), Coastal Red Cedar (*Juniperus silicicola*), Trumpet Vine (*Campis redicans*), Catbriar (*Smilax bona-nox*), and Poison Ivy (*Toxicodendron radicans*). The approximately 2,230' of shoreline along the Cape Fear River is bordered by an area of wetlands consisting of tidal and brackish marsh. Brackish marsh species include Big Cordgrass (*Spartina cynosuroides*), Narrow-leaf Cattail (*Typha angustifolia*), Salt Marsh Aster (*Symphotrichum tenuifolium*), Bull-tongue Arrowhead (*Sagittaria lancifolia*), Water Primrose (*Ludwigia bonariensis*), and Common Reed (*Phragmites australis*). Coastal Wetlands in this area consist primarily of Smooth Cordgrass (*Spartina alterniflora*) (See Sheets 2 and 3 of 16 and Preliminary Jurisdictional Determination).

**Permit History-** The applicant currently maintains State Permit No. 47-87, which was originally issued on February 17, 1987 for hydraulic dredging of the NCSPA shipping berths and was modified via a variance through the Coastal Resources Commission (CRC) on September 6, 2000 for the use of a barge mounted agitation dredge to sweep accumulating fines from the berth area to avoid the creation of shoaled areas. The NCSPA received a Major Modification to State Permit No. 47-87 through a CRC-Final Order granted on January 7, 2016 and issued on January 13, 2016, to allow for the relocation of an existing liquid bulk pier, the expansion of the turning basin dredging footprint from 1,200' to 1,400' in diameter, and dredging depth limit of -44' mean lower low water (MLLW) to accommodate Post-Panamax ships. A Major Modification to State Permit No. 47-87 was issued on May 26, 2016 for a one-time emergency maintenance dredging of the western portion of the turning basin. State Permit No. 47-87 was last modified on June 21, 2018 authorizing the change in methodology to allow for water injection dredging to maintain water depths at the berths. State Permit No. 47-87 is due to expire on December 31, 2020.

The waters of the Cape Fear River (in the vicinity of the project) are classified SC, by the N.C. Division of Water Resources. The area is designated as a **Primary Nursery Area (PNA)**, by the N.C. Division of Marine Fisheries and these waters are **CLOSED** to the harvesting of shellfish. The Wilmington-New Hanover County Land Use Plan 2006

Update classifies the area as Conservation and Urban.

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**PROPOSED PROJECT**

The N.C. State Ports Authority proposes a **Major Modification** to State Permit No. 47-87 to allow for the removal of an existing wooden pier, installation of a toe wall, and expansion of dredging limits to accommodate larger ships. The application states that the entirety of the existing timber pier and platform would be dismantled and removed before initiation of the proposed turning basin expansion.

The applicant proposes a new 1,416 linear foot toe wall that would be installed along the eastern perimeter of the proposed dredge footprint approximately 25' to 100' waterward of NHW. The applicant state that the toe wall would consist of interlocking sheet piles with protective coating and driven in to the marl layer. The tow wall would be constructed in one of two ways, using 160 sheet piles and 160 pipe piles or 310 sheet piles and 15 H-piles. **Sheet 4 of 16** shows that king piles would be approximately 105' long with the tip set -95' below MLLW and the top exposed +10' above MLLW. Sheet piles would be installed at -60' below MLLW and the top would be submerged at -10' below MLLW and match the new proposed grade of the river bottom on the landward side. An alternative sheet pile design on Sheet 4 of 16 shows a sheet pile wall that would be constructed with steel sheet piles set at -80' below MLLW and the top would be submerged at -10' below MLLW. The top of the steel sheet piles would match the new proposed grade of the river bottom on the landward side. Both designs show pile extensions at +10' above MLLW and would be fitted with self-contained solar powered navigation lights (**See Sheets 2,3, and 4 of 16**).

The applicant then proposes to excavate an area of approximately 19.16 acres to a final project depth of -42' @ MLLW + 2' overdredge + 1' advanced maintenance dredge, which would result in the removal of approximately 560,000 cubic yards (CY) of shallow and deep bottom material as well as tidal and Section 404 wetlands. The application states that prior to initiating dredging, the dredge contractor would install turbidity curtains around the dredge work area. The excavation would be accomplished by the use of barge-mounted crane equipped with an environmental bucket or a long reach excavator boom and bucket if rock is encountered. The application also states that the excavated material would be loaded into watertight barges or scows and transported across the river and then re-fluidize the sediment and hydraulically pump the material into the USACE Eagle Island confined disposal facility. On the east bank, the channel dredge limits would extend landward to the location of the proposed toe wall shown on **Sheet 2 and 3 of 16**. Dredge limits would extend landward of the proposed toe wall located approximately 25' to 100' waterward of NHW to maintain a shallow bottom grade towards the shoreline of approximately 3:1. Approximately 370,000 CY of material would be removed to expand the turning basin on the east bank of the Cape Fear River. Dredge limits for expanding the turning basin on the west bank adjacent to Eagle Island are shown on **Sheets 2 and 3 of 16** and would require excavation of approximately 190,000 CY of shallow and deep bottom material. The application states the proposed excavation would increase the existing turning basin from 1,400' to 1,524' in length at this location of the Cape Fear River and would meet with the USACE Federal Channel.

The applicant proposes mitigation for the stated unavoidable impacts to 17.76 acres of PNA habitat, and 1.4 acres of Coastal and Section 404 Wetlands. A marsh restoration plan is conveyed that would consist of 3 acres of newly planted *Spartina alterniflora* adjacent to Shellbed Island in the lower Cape Fear River. Staked oyster shell bags are proposed adjacent to the plantings if stabilization is needed. The wetland mitigation plan would add to an ongoing oyster restoration program lead by Audubon and funded by USFWS and NFWF. The applicant also proposes a payment of \$650,000 towards the Lock and Dam #1 Rock Ramp Fish Passage modification project on the Cape Fear River with the condition that the NMFS complete its Biological Opinion within 120 days following the submittal of this application. (**See Page 10 through 12 of the Project Narrative, and the Compensatory Wetland Mitigation Plan**).

10. ANTICIPATED IMPACTS

The proposed excavation would disturb approximately 835,001 sq. ft. of shallow and deep bottom, which is currently designated as a PNA, and would result in the removal of approximately 560,000 CY of material. The material would be hydraulically pumped to the existing USACE Eagle Island confined disposal area. According to the applicant, proposed excavation and grading would impact approximately 1.01 acres of Coastal Wetlands which appears to primarily consist of Smooth Cordgrass (*Spartina alterniflora*). Approximately 0.39 acres of Section 404 wetlands which appears to primarily consist of Common Reed (*Phragmites australis*) would be impacted as a result of this project. Results from the NC Wetland Assessment Method (NCWAM) calculated a "High" wetland rating for Coastal Wetlands on site within the impact area. Results from NCWAM calculated a "Low" wetland rating for non-Coastal Wetlands on site within the impact area. The 1.4 acres of Coastal and Section 404 wetlands would be permanently excavated and converted to subtidal soft bottom. The proposed excavation of the turning basin would result in an overall conversion of 1.68 acres of shallow bottom to deep bottom which would have permanent effects on foraging and nursing habitat in that area for federal and state protected species. Removal of sediment and deepening of the river bottom would have immediate impacts on benthic invertebrate communities that use shallow river bottom. 16.08 acres of existing deeper mud bottom would be dredged even deeper according to the applicant. Although not specifically addressed in the application, mechanical hammering or driving of 160 to 310 sheet piles could have an adverse impact to fish and marine mammal species in the work area. The applicant states that a turbidity curtain would be deployed prior to dredging to minimize suspended sediments from leaving the work area, however minor increases in turbidity from excavation and transportation should be expected during construction. Dredge operation are proposed to occur during falling tides to mimic normal sediment transport in the Cape Fear River. It is estimated that it will take 10 months to complete the turning basin expansion project.