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TO: Coastal Resources Commission

FROM: Christine A. Goebel, Assistant Attorney General CAG

DATE: December 4, 2015 (for the December 8, 2015 Special CRC Meeting)

RE: **Variance Request by North Carolina Ports Authority (15-09)**

Petitioner North Carolina Ports Authority (NC Ports or Petitioner) develops and administers the state port facility in Wilmington (POW), south of the Cape Fear Memorial Bridge on the Cape Fear River. In October 2015, Petitioner sought a major modification to an existing CAMA major permit in order to perform new dredging in order to enlarge the existing turning basin, and the associated relocation of existing facilities. This area of the Cape Fear River is designated as a Primary Nursery Area (PNA) by the Marine Fisheries Commission (MFC), and per CRC rule 15A NCAC 7H.0208(b)(1), new dredging in a PNA is prohibited. Based on this rule, DCM denied Petitioner's permit application on November 30, 2015. Petitioner now seeks a variance to allow the proposed new dredging (as revised and noted in the facts below).

The following additional information is attached to this memorandum:

Attachment A: Relevant Rules
Attachment B: Stipulated Facts
Attachment C: Petitioner's Position and Staff's Responses to Criteria
Attachment D: Petitioner's Variance Request Materials
Attachment E: Stipulated Exhibits

cc (w/enc): Scott Slusser and Tom Henry, Co-counsel for Petitioner, electronically
William A. Raney, Jr., Co-counsel for Petitioner, electronically
Linda Painter, CAMA LPO, New Hanover County, electronically
Mary Lucasse, CRC Counsel, electronically

ATTACHMENT A

RELEVANT STATUTES OR RULES

15A NCAC 07H.0203 MANAGEMENT OBJECTION OF THE ESTUARINE AND OCEAN SYSTEM

It is the objective of the Coastal Resources Commission to conserve and manage estuarine waters, coastal wetlands, public trust areas, and estuarine and public trust shorelines, as an interrelated group of AECs, so as to safeguard and perpetuate their biological, social, economic, and aesthetic values and to ensure that development occurring within these AECs is compatible with natural characteristics so as to minimize the likelihood of significant loss of private property and public resources. Furthermore, it is the objective of the Coastal Resources Commission to protect present common-law and statutory public rights of access to the lands and waters of the coastal area.

15A NCAC 07H .0206 ESTUARINE WATERS

(a) Description. Estuarine waters are defined in G.S. 113A-113(b)(2) to include all the waters of the Atlantic Ocean within the boundary of North Carolina and all the waters of the bays, sounds, rivers and tributaries thereto seaward of the dividing line between coastal fishing waters and inland fishing waters. The boundaries between inland and coastal fishing waters are set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Environment and Natural Resources and in the most current revision of the North Carolina Marine Fisheries Regulations for Coastal Waters, codified at 15A NCAC 3Q .0200.

(b) Significance. Estuarine waters are the dominant component and bonding element of the entire estuarine and ocean system, integrating aquatic influences from both the land and the sea. Estuaries are among the most productive natural environments of North Carolina. They support the valuable commercial and sports fisheries of the coastal area which are comprised of estuarine dependent species such as menhaden, flounder, shrimp, crabs, and oysters. These species must spend all or some part of their life cycle within the estuarine waters to mature and reproduce. Of the leading species in the commercial catch, all but one are dependent on the estuary. This high productivity associated with the estuary results from its unique circulation patterns caused by tidal energy, fresh water flow, and shallow depth; nutrient trapping mechanisms; and protection to the many organisms. The circulation of estuarine waters transports nutrients, propels plankton, spreads seed stages of fish and shellfish, flushes wastes from animal and plant life, cleanses the system of pollutants, controls salinity, shifts sediments, and mixes the water to create a multitude of habitats. Some important features of the estuary include mud and sand flats, eel grass beds,

salt marshes, submerged vegetation flats, clam and oyster beds, and important nursery areas. Secondary benefits include the stimulation of the coastal economy from the spin off operations required to service commercial and sports fisheries, waterfowl hunting, marinas, boatyards, repairs and supplies, processing operations, and tourist related industries. In addition, there is considerable nonmonetary value associated with aesthetics, recreation, and education.

(c) Management Objective. To conserve and manage the important features of estuarine waters so as to safeguard and perpetuate their biological, social, aesthetic, and economic values; to coordinate and establish a management system capable of conserving and utilizing estuarine waters so as to maximize their benefits to man and the estuarine and ocean system.

(d) Use Standards. Suitable land/water uses shall be those consistent with the management objectives in this Rule. Highest priority of use shall be allocated to the conservation of estuarine waters and their vital components. Second priority of estuarine waters use shall be given to those types of development activities that require water access and use which cannot function elsewhere such as simple access channels; structures to prevent erosion; navigation channels; boat docks, marinas, piers, wharfs, and mooring pilings. In every instance, the particular location, use, and design characteristics shall be in accord with the general use standards for coastal wetlands, estuarine waters, and public trust areas described in Rule .0208 of this Section.

15A NCAC 07H .0207 PUBLIC TRUST AREAS

(a) Description. Public trust areas are all waters of the Atlantic Ocean and the lands thereunder from the mean high water mark to the seaward limit of state jurisdiction; all natural bodies of water subject to measurable lunar tides and lands thereunder to the normal high water or normal water level; all navigable natural bodies of water and lands thereunder to the normal high water or normal water level as the case may be, except privately-owned lakes to which the public has no right of access; all water in artificially created bodies of water containing public fishing resources or other public resources which are accessible to the public by navigation from bodies of water in which the public has rights of navigation; and all waters in artificially created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication, or any other means. In determining whether the public has acquired rights in artificially created bodies of water, the following factors shall be considered:

(1) the use of the body of water by the public;
(2) the length of time the public has used the area;
(3) the value of public resources in the body of water;
(4) whether the public resources in the body of water are mobile to the extent that they can move into natural bodies of water;

(5) whether the creation of the artificial body of water required permission from the state; and
(6) the value of the body of water to the public for navigation from one public area to another public area.

(b) Significance. The public has rights in these areas, including navigation and recreation. In addition, these areas support commercial and sports fisheries, have aesthetic value, and are important resources for economic development.

(c) Management Objective. To protect public rights for navigation and recreation and to conserve and manage the public trust areas so as to safeguard and perpetuate their biological, economic and aesthetic value.

(d) Use Standards. Acceptable uses shall be those consistent with the management objectives in Paragraph (c) of this Rule. In the absence of overriding public benefit, any use which jeopardizes the capability of the waters to be used by the public for navigation or other public trust rights which the public may be found to have in these areas shall not be allowed. The development of navigational channels or drainage ditches, the use of bulkheads to prevent erosion, and the building of piers, wharfs, or marinas are examples of uses that may be acceptable within public trust areas, provided that such uses shall not be detrimental to the public trust rights and the biological and physical functions of the estuary. Projects which would directly or indirectly block or impair existing navigation channels, increase shoreline erosion, deposit spoils below normal high water, cause adverse water circulation patterns, violate water quality standards, or cause degradation of shellfish waters are considered incompatible with the management policies of public trust areas. In every instance, the particular location, use, and design characteristics shall be in accord with the general use standards for coastal wetlands, estuarine waters, and public trust areas.

15A NCAC 07H .0208 USE STANDARDS

(b) Specific Use Standards

(1) Navigation channels, canals, and boat basins **shall be aligned or located so as to avoid primary nursery areas,** shellfish beds, beds of submerged aquatic vegetation as defined by the MFC, or areas of coastal wetlands except as otherwise allowed within this Subchapter. Navigation channels, canals and boat basins shall also comply with the following standards:

ATTACHMENT B **STIPULATED FACTS**

Overview of Project and Petitioner

1. Petitioner, the North Carolina State Port Authority ("NC Ports"), is an instrumentality of the State of North Carolina, created within the Department of Transportation, which by law has been granted the "broad objective of developing to the utmost the port possibilities of the State of North Carolina." N.C. Gen. Stat. § 136-261.

2. Pursuant to N.C. Gen. Stat. § 136-261, as a public entity NC Ports has several general purposes, including: (a) to develop and improve the harbors or seaports at Wilmington, Morehead City and Southport, North Carolina, (b) to foster and stimulate the shipment of freight and commerce through said ports, whether originating within or without the State of North Carolina, and (c) to increase the movement of waterborne commerce, foreign and domestic, to, through, and from such harbors and ports.

3. NC Ports operates the Port of Wilmington ("POW"), located on the Cape Fear River in Wilmington, New Hanover County, approximately 25 miles north of the mouth of the river and about 1.2 miles south of the Cape Fear Memorial Bridge. The location of the Project is shown on the stipulated Powerpoint exhibit.

4. On October 16, 2015, NC Ports submitted to the North Carolina Division of Coastal Management ("DCM") a CAMA major permit application, seeking approval of a project ("Project") to expand the turning basin of the Port of Wilmington by 200 feet, from an existing diameter of 1,200 feet to 1,400 feet, by mechanically dredging the bottom of the Cape Fear River. To accomplish the widening of the turning basin, NC Ports also sought approval to remove and relocate in a shoreward direction the liquid bulk terminal pier, loading platform, and mooring dolphins (facilities which are leased to Kinder Morgan by NC Ports). There is no construction or activity, however, proposed for the tank farm facility associated with the liquid bulk pier. The location of the Project is shown on the stipulated Powerpoint exhibit.

5. By written resolution dated October 22, 2015, the Board of Directors of NC Ports authorized the expenditure of funds related to the solicitation, bidding, and execution of contracts for the design and construction of this project to widen the POW turning basin. The Resolution is attached hereto.

6. The estimated cost of the Project is about $16 million, and the duration of construction is estimated at 5 months. See Affidavit of Jeffrey E. Miles ("Miles Affidavit") ¶5, which is attached hereto.

Project Purpose and Need

7. The Port of Wilmington has served ships carrying container cargo for over 30 years and has served vessels in the Panamax class for over 10 years. Panamax vessels, with lengths up to 965 feet, are defined by the maximum ship length allowable in the locks of the Panama Canal. (Miles Affidavit ¶12)

8. POW is the only port facility in North Carolina that services container vessels. (Miles Affidavit ¶8)

9. A November 2014 study published by the Institute for Transportation Research and Education at North Carolina State University ("NCSU Study") found that the Port of Wilmington has an "annual economic contribution to the state's economy" of approximately $12.9 billion. (NCSU Study p. iv) A copy of the NCSU Study is attached hereto.

10. The NCSU Study found that economic activity at the two ports of Wilmington and Morehead City resulted in estimated state and local tax revenues totaling $707 million. (NCSU Study p. iv)

11. The NCSU Study determined that container traffic (imports and exports) increased 32.8% at the POW between 2008 and 2013. (NCSU Study p. 17)

12. The NCSU Study determined that the value of goods produced in North Carolina and exported by container ship through the POW was approximately $1.7 billion. (NCSU Study p. 9)

13. The NCSU Study determined that, taken together, NC Ports' operations accounted for approximately 3% of the State's entire gross domestic product. (NCSU Study p. 11)

14. The annual revenue of POW is approximately $43.8 million. (Miles Affidavit ¶9)

15. Container business makes up about 32% of POW's revenue. (Miles Affidavit ¶9)

16. The major container customers that call on the POW are four shipping companies originating in Asia – i.e., Cosco, K-line, Yang Ming, and Hanjin – which are collectively referred to as the "CKYH" alliance. (Miles Affidavit ¶10)

17. CKYH container ships utilize the Panama Canal for trade routes between the Port of Wilmington and Asia. (Miles Affidavit ¶10)

18. Revenue derived from CKYH shipping comprises approximately 66% of the port's container business. (Miles Affidavit ¶11)

19. NC Ports is pursuing the Project in order to develop the POW in a manner that ensures the port's ability to service container ships larger than the current Panamax vessel class. Specifically, the goal of NC Ports is to enable the POW to service ships in the vessel class known as "New Panamax." (Miles Affidavit ¶¶ 15, 19, 26)

20. New Panamax, which is larger than Panamax, refers to a class of vessels having a size up to 1,200 feet in length and 160 feet in width. The New Panamax designation is related to a present-day, ongoing expansion of the Panama Canal's lock system. Once the Panama Canal improvements are complete (anticipated in year 2016), the canal will be able to accommodate ships that are longer (up to 1,200 feet) and wider (up to 160 feet). (Miles Affidavit ¶¶ 12, 13)

21. The existing 1,200-foot turning basin at the POW is insufficient for the 1,200-foot New Panamax vessels that will transit the Panama Canal in the near future. The purpose of a turning basin is to allow cargo vessels to reorient themselves for safe ingress to and egress from the port. (Miles Affidavit ¶¶17, 18)

22. The federal channel in the Cape Fear River and Wilmington Harbor is federally authorized at 42 feet. The existing channel depth and proposed dredging of the turning basin to 42 feet will be adequate for vessels in the New Panamax class.

23. The existing onshore facilities and infrastructure at the POW are adequate to accommodate New Panamax ships and their cargo. (Miles Affidavit ¶16)

24. The present 1,200-foot diameter of the turning basin stands as the only physical impediment to servicing vessels in the New Panamax class at the POW. (Miles Affidavit ¶¶ 15, 16, 17)

25. NC Ports has determined that a turning basin expanded to 1,400 feet is the minimum width necessary to allow the POW to accommodate New Panamax vessels. A proper turning basin should have a minimum diameter approximately 20% longer than the length of the ship using it. (Miles Affidavit ¶18)

26. Through discussions with the CKYH alliance, NC Ports has been made aware that, upon completion of the Panama Canal improvements, the CKYH alliance intends to use New Panamax vessels for their trade with ports on the east coast of the United States. (Miles Affidavit ¶¶20)

27. The use of larger container ships allows international shippers to move more cargo, more efficiently. (Miles Affidavit ¶21)

28. CKYH calls on other ports on the east coast, such as Miami, Charleston, Savannah, Norfolk and New York. These ports will be able to accommodate New Panamax vessels. (Miles Affidavit ¶22)

29. Through discussions with the CKYH alliance, NC Ports has been made aware that the CKYH alliance intends to divert its existing container trade at the Port of Wilmington to other east coast ports if POW cannot accommodate New Panamax vessels. (Miles Affidavit ¶23)

30. If the turning basin at POW cannot accommodate New Panamax vessels, the economic benefits associated with container shipping at the POW will be redirected away from North Carolina to the nearby states that can accommodate such vessels. (Miles Affidavit ¶¶24, 25)

31. If POW's turning basin is not expanded to 1,400 feet, the competitiveness and profitability of the POW will be adversely affected. Adverse impacts will be felt by many North Carolina businesses and citizens whose economic well-being is related to the movement of container cargo through the POW. (Miles Affidavit ¶¶24, 25)

32. The goal of NC Ports is to have POW ready for New Panamax vessels by May 2016. (Miles Affidavit ¶¶26)

Project Location and Environmental Factors

33. The Project environs are best characterized as industrial. The property is developed as a major port facility that services ocean-going vessels. The Project location sits in a stretch of the Cape Fear River that is heavily used by maritime traffic and is also adjacent to the federal channel which is dredged and maintained by the U.S. Army Corps of Engineers.

34. The proposed development (or portions of it) are located within the Public Trust and Estuarine Waters Areas of Environmental Concern ("AEC") as described in 15A NCAC 7H.0206 and .0207.

35. The proposed dredging is within an area designated by the North Carolina Marine Fisheries Commission as primary nursery area (PNA) and is closed to the harvest of shellfish. The waters of the Cape Fear River at this site are classified as SC by the NC Environmental Management Commission.

36. PNAs in this part of the Cape Fear River are defined as all areas of the river with the exception of the maintained channel. 15A NCAC 3R.0103(19)(a). The PNA areas are visually represented on a map attached hereto as an exhibit. The waters of the Cape Fear River at this location have been designated as a PNA since 1977.

37. The Project entails the mechanical dredging of sediment within an approximate 6.4-acre area of soft bottom estuarine habitat. The estimated volume of dredged sediments is expected to be about 100,000 cubic yards. After the application was submitted NC Ports consulted with the Corps of Engineers resulting in a new plan that reduced the dredged area from 8.5 acres to 6.4 acres and the volume of dredged material from 300,000 CY to 100,000 CY. The revised plan is attached as an exhibit. NC Ports agrees to a condition that substitutes the revised plan for the original plan NC Ports has committed to employing best management practices, such as turbidity barriers and maximizing dredging during falling tides to avoid and minimize impacts during dredging operations. (Miles Affidavit ¶28)

38. Dredged material will be placed in scows, transferred across the river, re-fluidized, and hydraulically pumped into the Eagle Island Confined Disposal Facility. The Eagle Island facility is owned and operated by the US Army Corps of Engineers.

39. For the Project, NC Ports has prepared an "Essential Fish Habitat Assessment" (EFH Study) pursuant to the federal Magnuson-Stevens Fishery Conservation and Management Act of 1976. The EFH Study is attached hereto as an exhibit.

40. A majority of the estimated dredging volume is due to dredging in waters presently ranging in depth from -5 feet to -20 feet MLW. The area will be dredged to a depth of -44 feet MLW, sloping back up to natural grade inshore. (EFH Study p. 2, 6)

41. While turbidity and dispersion of suspended sediment in the waterbody is a potential effect during the 5-6 months of dredging, the EFH Study has found that the proposed method of clamshell dredging allows mobile species to "quickly avoid plumes of elevated turbidity and the mechanical operations, even when migrating up river or foraging in shallow areas." (EFH Study p. 14)

42. There are no known areas of submerged aquatic vegetation or oyster beds within the footprint of the Project.

43. In order to offset potential impacts associated with the Project, NC Ports has offered two mitigation measures:

> NC Ports will convey a conservation easement over a 13.4-acre tract owned by NC Ports and located on the Brunswick River. NC Ports has owned the tract since 1965. The majority of this tract is coastal marsh within primary fisheries nursery habitat. The conservation easement is proposed for conveyance to the N.C. Department of Environmental Quality (DEQ) or other entity designated by DEQ. The location of the 13.4-acre mitigation tract is shown on the stipulated Powerpoint exhibit.
>
> NC Ports will contribute $750,000 towards a project to create a fish passage at Lock and Dam #2 on the Cape Fear River, assuming issuance of a CAMA major permit and US Army Corps General Permit (GP 291) to NC Ports by January 19, 2016. NC Ports makes this offer conditional because the turning basin expansion is urgent and important to NC Ports and the State in general. The contribution of NC Ports, if made, will be combined with other funding allocated by the State to complete the planning, design, and permitting (phase 1) of a rock ramp fishway. With NC Ports' contribution, phase 1 should be completed by May 2017. Lock and Dam #2 is located in Bladen County, upstream from the Port of Wilmington. The design, permitting, and construction of a fish passage will allow migratory fish (such as shortnose and Atlantic sturgeon, striped bass, American shad, and river herring) to access approximately 20-40% of the remaining historic fish habitat that is currently blocked. (EFH Study 39-40) The location of Lock and Dam #2 and fish passage images are shown on the stipulated Powerpoint exhibit.

CAMA Major Permit Application

44. NC Ports' CAMA major permit application for the Project was accepted as complete by DCM on October 16, 2015.

45. The proposed Project is a Major Modification to CAMA Major Permit No. 47-87, originally issued on February 17, 1987 for hydraulic dredging of NC Ports' shipping berths. The liquid bulk pier was authorized through a Minor Modification to the permit on March 16, 1999.

46. As part of the CAMA major permit review process, state and federal resource agencies were given copies of the application and the field investigation report, copies of which are attached. Three agencies and a DCM Fisheries Resource Specialist provided comment back to DCM. The Department of (Natural and) Cultural Resources recommended caution during the dredging in case watercraft remains were found. A copy of their comments is attached. The NC Wildlife Resources Commission also responded raising concerns about PNA habitat. A copy of their comments is attached. The National Marine Fisheries Service provided comment related to the fish habitat in the project area. A copy of their comments is attached. The comments of the DCM Fisheries Resource Specialist are attached.

47. All other agencies had either "no objection" or "no comment" on the Project, except for two which did not return comment by November 30, 2015. Those include Division of Water Resources, which has the 401 certification application pending, and DCM's Land Use Planner with a consistency determination.

48. As part of the CAMA major permit process, notice of this proposed project was given to the public and neighbors by (1) publishing notice in the Star-News newspaper on October 21, 2015, (2) posting notice on site, and (3) sending notice to the adjacent riparian owners Apex Oil and Kinder-Morgan. DCM received no comments back from the general public. Apex Oil had no objection to the project. Kinder-Morgan initially objected, they later "received clarification of the project from the Port of North Carolina that has satisfied our concerns" and officially withdrew their objections to the project. Copies of the notice and comments received from the adjacent riparian owners are attached.

49. On November 17, 2015, NC Ports notified DCM Staff that they wished to remove the two northern mooring dolphins initially proposed and which were located in Kinder-Morgan's riparian area. An email from NC Ports making the change is attached.

50. On November 30, 2015, DCM denied the NC Ports' application through a letter, attached. DCM noted that its denial was based on the proposed development's inconsistency with rule 15A NCAC 7H .0208(b)(1), which requires that new dredging projects avoid areas designated as PNAs. Accordingly, DCM denied the permit application for inconsistency with state guidelines in accordance with N.C. Gen. Stat. § 113A-120(a)(8).

51. On December 1, 2015, Petitioner filed this variance petition seeking a variance from 15A NCAC 7H .0208(b)(1) in order to allow the dredging proposed and since revised as noted in Fact 37, above.

52. Also on December 1, 2015, Petitioner filed a request to hear this variance in an expedited fashion. A copy of that letter, the DCM Staff Response and the Commission's decision are attached.

53. The parties will show site photographs as part of a powerpoint presentation, which is a stipulated exhibit.

Stipulated Exhibits

- Powerpoint Slideshow with relevant maps, diagrams, aerial photos, photos of mitigation, and site plans.
- October 22, 2015 NC Ports Board Resolution
- November 2014 Study prepared by Institute for Transportation Research and Education at North Carolina State University
- October 2015 Essential Fish Habitat Study
- Affidavit of Jeffrey E. Miles
- CAMA Major Permit Application of October 16, 2015 as amended
- DCM Field Investigation Report
- Comments of Department of (Natural and)Cultural Resources
- Comments of NC Wildlife Resources Commission
- Comments of National Marine Fisheries Service
- Comments of DCM Fisheries Resource Specialist
- Proof of publishing of notice in the Star News
- Copy of On-site notice card
- Notice forms returned from Apex Oil and Kinder-Morgan, along with email correspondence withdrawing objection
- November 17, 2015 email from Ports removing northern-most two dolphins from the project
- November 30, 2015 denial letter
- PNA map showing the site

ATTACHMENT C **PETITIONER AND STAFF POSITIONS**

I. Will strict application of the applicable development rules, standards, or orders issued by the Commission cause the petitioner unnecessary hardships? If so, the petitioner must identify the hardships.

Petitioner's Position: Yes.

A project is nearing completion to enlarge locks in the Panama Canal to allow larger and wider ships to utilize the Canal. The Panama Canal is used by the four largest container shipping customers of the Port of Wilmington. The Port of Wilmington has been informed by these customers that the customers will move their business from the Port of Wilmington to other east coast ports unless the Port of Wilmington is able to accommodate the longer and wider ships that will soon be able to utilize the Panama Canal. The Port of Wilmington cannot currently accommodate the larger ships because the deep water turning basin needed by ships to have safe ingress to and egress from the Port of Wilmington is not wide enough. Increasing the width of the turning basin can only be accomplished by dredging an area adjacent to the existing turning basin. The only area feasible for enlargement of the turning basin is designated in part as primary nursery area (PNA) by the North Carolina Marine Fisheries Commission. New dredging in PNAs is prohibited by the rules of the Coastal Resources Commission. The inability to enlarge the turning basin will result in a loss of the four largest container ship customers of the Port of Wilmington. Based on the most recent figures, these shipping lines accounted for approximately $9.2 million of the Port's total revenue, or approximately 21% of the Port's total revenue. The loss of this revenue would have a tremendous adverse effect on the Port's profitability. Thus, the inability to enlarge the turning basin constitutes a hardship to the Petitioner and to the economy of the State. The hardship is unnecessary in view of the measures that the Petitioner will implement to mitigate the adverse effects of dredging in a primary nursery area.

Staff's Position: Yes.

Petitioner's inability to dredge in order to enlarge the existing turning basis at the Wilmington port facility causes an unnecessary hardship. The proposed site is within an industrial port area which has been used in this manner for many decades. The proposed dredging for this water-dependent use is not allowed by the rules because the area is within a designated Primary Nursery Area, a designation which extends from bank to bank of the Cape Fear River (with the exception of the federal channel) and has been in place since 1977. Petitioner will face unnecessary hardships of the likely loss of significant commercial shipping traffic if the Commission's rule prohibiting new dredging in a designated PNA is strictly applied. DCM's position is that the fisheries value of this site is already somewhat reduced due to the historic use of the area and other site characteristics.

II. Do such hardships result from conditions peculiar to the petitioner's property, such as location, size, or topography of the property? Explain.

Petitioner's Position: Yes.

The property is the site of the North Carolina State Port at Wilmington. The Cape Fear River at this location has been extensively dredged to accommodate large ships, including container ships. The State Port facility and the ship channel and turning basin are the only facilities in North Carolina that can practically be used for the foreseeable future to accommodate container shipping. There is no other property in North Carolina that can practically be used to create a wide enough and deep enough body of water to accommodate the larger vessels that will soon be using the Panama Canal.

Staff's Position: Yes.

Staff agrees that this site on the Cape Fear River is unique as it is the only area within the state reasonably capable of handling the New Panamax ship traffic, and the lack of a larger turning basin is the only change to existing infrastructure needed to accommodate this new class of ship. Staff also agrees with Petitioner that this area has been heavily dredged in the past to create and maintain the federal channel and the existing turning basin. DCM's Fisheries Resource Specialist noted in his comments existing disturbances in this area due to historical propeller wash from tug boats and other vessels, as well as maintenance agitation dredging that is already permitted in this area. He concluded that "[o]verall the area has been highly developed and routinely impacted by large vessels utilizing the POW as a hub for commerce in the state." Staff also notes that deeper water depths at and adjacent to the dredging site reduces the shallow-bottom habitat and related characteristics and functions of a typical PNA, which is defined by the MFC at 15A NCAC 3I.0101(4)(f) as "those areas in which for reasons such as food, cover, bottom type, salinity, temperature and other factors, young finfish and crustaceans spend the major portion of their initial

growing season. Primary nursery areas are those areas in the estuarine system where initial post-larval development takes place. These are areas where populations are uniformly early juveniles." Accordingly, while the dredging site is designated as a PNA, the site conditions and historical use of the site reduce the function of the site as a PNA. Accordingly, Staff believe that the physical characteristics peculiar to this site cause Petitioner's hardship.

III. Do the hardships result from the actions taken by the Petitioner? Explain.

Petitioner's Position: No.

The Petitioner has no control over the size of the ships that are being used by its customers and potential customers. Nor does the Petitioner have any practical alternative for enlarging the turning basin.

Staff's Position: No.

Staff agrees that the hardships do not result from actions taken by Petitioner. The POW has been operating at this location for decades, as has the federal channel. It makes sense to minimize impacts to PNAs by locating new impacts where the existing turning basin and heavily used port infrastructure are already located in order to accommodate the New Panamax ships. Staff also notes that Petitioner, in consultation with the federal resource agencies, has further reduced the dredging impacts initially proposed.

IV. Will the variance requested by the petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice? Explain.

Petitioner's Position: Yes.

- **Consistent with the spirit, purpose and intent of rules.**

The Coastal Area Management Act states that a goal of the Act is "[t]o establish policies, guidelines and standards for… location and design of… port facilities… [and] navigation channels and harbors…." N.C. Gen. Stat. § 113A-102(b)(4). The Port of Wilmington and the ship channel and turning basin were already in existence at the time CAMA was enacted, and CAMA recognizes that such facilities are a part of the existing coastal area and should be taken into account when developing the CAMA program.

The Management Objective for Estuarine Waters found in 15A NCAC 7H.0206(c) states:

> To conserve and manage the important features of estuarine waters so as to safeguard and perpetuate their biological, social, aesthetic and economic values; to coordinate and establish a management system capable of conserving and utilizing estuarine waters so as to maximize their benefits to man and the estuarine and ocean system.

The Use Standards for Estuarine Waters found in 15A NCAC 7H.0206(d) states:

> Highest priority of use shall be allocated to the conservation of Estuarine Waters and their vital components. Second priority of Estuarine Waters use shall be given to those types of development activities that require water access and use which cannot function elsewhere such as simple access channels; structures to prevent erosion; navigation channels; boat docks, marinas, piers, wharfs and mooring pilings.

Thus, the CRC Rules clearly anticipate that water-dependent uses such as a state port are appropriate in certain circumstances. The CRC Rules also set out guidelines for approving projects that conflict with the use standards in the CRC Rules. In accordance with 15A NCAC 7H.0208(a)(3), a development can be approved "if the applicant can demonstrate that the activity associated with the proposed project will have public benefits as identified in the findings and goals of the Coastal Area Management Act, that the public benefits outweigh the long-range adverse effects of the project, that there is no reasonable alternative site available for the project, and that all reasonable means and measures to mitigate adverse impacts of the project have been incorporated into the project design and shall be implemented at the applicant's expense." Although the Petitioner has elected to seek a variance rather than seeking approval under 7H.0208(a)(3), the provisions of this Rule show that the project is consistent with the spirit, purpose and intent of the CRC Rules.

- **Secure the public safety and welfare.**

Port operations will be safer with a wider turning basin. Public welfare will be secured by allowing the Port to continue to provide significant economic benefits to the people of North Carolina.

- **Preserve substantial justice.**

The variance will allow the Port to continue to realize benefits from the substantial investment in the infrastructure used to service the container ship industry. If the Port were to lose a significant part or all of its container ship business, the investment made by the Port in the facilities used to service container ships will be wasted. Allowing the variance will preserve justice by avoiding the loss of reasonably made and lawful investment in the existing port facilities. The mitigation measures will protect the public interest in public natural resources.

Staff's Position: Yes.

Petitioner has stipulated that it's proposed development is contrary to 15A NCAC 7H .0208(b)(1) and is seeking a variance from this rule, which provides that "Navigation channels, canals, and boat basins shall be aligned or located so as to avoid primary nursery areas. . ."

Staff believes the variance meets the spirit, purpose and intent of the Commission's prohibition against new dredging in designated PNAs, where, as in this case, the PNA resources have long been impacted by the longstanding use of the site as an industrial port subject to regular dredging and propeller agitation in the adjacent existing turning basin and federal channel. Staff also notes that the initial impacts proposed have been further reduced after consultation with federal resource agencies. Finally, Staff also acknowledges the significant economic value of the Port of Wilmington, and believes it is within the spirit of the rules to consolidate industrial port activities in the coastal area.

Public safety and welfare will be preserved by allowing ship traffic at the POW to have sufficient room to navigate, while minimizing impacts to the resource by reducing the dredging area and siting it near the existing turning basin and federal channel. Substantial Justice will be preserved by maintaining commercially useful port infrastructure.

MITIGATION MEASURES

Finally, Staff notes that the two proposed mitigation measures have not been finalized and may continue to change during the ongoing federal permit review process. DCM does not oppose either proposal to the extent they may improve the fisheries resources of the Cape Fear River. DCM did not rely on these mitigation measures in making these variance recommendations, but will continue to follow the federal permitting process and work with the NC Ports and other agencies regarding these proposals.

Attachment D:
Petitioners' Variance Request Materials
(Except the draft facts and items agreed to as stipulated exhibits)

STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE

ROY COOPER
ATTORNEY GENERAL

REPLY TO:
Scott T. Slusser
Thomas D. Henry
Transportation Section

December 1, 2015

Via E-Mail
Mr. Frank Gorham, Chairman
North Carolina Coastal Resources Commission
c/o Mary Lucasse, Esq.
Special Deputy Attorney General
North Carolina Department of Justice
E-Mail: mlucasse@ncdoj.gov

Re: Request for Emergency Variance Hearing

Dear Chairman Gorham:

Pursuant to N.C.G.S. § 143-318.12(f) and 15A N.C.A.C. 7J.0701, we respectfully request on behalf of our client, the N.C. State Ports Authority ("NC Ports"), that the Coastal Resources Commission ("CRC") grant NC Ports an expedited hearing in connection with a pending variance petition.

The variance petition concerns the CAMA major permit application (dated October 16, 2015) for the relocation of the Port of Wilmington's liquid bulk pier and dredging in the Cape Fear River to widen the existing boat turning basin. The petition will seek a variance from CRC rules pertaining to the expansion of the existing boat turning basin into primary nursery areas.

The current turning basin is approximately 1200 feet wide. The Ports' CAMA major permit application seeks to widen the basin to 1400 feet by mechanical dredging and to shorten the liquid bulk pier and relocate the pier landward. A wider turning basin is needed to accommodate larger shipping vessels that will call on the Port of Wilmington once the new Panama Canal expansion is completed in April 2016. A major source of revenue and business for NC Ports are "Panamax" container ships that sail to/from Asia through the Panama Canal.

MAILING ADDRESS:
DEPARTMENT OF TRANSPORTATION
ATTORNEY GENERAL'S OFFICE
1505 MAIL SERVICE CENTER
RALEIGH, NC 27699-1505

TELEPHONE: 919-707-4480
FACSIMILE: 919-733-9329

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH, NC 27601

Once the expansion is complete, the Panama Canal will be able to accommodate "New Panamax" ships, approximately 1200 feet in length. New Panamax vessels will be able to transport more cargo, more efficiently. NC Ports' current infrastructure (i.e., berths, cranes, storage, trucking, etc.) is able to accommodate the New Panamax vessels, but the existing turning basin cannot. Wilmington's largest container shipping customers have informed NC Ports that, once the Panama Canal expansion is complete, they will switch to New Panamax vessels for voyages to the eastern United States. If the Port of Wilmington cannot accommodate the new vessels, the shipping companies will rely on other ports, such as Charleston and Norfolk for their business needs. The loss of this business will have a severe impact on the Ports and on the many North Carolina businesses and consumers that rely on the Port of Wilmington to ship and receive goods to/from Asia.

The goal of NC Ports is to widen the turning basin as soon as possible so that it can accommodate the New Panamax vessels. In an attempt to expedite the necessary permits and to further convey the urgent need for this development, NC Ports is committed to extensive mitigation for this development, including the perpetual conservation of 13.4 acres on the Brunswick River and payment of $750,000.00 for the construction of fish ladders at Lock and Dam #2 on the Cape Fear River, which will greatly expand migratory fish habitat. NC Ports, businesses, and consumers at large are facing generally unexpected circumstances that require immediate consideration by the CRC. The impending completion of the Panama Canal expansion, the pressures of a competitive shipping industry, and the potential loss of important customers at the Port of Wilmington present a set of extenuating circumstances that warrant expeditious consideration of NC Ports' variance request. The variance will allow NC Ports to continue to serve container vessels for the benefit of businesses and consumers in North Carolina. Delay in the consideration of NC Ports' variance petition will affect its ability to accommodate "New Panamax" vessels and will likely result in the loss of major international shipping customers, thereby having a direct impact on the Port's sustainability and its ability to serve the citizens and businesses of North Carolina.

It is our understanding that the CRC is available to hear this petition on December 8, 2015, and we respectfully ask that the CRC to hear the petition at that time. Please contact us with any questions or concerns. We appreciate your consideration.

Respectfully submitted,

Scott T. Slusser
Special Deputy Attorney General

Thomas D. Henry
Special Deputy Attorney General

cc: **(via e-mail)**
William Raney, Jr., Esq.
Christine Goebel, Esq., NCDOJ
Mr. Jeffrey E. Miles, NC Ports

STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE

ROY COOPER
ATTORNEY GENERAL

REPLY TO:
CHRISTINE A. GOEBEL
cogebel@ncdoj.gov

December 1, 2015

By email to mlucasse@ncdoj.gov
Frank Gorham, Chairman of the CRC
c/o Mary Lucasse, CRC Counsel

RE: Request by NC Ports for expedited variance

The following is DCM Staff's ("Staff") response to the December 1, 2015 request by the NC Ports ("Petitioner") to have an expedited hearing on its variance petition seeking authorization for new dredging in a PNA as part of an expansion of the existing turning basin at the Wilmington port facility. Staff does not oppose the request for expedited hearing if it is pursuant to the schedule and conditions set forth below.

Staff always has concerns about proceeding with a variance in an expedited manner instead of the process prescribed by the Commission's rules. However, in this case, Staff understands that larger ships (New Panamax Class) may wish to access the Wilmington port facility as early as 2016. DCM understands that due to environmental dredging windows and a desire not to lose ship traffic to other ports, Petitioner seeks to do dredging work as soon as possible in order to have the Wilmington port facility accessible by this new class of ship by 2016.

Staff's concern is making sure they have a schedule which affords enough time for the process to be completed (i.e. for the parties to agree on stipulated facts, to get Staff's positions complete, and to get the materials available for the Commission's review). However, due to the early notice of this request by Petitioner, DCM staff and the undersigned have been able to work ahead in anticipation of this request, and have been holding Tuesday, December 8, 2015 open for this purpose. Therefore, if the Chairman grants the request for expedited hearing, Staff believes it can properly prepare for the matter to be heard and deliver a variance package to the Commission no later than Friday, December 4, 2015, provided that Staff and Petitioner have reached agreement on stipulated facts by Wednesday, December 2, 2015.

Post Office Box 629 | Raleigh, North Carolina 27602-0629
Telephone 919.716.6600 | Facsimile 919.716.6767

Thank you for your consideration and please contact me if you have further questions.

Sincerely,

Christine A. Goebel
Assistant Attorney General

cc: Thomas Henry, Special Deputy AG and Petitioner's Co-counsel, via email
Scott Slusser, Special Deputy AG and Petitioner's Co-counsel, via email
William A Raney, Jr., Petitioner's Co-counsel, via email
Braxton C. Davis, DCM Director, via email
Angela Willis, DCM Director's Assistant, via email
Debra Wilson, DCM WiRO DM, via email
Doug Huggett, DCM Major Permits Manager, via email
Linda Painter, New Hanover County CAMA LPO, via email

North Carolina
Coastal Resources Commission

December 1, 2015

Scott T. Slusser, Esq. via email: sslusser@ncdoj.gov
Thomas D. Henry, Esq. via email: thenry@ncdoj.gov
NC Dept. of Justice – Transportation Section
1 South Wilmington Street
Raleigh, NC 27601

Re: NC State Ports Authority Request for Expedited Hearing-- GRANTED

Dear Mr. Slusser and Mr. Henry:

I have reviewed the December 1, 2015 letter you submitted on behalf of the NC State Ports Authority ("Petitioner" or "NC Ports") requesting the Commission schedule an expedited hearing before its next regularly scheduled meeting in February 2016 to consider the NC Ports' request for a variance to expand the existing boat turning basin into primary nursery areas as contemplated by its application for a CAMA major permit dated October 16, 2015. Based on the information submitted and taking that information at face value, I note that Petitioner has alleged that a wider turning basin is needed to accommodate larger shipping vessels that will call on the Port of Wilmington once the new Panama Canal expansion is completed in April 2016. In addition, you have reported that customers currently using the Port of Wilmington have informed Petitioner that if the Port cannot accommodate the new larger vessels, they will rely on other ports, such as Charleston and Norfolk, for their business needs. I understand that Petitioner has concluded that the loss of business will have a severe impact on many North Carolina businesses and consumers who rely on the Port of Wilmington.

In addition, I have reviewed the response submitted by DCM, through counsel, stating that DCM understands that larger ships may wish to access the Wilmington port facility as early as 2016 and that due to environmental dredging windows and a desire not to lose ship traffic to other ports, Petitioners seeks to complete any dredging allowed as soon as possible. For this reason, subject to certain conditions, DCM stated it does not oppose the request for an expedited hearing. Specifically, DCM suggests that it can accommodate an expedited hearing on December 8, 2015 as long as the parties are able to agree on stipulated facts and exhibits by December 2, 2015 and submit information for the Commission's review by Friday, December 4, 2015.

N.C.G.S. § 143-318.12(f) states that an emergency meeting may appropriately be called in situations where "generally unexpected circumstances" are present requiring "immediate consideration by the public body."

Division of Coastal Management
Department of Environmental Quality
400 Commerce Ave., Morehead City, North Carolina 28557
Phone 252-808-2808 FAX 919-733-1495

Environmental Quality

Given the information provided, I have determined that the facts alleged support a finding that there are unexpected circumstances requiring the Commission's immediate consideration of the variance request. Accordingly, the Commission will hold a special meeting on **December 8, 2015 at 11:00 a.m.** at the Division of Coastal Management's Wilmington District Office located at 127 Cardinal Drive Ext., Wilmington, North Carolina 28405-3845. Commissioners will be provided the option of participating telephonically. However, I am requesting that the attorneys for the parties appear in person at the hearing.

My decision to grant the request for an expedited hearing is limited to a finding that the hearing is justified and should not be read as an indication of how the Commission will ultimately decide Petitioner's request for a variance.

The grant of your request is contingent on there being a quorum of duly appointed members of the Commission available for the meeting and the parties' agreement on a set of stipulated facts and exhibits. If either of these conditions is not met, the Commission will not be able to proceed with the hearing. Commission counsel, Mary L. Lucasse, Esq. will keep you informed of any changes to the schedule and will ensure that notice is provided at a minimum of forty-eight (48) hours before the scheduled public hearing. If you have any questions regarding this information, please direct them to Mary Lucasse. She may be reached at (919) 716-6962 or by email at mlucasse@ncdoj.gov.

Sincerely,

Frank D. Gorham III

Frank Gorham, III

CAMA VARIANCE REQUEST FORM **DCM FORM 11**
DCM FILE No.:_____

PETITIONER'S NAME N.C. State Ports Authority

COUNTY WHERE THE DEVELOPMENT IS PROPOSED New Hanover

Pursuant to N.C.G.S. § 113A-120.1 and 15A N.C.A.C. 07J .0700 *et seq.,* the above named Petitioner hereby applies to the Coastal Resources Commission (CRC) for a variance.

VARIANCE HEARING PROCEDURES

A variance petition will be considered by the CRC at a regularly scheduled meeting, heard in chronological order based upon the date of receipt of a complete petition. 15A N.C.A.C. 07J .0701(e). A complete variance petition, as described below, must be *received* by the Division of Coastal Management (DCM) a minimum of six (6) weeks in advance of the first day of a regularly scheduled CRC meeting to be eligible for consideration by the CRC at that meeting. 15A N.C.A.C. 07J .0701(e). The final set of stipulated facts must be agreed to at least four (4) weeks prior to the first day of a regularly scheduled meeting. 15A N.C.A.C. 07J .0701(e). The dates of CRC meetings can be found at DCM's website: **www.nccoastalmanagement.net**

If there are controverted facts that are significant in determining the propriety of a variance, or if the Commission determines that more facts are necessary, the facts will be determined in an administrative hearing. 15A N.C.A.C. 07J .0701(b).

VARIANCE CRITERIA

The petitioner has the burden of convincing the CRC that it meets the following criteria:

(a) Will strict application of the applicable development rules, standards, or orders issued by the Commission cause the petitioner unnecessary hardships? Explain the hardships.

(b) Do such hardships result from conditions peculiar to the petitioner's property such as the location, size, or topography of the property? Explain.

(c) Do the hardships result from actions taken by the petitioner? Explain.

(d) Will the variance requested by the petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice? Explain.

Please make your written arguments that Petitioner meets these criteria on a separate piece of paper.

The Commission notes that there are some opinions of the State Bar which indicate that non-attorneys may not represent others at quasi-judicial proceedings such as a variance hearing before the Commission. These opinions note that the practice of professionals, such as engineers, surveyors or contractors, representing others in quasi-judicial proceedings through written or oral argument, may be considered the practice of law. Before you proceed with this variance request, you may wish to seek the advice of counsel before having a non-lawyer represent your interests through preparation of this Petition.

For this variance request to be complete, the petitioner must provide the information listed below. The undersigned petitioner verifies that this variance request is complete and includes:

__X__ The name and location of the development as identified on the permit application;

__X__ A copy of the permit decision for the development in question;

__X__ A copy of the deed to the property on which the proposed development would be located;

__X__ A complete description of the proposed development including a site plan;

__X__ A stipulation that the proposed development is inconsistent with the rule at issue;

__X__ Proof that notice was sent to adjacent owners and objectors*, as required by 15A N.C.A.C. 07J .0701(c)(7);

__N/A__ Proof that a variance was sought from the local government per 15A N.C.A.C. 07J .0701(a), if applicable;

__X__ Petitioner's written reasons and arguments about why the Petitioner meets the four variance criteria, listed above;

__X__ A draft set of proposed stipulated facts and stipulated exhibits. Please make these verifiable facts free from argument. Arguments or characterizations about the facts should be included in the written responses to the four variance criteria instead of being included in the facts.

__X__ This form completed, dated, and signed by the Petitioner or Petitioner's Attorney.

**Please contact DCM or the local permit officer for a full list of comments received on your permit application. Please note, for CAMA Major Permits, the complete permit file is kept in the DCM Morehead City Office.*

Due to the above information and pursuant to statute, the undersigned hereby requests a variance.

Signature of Petitioner or Attorney	12/1/15 Date
Scott T. Slusser Printed Name of Petitioner or Attorney	sslusser@ncdoj.gov Email address of Petitioner or Attorney
1 South Wilmington Street Mailing Address	(919) 707-4526 Telephone Number of Petitioner or Attorney
Raleigh NC 27601 City State Zip	(919) 733-9329 Fax Number of Petitioner or Attorney

DELIVERY OF THIS HEARING REQUEST

This variance petition must be **received by** the Division of Coastal Management at least six (6) weeks before the first day of the regularly scheduled Commission meeting at which it is heard. A copy of this request must also be sent to the Attorney General's Office, Environmental Division. 15A N.C.A.C. 07J .0701(e).

Contact Information for DCM:

By mail, express mail or hand delivery:
Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

By Fax:
(252) 247-3330

By Email:
Check DCM website for the email address of the current DCM Director
www.nccoastalmanagement.net

Contact Information for Attorney General's Office:

By mail:
Environmental Division
9001 Mail Service Center
Raleigh, NC 27699-9001

By express mail:
Environmental Division
114 W. Edenton Street
Raleigh, NC 27603

By Fax:
(919) 716-6767

Revised: July 2014

CAMA VARIANCE PETITION
NORTH CAROLINA STATE PORTS AUTHORITY

Petitioner, North Carolina State Ports Authority, through its Attorney, Scott T. Slusser, Special Deputy Attorney General, stipulates that the proposed development that is subject of the Variance Petition is inconsistent with Coastal Resources Commission Rule 15A NCAC 7H.0208(b)(1).

By: _____

Scott T. Slusser
Special Deputy Attorney General
NC Bar No. 24527
sslusser@ncdoj.gov
Attorney for N.C. State Ports Authority
North Carolina Department of Justice
Transportation Section
1505 Mail Service Center
Raleigh, NC 27699-1505
Phone: (919) 707-4480
Fax: (919) 733-9329

PETITIONER'S POSITION

ON

VARIANCE CRITERIA

(1) **Will unnecessary hardships result from strict application of the rules, standards, or orders?**

Petitioner's position: Yes.

Petitioner's argument: A project is nearing completion to enlarge locks in the Panama Canal to allow larger and wider ships to utilize the Canal. The Panama Canal is used by the four largest container shipping customers of the Port of Wilmington. The Port of Wilmington has been informed by these customers that the customers will move their business from the Port of Wilmington to other east coast ports unless the Port of Wilmington is able to accommodate the longer and wider ships that will soon be able to utilize the Panama Canal. The Port of Wilmington cannot currently accommodate the larger ships because the deep water turning basin needed by ships to have safe ingress to and egress from the Port of Wilmington is not wide enough. Increasing the width of the turning basin can only be accomplished by dredging an area adjacent to the existing turning basin. The only area feasible for enlargement of the turning basin is designated in part as primary nursery area (PNA) by the North Carolina Marine Fisheries Commission. New dredging in PNAs is prohibited by the rules of the Coastal Resources Commission. The inability to enlarge the turning basin will result in a loss of the four largest container ship customers of the Port of Wilmington. Based on the most recent figures, these shipping lines accounted for approximately $9.2 million of the Port's total revenue, or approximately 21% of the Port's total revenue. The loss of this revenue would have a tremendous adverse effect on the Port's profitability. Thus, the inability to enlarge the turning basin constitutes a hardship to the Petitioner and to the economy of the State. The hardship is unnecessary in view of the measures that the Petitioner will implement to mitigate the adverse effects of dredging in a primary nursery area.

(2) **Do such hardships result from conditions peculiar to Petitioner's property such as the location, size, or topography of the property?**

Petitioner's position: Yes.

Petitioner's argument: The property is the site of the North Carolina State Port at Wilmington. The Cape Fear River at this location has been extensively dredged to accommodate large ships, including container ships. The State Port facility and the ship channel and turning basin are the only facilities in North Carolina that can practically be used for the foreseeable future to accommodate container shipping. There is no other property in North Carolina that can practically be used to create a wide enough and deep

enough body of water to accommodate the larger vessels that will soon be using the Panama Canal.

(3) **Do the hardships result from actions taken by the Petitioner?**

Petitioner's position: No.

Petitioner's argument: The Petitioner has no control over the size of the ships that are being used by its customers and potential customers. Nor does the Petitioner have any practical alternative for enlarging the turning basin.

(4) **Will the variance requested by the Petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice?**

Petitioner's position: Yes.

Petitioner's argument:

- **Consistent with the spirit, purpose and intent of rules.**

  The Coastal Area Management Act states that a goal of the Act is "[t]o establish policies, guidelines and standards for… location and design of… port facilities… [and] navigation channels and harbors…." N.C. Gen. Stat. § 113A-102(b)(4). The Port of Wilmington and the ship channel and turning basin were already in existence at the time CAMA was enacted, and CAMA recognizes that such facilities are a part of the existing coastal area and should be taken into account when developing the CAMA program.

  The Management Objective for Estuarine Waters found in 15A NCAC 7H.0206(c) states:

  > To conserve and manage the important features of estuarine waters so as to safeguard and perpetuate their biological, social, aesthetic and economic values; to coordinate and establish a management system capable of conserving and utilizing estuarine waters so as to maximize their benefits to man and the estuarine and ocean system.

  The Use Standards for Estuarine Waters found in 15A NCAC 7H.0206(d) states:

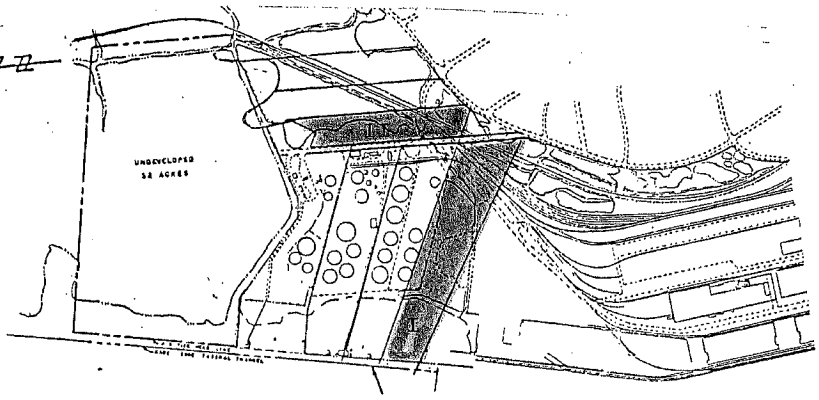
  > Highest priority of use shall be allocated to the conservation of Estuarine Waters and their vital components. Second priority of Estuarine Waters use shall be given to those types of development activities that require water access and use which cannot function elsewhere such as simple access channels; structures to prevent erosion; navigation channels; boat docks, marinas, piers, wharfs and mooring pilings.

PROPERTY DEED PROFILE

LOCATION: WILMINGTON PORT - SUMMER HILL TRACT COUNTY: New Hanover

DESCRIPTION:

Tract I 9.1
Tract II 5.2



ACQUIRED FROM: Howard A. Hanby, ETUX, Ione Hanby

APPRAISAL:

PRICE:

DEED RECORDED: Date: 2-24-53 Book: 507 Page: 492

PLAT: October 1950 By J. A. Loughlin, Rev. March 7, 1951

EASEMENTS: Tract No. 1 - RR Easement - June 11, 1937, Book 258, Page 340
Tract No. 2 - RR Easement - June 11, 1937, Boom 258, Page 340

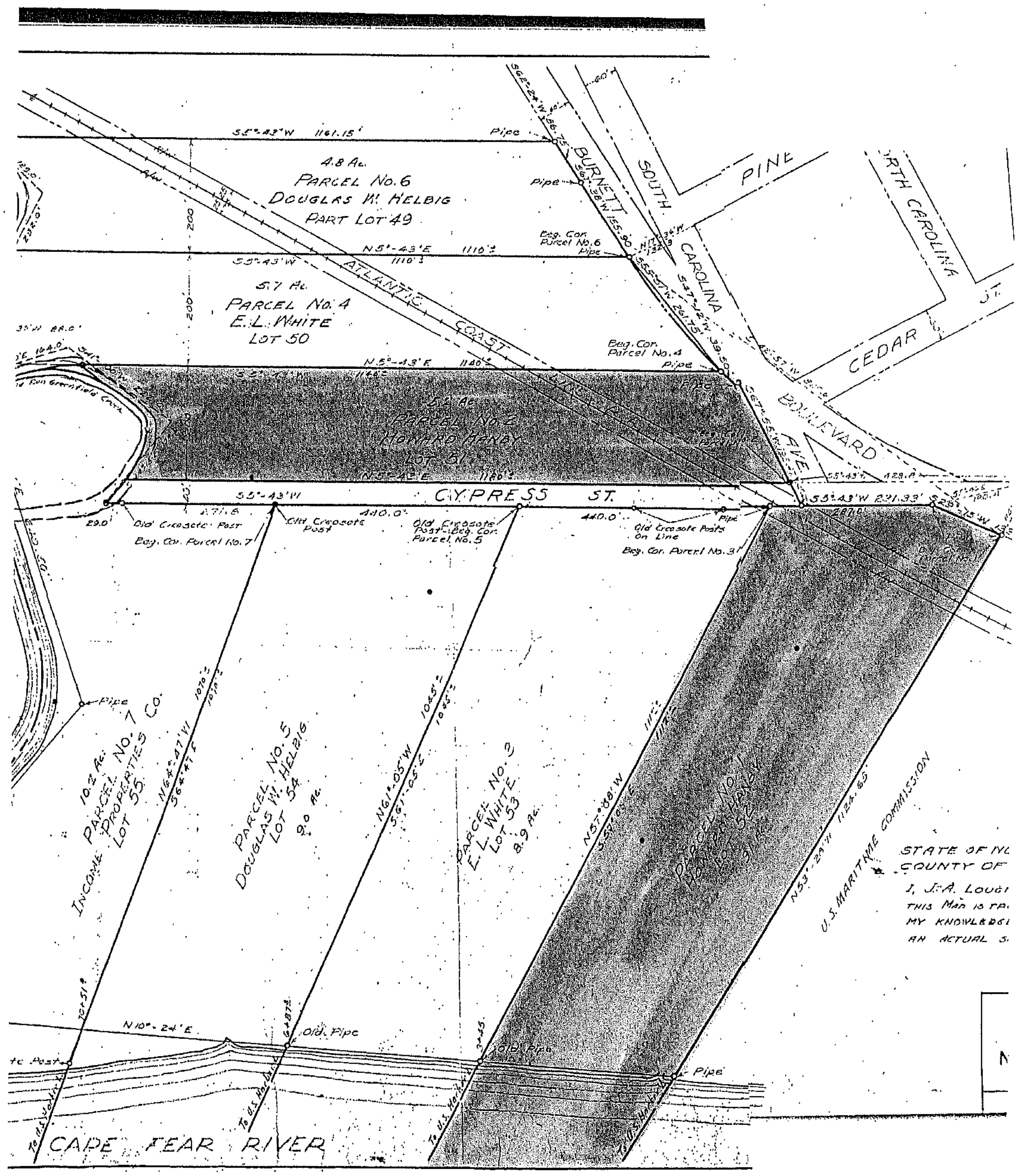
APPROVALS: BOARD OF DIRECTORS
COUNCIL OF STATE

COMMENTS:

SOLD TO: DATE:

PRICE:

APPROVALS: BOARD OF DIRECTORS
COUNCIL OF STATE


S5°-43'W 1161.15'
Pipe
4.8 Ac.
PARCEL No. 6
DOUGLAS W. HELBIG
PART LOT 49
N5°-43'E 1110'±
S5°-43'W 1110'±
200
5.7 Ac.
PARCEL No. 4
E.L. WHITE
LOT 50
N5°-43'E 1140'±
ATLANTIC COAST
PARCEL No. 2
HOWARD HANBY
LOT 51
CYPRESS ST.
S5°-43'W
471.6
440.0'
29.0
Old Creosote Post
Beg. Cor. Parcel No. 7
Old Creosote Post
Old Creosote Post - Beg. Cor. Parcel No. 5
Old Creosote Posts On Line
Beg. Cor. Parcel No. 3
Pipe
BURNETT
SOUTH
CAROLINA
PINE
NORTH CAROLINA
CEDAR
BOULEVARD
AVE
Beg. Cor. Parcel No. 6
Beg. Cor. Parcel No. 4
S62°-24'W 66.75
S67°-38'W 155.90
S47°-12'W 39.50
S5°-43'W 231.33'
287.0
428.8
10.2 Ac.
PARCEL No. 7 Co.
INCOME PROPERTIES
LOT 55
N64°-47'W
S64°-47'E
1070'±
PARCEL No. 5
DOUGLAS W. HELBIG
LOT 54
9.0 Ac.
N61°-05'W
S61°-05'E
1045'±
PARCEL No. 3
E.L. WHITE
LOT 53
8.9 Ac.
N57°-08'W
S57°-08'E
PARCEL No. 1
HOWARD HANBY
LOT 52
N53°-29'W 1124.65
U.S. MARITIME COMMISSION
N10°-24'E
Old Pipe
Old Pipe
Pipe
To U.S. Harbor L.
CAPE FEAR RIVER
STATE OF NC
COUNTY OF
I, J. A. Loug
THIS MAP IS TR
MY KNOWLEDGE
AN ACTUAL S

① Lt. 53 Hanby Prop. Summer Hill
② Lt. 50 Hanby Prop. Summer Hill City

STATE OF NORTH CAROLINA

COUNTY OF NEW HANOVER

E. L. WHITE, party of the first part,

and

THE NORTH CAROLINA STATE PORTS AUTHORITY, party of the second part.

D E E D

North Carolina - New Han. County
Filed for registration on 9 day of
Nov. 1951 at 10:50 A M
and duly recorded in Book 101
Page 66
R. L. Block, Register Deeds

A True Copy
By H W Cook

STATE OF NORTH CAROLINA :

COUNTY OF NEW HANOVER :

THIS INDENTURE, Made this 31st day of October, 1951, between E. L. White, Widower, of the County of New Hanover, State of North Carolina, party of the first part; and The North Carolina State Ports Authority, an instrumentality of the State of North Carolina created, organized and existing under and by virtue of Chapter 143, Article 22, of the Statutes of North Carolina, party of the second part;

W I T N E S S E T H :

That the said party of the first part, for and in consideration of the sum of Ten ($10.00) Dollars, and other valuable considerations, to him in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, has given, granted, bargained and sold, aliened, conveyed and confirmed, and by these presents does give, grant, bargain and sell, alien, convey and confirm unto the said party of the second part, and its successors and assigns, forever, all those certain tracts or parcels of land, situate, lying and being in New Hanover County, partly within the limits of the City of Wilmington, South of old Greenfield Creek, and more particularly bounded and described as follows, to-wit:

First Tract: BEGINNING at a point marked by an iron pipe in the Western line of Cypress Street as laid out and designated in the division of the Hanby Property, Summer Hill Tract, as shown by a map recorded in Lands and Dowers, Book A, Page 557, and also recorded in Map Book 2, at Page 11, of the records of New Hanover County, said pipe marking and being the Southeast corner of Lot 53 of said Hanby Property, Summer Hill Tract, said pipe being also located North 5 degrees 43 minutes East 287 feet from an iron pipe located at the intersection of the Northwestern line of Burnett Boulevard and the Western line of Cypress Street, which said last mentioned pipe is North 5 degrees 46 minutes West from a stone marking a corner in the dividing line between the Hanby Property and the Sunset Park Subdivision, and also North 29 degrees and 15 minutes East, 133.10 feet from a pipe in the Western line of Burnett Boulevard marking the Northeastern corner of the property of the United States Maritime Commission; and from said point of beginning running thence North 57 degrees 8 minutes West 1112 feet, more or less, and along the dividing line between Lots 52 and 53 of said Hanby Property to the waters of the Cape Fear River, said line being marked by an old iron pipe on the Eastern bank of the Cape Fear River; thence Northwardly with the waters of the Cape Fear River to the line dividing Lots 53 and 54 of said Hanby Property as shown by said map recorded in Lands and Dowers Book A, at Page 557, of the records of New Hanover County,

said line being marked by an old iron pipe on the banks of said river; thence South 61 degrees 5 minutes East along the dividing line between Lots 53 and 54 of said Hanby Property 1045 feet more or less to an old creosote post marking the Northeast corner of Lot 53 of the Hanby Property in the Western line of Cypress Street; thence South 5 degrees 45 minutes West along the Western line of said Cypress Street 440 feet to the point of Beginning; SUBJECT, HOWEVER AND NEVERTHELESS, to the easement of the right of way of the Atlantic Coast Line Railroad as set forth and described in a conveyance by Florence R. Hanby et al to the Atlantic Coast Line Railroad Company dated August 26, 1937, and recorded December 23, 1937, in Book 273, at Page 71, in the office of the Register of Deeds for New Hanover County; the foregoing tract or parcel of land being all of Tract #53 of the Hanby Property, Summer Hill Tract, as shown by a map duly recorded in Lands and Dowers Book A, at Page 557, of the records of New Hanover County, reference to which is hereby specifically made.

Together with all rights, including riparian rights, privileges and easements of every kind and nature whatsoever, and also all right, title and interest of every kind and nature which the party of the first part has in and to Cypress Street as shown by the aforesaid map of the Hanby property, Summer Hill Tract.

Second Tract: BEGINNING at an iron pipe in the Northern line of Burnett Boulevard, said pipe being located North 17 degrees 30 minutes West 132.3 feet from the intersection of the Southern line of South Carolina Avenue with the Western line of Pine Street, and said pipe being also located North 42 degrees and 57 minutes East 825.6 feet from a pipe in the Western line of Burnett Boulevard marking the Northeastern corner of the property of the United States Maritime Commission, said pipe at the beginning corner marking the dividing line between Lots 49 and 50 of the Hanby Property, Summer Hill Tract, as shown by a map recorded in Lands and Dowers Book A, at Page 557, in the office of the Register of Deeds for New Hanover County; and from said point of beginning running thence Westwardly along the Northern line of Burnett Boulevard a chord distance of 261.75 feet to an iron pipe in the Northern line of Burnett Boulevard where the Northern line of Burnett Boulevard intersects the dividing line between Lots 50 and 51 of the Hanby Property, Summer Hill Tract; thence North 5 degrees 43 minutes East 1140 feet more or less and along the dividing line between Lots 50 and 51 to its intersection with the center of the old run of Greenfield Creek; thence along the center of said old run as it meanders to its intersection with the center line of Greenfield Canal; thence crossing said Greenfield Canal and along the center line of said old Greenfield Creek, North 13 degrees East 155 feet to a bend in said old creek; thence following said bend in said old creek and with the center line thereof about South 17 degrees and 30 minutes East, to the center line of said Greenfield Canal, thence crossing said Canal and up the center of said old run to its intersection with the Western line of Lot 49 of said Hanby Property, said point being 200 feet at right angles Eastwardly from the Western line of said Lot 50; thence South 5 degrees 43 minutes West 1110 feet more or less to the iron pipe in the Northern line of Burnett Boulevard marking the point of beginning; said tract or parcel of land being all of that portion of Lot 50 of the Hanby Property, Summer Hill Tract, lying North

of Burnett Boulevard and South of the center line of old Greenfiled Creek as shown by a map recorded in Lands and Dowers Book A, at Page 557, of the records of New Hanover County; SUBJECT, HOWEVER AND NEVERTHELESS, to the easement of the right of way of the Atlantic Coast Line Railroad Company as set forth in a conveyance from Florence R. Hanby et al to the Atlantic Coast Line Railroad Company dated August 26, 1937, and recorded December 23, 1937, in Book 273, at Page 71, in the office of the Register of Deeds for New Hanover County.

Together with all and singular the tenements, easements, hereditaments and appurtenances unto the same belonging, or in anywise appertaining.

TO HAVE AND TO HOLD the above granted and described premises, with the appurtenances, unto the said party of the second part, its successors and assigns, to its own proper use and behoof, FOREVER.

And the said party of the first part, for himself, his heirs, executors and assigns does covenant, promise and agree to and with the said party of the second part, its successors and assigns, that he is lawfully seized in fee of the above granted and described premises; that he has good right to sell and convey the same in fee simple, that the same are free and clear from all liens and encumbrances of every kind, except those noted above, and that he will, and his heirs and administrators shall warrant and defend the same against the lawful claims and demands of any and all persons whomsoever.

IN TESTIMONY WHEREOF, the said party of the first part has hereunto set his hand and seal, the day and year first above written.

/s/ E. L. White (SEAL)

STATE OF NORTH CAROLINA :
:
COUNTY OF NEW HANOVER :

I, Barbara E. Leeuwenburg, a Notary Public, in and for the State and County aforesaid, do hereby certify that E. L. White, Widower, personally appeared before me this day and acknowledged the due execution of the annexed instrument.

Witness my hand and official seal, this the 31st day of October, 1951.

(Notary Seal)

/s/ Barbara E. Leeuwenburg
Notary Public

My commission expires:

My Commission Expires September 20, 1953

STATE OF NORTH CAROLINA
New Hanover County.

The foregoing Certificate of
/S/ Barbara E. Brunenburg
Notary Public of New Hanover County,
is adjudged to be correct. Let the instrument with the Certificate be recorded.

($16.50 Revenue Stamps)

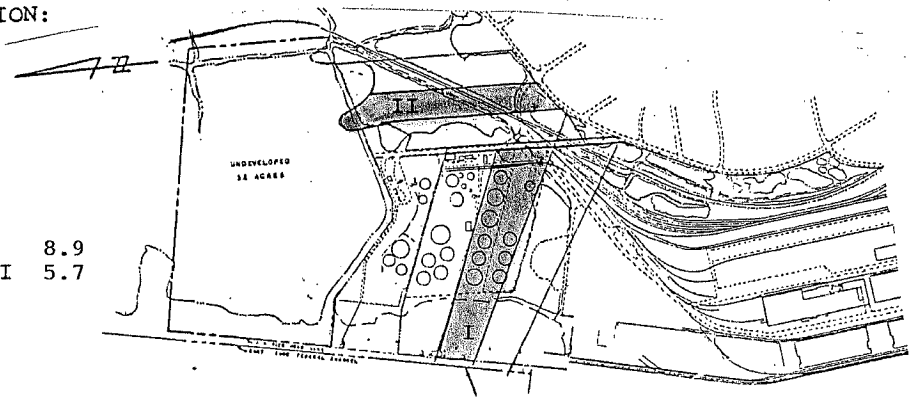
This the 9 day of Mar 1951

/S/ Lois J. Ward
Asst. Clerk Superior Court

PROPERTY DEED PROFILE

LOCATION: WILMINGTON PORT - Summer Hill Tract COUNTY: New Hanover

DESCRIPTION:



Tract I 8.9
Tract II 5.7

ACQUIRED FROM: E. L. White

APPRAISAL:

PRICE:

DEED RECORDED: Date: 11-9-51 Book: 501 Page: 66

PLAT: October 1950 By J. A. Loughlin, Rev. March 7, 1951

EASEMENTS: Tract No. 1 RR Right-of-Way Easement 12-23-37 Book 273, Page 71
Tract No. 2 RR Right-of-Way Easement 12-23-37 Book 273, Page 71

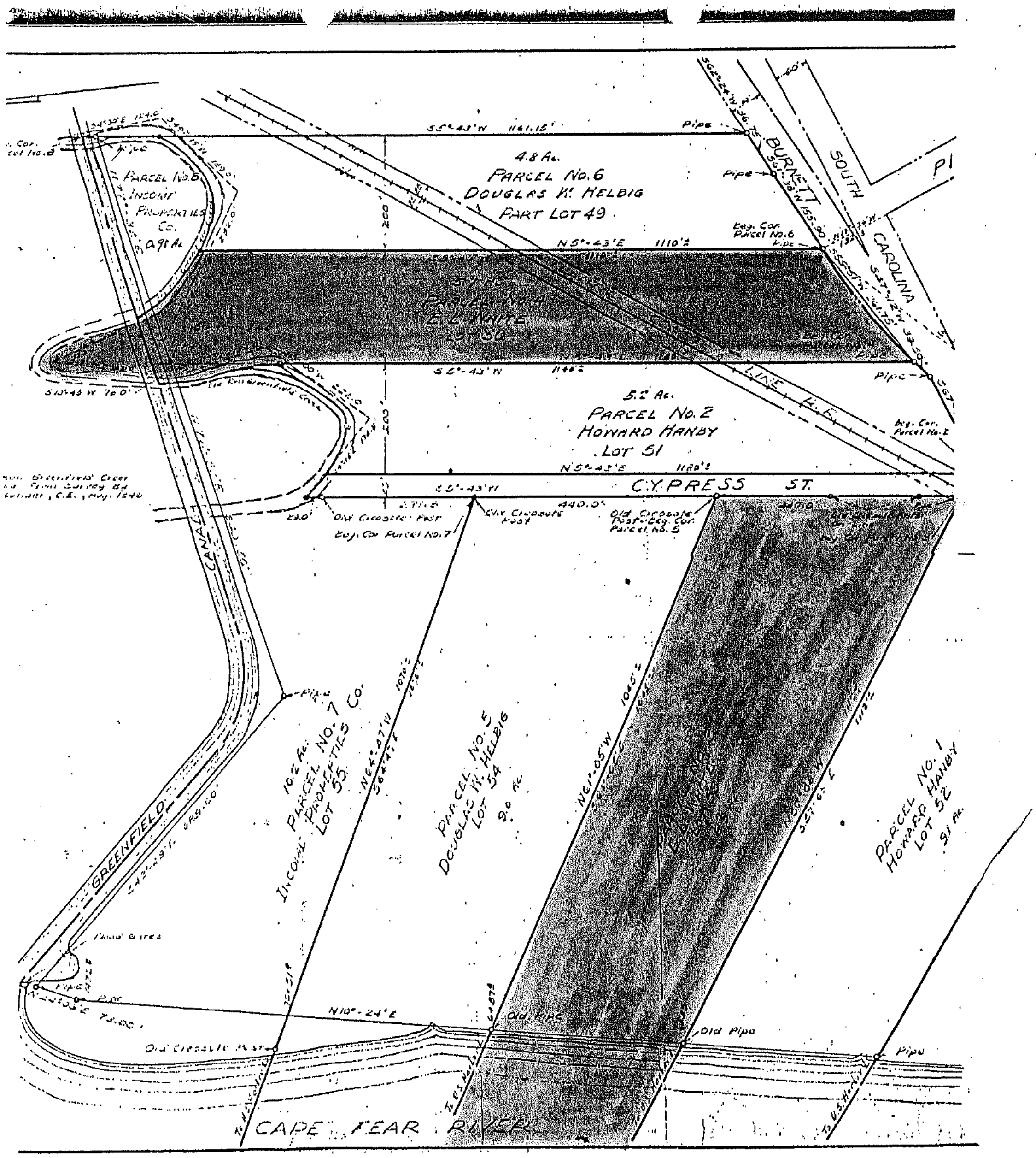
APPROVALS: BOARD OF DIRECTORS
COUNCIL OF STATE

COMMENTS: Pink Color is portion that was exchanged with Atlantic Coast Terminals, Inc.

SOLD TO: Atlantic Coast Terminals, Inc. DATE: March 30, 1960
Book 664, Page 269

PRICE: Exchange - No money involved.

APPROVALS: BOARD OF DIRECTORS January 18, 1960
COUNCIL OF STATE February 8, 1960


4.8 Ac.
PARCEL No. 6
DOUGLAS W. HELBIG
PART LOT 49
PARCEL No. 8
INCOME PROPERTIES Co.
SOUTH
CAROLINA
BURNETT
Pipe
N 5°-43' E 1110'±
S 5°-43' W 1161.15'
S 5°-43' W 1140'±
5.2 Ac.
PARCEL No. 2
HOWARD HANBY
LOT 51
N 5°-43' E 1160'±
CYPRESS ST.
440.0'
Old Creosote Post
Beg. Cor. Parcel No. 7
Beg. Cor. Parcel No. 6
Beg. Cor. Parcel No. 2
GREENFIELD
CANAL
10.2 Ac.
PARCEL No. 7
INCOME PROPERTIES Co.
LOT 55
PARCEL No. 5
DOUGLAS W. HELBIG
LOT 54
9.0 Ac.
PARCEL No. 1
HOWARD HANBY
LOT 52
N 10°-24' E
Old Pipe
Flood Gates
CAPE FEAR RIVER

STATE OF NORTH CAROLINA

COUNTY OF NEW HANOVER

HOWARD A. HANBY and wife, IONE HANBY, parties of the first part,

- to -

THE NORTH CAROLINA STATE PORTS AUTHORITY, Party of the second part.

DEED

NORTH CAROLINA-NEW HAN. COUNTY
Filed for registration on 24
day of Oct 1953 at 11-15 M
and duly recorded in BOOK 507
PAGE 492

R. L. BLACK, Register Deeds

A

JAMES & JAMES
Attorneys and Counselors at Law
Wilmington, N.C.

STATE OF NORTH CAROLINA :

COUNTY OF NEW HANOVER :

THIS INDENTURE, Made this 14th day of January, 1953, between Howard A. Hanby and wife, Ione Hanby, of the County of New Hanover, State of North Carolina, parties of the first part; and The North Carolina State Ports Authority, an instrumentality of the State of North Carolina created, organized and existing under and by virtue of Chapter 143, Article 22, of the Statutes of North Carolina, party of the second part;

W I T N E S S E T H :

That the said parties of the first part, for and in consideration of the sum of Ten ($10.00) Dollars, and other valuable considerations, to them in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, have given, granted, bargained and sold, aliened, conveyed and confirmed, and by these presents do give, grant, bargain and sell, alien, convey and confirm unto the said party of the second part, and its successors and assigns, forever, all those certain tracts or parcels of land, situate, lying and being in New Hanover County, North Carolina, lying South of Greenfield Canal as now constructed and existing, and more particularly bounded and described as follows, to-wit:

First Tract: BEGINNING at a pipe in the Western line of Burnett Boulevard where said Western line intersects the dividing line between the property of the United States Maritime Commission and Lot 52 of the Hanby Property as laid out and designated in the Division of the Hanby Property, Summer Hill Tract, as shown by a map recorded in Lands and Powers Book A, Page 557, and also recorded in Map Book 2, at Page 11, of the records of New Hanover County, said iron pipe being located North 53 degrees 28 minutes West 104.6 feet from a stone marking a corner

in the dividing line between the Hanby Property and the Sunset Park Subdivision, and from said point of beginning running thence North 53 degrees 28 minutes West and along the dividing line between Lot 52 of the aforesaid Hanby Property and the property of the United States Maritime Commission 1124.65 feet to a pipe in the Eastern bank of the Cape Fear River; thence continuing the same course to the waters of the Cape Fear River; thence Northwardly with the waters of the Cape Fear River to the dividing line between Lots 53 and 52 of the Hanby Property to an old pipe on the Eastern bank of the Cape Fear River; thence continuing the same course South 57 degrees .08 minutes East 1112 feet more or less to an iron pipe at the intersection of said line with the Western line of Cypress Street, as shown on the aforesaid Division of the Hanby Property; thence South 5 degrees 43 minutes West and along the Western line of Cypress Street 287 feet to an iron pipe at the intersection of the said Western line of Cypress Street with the Northwesterly line of Burnett Boulevard; thence South 29 degrees 15 minutes West 133.1 feet with and along the Northwesterly line of Burnett Boulevard to the point of Beginning, containing 9.1 acres of land more or less, and being all of Lot 52 of the Hanby Property, Summer Hill Tract, as recorded in Lands and Dowers Book A, Page 557, and also recorded in Map Book 2, at Page 11, records of New Hanover County, and being designated on the map hereto attached and by reference made a part hereof as Parcel No. 1, Howard Hanby.

Together with all rights, including riparian rights, privileges and easements of every kind and nature whatsoever, and also all right, title and interest of every kind and nature which the respondents have in and to Cypress Street, as shown by the aforesaid map of the Hanby Property, Summer Hill Tract.

Subject, however and nevertheless, to an easement dated June 11, 1937, and recorded in Book 258, at Page 240, in the office of the Register of Deeds for New Hanover County, from The Wilmington Savings and Trust Company, Trustee under the Last Will and Testament of Archibald J. Hanby, to the Atlantic Coast Line Railroad Company.

Second Tract: BEGINNING at the intersection of the Northern line of South Carolina Avenue with the Eastern line of Cypress Street as laid out and designated in the Division of the Hanby Property, Summer Hill Tract, as shown by a map recorded in Lands and Dowers Book A, Page 557, and also recorded in Map Book 2, at Page 11, of the records of New Hanover County, said point being North 5 degrees 43 minutes East 426.8 feet from a stone marking a corner in the dividing line between the Hanby Property and the Sunset Park Subdivision, and from said point of beginning running thence North 5 degrees 43 minutes East along the said Eastern line of Cypress Street 1180 feet more or less to the center line of the old run of Greenfield Creek; thence up and with the center line

of the old run of Greenfield Creek as it meanders to its intersection with the Western line of Lot 50 of the aforesaid Hanby Property, Summer Hill Tract; thence South 5 degrees 43 minutes West 1140 feet more or less and along the dividing line between Lots 50 and 51 of the aforesaid Hanby Property to the Northern line of Burnett Boulevard, said point being marked by an iron pipe; thence South 47 degrees 12 minutes West and along the Northern line of Burnett Boulevard 39.5 feet to its intersection with the Northern line of South Carolina Avenue; thence South 67 degrees 55 minutes West along the Northern line of South Carolina Avenue 195.47 feet to the point of Beginning, and being all of Lot 51 of the Hanby Property, Summer Hill Tract, as recorded in Lands and Dowers Book A, Page 557, and also recorded in Map Book 2, at Page 11, records of New Hanover County, and being designated on the map hereto attached and by reference made a part hereof as Parcel No. 2, Howard Hanby.

Together with all rights, including riparian rights, privileges and easements of every kind and nature whatsoever, and also all right, title and interest of every kind and nature which the parties of the first part have in and to Cypress Street, as shown by the aforesaid map of the Hanby Property, Summer Hill Tract.

Subject, however and nevertheless, to an easement dated June 11, 1937, and recorded in Book 258, at Page 340, in the office of the Register of Deeds for New Hanover County, from The Wilmington Savings and Trust Company, Trustee under the Last Will and Testament of Archibald J. Hanby, to the Atlantic Coast Line Railroad Company.

Together with all and singular the tenements, easements, hereditaments and appurtenances unto the same belonging, or in anywise appertaining.

TO HAVE AND TO HOLD the above granted and described premises, with the appurtenances, unto the said party of the second part, its successors and assigns, to its own proper use and behoof, FOREVER.

And the said parties of the first part, for themselves, their heirs, executors and assigns do covenant, promise and agree to and with the said party of the second part, its successors and assigns, that they are lawfully seized in fee of the above granted and described premises; that they have good right to sell and convey the same in fee simple, that the same are free and clear from all liens and encumbrances of every kind, except those noted above, and that they will, and their heirs and administrators shall warrant and defend the same against the lawful claims and

demands of any and all persons whomsoever.

IN TESTIMONY WHEREOF, the said parties of the first part have hereunto set their hands and seals, the day and year first above written.

Howard A. Hanby (SEAL)

($19.25 Revenue stamps) Ione Hanby (SEAL)

STATE OF NORTH CAROLINA :
:
COUNTY OF NEW HANOVER :

I, Christine B. Farrow, a Notary Public, in and for the State and County aforesaid, do hereby certify that Howard A. Hanby and Ione Hanby his wife, personally appeared before me this day and acknowledged the due execution of the annexed instrument.

Witness my hand and official seal, this the 14th day of January, 1953.

Christine B. Farrow
Notary Public

(NOTARY SEAL) My commission expires: Dec. 31, 1953

Approved as to form and execution

T. W. Bruton
Ass't Attorney General

STATE OF NORTH CAROLINA
New Hanover County.

The Foregoing Certificate of Christine B. Farrow Notary Public of New Hanover County, is adjudged to be correct. Let the instrument with the Certificate be recorded.

This the 24 day of February 1953

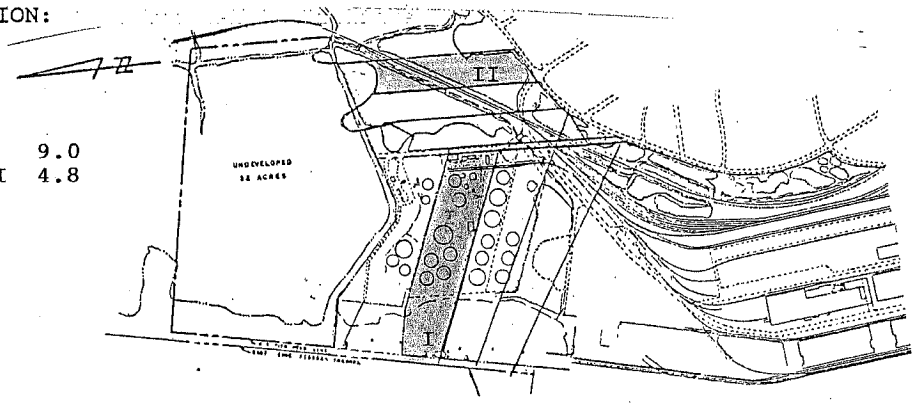
Lois J. Ward
Asst. Clerk Superior Court

PROPERTY DEED PROFILE

LOCATION: WILMINGTON PORT - SUMMER HILL TRACT COUNTY: New Hanover

DESCRIPTION:

Tract I 9.0
Tract II 4.8



ACQUIRED FROM: Carolyn Helbig Williams, ETUX

APPRAISAL:

PRICE:

DEED RECORDED: Date: 9-6-57 Book: 600 Page: 118

PLAT: October 1950 by J. A. Loughlin, Rev. March 17, 1951

EASEMENTS: Tract No. 2 - R/R Right of Way June 14, 1938, Book 289, Page 1
Plus road easement for Burnett Blvd.
1982 - Chevron to NCSPA - Mooring Dolphin Agreement T-Head Pier.

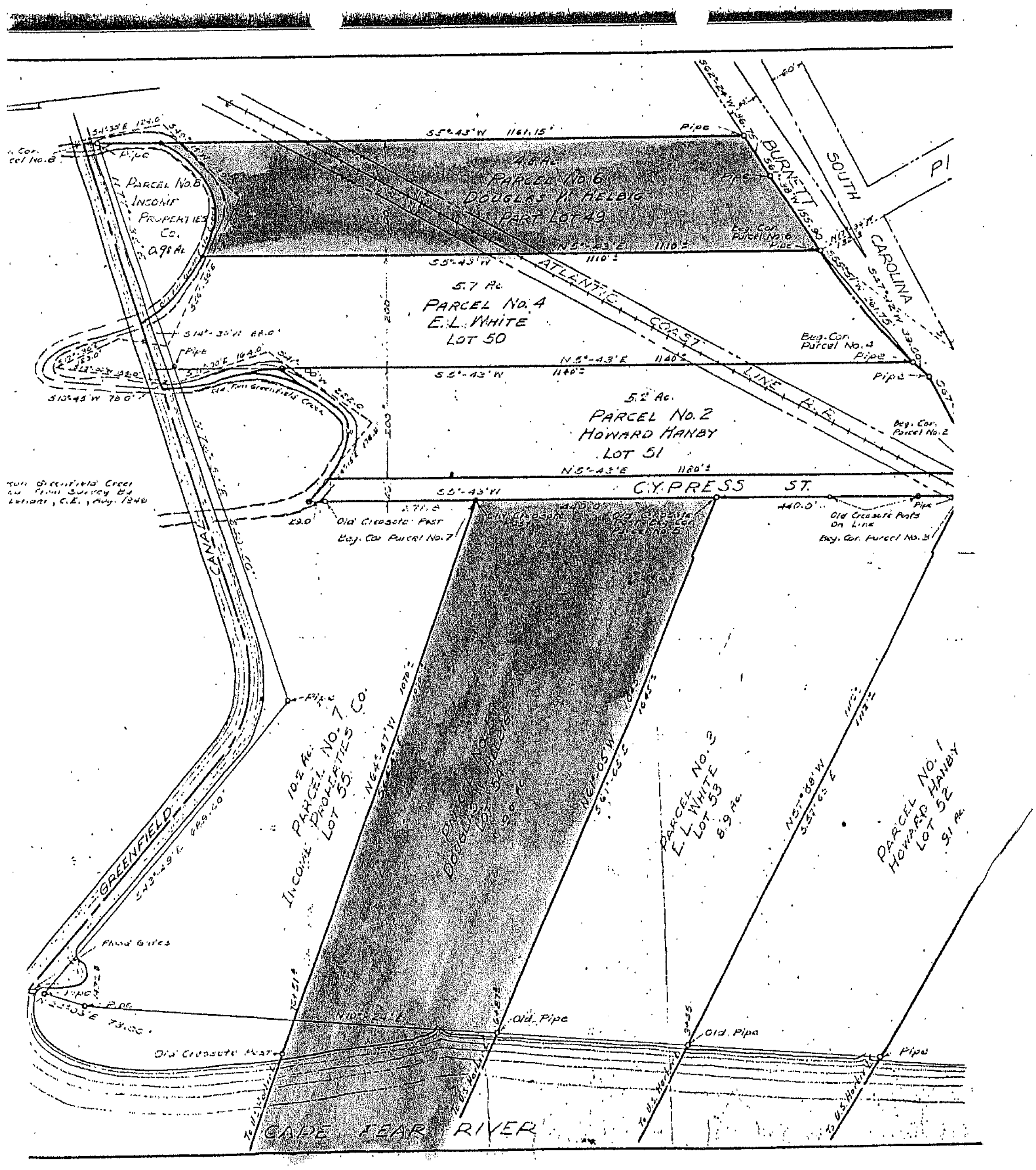
APPROVALS: BOARD OF DIRECTORS
COUNCIL OF STATE

COMMENTS:

SOLD TO: DATE:

PRICE:

APPROVALS: BOARD OF DIRECTORS
COUNCIL OF STATE



S5°-43'W 1161.15'
4.8 Ac.
PARCEL No. 6
DOUGLAS W. HELBIG
PART LOT 49
Beg. Cor. Parcel No. 6
N5°-43'E 1110'±
BURNETT
SOUTH
CAROLINA
PARCEL No. 8
INCOME PROPERTIES Co.
0.98 Ac.
5.7 Ac.
PARCEL No. 4
E.L. WHITE
LOT 50
ATLANTIC COAST LINE R.R.
Beg. Cor. Parcel No. 4
Pipe
N5°-43'E 1140'±
S5°-43'W
5.2 Ac.
PARCEL No. 2
HOWARD HANBY
LOT 51
Beg. Cor. Parcel No. 2
N5°-43'E 1160'±
CYPRESS ST.
Old Creosote Post
Beg. Cor. Parcel No. 7
Old Creosote Posts On Line
Beg. Cor. Parcel No. 3
CANAL
GREENFIELD
10.2 Ac.
PARCEL No. 7
INCOME PROPERTIES Co.
LOT 55
PARCEL No. 3
E.L. WHITE
LOT 53
8.9 Ac.
PARCEL No. 1
HOWARD HANBY
LOT 52
9.1 Ac.
Flood Gates
Old Pipe
Pipe
CAPE FEAR RIVER

STATE OF NORTH CAROLINA

COUNTY OF NEW HANOVER

111
009

CAROLYN HELBIG WILLIAMS and husband, A. JUSTIN WILLIAMS, Grantors

and

STATE OF NORTH CAROLINA, Grantee

W A R R A N T Y D E E D

Book 600
Page 118

STATE OF NORTH CAROLINA :

COUNTY OF NEW HANOVER :

WARRANTY DEED

THIS DEED, made this 6th day of September, 1957 by and between Carolyn Helbig Williams and her husband, A. Justin Williams, of San Francisco County, California, GRANTORS and State of North Carolina, GRANTEE.

W I T N E S S E T H T H A T:

WHEREAS, Carrie E. Helbig died testate on March 6, 1937 seized in fee of the property described below; her will was probated in the County Court of the City and County of Denver, Colorado, and an exemplified copy thereof was recorded on June 3, 1938 in Will Book O, page 64 in the Office of the Clerk of Superior Court of New Hanover County, North Carolina; under said will the property described below was devised equally to her children and heirs at law, Douglas W. Helbig, Emerson D. Helbig, Lucille Helbig (Johns), Carolyn Helbig Williams and Robert Helbig, but Robert's share was held in trust by Emerson D. Helbig and Lucille Helbig (Johns) as Trustees until he attained the age of 30 years; Robert Helbig has attained the age of 30 years and the trust for his benefit has terminated and title to his undivided interest in the property has vested in him in fee simple; all debts, expenses, estate and inheritance taxes due by the estate of Carrie E. Helbig have been paid by her executors and the administration of said estate has been closed; and the GRANTORS herein and the other parties mentioned above contracted to sell the property described below to the GRANTEE; and

WHEREAS, a deed, dated August 6, 1957, and recorded in Book 600, at Page 116 of the Office of the Register of Deeds of New Hanover County conveying said property to the State of North Carolina, was executed by all of the parties named above, other than the GRANTORS herein, and Douglas W. Helbig undertook to join in the execution of said deed for and in the names of the GRANTORS herein

as their attorney-in-fact,and his execution thereof was not fully in accordance with the laws of North Carolina, and the GRANTORS desire to correct said deficiencies, ratify the attempted conveyance in their behalf and convey all of their right, title and interest in and to said property to the GRANTEE herein;

NOW, THEREFORE, the GRANTORS, for the purpose aforesaid and for and in consideration of the premises and the sum of One Hundred ($100.00) Dollars and other valuable considerations to them in hand paid by the GRANTEE, the receipt of which is hereby acknowledged, have bargained, sold and conveyed, and by these presents do bargain, sell and convey unto the GRANTEE, its successors and assigns,all of their right, title and interest, being an undivided one-fifth (1/5) interest, in and to all those certain tracts of land lying in the County of New Hanover, North Carolina, more particularly described as follows:

FIRST TRACT: BEGINNING at a point in the Western line of Cypress Street (20 feet from its center line), said point being the Southeast corner of Tract 55 of the Hanby Property, "Summer Hill Tract", according to the map thereof recorded in Map Book 2 on page 11 in the New Hanover County Registry, running thence Southwardly along the Western line of said Cypress Street 440 feet to a point in the dividing line between Tracts 53 and 54 of said Hanby Property; thence Northwestwardly along said dividing line to the high water line of the Cape Fear River; thence Northwardly along said high water line 345 feet, more or less, to its intersection with the dividing line between Tracts 54 and 55; thence Southeastwardly along said dividing line to the point of BEGINNING, same being all of Tract 54 of the Summer Hill Tract as shown on the aforementioned map, and being one of the tracts allotted to Carrie E. Helbig in the division of the Hanby propert

Together with all of the GRANTORS' right, title and interest in and to all of the land, tide land, marshes and water area lying between the high water line of the Cape Fear River and the channel or harbor line of said River, and between the extende northern and southern lines of said tract, and together with all riparian and other water rights appertaining to said tract and a rights of ingress and egress in and to Cypress Street belonging the GRANTORS herein.

SECOND TRACT: BEGINNING at a point in the Northern l of South Carolina Avenue (30 feet from its center line), said po being the Southwest Corner of Tract 48 of the Hanby Property,"Su mer Hill Tract", according to the map thereof recorded in Map Bo

on page 11 in the New Hanover County Registry, running thence from said beginning point along the Northern line of South Carolina Avenue in a Southwestwardly direction 225 feet, more or less, to its intersection with the dividing line between Tracts 49 and 50 of said Hanby Property; thence Northwardly along said dividing line between Tracts 49 and 50 to the old run of Greenfield Creek; thence Eastwardly along the old run of said creek to the intersection of said run with the dividing line between Tracts 48 and 49; thence Southwardly along said dividing line to the point of BEGINNING, same being all of Tract 49 of the Summer Hill Tract as shown on the aforementioned map and being one of the tracts allotted to Carrie E. Helbig in the division of the Hanby property.

Subject, however, to an easement and right of way conveyed to the Atlantic Coast Line Railroad Company by deed recorded June 14, 1938 in Book 285, page 1 in the New Hanover County Registry, map of which easement is recorded in Book 285, page 2½ in said Registry. Subject also to the right of way of the City of Wilmington and the State Highway and Public Works Commission across the southern end of said tract for Burnett Boulevard, which right of way is 60 feet in width.

TO HAVE AND TO HOLD the above granted tracts of land and all privileges and appurtenances thereunto belonging to the GRANTEE, its successors and assigns, forever.

And the GRANTORS do covenant that they are seized of said premises in fee and have the right to convey the same in fee simple; that the same are free from encumbrances, except 1957 city and county property taxes which will be prorated as of the date of closing; and that they will warrant and defend the said title to the same against the claims of all persons whomsoever.

IN TESTIMONY WHEREOF, the GRANTORS have hereunto set their hands and affixed their personal seals the day and year first above written.

Carolyn Helbig Williams (SEAL)
Carolyn Helbig Williams

A. Justin Williams (SEAL)
A. Justin Williams

STATE OF CALIFORNIA :

COUNTY OF SAN FRANCISCO:

I, John S. Cokely, a Notary Public in and for the state and county aforesaid, do hereby certify that Carolyn Helbig Williams and her husband, A. Justin Williams, personally appeared before me this day and acknowledged the due execution of the foregoing Deed.

WITNESS my hand and official seal this the 6th day of September, 1957.

John S. Cokely
Notary Public

My commission expires: September 3, 1961 (NOTARIAL SEAL)

STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE

ROY COOPER
ATTORNEY GENERAL

REPLY TO:
Scott T. Slusser
Transportation Section

December 1, 2015

VIA CERTIFIED MAIL -RETURN RECEIPT REQUESTED

Mr. John Joyner
Terminal Manager
Apex Oil Company
P.O. Box 3127
Wilmington, NC 28406

Re: Variance Request by N.C. State Ports Authority
2202 Burnett Blvd, Wilmington, NC

Dear Property Owner:

This is to notify you that the N.C. State Ports Authority is applying for a variance from the North Carolina Coastal Resources Commission to allow the relocation of the liquid bulk pier and widening of the existing boat turning basin in the Cape Fear River. The variance is expected to be heard at a December 8, 2015 meeting of the Coastal Resources Commission. If you wish to receive further information concerning the variance, you may contact me. If you wish to make comments on the variance, you may direct your comments to the North Carolina Division of Coastal Management, 127 Cardinal Drive Extension Wilmington, NC 28405. You may also contact a Division of Coastal Management representative at (910) 796-7215. If you have any questions or comments regarding this communication, please do not hesitate to contact me at (919) 707-4526. Thanking you very much for your time and consideration in this matter, I am

Very truly yours,

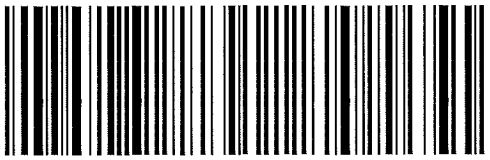
Scott T. Slusser
Special Deputy Attorney General
Attorney for the N.C. State Ports Authority

MAILING ADDRESS:
DEPARTMENT OF TRANSPORTATION
ATTORNEY GENERAL'S OFFICE
1505 MAIL SERVICE CENTER
RALEIGH, NC 27699-1505

TELEPHONE: 919-707-4480
FACSIMILE: 919-733-9329

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH, NC 27601

JESSIE THOMPSON
NC DEPARTMENT OF TRANSPORTATION
ATTORNEY GENERAL'S OFFICE
1505 MAIL SERVICE CENTER
RALEIGH, NC 27699-1505
SCOTT SLUSSER



9214 8901 0661 5400 0074 8820 65

Return Receipt (Electronic)

JOHN JOYNER
APEX OIL COMPANY
PO BOX 3127
WILMINGTON, NC 28406-0127

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STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE

ROY COOPER
ATTORNEY GENERAL

REPLY TO:
Scott T. Slusser
Transportation Section

December 1, 2015

VIA CERTIFIED MAIL -RETURN RECEIPT REQUESTED

Mr. Troy Sturtz
Terminal Manager
Kinder Morgan
1710 Woodbine St.
Wilmington, NC 28401

Re: Variance Request by N.C. State Ports Authority
2202 Burnett Blvd, Wilmington, NC

Dear Property Owner:

This is to notify you that the N.C. State Ports Authority is applying for a variance from the North Carolina Coastal Resources Commission to allow the relocation of the liquid bulk pier and widening of the existing boat turning basin in the Cape Fear River. The variance is expected to be heard at a December 8, 2015 meeting of the Coastal Resources Commission. If you wish to receive further information concerning the variance, you may contact me. If you wish to make comments on the variance, you may direct your comments to the North Carolina Division of Coastal Management, 127 Cardinal Drive Extension Wilmington, NC 28405. You may also contact a Division of Coastal Management representative at (910) 796-7215. If you have any questions or comments regarding this communication, please do not hesitate to contact me at (919) 707-4526. Thanking you very much for your time and consideration in this matter, I am

Very truly yours,

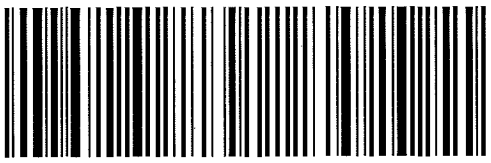
Scott T. Slusser
Special Deputy Attorney General
Attorney for the N.C. State Ports Authority

MAILING ADDRESS:
DEPARTMENT OF TRANSPORTATION
ATTORNEY GENERAL'S OFFICE
1505 MAIL SERVICE CENTER
RALEIGH, NC 27699-1505

TELEPHONE: 919-707-4480
FACSIMILE: 919-733-9329

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH, NC 27601

JESSIE THOMPSON
NC DEPARTMENT OF TRANSPORTATION
ATTORNEY GENERAL'S OFFICE
1505 MAIL SERVICE CENTER
RALEIGH, NC 27699-1505
SCOTT SLUSSER



9214 8901 0661 5400 0074 8818 91

Return Receipt (Electronic)

TROY STURTZ
KINDER MORGAN
1710 WOODBINE ST
WILMINGTON, NC 28401-6558

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6"X9" ENVELOPE
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Attachment E:
Stipulated Exhibits including Powerpoint

1. October 22, 2015 NC Ports Board Resolution
2. Affidavit of Jeffrey E. Miles
3. CAMA Major Permit Application of October 16, 2015
4. DCM Field Investigation Report
5. Comments of Department of (Natural and) Cultural Resources
6. Comments of NC Wildlife Resources Commission
7. Comments of National Marine Fisheries Service
8. Comments of DCM Fisheries Resource Specialist
9. Proof of publishing of notice in the Star News
10. Copy of On-site notice card
11. Notice forms returned from Apex Oil and Kinder-Morgan, along with email correspondence withdrawing objection
12. November 17, 2015 email from Ports removing northern-most two dolphins from the project with revised drawings
13. November 30, 2015 denial letter
14. PNA map showing the site
15. November 2014 Study prepared by Institute for Transportation Research and Education at North Carolina State University
16. October 2015 Essential Fish Habitat Study
17. Powerpoint Slideshow with relevant maps, photos of mitigation sties, and site plans.

RESOLUTION OF THE BOARD OF DIRECTORS
OF THE NORTH CAROLINA STATE PORTS AUTHORITY

WHEREAS, The North Carolina State Ports Authority (the Authority) promotes economic growth through facilitating waterborne commerce in the State of North Carolina; and

WHEREAS, the Authority's Board of Directors (the Board) is given certain statutory authority, among which include the powers to acquire, construct, maintain, equip and operate any wharves, docks, piers and/or other structures useful in connection with the operation of the ports; and

WHEREAS, the Authority desires to move forward with the solicitation, bidding and execution of a design and construction contract for the expansion of the turning basin at the Port of Wilmington (the Project);

WHEREAS, the Project was not included in the Approved Fiscal Year 2016 Capital Budget; and

WHEREAS, the Authority has sufficient excess cash flows from operations to fund the Project; and

WHEREAS, the Authority estimates that phase one of the project will cost no more than $5 million;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE NORTH CAROLINA STATE PORTS AUTHORITY:

1) The Board hereby authorizes the officers of the Authority to move forward with the solicitation, bidding and execution of a design and construction contracts for the Project.
2) The Board delegates the authority to execute a design and construction contracts for the Project to the Executive Director.
3) The Board instructs the Executive Director to notify, in writing, the Secretary of Transportation and the Board of Directors of a contract solicitation and/or award concerning the project within 24 hours and in person at the next regularly occurring meeting of the Board.

The foregoing resolution was adopted at a meeting duly called and held on October 22, 2015.

Chairman

Secretary

NORTH CAROLINA

COUNTY OF NEW HANOVER

IN RE:

OCTOBER 16, 2015 APPLICATION OF THE NORTH CAROLINA STATE PORTS AUTHORITY FOR A CAMA MAJOR DEVELOPMENT PERMIT TO EXPAND THE PORT OF WILMINGTON'S TURNING BASIN

AFFIDAVIT OF JEFFREY E. MILES

I, Jeffrey E. Miles, appearing before the undersigned notary and being duly sworn, do hereby depose and say:

1. I am employed as the Deputy Executive Director and Chief Operating Officer for the North Carolina State Ports Authority ("NC Ports").

2. I have been employed with NC Ports for ten and a half years.

3. As Deputy Executive Director and Chief Operating Officer, I am responsible for directing terminal operations, engineering, maintenance and security for NC Ports.

4. I am familiar with NC Ports' request for a CAMA Major Development Permit for the relocation of the liquid bulk pier and dredging in the Cape Fear River to widen the existing boat turning basin (hereinafter, the "Project").

5. The Project is estimated to cost approximately $16 million, and construction is estimated to take approximately 5-6 months.

6. The Project is needed to allow the Wilmington Port facility ("Port") to accommodate larger cargo vessels, especially larger container vessels.

7. The Port services multiple types of vessels that carry a variety of cargo such as containers and bulk cargo.

8. NC Ports' facility at Wilmington is the only port in North Carolina that accommodates container vessels.

9. The annual revenue for the Wilmington Port is approximately $43.8 million. Container business accounts for 32% of that revenue.

10. The Port's biggest container customers are four shipping companies originating in Asia: Cosco, K-line, Yang Ming, and Hanjin (hereinafter, "CKYH" or "CKYH Alliance"). CKYH container vessels rely on the Panama Canal for shipping routes between Asia and the Port of Wilmington.

11. Revenue from CKYH comprises approximately 66% of the Port's total revenue from container business.

12. Currently the Port services container vessels of approximately 965 feet in length and 106 feet in width. These vessels are considered "Panamax" vessels because they are the maximum-sized vessels that are able to pass through the existing Panama Canal. The Port of Wilmington has served ships carrying container cargo for over 30 years and has served vessels in the Panamax class for over 10 years.

13. The Panama Canal is currently in the process of expanding its lock system and other infrastructure to allow the passage of larger vessels. The expansion is scheduled to open in April, 2016. Once completed the locks will be approximately 1400 feet long and 180 feet wide. This will allow "New Panamax" vessels, which will be approximately 1200 feet long and 160 feet wide, to pass through the Panama Canal. These "New Panamax" vessels currently exist and are used for shipping routes that do not pass through the Panama Canal.

14. The "New Panamax" vessels will have significantly more cargo capacity (almost double the cargo capacity of a "Panamax" vessel), thereby moving more cargo more efficiently and with less resources.

15. The Wilmington Port has the current capability to service most classes of the "New Panamax" vessels with the exception of the turning basin in the Cape Fear River. In other words, New Panamax vessels would not be able to turn around and head back out to sea.

16. The Port's existing cranes, berths, storage, trucking operation, rail system and other infrastructure are currently able to service "New Panamax" vessels.

17. The current turning basin is 1200 feet wide, and while it can accommodate existing "Panamax" vessels, it cannot accommodate a "New Panamax" vessel.

18. The purpose of the turning basin is to allow cargo vessels to reorient themselves for safe ingress to and egress from the port. For safety reasons the turning basin should be approximately 20% larger than the length of the vessel. Therefore, to accommodate a "New Panamax" vessel the turning basin would need to be around 1400 feet wide.

19. To achieve the necessary dimensions of a turning basin suitable for "New Panamax" vessels, NC Ports seeks to widen the basin by 200 feet by mechanically dredging approximately 6.4 acres of the Cape Fear River bottom from present depths of 5 to 20 feet MLW to a final depth of 42 feet + 2 feet MLW.

20. I and other employees of NC Ports have travelled to Asia and have had several meetings with representatives from the CKYH Alliance to discuss their intentions to use "New Panamax" vessels for shipments to/from the ports on the east coast of the United States.

21. Once the Panama Canal expansion opens, CKYH will use "New Panamax" vessels for container cargo shipments to the east coast of the United States. This will allow CKYH to ship cargo more efficiently, thereby reducing costs.

22. CKYH calls to several other ports on the east coast, such as Miami, Charleston, Savannah, Norfolk, and New York. These ports, some through recent expansions, are capable of servicing "New Panamax" vessels.

23. CKYH has indicated that if the Wilmington Port is not able to accommodate their "New Panamax" vessels, then CKYH intends to cease calling on the Port and will rely on other ports to handle container cargo.

24. If CKYH were to cease calling at the Wilmington Port, the Port would lose its largest container revenue source, thereby impacting the Port's sustainability and competitiveness, as well as jobs and economic growth. The loss of CKYH's business would negatively impact the various industries – such as trucking, rail, and warehousing – that play a role in the movement of container cargo.

25. North Carolina citizens, businesses and taxpayers would be impacted by the loss of the ability to ship and receive goods via the "New Panamax" container vessels. If the turning basin is not expanded to accommodate the "New Panamax" vessels, then current customers that rely on the Port to ship and receive goods via the container vessels would have to ship and receive their goods via port facilities in other states, thereby increasing their costs, which are likely to be passed down to the consumers.

26. Because the Panama Canal expansion is scheduled to open in April, 2016, NC Ports hopes to widen the turning basin as soon as possible to avoid the loss of container business.

27. In an attempt to expedite the necessary permits and to further convey the great need for this Project, NC Ports has proposed the following mitigation measures:

    a. NC Ports currently owns 13.4 acres of coastal marshes and primary fish nursery habitat across from the Port facility on the Brunswick River. NC Ports will convey a conservation easement on the 13.4 acres to NCDEQ to preserve the area in perpetuity.

    b. If the permit will be issued within 90 days of the application, NC Ports will also contribute $750,000.00 towards the cost of constructing fish ladders at Lock # 2 upstream on the Cape Fear River. This fish ladder (and eventually at Lock # 3) will restore and open up access to approximately 84 miles of the Cape Fear River (and 995 tributary stream miles) that was previously lost spawning, nursery, and migratory fish habitat.

28. In addition, NC Ports will use best management practices, turbidity barriers, and maximize dredging during falling tides to avoid and minimize impacts during dredging operations.

The information contained in this affidavit is based on the personal knowledge of the affiant and the public records of the North Carolina Department of Transportation and the North Carolina State Ports Authority.

This the 30 day of NOVEMBER, 2015.

Jeffrey E. Miles
Deputy Executive Director / Chief Operating Officer
North Carolina State Ports Authority

Sworn to and subscribed before me
this the 30th day of November, 2015.

Official Signature of Notary Public

Teresa Dean, Notary Public
Notary's printed name

(Official Seal)

TERESA DEAN
Notary Public
New Hanover County
NORTH CAROLINA

My Commission Expires:

11/2017

Mark Blake P.E.
Director of Engineering and Maintenance

October 16, 2015

Mr. Robb Mairs
Division of Coastal Management
127 Cardinal Drive Ext.
Wilmington NC 28405-3845

Subject: North Carolina State Ports Authority
Relocation of Liquid Bulk Pier
Port of Wilmington
New Hanover County

Dear Mr. Robb Mairs,

The North Carolina State Ports Authority requests a CAMA Major permit to allow the relocation of the current liquid bulk pier and dredging in the surrounding area.

The North Carolina State Ports Authority (NCSPA) currently maintains a Coastal Area Management Act (CAMA) Permit (Permit ID No. #47-87). The NCSPA is proposing to reduce the length of the existing T-Head pier at Kinder Morgan by 200 feet, and relocate all associated mooring dolphins and breasting cells. The NCSPA also is requesting permission to dredge the area to 42'+2' to accommodate larger vessels at the facility. This also will expand the turning basin from the current 1200' to approximately 1400', allowing all terminals in the River to accept longer and larger vessels at their terminals.

Please find included in this packet the appropriate DCM CAMA permit applications, a check for $475.00, site maps, and copies of the letters to our adjacent riparian neighbors.

NORTH CAROLINA PORTS

The North Carolina State Ports Authority appreciates the Divisions assistance and guidance on this project and if any additional information to the enclosed drawing arise, please call me at (910) 251-5678 at your earliest convenience.

Please find included in this packet the appropriate DCM CAMA permit applications, a check for $475.00, site maps, and copies of the letters to our adjacent riparian neighbors.

Sincerely,
North Carolina State Ports Authority

Todd C. Walton
Sr. Environmental Analyst

Cc: environmental files

Relocation of Liquid Bulk Pier
Construction Methodology

Dredging

While the berth is vacant, the selected dredging contractor will use a mechanical dredge to dredge the project area in stages. Prior to initiating dredging, the selected dredging contractor will install turbidity curtains around the proposed dredge area. The selected dredging contractor will remove soil and sediments using either a barge-mounted crane equipped with an environmental bucket or a long reach excavator boom and bucket if rock is encountered. The dredged material will be loaded into watertight barges or scows and transported across the Wilmington River were the selected dredging contractor will re-fluidize the sediments and hydraulically pump the dredged material to Eagle Island.

New Pier Construction

The pier, including the new loading platform, pipe trestle and dolphins, will be constructed while the existing pier remains in place and is operational. A boom will be placed around the work area or areas. Temporary driving frames or templates, constructed of steel H or pipe piles and steel framed grid structure will be erected to facilitate placement of the breasting dolphin sheet piling and the bearing piles for the pipeway trestle, the loading platform and the mooring dolphins. The falsework frames / templates, as well as subsequent construction operations, will be erected using a spud or jackup barge mounted construction crane and timber float stages for personnel access. One or two supply barges will be used throughout all erection operations to deliver and store piles, precast concrete elements and other appearances. The temporary piles supporting the template will be installed using vibratory hammers; the grid frame will be set in place with a crane. Dockbuilders will make burn steel and make member connections working from float stages or atop framing as erected.

Once falsework is completed, new precast-prestressed concrete piles will be driven using fixed leads and an impact hammer on the barge crane. Should predrilling for piles be required, it will be done through a casing and all materials will be collected airlifted or pumped out of the casing and not discharged into the waterway. Once piles are complete, precast pile caps for the pipeway bridge and loading platform will be set onto the driven piles using the barge mounted crane. Preformed pockets in the pilecaps for connecting them to the piles will be concreted by pumping concrete from shore. Pumping hoses will be layed atop the existing vehicular trestle to discharge point. Once cured, precast concrete deck planks will be set atop the loading platform pile caps. A cast-in-place concrete topping will be pumped from shore to lock the entire deck together into a unit. A steel pipe frame will be erected onto the pipeway trestle pile caps and on the platform deck using the barge mounted crane or a cherry picker operating from the existing vehicular trestle. Product piping will then be installed in manner similar to the pipe frame.

Breasting Dolphins
Circular cofferdams sheet piling for the breasting dolphins will be driven using a vibratory hammer inside the template. When the cell is complete, unsuitable material within the cofferdams will be removed using an environmental clamshell bucket as for dredging. The cells will then be backfilled with clean sand fill and vibrocompacted.

Mooring Dolphin platform caps will be formed in place over the water and cast-in-place concrete will be poured by pumping from upland.

Existing Pier Removals
When all new works have been completed, product piping will be disconnected onshore at inboard end trestle and reconnected to the new facility piping. The existing dolphins, loading platform and outboard portion of the approach trestle will then be demolished including original product piping back to shore. Containment booms will be installed around all structures to be removed and structures demolished using the barge mounted crane and then loaded into barges or scows for recycling or disposal including:

- Loading Platform and outboard part of vehicular trestle will be sawcut into manageable size pieces, the tops of piles cut then cut deck will be lifted off.
- Mooring dolphin cap will be removed after cutting off the tops of piles.
- Breasting dolphin bracing pile brackets will be unbolted and removed.
- Piles of Loading Platform, Dolphins and Outboard end of trestle will be extracted (to preclude any future hazards to navigation) and loaded for disposal in scow(s) or atop deck barge(s) surrounded with sediment barriers to preclude any adherent mud stuck to the pile from washing overboard into the waterway.
- The top 3'-6" +/- of the breasting dolphin cap cut will be off (down to top of fill inside), sawcut into pieces if needed, and lifted off.
- Existing fill within breasting dolphin will be excavated, using an environment bucket, down to proposed dredge line.
- Breasting dolphin top encasement will be vertically wire or sawcut into pieces around perimeter down to bottom of encasement at approximately 2 feet below MLLW. Cut portions will be extracted with sheet piles if possible. If not possible or practicle, alternately the sheet piling may be burnt but divers just below encasement and the encased cut piece lifted off individually. This will be followed by extraction of sheet piles. Sheet piles will be transported in a scow or a deck barge in similar manner as other piles.

Upon completion of all removals, any remaining mounds of sediment beneath removed structures will be dredged as described hereinbefore. The bottom will be inspected for any debris then the reconstructed facility will be commissioned.

DCM MP-1

MM 47-87

APPLICATION for Major Development Permit

(last revised 12/27/06)

North Carolina DIVISION OF COASTAL MANAGEMENT

1. Primary Applicant/ Landowner Information

Business Name North Carolina State Port Authority		Project Name (if applicable) RELOCATION OF LIQUID BULK PIER		
Applicant 1: First Name JEFFERY	MI E	Last Name MILES		
Applicant 2: First Name	MI	Last Name		
If additional applicants, please attach an additional page(s) with names listed.				
Mailing Address P.O. BOX 9002		PO Box 9002	City Wilmington	State NC
ZIP 28402	Country USA	Phone No. 910 - 343 - 6430 ext.		FAX No. 910 - 343 - 6237
Street Address *(if different from above)* 2202 BURNETT BLVD		City Wilmington	State NC	ZIP 28401-
Email jeff.miles@ncports.com				

2. Agent/Contractor Information

Business Name North Carolina State Port Authority				
Agent/ Contractor 1: First Name TODD	MI	Last Name WALTON		
Agent/ Contractor 2: First Name	MI	Last Name		
Mailing Address P.O. BOX 9002		PO Box 9002	City Wilmington	State NC
ZIP 28402		Phone No. 1 910 - 251 - 5678 ext.	Phone No. 2 - - ext.	
FAX No. 910 251 5686		Contractor # N/A		
Street Address *(if different from above)* 2202 BURNETT BOULEVARD		City Wilmington	State NC	ZIP 28401 -
Email TODD.WALTON@NCPORTS.COM				

<Form continues on back>

3. Project Location

County (can be multiple)	Street Address		State Rd. #
NEW HANOVER	1 SHIPYARD BOULEVARD		117
Subdivision Name	**City**	**State**	**Zip**
N/A	WILMINGTON	NC	28401 -

Phone No.	Lot No.(s) *(if many, attach additional page with list)*
910 - 251 - 5678 ext.	, , , ,
a. In which NC river basin is the project located? CAPE FEAR	b. Name of body of water nearest to proposed project CAPE FEAR RIVER
c. Is the water body identified in (b) above, natural or manmade? ☒Natural ☐Manmade ☐Unknown	d. Name the closest major water body to the proposed project site. CAPE FEAR RIVER
e. Is proposed work within city limits or planning jurisdiction? ☒Yes ☐No	f. If applicable, list the planning jurisdiction or city limit the proposed work falls within. WILMINGTON

4. Site Description

a. Total length of shoreline on the tract (ft.) N/A	b. Size of entire tract (sq.ft.) N/A
c. Size of individual lot(s) N/A, , , *(If many lot sizes, please attach additional page with a list)*	d. Approximate elevation of tract above NHW *(normal high water)* or NWL *(normal water level)* N/A ☐NHW or ☐NWL

e. Vegetation on tract
CAPE FEAR RIVER

f. Man-made features and uses now on tract
PROJECT LOCATED WITHIN THE CONFINES OF THE NORTH CAROLINA STATE PORT AUTHORITY.

g. Identify and describe the existing land uses adjacent to the proposed project site.
INDUSTRIAL

h. How does local government zone the tract? INDUSTRIAL	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable) ☒Yes ☐No ☐NA

j. Is the proposed activity part of an urban waterfront redevelopment proposal? ☐Yes ☒No

k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy. ☐Yes ☒No ☐NA

If yes, by whom?

l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property? ☐Yes ☒No ☐NA

<Form continues on next page>

m. (i) Are there wetlands on the site?	☒Yes ☐No
(ii) Are there coastal wetlands on the site?	☐Yes ☒No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? *(Attach documentation, if available)*	☐Yes ☒No

n. Describe existing wastewater treatment facilities.

PORT WASTEWATER SYSTEM OPERATED BY CAPE FEAR PUBLIC UTILITY AUTHORITY

o. Describe existing drinking water supply source.

PORT WATER SUPPLIED BY CAPE FEAR PUBLIC UTILITY AUTHORITY. PORT AUTHORITY OPERATES DISTRIBUTION SYSTEM

p. Describe existing storm water management or treatment systems.

PORT FACILITY IS SUBJECT TO NPDES STORMWATER PERMIT NUMBER NCS000174

5. Activities and Impacts

a. Will the project be for commercial, public, or private use? ☒Commercial ☐Public/Government ☐Private/Community

b. Give a brief description of purpose, use, and daily operations of the project when complete.

RELOCATED LIQUID BULK PIER AND WIDEN EXISTING TURNING BASIN

c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored.

DREDGE AND DISPOSAL OF MATERIAL TO WIDEN TURNING BASIN. DEEP FOUNDATION EQUIPMENT (PILE DRIVING) FOR REMOVAL AND RECONSTRUCTION OF PIER / PLATFORM.

d. List all development activities you propose.

REMOVAL OF A PORTION OF AN EXISTING PIER / PLATFORM AND RECONSTRUCTION CLOSER TO THE SHORE LINE. REMOVAL OF EXISTING VESSEL MOORINGS AND RELOCATION CLOSER TO THE SHORE LINE.

e. Are the proposed activities maintenance of an existing project, new work, or both?	NEW
f. What is the approximate total disturbed land area resulting from the proposed project?	N/A ☐Sq.Ft or ☐Acres
g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of?	☐Yes ☒No ☐NA

h. Describe location and type of existing and proposed discharges to waters of the state.

EXISTING STORMWATER RUNOFF EXISTING PIER / PLATFORM WILL BE REDUCED BY DECREASE OF PIER LENGTH

i. Will wastewater or stormwater be discharged into a wetland?	☐Yes ☒No ☐NA
If yes, will this discharged water be of the same salinity as the receiving water?	☐Yes ☐No ☐NA
j. Is there any mitigation proposed? If yes, attach a mitigation proposal.	☒Yes ☐No ☐NA

<Form continues on back>

6. Additional Information

In addition to this completed application form, (MP-1) the following items below, if applicable, must be submitted in order for the application package to be complete. Items (a) – (f) are always applicable to any major development application. Please consult the application instruction booklet on how to properly prepare the required items below.

a. A project narrative.

b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed.

c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site.

d. A copy of the deed (with state application only) or other instrument under which the applicant claims title to the affected properties.

e. The appropriate application fee. Check or money order made payable to DENR.

f. A list of the names and complete addresses of the adjacent waterfront (riparian) landowners and signed return receipts as proof that such owners have received a copy of the application and plats by certified mail. Such landowners must be advised that they have 30 days in which to submit comments on the proposed project to the Division of Coastal Management.

Name APEX OIL COMPANY, JOHN JOYNER	Phone No. 910-799-0030
Address P.O. BOX 3127, WILMINGTON, NC 28406	
Name KINDER MORGAN, TROY STURTZ	Phone No. 910-763-0104
Address 1710 WOODBINE STREET, WILMINGTON, NC 28401	
Name	Phone No.
Address	

g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates.

CAMA PERMIT 47-87; NPDES PERMIT NCS000174; AIR QUALITY PERMIT 4683R26; PUBLIC WATER SUPPLY ID NO. 70-65-007

h. Signed consultant or agent authorization form, if applicable.

i. Wetland delineation, if necessary.

j. A signed AEC hazard notice for projects in oceanfront and inlet areas. *(Must be signed by property owner)*

k. A statement of compliance with the N.C. Environmental Policy Act (N.C.G.S. 113A 1-10), if necessary. If the project involves expenditure of public funds or use of public lands, attach a statement documenting compliance with the North Carolina Environmental Policy Act.

7. Certification and Permission to Enter on Land

I understand that any permit issued in response to this application will allow only the development described in the application. The project will be subject to the conditions and restrictions contained in the permit.

I certify that I am authorized to grant, and do in fact grant permission to representatives of state and federal review agencies to enter on the aforementioned lands in connection with evaluating information related to this permit application and follow-up monitoring of the project.

I further certify that the information provided in this application is truthful to the best of my knowledge.

Date 16 OCT 2015 Print Name JEFFERY E. MILES

Signature

Please indicate application attachments pertaining to your proposed project.

☒DCM MP-2 Excavation and Fill Information

☐DCM MP-3 Upland Development

☒DCM MP-4 Structures Information

☐DCM MP-5 Bridges and Culverts

Form DCM MP-2

EXCAVATION and FILL

(Except for bridges and culverts)

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

Describe below the purpose of proposed excavation and/or fill activities. **All values should be given in feet.**

	Access Channel (NLW or NWL)	Canal	Boat Basin	Boat Ramp	Rock Groin	Rock Breakwater	Other (excluding shoreline stabilization)
Length			1000				
Width			320				
Avg. Existing Depth			20		NA	NA	
Final Project Depth			44		NA	NA	

1. EXCAVATION

☐ *This section not applicable*

a. Amount of material to be excavated from below NHW or NWL in cubic yards.
300,000

b. Type of material to be excavated.
SOIL

c. (i) Does the area to be excavated include coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
☐CW ____ ☐SAV ____ ☐SB ____
☐WL ____ ☒None

(ii) Describe the purpose of the excavation in these areas:
WIDEN TURNING BASIN

d. High-ground excavation in cubic yards.
N/A

2. DISPOSAL OF EXCAVATED MATERIAL

☐ *This section not applicable*

a. Location of disposal area.
USACE EAGLE ISLAND DISPOSAL SITE

b. Dimensions of disposal area.

c. (i) Do you claim title to disposal area?
☐Yes ☒No ☐NA

(ii) If no, attach a letter granting permission from the owner.

d. (i) Will a disposal area be available for future maintenance?
☒Yes ☐No ☐NA

(ii) If yes, where?

e. (i) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
☐CW ____ ☐SAV ____ ☐SB ____
☐WL ____ ☒None

(ii) Describe the purpose of disposal in these areas:
THE DISPOSAL SITE IS A USACE DESIGNATED DISPOSAL SITE

f. (i) Does the disposal include any area in the water?
☐Yes ☒No ☐NA

(ii) If yes, how much water area is affected?

3. SHORELINE STABILIZATION

☒ *This section not applicable*

(If development is a wood groin, use MP-4 – Structures)

a. Type of shoreline stabilization:
☐Bulkhead ☐Riprap ☐Breakwater/Sill ☐Other: _____

b. Length: _____
Width: _____

c. Average distance waterward of NHW or NWL:

d. Maximum distance waterward of NHW or NWL:

e. Type of stabilization material:

f. (i) Has there been shoreline erosion during preceding 12 months?
☐Yes ☐No ☐NA
(ii) If yes, state amount of erosion and source of erosion amount information.

g. Number of square feet of fill to be placed below water level.
Bulkhead backfill _____ Riprap _____
Breakwater/Sill _____ Other _____

h. Type of fill material.

i. Source of fill material.

4. OTHER FILL ACTIVITIES

☒ *This section not applicable*

(Excluding Shoreline Stabilization)

a. (i) Will fill material be brought to the site? ☐Yes ☒No ☐NA
If yes,
(ii) Amount of material to be placed in the water _____
(iii) Dimensions of fill area _____
(iv) Purpose of fill

b. (i) Will fill material be placed in coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
☐CW _____ ☐SAV _____ ☐SB _____
☐WL _____ ☐None
(ii) Describe the purpose of the fill in these areas:

5. GENERAL

a. How will excavated or fill material be kept on site and erosion controlled?
N/A

b. What type of construction equipment will be used (e.g., dragline, backhoe, or hydraulic dredge)?
MECHANICAL DREDGE (BUCKET TO BARGE)

c. (i) Will navigational aids be required as a result of the project?
☐Yes ☒No ☐NA
(ii) If yes, explain what type and how they will be implemented.

d. (i) Will wetlands be crossed in transporting equipment to project site? ☐Yes ☒No ☐NA
(ii) If yes, explain steps that will be taken to avoid or minimize environmental impacts.

10.16.15
Date

RELOCATION OF LIQUID BULK PIER
Project Name

NORTH CAROLINA STATE PORT AUTHORITY
Applicant Name

Applicant Signature

RECEIVED
DCM WILMINGTON, NC
OCT 16 2015

Form DCM MP-4

STRUCTURES

(Construction within Public Trust Areas)

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

1. DOCKING FACILITY/MARINA CHARACTERISTICS

☐ *This section not applicable*

a. (i) Is the docking facility/marina:
☒Commercial ☐Public/Government ☐Private/Community

b. (i) Will the facility be open to the general public?
☐Yes ☒No

c. (i) Dock(s) and/or pier(s)
(ii) Number 1
(iii) Length REMOVE 200'
(iv) Width REMOVE 13'-6"
(v) Floating ☐Yes ☒No

d. (i) Are Finger Piers included? ☐Yes ☒No
If yes:
(ii) Number _____
(iii) Length _____
(iv) Width _____
(v) Floating ☐Yes ☒No

e. (i) Are Platforms included? ☒Yes ☐No
If yes:
(ii) Number RELOCATED
(iii) Length 56'
(iv) Width 50'
(v) Floating ☐Yes ☒No
Note: Roofed areas are calculated from dripline dimensions.

f. (i) Are Boatlifts included? ☐Yes ☒No
If yes:
(ii) Number _____
(iii) Length _____
(iv) Width _____

g. (i) Number of slips proposed
N/A
(ii) Number of slips existing
N/A

h. Check all the types of services to be provided.
☐ Full service, including travel lift and/or rail, repair or maintenance service
☐ Dockage, fuel, and marine supplies
☐ Dockage ("wet slips") only, number of slips: _____
☐ Dry storage; number of boats: _____
☐ Boat ramp(s); number of boat ramps: _____
☒ Other, please describe:
LIQUID BULK TERMINAL

i. Check the proposed type of siting:
☐ Land cut and access channel
☒Open water; dredging for basin and/or channel
☐Open water; no dredging required
☐Other; please describe:
_____

j. Describe the typical boats to be served (e.g., open runabout, charter boats, sail boats, mixed types).
BARGE AND OCEAN VESSEL

k. Typical boat length: 800'

l. (i) Will the facility be open to the general public?
☐Yes ☒No

m. (i) Will the facility have tie pilings?
☐Yes ☒No
(ii) If yes number of tie pilings?
_____

2. DOCKING FACILITY/MARINA OPERATIONS

☒ This section not applicable

a. Check each of the following sanitary facilities that will be included in the proposed project.

☐ Office Toilets

☐ Toilets for patrons; Number: _____; Location: _____

☐ Showers

☐ Boatholding tank pumpout; Give type and location: _____

b. Describe treatment type and disposal location for all sanitary wastewater.

N/A

c. Describe the disposal of solid waste, fish offal and trash.

N/A

d. How will overboard discharge of sewage from boats be controlled?

N/A

e. (i) Give the location and number of "No Sewage Discharge" signs proposed.

N/A

(ii) Give the location and number of "Pumpout Available" signs proposed.

N/A

f. Describe the special design, if applicable, for containing industrial type pollutants, such as paint, sandblasting waste and petroleum products.

CONTAINMENT PROVIDED ON PLATFORM

g. Where will residue from vessel maintenance be disposed of?

N/A

h. Give the number of channel markers and "No Wake" signs proposed. N/A

i. Give the location of fuel-handling facilities, and describe the safety measures planned to protect area water quality.

N/A

j. What will be the marina policy on overnight and live-aboard dockage?

N/A

k. Describe design measures that promote boat basin flushing?

N/A

l. If this project is an expansion of an existing marina, what types of services are currently provided?

MODIFICATION OF EXISITING PORT FACILITY

m. Is the marina/docking facility proposed within a primary or secondary nursery area?

☒ Yes ☐ No

n. Is the marina/docking facility proposed within or adjacent to any shellfish harvesting area?
☐Yes ☒No

o. Is the marina/docking facility proposed within or adjacent to coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
☐CW _____ ☐SAV _____ ☐SB _____
☐WL _____ ☒None

p. Is the proposed marina/docking facility located within or within close proximity to any shellfish leases? ☐Yes ☒No
If yes, give the name and address of the leaseholder(s), and give the proximity to the lease.

_____
_____

3. BOATHOUSE *(including covered lifts)*

☒*This section not applicable*

a. (i) Is the boathouse structure(s):
☐Commercial ☐Public/Government ☐Private/Community
(ii) Number _____
(iii) Length _____
(iv) Width _____
Note: Roofed areas are calculated from dripline dimensions.

4. GROIN *(e.g., wood, sheetpile, etc. If a rock groin, use MP-2, Excavation and Fill.)*

☒*This section not applicable*

a. (i) Number _____
(ii) Length _____
(iii) Width _____

5. BREAKWATER *(e.g., wood, sheetpile, etc.)*

☒*This section not applicable*

a. Length _____

b. Average distance from NHW, NWL, or wetlands
_____

c. Maximum distance beyond NHW, NWL or wetlands
_____

6. MOORING PILINGS and BUOYS

☐*This section not applicable*

a. Is the structure(s):
☒Commercial ☐Public/Government ☐Private/Community

b. Number 3

c. Distance to be placed beyond shoreline 0 TO 100 FEET
Note: This should be measured from marsh edge, if present.

d. Description of buoy (color, inscription, size, anchor, etc.)
3 BREASTING DOLPHINS AND 4 MOORING DOLPHINS

e. Arc of the swing _____

7. GENERAL

a. Proximity of structure(s) to adjacent riparian property lines
0 TO 100 FEET

Note: For buoy or mooring piling, use arc of swing including length of vessel.

b. Proximity of structure(s) to adjacent docking facilities.
2000 FEET TO BERTH 1 NCSPA

c. Width of water body
CAPE FEAR RIVER 1600 FEET

d. Water depth at waterward end of structure at NLW or NWL
38

e. (i) Will navigational aids be required as a result of the project?
☐Yes ☒No ☐NA
(ii) If yes, explain what type and how they will be implemented.

8. OTHER

☒*This section not applicable*

a. Give complete description:

10.16.15
Date

RELOCATED LIQUID BULK PIER
Project Name

NORTH CAROLINA STATE PORT AUTHORITY
Applicant Name

Applicant Signature

RECEIVED
DCM WILMINGTON, NC
OCT 16 2015

Port of Wilmington Turning Basin Improvement Project
Proposed Mitigation Measures

Introduction

Mitigation and or conservation measures proposed for unavoidable effects of the proposed action on sturgeon species and their foraging habitat at the Port of Wilmington in the Cape Fear River are provided below. These measures include conveyance of a conservation easement on 13.4 acres of coastal marsh habitat present on property owned by the NCSPA since 1965 and payment of $750,000 towards planning, permitting and design of the Lock and Dam 2 Fish Passage on the Cape Fear River. Along with the funds appropriated by the NC State legislature this past session, this will allow for completion of all services needed to develop the fish passage project into a "shovel ready" project within two years. The latter measure is only proposed if this project can be fully permitted and approved by all parties, including an informal Section 7 consultation letter from the NMFS in less than 90 days from the initial date of application (October 16, 2015). A description of each measure is provided below.

Mitigation/Conservation Measures

Conservation of 13.4-Acre Tract on Brunswick River

The NCSPA has owned this property since 1965. As shown in Figure 1, this site is located on the west side of the Brunswick property in the Town of Belville, NC. The NCSPA has agreed to place a conservation easement on the 13.4-acre property, a majority of which is coastal marsh habitat within primary fisheries nursery habitat of NC. This action will ensure conservation of potential foraging habitat of sturgeon species documented to occur in the river. Within 60 days of permit issuance the applicant will register the conservation easement with the NCDENR

Fish Passage for Lock and Dam 2 – Cape Fear River

One of the overarching goals of the Cape Fear River Partnership, as well as state and federal resource agencies (NMFS, USFWS, NCDENR, NCDMF) is restoring access to historic migratory fish habitat in the upper Cape Fear River Basin. To this end, Cape Fear River Watch and other public and private partners have applied for NOAA and State grants over the past several years. This past NC legislative session approved allocation of $250,000 as matching funds to kick this initiative forward. NOAA OR&R has also voiced considerable interest in moving this restoration initiative as a top priority for the basin. The NCSPA agrees to contribute the balance of funds needed to make this project "shovel ready" so as to better ensure that construction dollars have a better chance of being allocated through federal grants and state funding. As stated above, the NCSPA agrees to allocate these funds if all state and federal agencies ensure that full permitting approval is granted for the proposed action in less than 90 days. Information on the project is provided below.

Site Locations

Lock and Dam 2 is located within the Cape Fear River basin on the Cape Fear River in Bladen County, NC, (Lat: 34 37' 36.25" N; Long: 78 34' 38.47" W). Lock and Dam 2 is accessible to public use by way of SR 1703 from NC State Highway 87 (Figure 2).

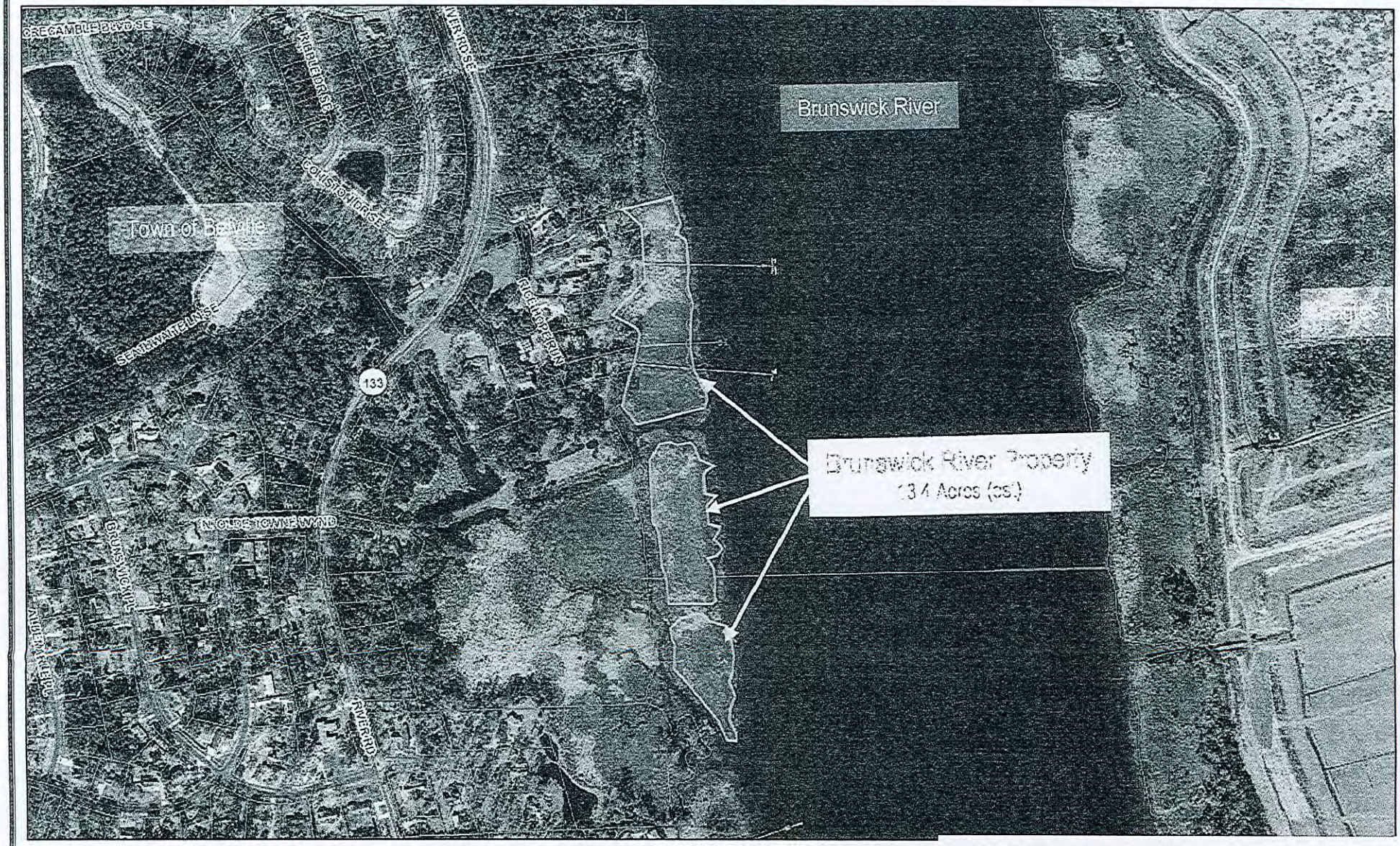
Project Description

The applicant, along with matching funds from the State of NC, proposes to contribute funds to complete the planning, design and permitting of the rock ramp fishway at Lock and Dams 2 in the Cape Fear River to restore access to lost spawning and nursery habitat in order to improve the resilience of anadromous fish populations, including endangered Atlantic and shortnosed sturgeon.

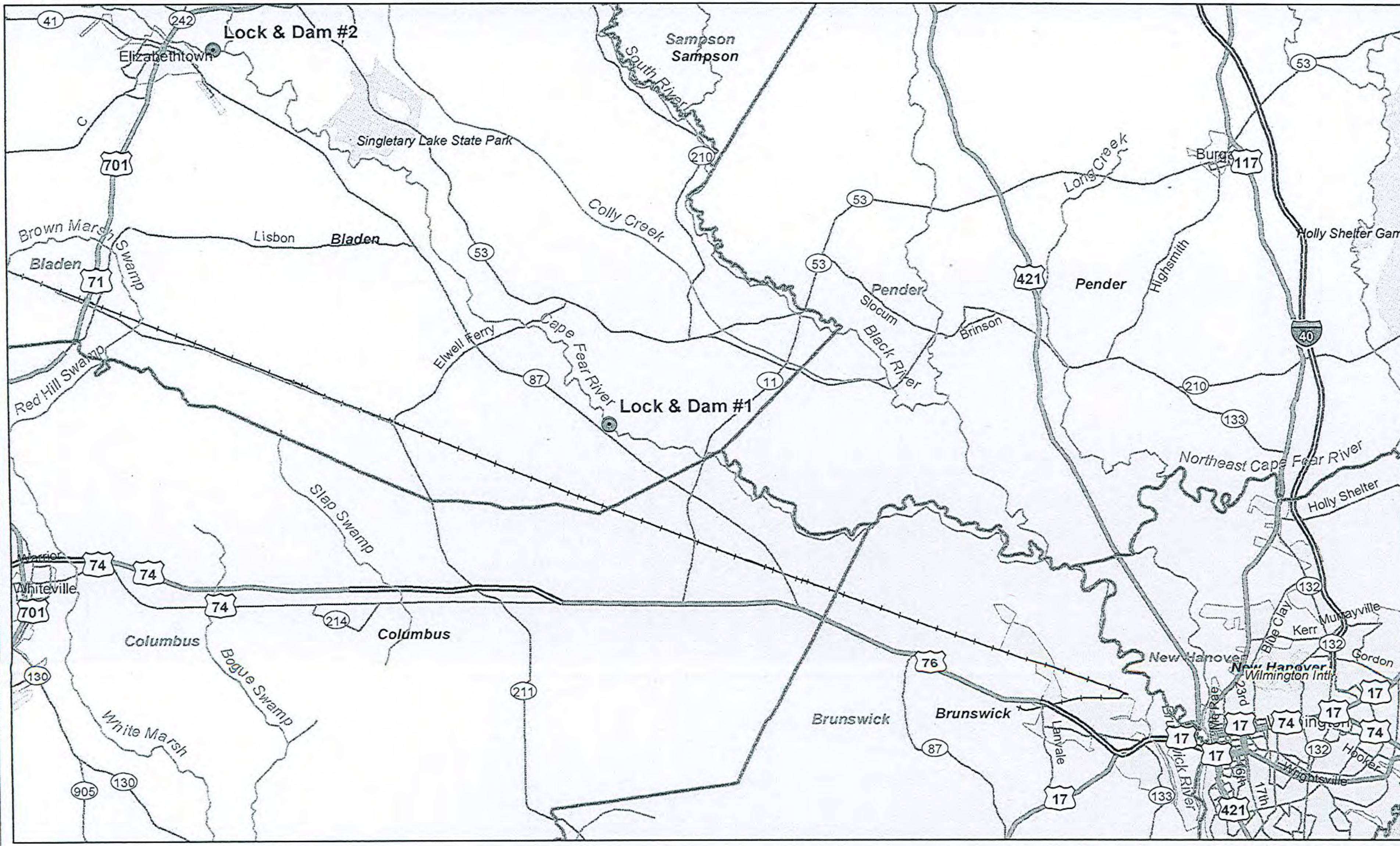
Fragmentation by dams is an important impediment to the resilience of coastal river ecosystems in the face of advancing climate change and associated extreme weather periods and events. Spatial limitations on the amounts of spawning habitat for anadromous species are imposed by dams in most river systems throughout the US eastern seaboard. The resulting reduction in spawning and nursery habitat adversely impacts the resilience of numerous fish species by reducing their available refuge from low flow periods due to droughts and increasing water temperatures in southernmost river basins. Valuable spawning habitats for federally endangered shortnose and Atlantic sturgeon exist in the Cape Fear River near the Fall Line but are currently blocked by Lock and Dams 2 and 3. The proposed project will also improve access to critical habitats for numerous managed anadromous fish species, including striped bass, American shad, river herring, and American eel, which will improve the resilience of these populations as well.

Project Performance Measures and Outcomes

The proposed project includes restoration of access to approximately 20-40% of remaining historic habitat that is currently blocked by Lock and Dam 2. After construction of the fish passage for Lock and Dam 2 and eventually Lock and Dam 3, over 84 free-flowing river mainstem miles and 995 tributary stream miles and more than 192 acres of migratory fish habitat will be made accessible to anadromous fish for spawning. The anticipated long-term ecological and socioeconomic outcomes include improved recruitment among the numerous anadromous species listed above. The restoration of a degraded fisheries will, in turn, result in increased revenue to the businesses and improved quality of fishing for recreational users of the Cape Fear River. The expansion of the economic benefits from recreational fishing activity in this section of the river has been projected to yield an increase in net annual economic benefits upwards of $188,000 and contribute $961,000 in industry production and business sales in the state economy (Hadley 2014)



NCSPA Turning Basin Project - Brunswick River Property	
NCSPA Turning Basin Mitigation Plan	
Scale: 1 inch = 500 feet	Drawn By: MR
Date: October 2015	Approved By: SD
DIAL CORDY AND ASSOCIATES INC Environmental Consultants	J15-1355
	Figure 1



Legend

Cape Fear River Lock and Dam Location

0 5 10 15 Miles

Cape Fear River Lock and Dam 2 Project Location	
NCSPA Turning Basin Mitigation Plan	
Scale: 1 inch = 5 miles	Drawn By: MR
Date: October 2015	Approved By: SD
DIAL CORDY AND ASSOCIATES INC Environmental Consultants	J15-1355
	Figure 2

LIQUID BULK PIER RELOCATION
EXISTING CONDITIONS

NCSPA

KINDER MORGAN
TANK FARM

NCSPA

YILDIZ

STEEL CARGO

Gavilon

Bulk
Facilities

W-3

T-2

LIQUID
BULK PIER

BERTH 1

BERTH 2

BERTH 3

Federal Channel
42' Authorized Project Depth

1200'

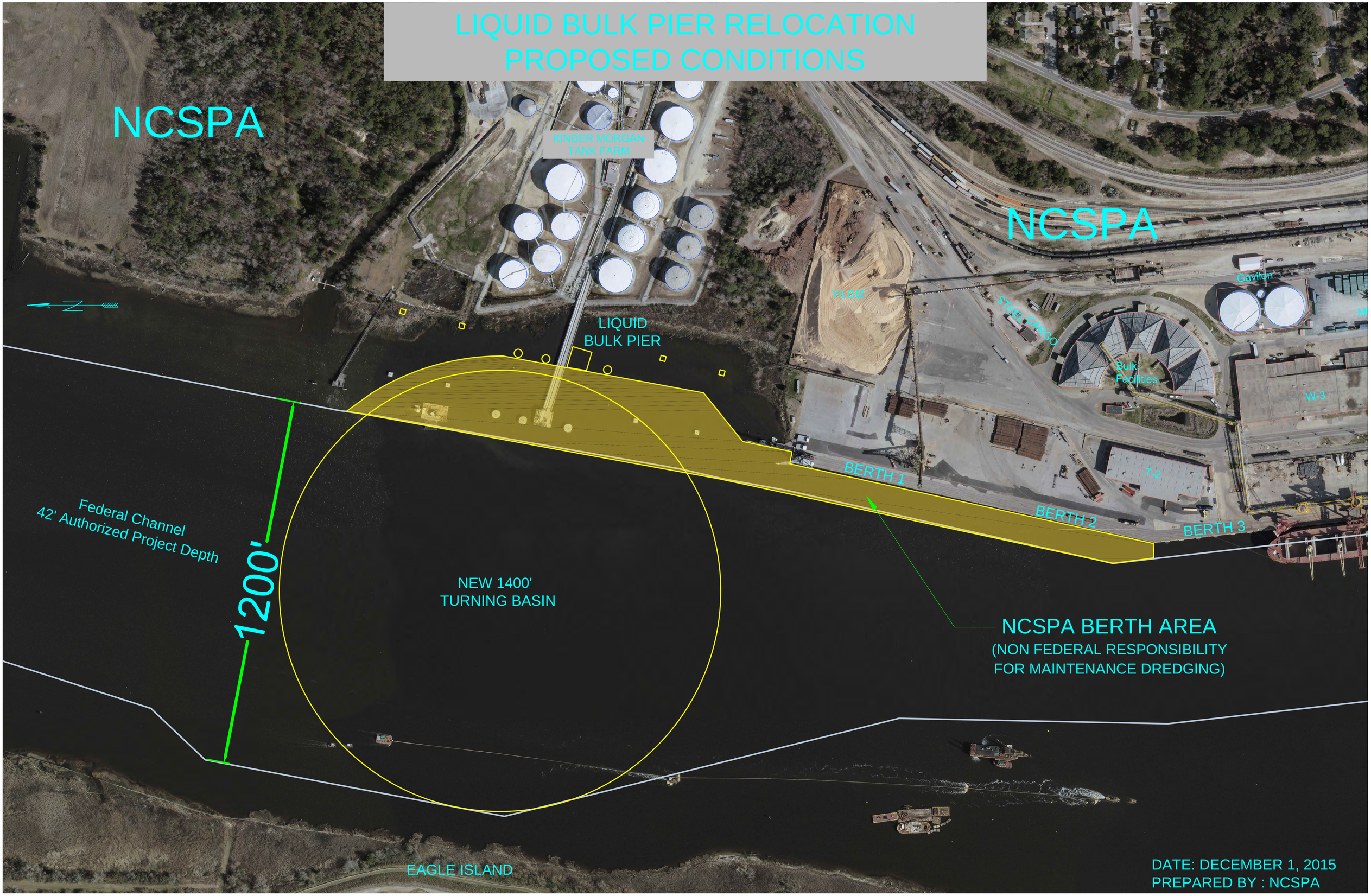
NCSPA BERTH AREA
(NON FEDERAL RESPONSIBILITY
FOR MAINTENANCE DREDGING)

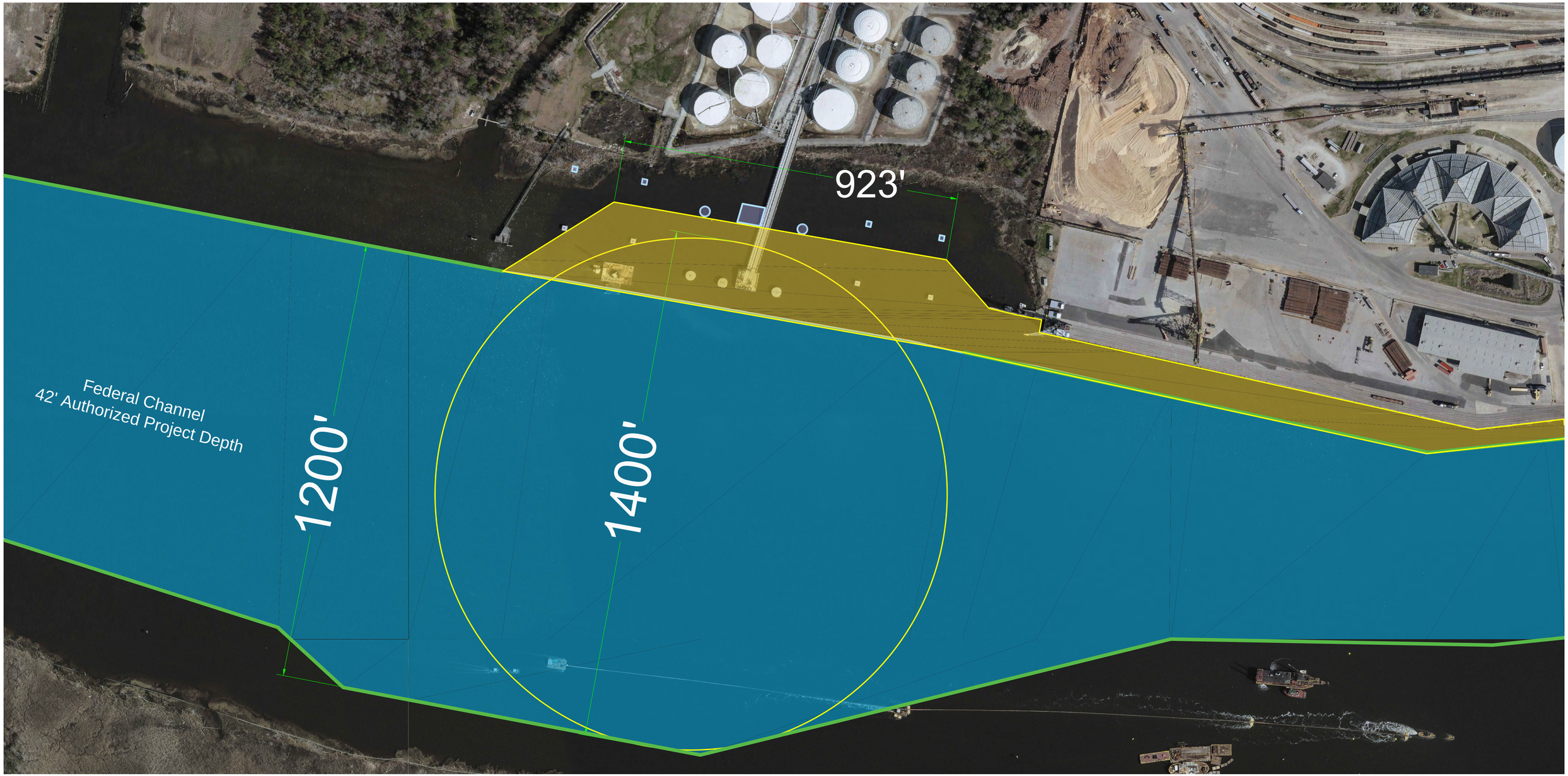
EXISTING TURNING BASIN

EAGLE ISLAND

DATE: DECEMBER 1, 2015
PREPARED BY : NCSPA

LIQUID BULK PIER RELOCATION
PROPOSED CONDITIONS

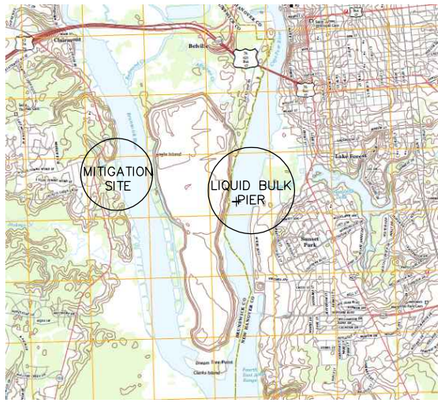



923'
Federal Channel
42' Authorized Project Depth
1200'
1400'

RELOCATION OF LIQUID BULK PIER

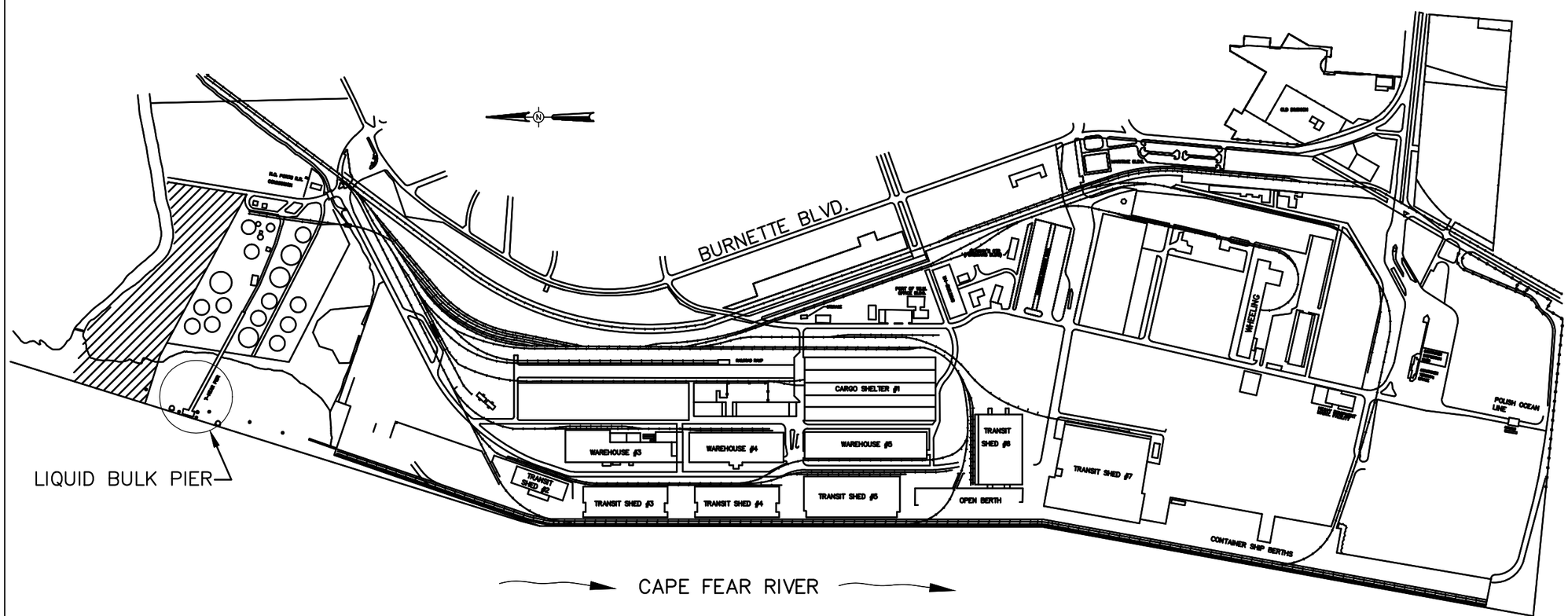
PORT OF WILMINGTON

NCSPA Contract No. XXXXXXX ID #XXXXXXXXXXX



VICINITY MAP

DRAWING INDEX



PROJECT LOCATION MAP

DEPARTMENT OF ENGINEERING

RELOCATION OF LIQUID BULK PIER
NCSPA Contract No. XXXXXXXX ID #XXXXXXXXXXX
PORT OF WILMINGTON

REV	DESCRIPTION	APP	DATE

SEAL

NORTH CAROLINA PORTS

PROJECT MANAGER XXX

PROJ. No.
DESN:
DRWN:
CHK:
DATE:
SCALE:

SHEET OF

FILE NO. PLOT DATE: SCALE:

0 100 200 Feet

DEPARTMENT OF ENGINEERING

RELOCATION OF LIQUID BULK PIER
NCSPA Contract No. XXXXXXXX ID #XXXXXXXXXXX
PORT OF WILMINGTON

REV	DESCRIPTION	APP	DATE

SEAL

NORTH CAROLINA PORTS

PROJECT MANAGER
XXX

PROJ. No.
DESN:
DRWN:
CHK:
DATE:
SCALE:

SHEET OF

FILE NO. PLOT DATE: SCALE:

REMOVE EXISTING
MOORING DOLPHINS

SHORELINE

REMOVE EXISTING LOADING PLATFORM
56' X 50'AREA
ELEV 10.00
(20) 24" SQ PILES

REMOVE EXISTING
BREASTING DOLPHINS

EXISTING APPROACH PIER & PIPE BRIDGE
EACH BENT (3) 24" SQ. PILES

CAPE FEAR RIVER
FLOOD
EBB

Ø1200.0'

CURRENT DREDGE LIMIT

REMOVE EXISTING
MOORING DOLPHINS

REMOVE EXISTING PIER

FEDERAL CHANNEL CENTERLINE

0 80 160
FEET

NOTE:
1. WILMINGTON HARBOR FEDERAL CHANNEL FOOTPRINT FROM U.S.A.C.E. WILMINGTON DISTRICT UPDATED ON: JULY 19, 2010.
2. SOUNDINGS ARE IN FEET BELOW MEAN LOW WATER (MLLW) FROM McKIM & CREED SURVEY, SEPTEMBER 04, 2015.
3. AERIAL IMAGE FROM NCONEMAP IMAGE SERVER.
4. NC GRID (NAD 83 2011).

EXISTING PLAN

SHORELINE

MOORING DOLPHINS
15' X 15' AREA
16 – 24" SQ PILES

LIMITS OF DREDGING

TOE OF DREDGING

24' DIAMETER
BREASTING DOLPHINS

DREDGE AREA
3.16 ACRES

CAPE FEAR RIVER
FLOOD
EBB

Ø1400.0'

200'

50.0'

CURRENT DREDGE LIMIT

PIPE BRIDGE EACH BENT
(3) 24" SQ. PILES

RELOCATED
LOADING PLATFORM
56' X 50' AREA
ELEV 10.00
20 – 24" SQ PILES

FEDERAL CHANNEL CENTERLINE

MOORING DOLPHINS

0 80 160
Feet

PROPOSED PLAN

DEPARTMENT OF ENGINEERING

RELOCATION OF LIQUID BULK PIER
NCSPA Contract No. XXXXXXXX ID #XXXXXXXXXXX
PORT OF WILMINGTON

REV	DESCRIPTION	APP	DATE

PROJECT MANAGER
XXX

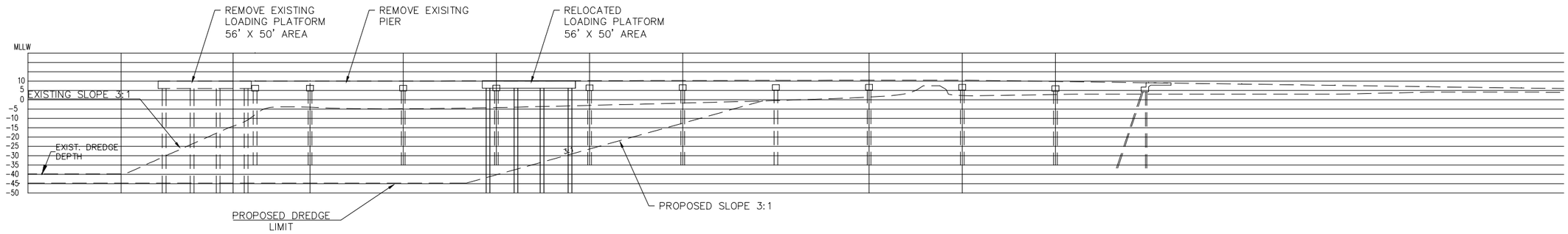
PROJ. No.
DESN:
DRWN:
CHK:
DATE:
SCALE:

SEAL

NORTH CAROLINA PORTS

SHEET OF

FILE NO. PLOT DATE: SCALE:



PROFILE

0 30 60 HORIZ FEET

0 30 60 VERT FEET

NOTE:
1. WILMINGTON HARBOR FEDERAL CHANNEL FOOTPRINT FROM U.S.A.C.E. WILMINGTON DISTRICT UPDATED ON: JULY 19, 2010.
2. SOUNDINGS ARE IN FEET BELOW MEAN LOW WATER (MLLW) FROM McKIM & CREED SURVEY, SEPTEMBER 04, 2015.
3. AERIAL IMAGE FROM NCONEMAP IMAGE SERVER.
4. NC GRID (NAD 83 2011).

DEPARTMENT OF ENGINEERING

RELOCATION OF LIQUID BULK PIER
NCSPA Contract No. XXXXXXXX ID #XXXXXXXXXXX
PORT OF WILMINGTON

REV	DESCRIPTION	APP	DATE

SEAL

NORTH CAROLINA PORTS

PROJECT MANAGER
XXX

PROJ. No.
DESN:
DRWN:
CHK:
DATE:
SCALE:

SHEET OF

FILE NO. PLOT DATE: SCALE:

MITIGATION LOCATION

DEPARTMENT OF ENGINEERING

RELOCATION OF LIQUID BULK PIER
NCSPA Contract No. XXXXXXXX ID #XXXXXXXXXXX
PORT OF WILMINGTON

REV	DESCRIPTION	APP	DATE

SEAL

NORTH CAROLINA PORTS

PROJECT MANAGER
XXX

PROJ. No.
DESN:
DRWN:
CHK:
DATE:
SCALE:

SHEET OF

FILE NO. PLOT DATE: SCALE:

VARIANCE PETITION of the NC STATE PORTS AUTHORITY
TURNING BASIN IMPROVEMENT PROJECT
PROJECT NARRATIVE
DECEMBER 2015

A project is nearing completion to enlarge locks in the Panama Canal to allow larger and wider ships to utilize the Canal. The Panama Canal is used by the four largest container shipping customers of the Port of Wilmington. The Port of Wilmington has been informed by these customers that the customers will move their business from the Port of Wilmington to other east coast ports unless the Port is able to accommodate the longer and wider ships ("New Panamax" class) that will soon be able to use the Panama Canal. The Port of Wilmington cannot currently accommodate New Panamax container vessels because the deep water turning basin needed by ships to have safe ingress to and egress from the Port is not wide enough.

The primary purpose and need of NC Ports at the Port of Wilmington is to expand the present turning basin from a 1,200-foot diameter to a 1,400 foot diameter to accommodate the New Panamax vessels that will be calling on the port in 2016. In order to meet this need, the liquid bulk terminal pier, loading platform and mooring dolphins will need to be relocated shoreward and approximately 6.4 acres of soft bottom estuarine habitat will need to be dredged to 42 feet +2 feet MLW. Construction of the entire Project is estimated to take 5 months. New Panamax vessels are expected to begin transiting the Panama Canal in 2016, and it is the objective of NC Ports to be prepared for these vessels by the month of May 2016.

The federally authorized channel depth of the Cape Fear River, 42 feet MLW, is acceptable for the New Panamax vessels that are expected to call at Port of Wilmington. In addition, the dock structures and the ship-to-shore cranes that exist at the Port are adequately sized to receive the larger vessels that will begin to deploy in 2016. Therefore, the existing diameter of the turning basin is the only impediment to receiving the vessels that will begin to deploy in 2016. The inability to service New Panamax vessels, by failing to widen the existing turning basin by approximately 200 feet, would likely have a severe economic impact on NC Ports and the State of North Carolina.

Prior to initiating any dredging in the Cape Fear River, the selected dredging contractor will install turbidity curtains around the proposed dredge area. While the berth is vacant, the selected dredging contractor will use a mechanical dredge to dredge the project area in stages. The selected dredging contractor will remove soil and sediments using either a barge-mounted crane equipped with an environmental bucket or a long reach excavator boom and bucket if rock is encountered. The dredged material will be loaded into watertight barges or scows and transported across the Cape Fear River where the selected dredging contractor will re-fluidize the sediments and hydraulically pump the dredged material to Eagle Island. The estimated quantity of sediments be dredged is 100,000 cubic yards, of which a majority is associated with dredging sediment from an existing elevation of -5 to -20 feet mean low water (MLW) to -44 feet MLW, with an average present depth of -20 feet MLW when including side-slopes.

Comment [NCDOJ1]: Revised from 300k to 100k

The liquid bulk pier, including the new loading platform, pipe trestle and dolphins, will be constructed while the existing pier remains in place and is operational. A boom will be placed

around the work area or areas. Temporary driving frames or templates, constructed of steel H or pipe piles and steel framed grid structure will be erected to facilitate placement of the breasting dolphin sheet piling and the bearing piles for the pipeway trestle, the loading platform and the mooring dolphins. The falsework frames/templates, as well as subsequent construction operations, will be erected using a spud or jackup barge mounted construction crane and timber float stages for personnel access. One or two supply barges will be used throughout all erection operations to deliver and store piles, precast concrete elements and other appearances. The temporary piles supporting the template will be installed using vibratory hammers; the grid frame will be set in place with a crane. Dockbuilders will make or burn steel and make member connections working from float stages or atop framing as erected.

Once falsework is completed, new precast-prestressed concrete piles will be driven using fixed leads and an impact hammer on the barge crane. Should predrilling for piles be required, it will be done through a casing and all materials will be collected, airlifted or pumped out of the casing and not discharged into the waterway. Once piles are complete, precast pile caps for the pipeway bridge and loading platform will be set onto the driven piles using the barge mounted crane. Preformed pockets in the pilecaps for connecting them to the piles will be concreted by pumping concrete from shore. Pumping hoses will be laid atop the existing vehicular trestle to discharge point. Once cured, precast concrete deck planks will be set atop the loading platform pile caps. A cast-in-place concrete topping will be pumped from shore to lock the entire deck together into a unit. A steel pipe frame will be erected onto the pipeway trestle pile caps and on the platform deck using the barge mounted crane or a cherry picker operating from the existing vehicular trestle. Product piping will then be installed in manner similar to the pipe frame.

Circular cofferdams sheet piling for the breasting dolphins will be driven using a vibratory hammer inside the template. When the cell is complete, unsuitable material within the cofferdams will be removed using an environmental clamshell bucket as for dredging. The cells will then be backfilled with clean sand fill and vibro-compacted. Mooring dolphin platform caps will be formed in place over the water and cast-in-place concrete will be poured by pumping from upland.

When all new works have been completed, product piping will be disconnected onshore at inboard end trestle and reconnected to the new facility piping. The existing dolphins, loading platform and outboard portion of the approach trestle will then be demolished including original product piping back to shore. Containment booms will be installed around all structures to be removed and structures demolished using the barge mounted crane and then loaded into barges or scows for recycling or disposal including:

- Loading platform and outboard part of vehicular trestle will be sawcut into manageable size pieces, the tops of piles cut, and then cut deck will be lifted off.
- Mooring dolphin cap will be removed after cutting off the tops of piles.
- Breasting dolphin bracing pile brackets will be unbolted and removed.
- Piles of Loading Platform, Dolphins and Outboard end of trestle will be extracted (to preclude any future hazards to navigation) and loaded for disposal in scow(s) or atop deck barge(s) surrounded with sediment barriers to preclude any adherent mud stuck to the pile from washing overboard into the waterway.

- The top 3'-6" +/- of the breasting dolphin cap will be cut off (down to top of fill inside), sawcut into pieces if needed, and lifted off.
- Existing fill within breasting dolphin will be excavated, using an environment bucket, down to proposed dredge line.
- Breasting dolphin top encasement will be vertically wire or sawcut into pieces around perimeter down to bottom of encasement at approximately 2 feet below MLLW. Cut portions will be extracted with sheet piles if possible. If not possible or practical, alternately the sheet piling may be burnt by divers just below encasement and the encased cut pieces lifted off individually. This will be followed by extraction of sheet piles. Sheet piles will be transported in a scow or a deck barge in similar manner as other piles.

Upon completion of all removals, any remaining mounds of sediment beneath removed structures will be dredged as described herein. The bottom will be inspected for any debris then the reconstructed facility will be commissioned.

In general, the potential effects on the water column and unvegetated mud bottoms will be spatially and temporally minimized through use of turbidity barriers around all dredging and pumping operations and by maximizing dredging during falling tides. There is no submerged aquatic vegetation, shellfish, or hardbottom habitat located within the proposed action area. In addition, NC Ports has proposed the following mitigation measures: (1) conveyance of a conservation easement over a 13.4-acre tract which possesses coastal marsh habitat on the Brunswick River and (2) the contribution of $750,000 to fund the planning, permitting, and design of a fish passage for Lock and Dam #2. The latter is offered on the condition that all permits and agency approvals can be completed in less than 90 days from the date of application. Other measures include the use of best management practices and good engineering practices.

DIVISION OF COASTAL MANAGEMENT
FIELD INVESTIGATION REPORT

1. **APPLICANT'S NAME**: North Carolina State Ports Authority (Relocation of Liquid Bulk Pier)

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 **2000:** 204-209: A-I, 1-5 **1995:** 14-150: A-I, 1-7
State Plane Coordinates - X: 2316123 **Y**: 169027 **GPS** – N/A
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** – 08/24/2015
Was Applicant Present – Yes (Todd Walton with NCSPA)

5. **PROCESSING PROCEDURE**: **Application Received** – 10/16/2015 (Completed)
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
   Water Dependent: Yes
   (D) **Intended Use**: Commercial/Industrial
   (E) **Wastewater Treatment: Existing**: Municipal
   Planned: None
   (F) **Type of Structures**:
   Existing – Liquid bulk pier, storage tanks, office buildings, roads and rail line
   Planned – Relocation of an existing liquid bulk pier 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
(A) Vegetated Wetlands		15 sq. ft.	
(B) Non-Vegetated Wetlands (Open water)	320,000 sq. ft.		5,063 sq. ft. (incorporated)
(C) Other – Highground (Spoil Island)		9,801,000 sq. ft.	

   (D) **Total Area Disturbed**: ~10,126,070 sq. ft. (~232 acres)
   (E) **Primary Nursery Area**: Yes
   (F) **Water Classification**: SC Open: No

8. **PROJECT SUMMARY**: The N.C. State Ports Authority proposes to allow for the relocation of an existing liquid bulk pier 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. 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.

Existing structures on the highground of this property consists of office buildings, gravel and asphalt roads, rail line, storage tanks and conveyors for bulk liquid storage. The bulk liquid is unloaded from ships at the existing "T-shaped" concrete docking and associated mooring dolphin and breasting cells (Liquid Bulk Pier). The applicant currently has authorization to maintain the shipping berth at this location in dimensions of 1000' in length by 50' in width to a final project depth of -44' @ mean lower low water (MLLW), which ties into the federal channel limits.

Based on an August 24, 2015 site visit, existing water depth at the waterward end of the existing concrete platform was approximately -30' @ normal low water (NLW) and approximately -10' @ NLW at the landward end of the existing platform. The existing water depth 50' landward of the existing platform off the existing pier was approximately -5 @ NLW.

Upland vegetation along the project site is maintained grasses. The approximately 800' of shoreline along the Cape Fear River is bordered by an area of wetlands consisting primarily of Smooth Cordgrass (*Spartina alterniflora*) and Common Reed (*Phragmites australis*) (**See Sheets 1 and 2 of 5 and Project Narratives**).

Permit History- The existing Liquid Bulk Pier facility was authorized through a Minor Modification to State Permit No. 47-87 on March 16, 1999. 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. State Permit No. 47-87 was last modified on November 20, 2003 and then renewed on January 6, 2006 for maintaining the Maintenance 5 Clause for dredging within the NCSPA existing shipping berths. State Permit No. 47-87 was due to expire on December 31, 2013; however, State Permit No. 47-87 was subject to extension by Session Law 2009-406, and as amended by Session Law 2010-177, the Permit Extension Act. State Permit No. 47-87 was last renewed on October 22, 2013.

A Major Modification to State Permit No. 47-87 was issued on August 4, 2014, which authorized the Enviva Wood Pellet Storage and Shipping Facility. Structures authorized to accommodate the unloading and storage of this project from train or truck, included a new truck/railcar load out building, a maintenance building, two (2) concrete dome storage units and various conveyor belts. The authorized structures would transfer the product to the existing berth area into marine bulk handling ships through a telescoping chute system. A Minor Modification to State Permit No. 47-87 was recently issued on March 19, 2015, which authorized a slight re-configuration of the unloading building and conveyor belt leading from the unloading building to the domes, a shift of the unloading building location in a lateral direction in relation to the Cape Fear River, a slight separation of the two domes and a slight shift in location of the domes (shifted approximately 30 feet east). State Permit No. 47-87 is due to expire on December 31, 2018.

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.

PROPOSED PROJECT

The N.C. State Ports Authority proposes to allow for the relocation of an existing liquid bulk pier and expansion of dredging limits to accommodate larger ships. The application states that approximately 200' of the existing concrete pier and platform would be removed and relocation of the associated mooring dolphins and breasting cells.

Once the existing structures are entirely removed, a new loading platform, measuring approximately 56' in length by 50' in width would be constructed from the remaining fixed pier, creating an "L-shaped" configuration. Three (3) 24' in diameter breasting dolphins would be installed at the same distance as the platform and four (4) 15' in length by 15' in width mooring dolphins would be installed along the edge of the shoreline. The applicant then proposes to excavate an area of approximately 1000' in length by 320' in width to a final project depth of -44' @ MLLW, which would result in the removal of approximately 300,000 cubic yards (CY) of shallow bottom material. The application states the excavation would be accomplished by either 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 US Army Corps of Engineers (USACE) Eagle Island Cell #1 designated spoil site. The dredge limits would taper from the waterward location of the new platform and associated breasting dolphins towards the shoreline at a 3:1 ratio. The application states the proposed excavation would increase the existing turning basin from 1,200' to 1,400' in length at this location of the Cape Fear River.

The applicant proposes mitigation for the unavoidable impacts to the PNA habitat, which includes the conveyance of a conservation easement of 13.4 acres of existing coastal marsh habitat on property owned by the NCSPA since 1965 located within the Brunswick River. The applicant also proposes a payment of $750,000 towards the planning, permitting and design of the Lock and Dam 2 Fish Passage on the Cape Fear River.
(See Sheets 1 through 5 of 5 and Project Narratives).

10. ANTICIPATED IMPACTS

The proposed excavation would disturb approximately 320,000 sq. ft. of shallow bottom area, which is currently designated as a PNA, and would result in the removal of approximately 300,000 CY of material. The material would be hydraulically pumped to the existing USACE Eagle Island Designated Disposal Cell #1, which has the current capacity of 225 acres with the ability to handle up to approximately 3.6 million CY of hydraulically pumped material. Further, the application states that once de-watered Cell #1 has the capacity to handle approximately 1.8 million CY of material per the direction of the USACE. It is anticipated that the entire approximately 9,801,000 sq. ft. (~225 acres) of highground would be impacted within the existing spoil island. The proposed new loading platform, breasting and mooring dolphins would incorporate approximately 5,063 sq. ft. of Estuarine Waters and Public Trust Areas, which is essentially currently usurped with the existing structures, aforementioned. The proposed mooring dolphins would also fill approximately 15 sq. ft. of wetlands which appears to primarily consist of Common Reed (*Phragmites australis*). The proposed mooring dolphin on the most northern portion of the shoreline appears to encroach and potentially extend beyond the northern riparian line; however, the application states that the NCSPA are in the process of obtaining a waiver from the adjacent property owner, Kinder Morgan, which would allow them to construct the proposed mooring dolphin with in their riparian area. This is being done via the CAMA permit application with the DCM waiver form that was provided to Kinder Morgan via certified mail. Minor increases in turbidity should be expected during construction.

WiRO

NC Environmental Quality

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

October 21, 2015

ER 15-2497

13-1232

A (See letter) NCH/HPO 11-4-15

MEMORANDUM:

TO: Renee Gledhill-Early
Dept. of Cultural Resources
Archives & History

FROM: Heather Coats, Assistant Major Permits Coordinator
NCDEQ – Division of Coastal Management
127 Cardinal Drive Ext., Wilmington, NC 28405 heather.coats@ncdenr.gov
Fax: 395-3964 ***(Courier 04-16-33)***

SUBJECT: CAMA Application Review

Due 11/9/15

Applicant: ***NC State Port Authority 47-87MM***

Project Location: *1 Shipyard Blvd., adjacent to the Cape Fear River, in Wilm., New Hanover Co.*

Proposed Project: *relocation of an existing docking facility and performing of new dredging*

Please indicate below your agency's position or viewpoint on the proposed project and ***return this form to Heather Coats*** at the address above by ***November 10, 2015.*** If you have any questions regarding the proposed project, contact Robb Mairs at (910)796-7423 when appropriate, in-depth comments with supporting data is requested.

REPLY:

____ This agency has no objection to the project as proposed.

____ This agency has no comment on the proposed project.

__Y__ This agency approves of the project only if the recommended changes are incorporated. See attached.

____ This agency objects to the project for reasons described in the attached comments.

SIGNED Renee Gledhill-Early **DATE** 11·12·15

W220

North Carolina Department of Natural and Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

November 13, 2015

MEMORANDUM

TO: Heather Coats
Major Permits Processing Section
Division of Coastal Management

FROM: Ramona M. Bartos RMB for Ramona M. Bartos

SUBJECT: NC State Port Authority, Relocation of Liquid Bulk Pier & Dredging, 1 Shipyard Boulevard, Wilmington, New Hanover County, ER 15-2497

We have reviewed the permit application for the removal of 200 feet of concrete dock and the excavation of 300,000 cubic yards of shallow bottom material on the State Ports Authority property in Wilmington. Although no recorded archaeological sites exist within the project footprint there is a possibility that the dredging will impact undiscovered watercraft remains beneath the sediment. Under normal circumstances an underwater remote sensing survey to look for historic archaeological remains would be recommended. In this case, due to the conditions on the site it is unlikely that a survey would produce useful results.

We therefore recommend that a condition be added to the permit informing the applicant and contractor to be vigilant during construction activities and if watercraft remains are uncovered that work be temporarily moved to another area and the NC Underwater Archaeology Branch immediately contacted.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Location: 109 East Jones Street, Raleigh NC 27601 **Mailing Address**: 4617 Mail Service Center, Raleigh NC 27699-4617 **Telephone/Fax**: (919) 807-6570/807-6599

WiRO

NC Environmental Quality

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

October 21, 2015

MEMORANDUM:

TO: Maria Dunn
NCWRC
For WiRO

FROM: Heather Coats, Assistant Major Permits Coordinator
NCDEQ – Division of Coastal Management
127 Cardinal Drive Ext., Wilmington, NC 28405 heather.coats@ncdenr.gov
Fax: 395-3964 ***(Courier 04-16-33)***

SUBJECT: CAMA Application Review

Applicant: ***NC State Port Authority 47-87MM***

Project Location: *1 Shipyard Blvd., adjacent to the Cape Fear River, in Wilm., New Hanover Co.*

Proposed Project: *relocation of an existing docking facility and performing of new dredging*

Please indicate below your agency's position or viewpoint on the proposed project and ***return this form to Heather Coats*** at the address above by ***November 10, 2015.*** If you have any questions regarding the proposed project, contact Robb Mairs at (910)796-7423 when appropriate, in-depth comments with supporting data is requested.

REPLY:

_____ This agency has no objection to the project as proposed.

_____ This agency has no comment on the proposed project.

__✓__ This agency approves of the project only if the recommended changes are incorporated. See attached.

_____ This agency objects to the project for reasons described in the attached comments.

SIGNED _____ **DATE** 6 November 2015

Nothing Compares℠

State of North Carolina | Environmental Quality
1601 Mail Service Center | Raleigh, North Carolina 27699-1601
919 - 707 - 8600

North Carolina Wildlife Resources Commission

Gordon Myers, Executive Director

MEMORANDUM

TO: Heather Coats
Division of Coastal Management
North Carolina Department of Environmental Quality

FROM: Maria T. Dunn, Coastal Coordinator
Habitat Conservation

DATE: November 6, 2015

SUBJECT: CAMA Dredge/Fill Permit Application for NC State Port Authority 47-87MM, New Hanover County, North Carolina.

Biologists with the North Carolina Wildlife Resources Commission (NCWRC) reviewed the permit application with regard to impacts on fish and wildlife resources. The project site is located at 1 Shipyard Blvd, adjacent the Cape Fear River in Wilmington, NC. Our comments are provided in accordance with provisions of the Coastal Area Management Act (G.S. 113A-100 through 113A-128), as amended, Sections 401 and 404 of the Clean Water Act, as amended, and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

The NC State Port Authority (NCSPA) proposes to relocate an existing docking facility and perform new dredging to accommodate larger ships. To increase the turning basin area, approximately 200' of an existing concrete pier and platform would be removed along with relocation of associated mooring dolphins and breasting cells. Once the structures are removed a new 56' by 50' loading platform would be constructed from an existing pier to create an "L-shaped" configuration. An area 1000' by 320' would be excavated to -44' MLLW, removing approximately 300,000 CY of material and impacting 320,000 ft^2 of shallow water habitat. The proposed dredge footprint would increase the turning basin from 1,200' to 1,400'. Adjacent, authorized dredge depths within the shipyard are -42' MLLW with a -2' overdredge. The application states excavated material would be placed within the US Army Corps of Engineers (USACE) Eagle Island Cell #1. The Cape Fear River at this location is classified SC by the Environmental Management Commission and is designated a primary nursery area (PNA) by the NC Division of Marine Fisheries. To mitigate for impacts to the PNA, the NCSPA proposes to convey a conservation easement on 13.4 acres of coastal marsh on NCSPA property adjacent the Brunswick River

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 707-0220 • **Fax:** (919) 707-0028

and contribute a payment of $750,000 toward the planning, permitting, and designing of the Lock and Dam 2 fish passage on the Cape Fear River.

The NCWRC has reviewed the permit application and understands the project as proposed will have an impact on marine PNA resources. In general we do not support projects that significantly impact PNA resources due to the importance of these areas to spawning adults, egg, larvae, and juvenile aquatic species. However, we understand the importance of the State Port and inability of the Port to serve the larger sized vessels that now use the expanded Panama Canal. Although we believe aquatic resources may be adversely affected, we would not object to the project moving forward through the appropriate permitting processes provided the proposed impacts and mitigation are acceptable to the state and federal marine resource agencies.

We appreciate the opportunity to review and comment on this permit application. If you need further assistance or additional information, please contact me at (252) 948-3916 or at maria.dunn@ncwildlife.org

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

November 24, 2015 F/SER47:FR/pw

(Sent via Electronic Mail)

Colonel Kevin P. Landers, Sr., Commander
U.S. Army Corps of Engineers Wilmington District
69 Darlington Avenue
Wilmington, North Carolina 28403-1398

Attention: Tyler Crumbley

Dear Colonel Landers:

NOAA's National Marine Fisheries Service (NMFS) reviewed the public notice for Action ID No. SAW-2015-02235 dated October 27, 2015. To accommodate larger ships, the North Carolina State Ports Authority (SPA) proposes to conduct new dredging to relocate the Liquid Bulk Pier and to widen the associated turning basin along the eastern side of the Cape Fear River, New Hanover County. Relocating the pier to the edge of the new turning basin includes reducing the length of the pier by 200 feet, constructing a new loading platform (56 feet in length by 50 feet in width) on the remaining pier, and installing three breasting dolphins and four mooring dolphins in line with the new platform and shoreline, respectively. The Wilmington District's initial determination is the proposed project may adversely affect essential fish habitat (EFH) or associated fisheries managed by South Atlantic Fishery Management Council (SAFMC), the Mid-Atlantic Fishery Management Council (MAFMC), or NMFS. The District bases this determination on the proposed dredging of approximately 6.4 acres of state-designated Primary Nursery Area (PNA)[1]. As the nation's federal trustee for the conservation and management of marine, estuarine, and diadromous fishery resources, the NMFS provides the following comments and recommendations pursuant to the authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

The proposed excavation to -44 feet MLLW (mean lower low water) with 3:1 side slopes would disturb approximately 6.4 acres of shallow bottom habitat, most of which is currently designated as PNA, and would result in the removal of approximately 100,000 cubic yards of material. The proposed mooring dolphins would fill 15 square feet of coastal wetlands, primarily *Phragmites australis*. The SAFMC identifies shallow sub-tidal bottom and coastal marsh in estuarine waters as EFH for brown shrimp, pink shrimp, white shrimp, and gray snapper. The SAFMC identifies these areas as EFH because fish and shrimp concentrate in these habitats for feeding and refuge and experience high growth and survival rates when located in these habitats. Some waters of the Cape Fear River, including the proposed project area, are designated as a PNA for species

[1] The applicant initially proposed approximately 300,000 cubic yards of dredging from 8.3 acres. The applicant later revised the proposal to approximately 100,000 cubic yards from 6.4 acres, according to emails from the Wilmington District and SPA dated November 17 and November 24, respectively. Excavated material would be transported to the Eagle Island spoil site.

managed by the State of North Carolina. This designation makes the location a Habitat Area of Particular Concern (HAPC) under the SAFMC fishery management plans for shrimp, snappers, and groupers. The SAFMC provides detailed information on the EFH requirements of species it manages in amendments to fishery management plans and *Fishery Ecosystem Plan of the South Atlantic Region*. The project area also provides EFH for juvenile bluefish and summer flounder, which the MAFMC manages. Details about the EFH requirements of species managed by the MAFMC are included in separate amendments to individual fishery management plans. Other species of commercial or recreational importance found in the project area include red drum, Atlantic croaker, spot, Atlantic menhaden, American shad, blueback herring, bay anchovy, striped mullet, weakfish, striped bass, southern flounder, and blue crab. A number of these species serve as prey for fish managed by the SAFMC (e.g., king mackerel, Spanish mackerel, and cobia) or for highly migratory fish managed by the NMFS (e.g., billfishes and sharks).

The EFH assessment prepared by SPA proposes the following conservation measures to minimize effects to EFH: 1) managing mechanical dredging to minimize discharge in the upper water column, 2) minimizing discharge of dredge material overboard from scows when adding water for hydraulic pumping to the spoil site, 3) dredging primarily during falling tides, 4) using turbidity barriers around the dredge and scows at all time while dredging, and 5) using precise navigation to ensure only authorized areas are dredged. The wetland fringe inshore of the turning basin could potentially be affected by dredge plumes. With placement of barriers around the dredging operation, significant accumulation of sediment within the fringing shallow marshes is unlikely. While the EFH assessment did not address the potential impacts to the fringing marsh sloughing into the excavated area, the revised project plans address this impact by limiting the scope of the dredging, particularly in the southern portion of the project area.

To mitigate the impacts to PNA, the SPA proposes to place 13.4 acres of land adjacent to the Brunswick River in a conservation easement. The majority of this property is coastal marsh also designated PNA. In addition, to mitigate these impacts, the SPA also will pay $750,000 towards planning, permitting, and design of a fish passage structure at Lock and Dam No. 2 on the Cape Fear River. One of the overarching goals of the Cape Fear River Partnership (NOAA is a member) is restoring access to historic migratory fish habitat in the upper Cape Fear River Basin. Combined with funds appropriated by the North Carolina State Legislature, the funds from the SPA will allow for completion of all services needed to develop the fish passage project into a "shovel-ready" project within two years. The NMFS finds the proposed mitigation measures acceptable for the loss of PNA at this site.

While the NMFS recognizes the care the SPA has taken to avoid affecting salt marsh habitat, some concern about marsh sloughing into the newly dredged area remains. As noted by the applicant, steeper side slopes appear infeasible base on sediment characteristics, and it appears the revised dimensions of the turning basin reflect the smallest basin practicable given the project purpose. The NMFS requests the permit require monitoring of the marsh vegetation edge three years after construction to determine if equilibration of the new side-slopes results in loss of vegetated marsh. If the monitoring shows loss of vegetated marsh, the NMFS requests a meeting with the Wilmington District and SPA to determine the need for compensatory mitigation.

Thank you for the opportunity to provide these comments. Please direct related questions or comments to the attention of Mr. Fritz Rohde at our Beaufort Field Office, 101 Pivers Island Road, Beaufort, North Carolina 28516-9722, or at (252) 838-0828.

Sincerely,

Pete Benjamin

/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc: COE, Tyler.Crumbley@usace.army.mil
USFWS, Pete_Benjamin@fws.gov
NCDCM, Doug.Huggett@ncmail.net, Gregg.Bodnar@ncdenr.gov
EPA, Bowers.Todd@epa.gov
SAFMC, Roger.Pugliese@safmc.net
F/SER3, Kay.Davy@noaa.gov
F/SER4, David.Dale@noaa.gov, Fritz.Rohde@noaa.gov

Environmental Quality

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

MEMORANDUM:

TO: Heather Coats, DCM Assistant Major Permit Coordinator

FROM: Gregg Bodnar, DCM Fisheries Resource Specialist

THROUGH: Doug Huggett, DCM Major Permit Coordinator

SUBJECT: NC State Port Authority 47-87MM

DATE: November 16, 2015

A North Carolina Division of Coastal Management (DCM) Fisheries Resource Specialist has reviewed the subject permit application for proposed actions that impact fish and fish habitats. The applicant proposes to relocate an existing docking facility and perform new dredging at the Port of Wilmington (POW). The waters are classified as Primary Nursery Area (PNA), Anadromous Fish Spawning Area (AFSA), Secondary Recreation (SC), and are closed to shellfish harvest.

PNA's are estuarine waters where initial post-larval development occurs. Species within this area are early post-larval to juvenile and include finfish, crabs, and shrimp. Species inhabit PNA's because they afford food, protection, and proper environmental conditions during vulnerable periods of their life history, thus protection of these areas are imperative.

Greater than 75% of recreationally and commercially important fisheries off of the southeastern Atlantic coast have an estuarine component (Fox 1992). Spawning for many of these species occurs in the fall to winter along the continental shelf, with larval ingress to nearshore habitats such as the surf zone and through inlets to the estuary (Miller 1998; Ortner et al. 1999). Dredging can cause the resuspension of sediment that will create an increase in turbidity, and resuspension of sediments and toxins (DMF 1999). Larvae and juveniles, especially filter feeding species; have a higher sensitivity to turbidity than adults (West et al. 1994). An increase in suspended sediments can result in clogged gill surfaces and mortality, and can cover oysters, SAV, and other sessile fauna and flora. In eutrophic systems an increase in nutrients through bottom disturbances can result in algal blooms and hypoxia (Corbett et al. 2004; DMF

1999; Paerl et al. 1998). To protect such sensitive areas, Coastal Resources Commission rules prohibit most new dredging in PNA.

In addition this portion of the Cape Fear River has been designated as AFSA. AFSA's have evidence of anadromous fish spawning through direct observation, capture of running ripe females, or indication of eggs or early larvae. Anadromous species within the Cape Fear River include American and hickory shad, striped bass, river herring, American eel and both Atlantic and shortnose sturgeon.

The area of PNA proposed for dredging is within the Kinder Morgan bulk offloading facility and the Port of Wilmington (POW) turning basin. The area receives large volumes of prop wash from tug boats as they maneuver container ships to the port and to the berthing area of the bulk offloading/docking facility immediately adjacent to the POW. The POW performs maintenance agitation dredging at the northern end of the facility, directly adjacent to the proposed site. The proposed dredge cut will create considerable sloughing and redistribution of the remaining shallow water sediment that will cause deepening and further loss of productivity. The applicant identifies a dredge cut of -42ft at mean low water (MLW). Discussions with the Army Corp of Engineers identified that the maintained channel that would be considered connecting waters is maintained at -38ft at MLW. The shallower depth of connecting waters (-38ft at MLW) is recommended to prevent creating a depression that could cause stagnate waters. Overall the area has been highly developed and routinely impacted by large vessels utilizing the POW as a hub for commerce in the state. Due to Coastal Resources Commission (CRC) rules relating to new dredging within PNA, there is a technical denial based on rule making.

The applicant does state the willingness to provide mitigation for the degradation of PNA habitat. There are concerns with mitigation for PNA loss because PNA is defined, partially, by the species that utilize the habitat, and characteristics of the habitat itself. Therefore PNA can vary in composition, and mitigation for each case can be subjective. Scale of mitigation examples include replacement of these characteristics to an area that no longer exhibits them or restoring access to areas that alteration has made inaccessible or reduced its productivity. It should also be noted that a mitigation option should never become the norm to validate the loss of PNA or other highly valued habitats.

The applicant proposes to place a 13.4 acre tract of land on the Brunswick River into a conservation easement and provide $750,000 to complete the placement of a fish passage at Lock and Dam #2 on the Cape Fear River. The fish passage mitigation, though not in-kind, does restore access to habitat that has been denied though alteration. It is recommended that additional discussions with interested agencies be initiated to discuss these options.

EFH and BA Document Concerns

- Throughout the EFH document the proposed impacted footprint ranges from 8.34, 8.43 and 8.53 acres. The official disturbed footprint acreage should be verified.
- In the mitigation section the applicant states river and tributary miles that will be restored with the creation of fish passages at Lock and Dams #2 and #3. The documents have no mention of the creation of a fish passage at Lock and Dam #3 as mitigation. If restoration efforts at Lock and Dam #3 are proposed, then it should be identified.
- Dredging effects are compared to the amount of soft bottom habitat affected within the Cape Fear River (0.02 percent). Since this is PNA habitat as well, it should be mentioned that the Cape Fear River has approximately 17,857 acres of PNA, resulting in approximately 0.048 percent of PNA habitat affected. The EFH document describes the dredging impacts as a very small area due to a short-term event. In fact this area will be significantly and permanently altered due to the proposed depth and maintenance activities. PNA habitat is characterized by shallow estuarine waters where depth limits potential predation. The excavation potentially alters this characteristic, thereby permanently degrading the habitat.

In summary the proposed activities has the potential to permanently alter the shallow PNA habitat into a maintained deep water soft bottom, degrading the PNA habitat. The applicant sites the need to widen the turning basin to accommodate larger vessels that will increase the POW's accessibility and maintain the POW as a hub of state commerce. Due to CRC rules this results in a technical denial. The area's functionality is impaired due to surrounding development, impacts by prop wash from maneuvering vessels, maintenance agitation dredging adjacent to the location and the offloading of bulk transports. Mitigation is proposed, though this option should never become the norm to validate the loss of PNA or other highly valued habitats.

Should a permit be authorized, DCM recommends an AFSA moratorium on in water work, to include dredging, from 1 February to 30 June, **to include an observer posted during dredging operations as described in the applicant's EFH document**. This moratorium reduces the negative effects on critical fish life history activities, to include spawning migrations and nursery functions. Due to the potential for both species of sturgeon to inhabit the local area, this moratorium is recommended. In addition, the best management/good engineering practices described in both the EFH and BA documents, to include those that reduce turbidity, should be conditioned.

Contact Gregg Bodnar at (252) 808-2808 ext. 213 or gregg.bodnar@ncdenr.gov with further questions or concerns.

Corbett, D. R., T. West, L. Clough, and H. Daniels. 2004. Potential impacts of bottom trawling on water column productivity and sediment transport processes. NC SeaGrant, Raleigh, NC, NC SeaGrant Project No. 01-EP-04, 57p.

DMF (North Carolina Division of Marine Fisheries). 1999. Shrimp and crab trawling in North Carolina's estuarine waters. DENR, Morehead City, NC, Report to NC Marine Fisheries Commission, 121p.

Fox, W.W. 1992. Stemming the tide: challenges for conserving the nation's coastal fish habitats. Pages 9-12 in R.H. Stroud, editor. Stemming the tide of coastal fish habitat loss. National Coalition for Marine Conservation, Savanah, Georgia.

Miller, J.M. 1998. Physical processes and the mechanisms of coastal migrations of immature marine fishes. Pages 68-76 in M.P. Weinstein, editor. Larval fish and shellfish transport through inlets. American Fisheries Society, Symposium 3, Bethesda, Maryland.

Ortner, P.B.; L. Crowder, D. Hoss. 1999. The South Atlantic Bight recruitment experiment: introduction and overview. Fisheries Oceanography 8: 1-6.

Paerl, H. W., J. Pinckney, J. Fear, and B. Peierls. 1998. Ecosystem response to internal watershed organic matter loading: Consequences for hypoxia in the eutrophying Neuse River Estuary, North Carolina. Marine Ecological Progress Series 166: 17-25.

NC Ports / NH

AFFIDAVIT OF PUBLICATION

STATE OF NORTH CAROLINA
COUNTY OF NEW HANOVER

NOTICE OF FILING OF APPLICATION FOR CAMA MAJOR DEVELOPMENT PERMIT
The Department of Environment and Natural Resources hereby gives public notice as required by NCGS 113A-119(b) that the following application was submitted for a development permit in an Area of Environmental Concern as designated under the CAMA. According to said application, On October 16, 2015, the NC State Ports Authority proposed to relocate an existing docking facility and new dredging at 1 Shipyard Blvd., adjacent to the Cape Fear River, in Wilmington, New Hanover County; A copy of the application may be examined or copied at the office of Robb Mairs, N.C. Dept. of Environment & Natural Resources, Div. of Coastal Management, 127 Cardinal Drive Ext., Wilmington, North Carolina 28405, (910-796-7423) during normal business hours.
Comments mailed to Braxton C. Davis, Director, Division of Coastal Management, 400 Commerce Avenue, Morehead City, NC 28557-3421, prior to November 10, 2015 will be considered in making the permit decision. Later comments will be accepted and considered up to the time of permit decision. Project modification may occur based on review and comment by the public and state and federal agencies. Notice of the permit decision in these matters will be provided upon written request.

Before the undersigned, a Notary Public of Said County and State,

Jarimy Springer

Who, being duly sworn or affirmed, according to the law, says that he/she is

Accounting Specialist

of THE STAR-NEWS, a corporation organized and doing business under the Laws of the State of North Carolina, and publishing a newspaper known as STAR-NEWS in the City of Wilmington

NOTICE OF FILING OF APPLICATION FOR CAMA MAJOR DEVELOPMENT PERMIT
The Department of Environment and Natural Resources hereby gives public notice as required by NCGS 113A-119b that the following application was submitted for a development permit in an Area

was inserted in the aforesaid newspaper in space, and on dates as follows:

10/21 1x

And at the time of such publication Star-News was a newspaper meeting all the requirements and qualifications prescribed by Sec. No. 1-597 G.S. of N.C.

Jarimy Springer Title: **Accounting Specialist**

Sworn or affirmed to, and subscribed before me this 27th day of October, A.D., 2015

In Testimony Whereof, I have hereunto set my hand and affixed my official seal, the day and year aforesaid.

Elsa E. Lawrence
Notary Public

ELSA E. LAWRENCE NOTARY PUBLIC BRUNSWICK CO., NC

My commission expires 14th day of Aug, 2016

Upon reading the aforegoing affidavit with the advertisement thereto annexed it is adjudged by the Court that the said publication was duly and properly made and that the summons has been duly and legally served on the defendant(s).

This _____ day of _____, ____

_____
Clerk of Superior Court

MAIL TO:

RECEIVED
DCM WILMINGTON, NC
NOV 02 2015

North Carolina Department of Environmental Quality

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

October 19, 2015

Advertising@starnewsonline.com
2 Pages

Star News
Legal Advertisement Section
Post Office Box 840
Wilmington, North Carolina 28402

Re: ***NC State Ports Authority*** Major Public Notice

Kyle & Heather: Please publish the attached Notice in the ***Wednesday, October 21, 2015*** issue.

The State Office of Budget & Management requires an original Affidavit of Publication prior to payment for newspaper advertising.

Please send the original affidavit and invoice for payment to Shaun Simpson at the NC Divison of Coastal Management, 127 Cardinal Drive Extension, Wilmington, NC 28405, 910-796-7226. Paying by Credit Card (number on file with Elsa Lawrence, Ref acct # 796-7215). Please send a copy of the credit card receipt to me.

Thank you for your assistance in this matter. If you should have any questions, please contact me at our Wilmington office.

Sincerely,

DW for

Shaun K. Simpson
Permit & Customer Support
Division of Coastal Management

cc: Doug Huggett MHC DCM
Heather Coats - WIRO DCM
Tyler Crumbley – USACE
Michele Walker- DCM

Wilson, Debra

From: Advertising, Starnews <advertising@starnewsonline.com>
Sent: Monday, October 19, 2015 10:05 AM
To: Wilson, Debra
Subject: Re: NC State Ports 10-19-15x

Good morning,

Legal notice is set and released to run as requested this Wed. Oct. 21; pub cost is $134.94.

thanks!
Kyle

On Mon, Oct 19, 2015 at 9:59 AM, Wilson, Debra <debra.wilson@ncdenr.gov> wrote:

> Kyle & Heather: Please publish the attached Notice in the ***Wednesday, October 21, 2015*** issue.
>
> Please call me if you have any questions.

Debbie Wilson, District Manager
NC Division of Coastal Management
127 Cardinal Drive Ext.
Wilmington, NC 28405
(910) 796-7266 Fax: (910) 395-3964 debra.wilson@ncdenr.gov

--
Advertising Department
StarNews Media
1003 S. 17th St. Wilmington, NC 28401
P: (910) 343-2342
F: (910) 343-2346

NOTICE

CAMA PERMIT APPLIED FOR

PROJECT: ***Applicant proposes to relocate an existing docking facility and perform new dredging at 1 Shipyard Blvd., adjacent to the Cape Fear River, in Wilmington, New Hanover County.***

COMMENTS ACCEPTED THROUGH ***November 10, 2015***

APPLICANT:

NC State Port Authority
PO Box 9002
Wilmington, NC 28402

Agent: Todd Walton (910)251-5678

FOR MORE DETAILS CONTACT
THE LOCAL PERMIT OFFICER BELOW:

NC Div. of Coastal Management
127 Cardinal Dr. Extension
Wilmington, NC 28405
Robb Mairs, Field Representative
910-796-7423

KINDER MORGAN
TERMINALS

November 15, 2015

Robb Mairs
Coastal Management Field Representative
127 Cardinal Drive Extension
Wilmington, NC 28405-3845
910-796-7215

Re: North Carolina State Ports Authority Notification of CAMA Permit, Major Permit Application

Dear Mr. Mairs,

Kinder Morgan confirms receipt of the permit package for the modification to our Dock at our Woodbine Street Terminal. As adjacent property owner we object to this permit application at this time as we require more details and time to evaluate the impact of this request to Kinder Morgan.

Sincerely,

p.p. Andrea White – Contract administrator for

Thomas Lowndes
Commercial Director

FedEx Express **US Airbill**

FedEx Tracking Number 8754 1222 2266

Form ID No. 0215

MUR31

Recipient's Copy

1 From This portion can be removed for Recipient's records.

Date 11-16-15 FedEx Tracking Number 875412222266

Sender's Name Andrea White Phone 843 853-0453

Company KINDER MORGAN SRT SOUTH

Address 1500 GREENLEAF RD

Dept./Floor/Suite/Room

City NORTH CHARLESTO State SC ZIP 29405-9308

2 Your Internal Billing Reference

3 To

Recipient's Name Robb Mains Phone 910 746-7215

Company NC Port Authority

Address 127 Cardinal Drive Extension

We cannot deliver to P.O. boxes or P.O. ZIP codes.

HOLD Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

HOLD Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

City Wilmington State NC ZIP 28405-7215

0435440347

8754 1222 2266

4a Express Package Service * To most locations. ***Packages up to 150 lbs.***

- [x] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.*
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

RECEIVED
DCM WILMINGTON, NC
NOV 17 2015

4b Express Freight Service ** To most locations. ***Packages over 150 lbs.***

- [ ] FedEx 1Day Freight — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

FedEx 1Day Freight Booking No.

- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

- [x] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak and FedEx Large Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [ ] Other

6 Special Handling and Delivery Signature Options

- [ ] SATURDAY Delivery — **NOT available for** FedEx Standard Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [x] Direct Signature — Someone at recipient's address may sign for delivery. ***Fee applies.***
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. ***Fee applies.***

Does this shipment contain dangerous goods?

One box must be checked.

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

7 Payment ***Bill to:***

Enter FedEx Acct. No. or Credit Card No. below.

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- [ ] Obtain recip. Acct. No.

[redacted]

Total Packages ____ Total Weight ____ lbs. Credit Card Auth. ____

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

605

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fedex.com 1.800.GoFedEx 1.800.463.3339

ADJACENT RIPARIAN PROPERTY OWNER STATEMENT

I hereby certify that I own property adjacent to NORTH CAROLINA STATE PORT AUTHORITY's
(Name of Property Owner)

property located at 1 Shipyard Blvd Wilmington NC 28401
(Address, Lot, Block, Road, etc.)

on CAPE FEAR River, in Wilmington - New Hanover Co., N.C.
(Waterbody) (City/Town and/or County)

The applicant has described to me, as shown below, the development proposed at the above location.

_____ I have no objection to this proposal.

X I have objections to this proposal.

DESCRIPTION AND/OR DRAWING OF PROPOSED DEVELOPMENT

(Individual proposing development must fill in description below or attach a site drawing)

WAIVER SECTION

I understand that a pier, dock, mooring pilings, boat ramp, breakwater, boathouse, lift, or groin must be set back a minimum distance of 15' from my area of riparian access unless waived by me. (If you wish to waive the setback, you **must initial** the appropriate blank below.)

_____ I do wish to waive the 15' setback requirement.

CMJ I **do not** wish to waive the 15' setback requirement.

(Property Owner Information)

Todd Walton
Signature

Todd Walton
Print or Type Name

PO Box. 9002
Mailing Address

Wilmington NC 28401
City/State/Zip

910. 251. 5678 Todd.waclton@ncports.com
Telephone Number / email address

16 October 2015
Date

(Adjacent Property Owner Information)

Arthur Rudolph
*Signature**

ARTHUR RUDOLPH
Print or Type Name

1500 GREENLEAF STREET
Mailing Address

CHARLESTON, S.C. 29405
City/State/Zip

843-853-0453
Telephone Number / email address

13 NOVEMBER 2015
*Date**

(Revised Aug. 2014)

Valid for one calendar year after signature

CERTIFIED MAIL · RETURN RECEIPT REQUESTED

DIVISION OF COASTAL MANAGEMENT
ADJACENT RIPARIAN PROPERTY OWNER NOTIFICATION/WAIVER FORM

Name of Property Owner: Kinder Morgan

Address of Property: 1710 Woodbine St Wilmington NC 28401
(Lot or Street #, Street or Road, City & County)

Agent's Name #: _____ Mailing Address: 1710 Woodbine st

Agent's phone #: _____ Wilmington, NC 28401

I hereby certify that I own property adjacent to the above referenced property. The individual applying for this permit has described to me as shown on the attached drawing the development they are proposing. A description or drawing, with dimensions, must be provided with this letter.

_____ I have no objections to this proposal. X I have objections to this proposal.

If you have objections to what is being proposed, you must notify the Division of Coastal Management (DCM) in writing within 30 days of receipt of this notice. Correspondence should be mailed to 127 Cardinal Drive Ext., Wilmington, NC, 28405-3845. DCM representatives can also be contacted at (910) 796-7215. No response is considered the same as no objection if you have been notified by Certified Mail.

(Property Owner Information)

Todd Walt
Signature

Todd Walton
Print or Type Name

P.O. Box 9002
Mailing Address

Wilmington, NC 28402
City/State/Zip

910-251-5678
Telephone Number

16 OCTOBER 2015
Date

(Adjacent Property Owner Information)

Signature

ARTHUR RUDOLPH
Print or Type Name

1500 GREENLEAF STREET
Mailing Address

CHARLESTON, S.C. 29405
City/State/Zip

843-853-0453
Telephone Number

13 NOVEMBER 2015
Date

Revised 6/18/2012

RECEIVED
DCM WILMINGTON, NC
NOV 17 2015

Huggett, Doug

From: Huggett, Doug
Sent: Tuesday, December 01, 2015 8:33 AM
To: 'Rudolph, Arthur'
Subject: RE: Withdrawal of Objection in Wilmington NC
Attachments: ncspa denial letter.pdf

Mr. Rudolph,

Thank you for your additional comments on this project. Additionally, I have attached a copy of the denial for the project that was signed yesterday. My understanding is that the State Port Authority will be pursuing a variance from the Coastal Resources Commission to allow this project to move forward.

If I may answer any additional questions on this or any other matter, please don't hesitate to let me know.

Sincerely,

Doug Huggett

Doug Huggett
Manager, Major Permits and Federal Consistency Section
North Carolina Division of Coastal Management
doug.huggett@ncdenr.gov
(252) 808-2808 ext. 212

From: Rudolph, Arthur [mailto:Arthur_Rudolph@kindermorgan.com]
Sent: Monday, November 30, 2015 2:33 PM
To: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>; Huggett, Doug <doug.huggett@ncdenr.gov>
Cc: Miles, Jeff <Jeff.Miles@ncports.com>; Cozza, Paul J <Paul.Cozza@ncports.com>; Lowndes, Thomas <Thomas_Lowndes@kindermorgan.com>
Subject: Withdrawal of Objection in Wilmington NC

Mr. Davis,

Kinder Morgan has received clarification of the project from the Port of North Carolina that has satisfied our concerns.
We officially withdrawal our objection to their project.

Regards,

Arthur Rudolph

Mark Blake, P.E.
Director of Engineering and Maintenance

October 16, 2015

Certified Mail
7015152000306562247
Return Receipt Requested

John Joyner
Terminal Manager
Apex Oil Company
P.O. Box 3127
Wilmington, NC 28406

Re: North Carolina State Ports Authority
Notification of CAMA Permit, Major Permit Application

Dear Mr. Joyner:

The North Carolina State Ports Authority (NCSPA) currently maintains a Coastal Area Management Act (CAMA) Permit (Permit ID No. #47-87). The NCSPA is proposing to reduce the length of the existing T-Head pier at Kinder Morgan by 200 feet, and relocate all associated mooring dolphins and breasting cells. The NCSPA will also be dredging the area to 42'+2' to accommodate larger vessels at the facility. This also will expand the turning basin from the current 1200' to approximately 1400', allowing all terminals in the River to accept longer and larger vessels at their terminals.

In accordance with the Division of Coastal Management CAMA permitting process, we are providing attached, a complete copy of the CAMA Permit Application, including all associated work plats for the proposed project. As an adjacent landowner of the NCSPA, you have 30 days from receipt of this notice in which to submit comments on the proposed project to the Division of Coastal Management. Any comments or concerns you may have relating to the proposed project can be submitted to the NCDENR Division of Coastal Management at the following address:

Robb Mairs, Coastal Management Field Representative
NCDENR, Division of Coastal Management
127 Cardinal Drive Extension
Wilmington, NC 28405-3845
910-796-7215

Please note that we have also included an "Adjacent Riparian Property Owner Notification/Waiver Form" for your convenience in the event you wish to submit comments relating to this project.

NORTH CAROLINA PORTS

Mark Blake, P.E.
Director of Engineering and Maintenance

If you have any questions or require additional information, please contact me at 910-251-5678.

Sincerely,

Todd Walton
Sr. Environmental Analyst
NCSPA

7015 1520 0003 0656 2247

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WILMINGTON NC 28406

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☐ Adult Signature Restricted Delivery	$ N/A
Postage	$3.34
Total Postage and Fees	$9.59

0402
05 Postmark Here
10/19/2015

Sent To: John Joyner Apex Oil
Street and Apt. No., or PO Box No.: PO Box 3127
City, State, ZIP+4®: Wilm NC 28406

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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- Complete items 1, 2, and 3.
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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

John Joyner
Terminal Mgr
Apex Oil Company
PO Box 3127
Wilmington NC 28406

9590 9403 0288 5155 1590 02

7015 1520 0003 0656 2247

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☑ Agent ☐ Addressee

B. Received by (Printed Name): Jamie Mealy
C. Date of Delivery: 10/23/15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

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☐ Collect on Delivery Restricted Delivery	☐ Signature Confirmation Restricted Delivery
☐ Insured Mail	
☐ Insured Mail Restricted Delivery (over $500)	

PS Form 3811, April 2015 PSN 7530-02-000-9053 Domestic Return Receipt

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DCM WILMINGTON, NC
NOV 12 2015

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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

John Joyner
Terminal Mgr
Apex oil Company
PO Box 3127
Wilmington NC 28406

9590 9403 0288 5155 1590 02

2. 7015 1520 0003 0656 2247

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
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☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☒ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, April 2015 PSN 7530-02-000-9053 Domestic Return Receipt

RECEIVED
DCM WILMINGTON, NC
OCT 1 6 2015

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

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☐ Adult Signature Restricted Delivery $

Postage
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Total Postage and Fees
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Postmark Here

Sent To John Joyner Apex oil

Street and Apt. No., or PO Box No. PO Box 3127

City, State, ZIP+4® Wilm NC 28406

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

NWO

ADJACENT RIPARIAN PROPERTY OWNER STATEMENT

I hereby certify that I own property adjacent to NORTH CAROLINA STATE PORT AUTHORITY's
(Name of Property Owner)
property located at 1 Shipyard BLVD Wilmington NC 28401
(Address, Lot, Block, Road, etc.)
on CAPE FEAR River, in Wilmington - NEW HANOVER Co., N.C.
(Waterbody) (City/Town and/or County)

The applicant has described to me, as shown below, the development proposed at the above location.

__1__ I have no objection to this proposal.

_____ I have objections to this proposal.

DESCRIPTION AND/OR DRAWING OF PROPOSED DEVELOPMENT

(Individual proposing development must fill in description below or attach a site drawing)

WAIVER SECTION

I understand that a pier, dock, mooring pilings, boat ramp, breakwater, boathouse, lift, or groin must be set back a minimum distance of 15' from my area of riparian access unless waived by me. (If you wish to waive the setback, you **must initial** the appropriate blank below.)

_____ I do wish to waive the 15' setback requirement.

_____ I **do not** wish to waive the 15' setback requirement.

(Property Owner Information)	(Adjacent Property Owner Information)
Todd Walton	
Signature	*Signature**
Todd Walton	Jamie Mealy
Print or Type Name	*Print or Type Name*
PO Box. 9002	P.O. Box 3127
Mailing Address	*Mailing Address*
Wilmington NC 28401	Wilmington, NC 28406
City/State/Zip	*City/State/Zip*
910.251.5678 Todd.Walton@NCports.com	910-799-0030 JMWINC@BELLSOUTH.NET
Telephone Number / email address	*Telephone Number / email address*
16 October 2015	12 November 2015
Date	*Date**

(Revised Aug. 2014)

Valid for one calendar year after signature

WMO

CERTIFIED MAIL · RETURN RECEIPT REQUESTED

DIVISION OF COASTAL MANAGEMENT
ADJACENT RIPARIAN PROPERTY OWNER NOTIFICATION/WAIVER FORM

Name of Property Owner: Apex Oil Company

Address of Property: 3314 River Road, Wilmington, NC 28412
(Lot or Street #, Street or Road, City & County)

Agent's Name #: ~~John Joyner~~ Jamie Mealy Mailing Address: P.O. Box 3127

Agent's phone #: 910-799-0030 Wilmington, NC 28406

I hereby certify that I own property adjacent to the above referenced property. The individual applying for this permit has described to me as shown on the attached drawing the development they are proposing. A description or drawing, with dimensions, must be provided with this letter.

✓ I have no objections to this proposal. _____ I have objections to this proposal.

If you have objections to what is being proposed, you must notify the Division of Coastal Management (DCM) in writing within 30 days of receipt of this notice. Correspondence should be mailed to 127 Cardinal Drive Ext., Wilmington, NC, 28405-3845. DCM representatives can also be contacted at (910) 796-7215. No response is considered the same as no objection if you have been notified by Certified Mail.

(Property Owner Information)

Todd Walton
Signature

Todd Walton
Print or Type Name

P.O. Box 9002
Mailing Address

Wilmington, NC 28402
City/State/Zip

910-251-5678
Telephone Number

16 OCTOBER 2015
Date

(Adjacent Property Owner Information)

Signature

Jamie Mealy
Print or Type Name

P.O. Box 3127
Mailing Address

Wilmington, NC 28406
City/State/Zip

910-799-0030
Telephone Number

12 NOVEMBER 2015
Date

Revised 6/18/2012

NORTH CAROLINA PORTS

Mark Blake, P.E.
Director of Engineering and Maintenance

October 16, 2015

Certified Mail
7015152000306562230
Return Receipt Requested

Troy Sturtz
Terminal Manager
Kinder Morgan
1710 Woodbine St
Wilmington, NC 28401

Re: North Carolina State Ports Authority
Notification of CAMA Permit, Major Permit Application

Dear Mr. Sturtz:

The North Carolina State Ports Authority (NCSPA) currently maintains a Coastal Area Management Act (CAMA) Permit (Permit ID No. #47-87). The NCSPA is proposing to reduce the length of the existing T-Head pier at Kinder Morgan by 200 feet, and relocate all associated mooring dolphins and breasting cells. The NCSPA will also be dredging the area to 42'+2' to accommodate larger vessels at the facility. This also will expand the turning basin from the current 1200' to approximately 1400', allowing all terminals in the River to accept longer and larger vessels at their terminals.

In accordance with the Division of Coastal Management CAMA permitting process, we are providing attached, a complete copy of the CAMA Permit Application, including all associated work plats for the proposed project. As an adjacent landowner of the NCSPA, you have 30 days from receipt of this notice in which to submit comments on the proposed project to the Division of Coastal Management. Any comments or concerns you may have relating to the proposed project can be submitted to the NCDENR Division of Coastal Management at the following address:

Robb Mairs, Coastal Management Field Representative
NCDENR, Division of Coastal Management
127 Cardinal Drive Extension
Wilmington, NC 28405-3845
910-796-7215

Please note that we have also included an "Adjacent Riparian Property Owner Notification/Waiver Form" for your convenience in the event you wish to submit comments relating to this project.

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Troy STURTZ
TERMINAL Mgr
Kinder Morgan
1710 WOODBINE ST
Wilmington NC 28401

9590 9403 0288 5155 1589 99

7015 1520 0003 0656 2230

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☑ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, April 2015 PSN 7530-02-000-9053 Domestic Return Receipt

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS FOLD AT DOTTED LINE

CERTIFIED MAIL

7015 1520 0003 0656 2230

7015 1520 0003 0656 2230

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total Postage and Fees
$

Postmark Here

Sent To
TROY STURTZ - Kinder Morgan
Street and Apt. No., or PO Box No.
1710 WOODBINE ST
City, State, ZIP+4®
Wilm NC 28401

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

RECEIVED
DCM WILMINGTON, NC
OCT 16 2015

Mairs, Robb L

From: walton, todd
Sent: Tuesday, October 20, 2015 11:40 AM
To: Mairs, Robb L
Cc: Blake, Mark
Subject: adjacent property encroachment

Robb,

We are in the process of obtaining a waiver from the adjacent property owner, Kinder Morgan, that will allow us to construct our mooring dolphin with in their riparian area. This is being done via the CAMA permit application with the DCM waiver form that was provided to Kinder Morgan via certified mail.

Thanks,

Todd C. Walton
Senior Environmental Analyst
NC State Ports Authority
910-251-5678

Huggett, Doug

From: walton, todd
Sent: Tuesday, November 17, 2015 12:05 PM
To: Mairs, Robb L; Coats, Heather
Cc: Huggett, Doug; Blake, Mark; Hoyle, Dennis; NCDOT-Slusser, Scott
Subject: dolphin removal
Attachments: dolphin removal to cama.pdf

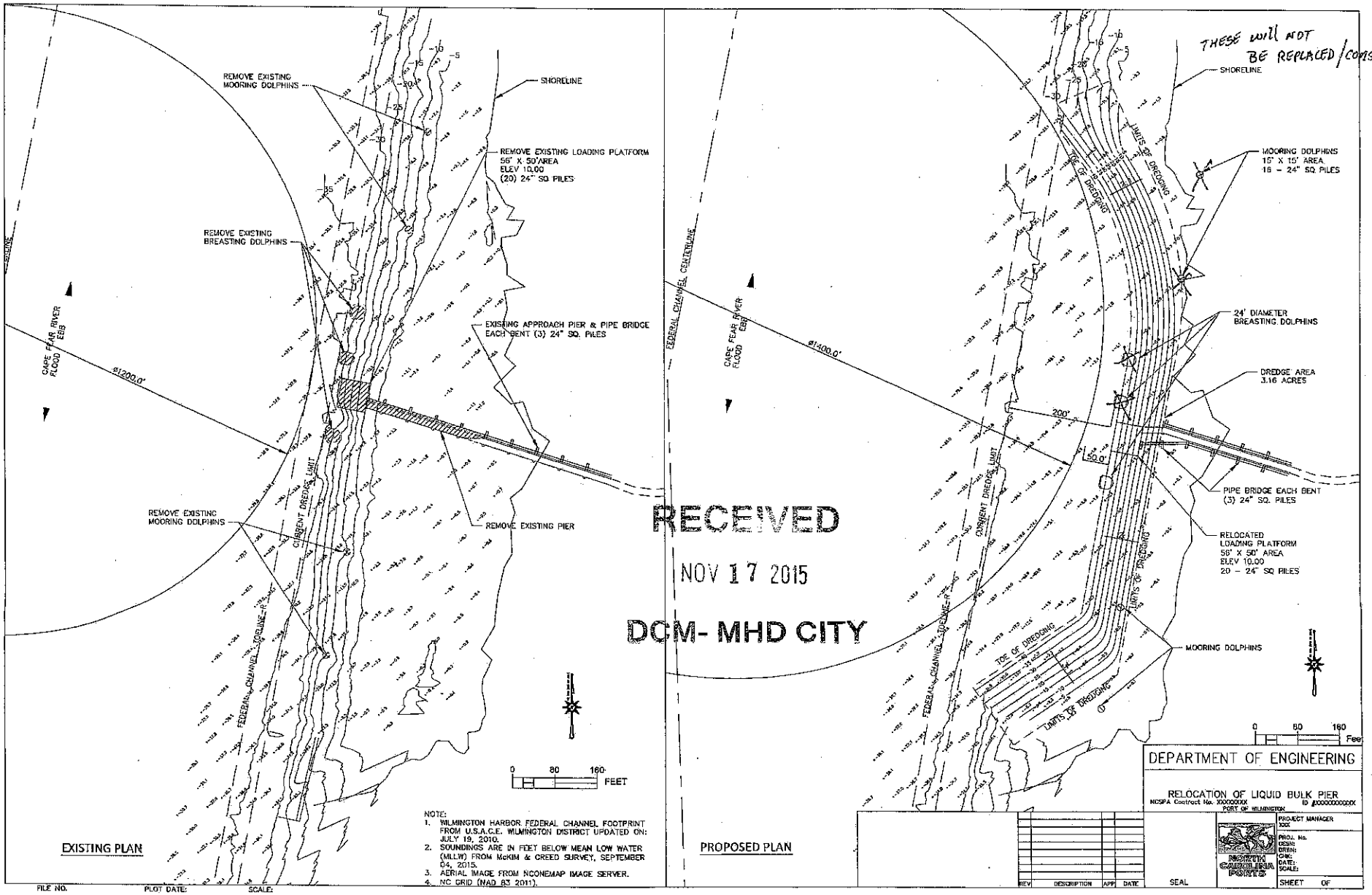
Robb and Heather,

Attached are drawing that show the 2 northern mooring dolphins that are across the Kinder Morgan Riparian line. As discussed, we had originally planned to reconstruct and move these landward, however, once the current ones are removed we will not reconstruct and will no longer be across or near Kinder Morgan's riparian area.

We have yet to receive the waiver form from Kinder Morgan for the original submittal.

Thanks,

Todd C. Walton
Senior Environmental Analyst
NC State Ports Authority
910-251-5678

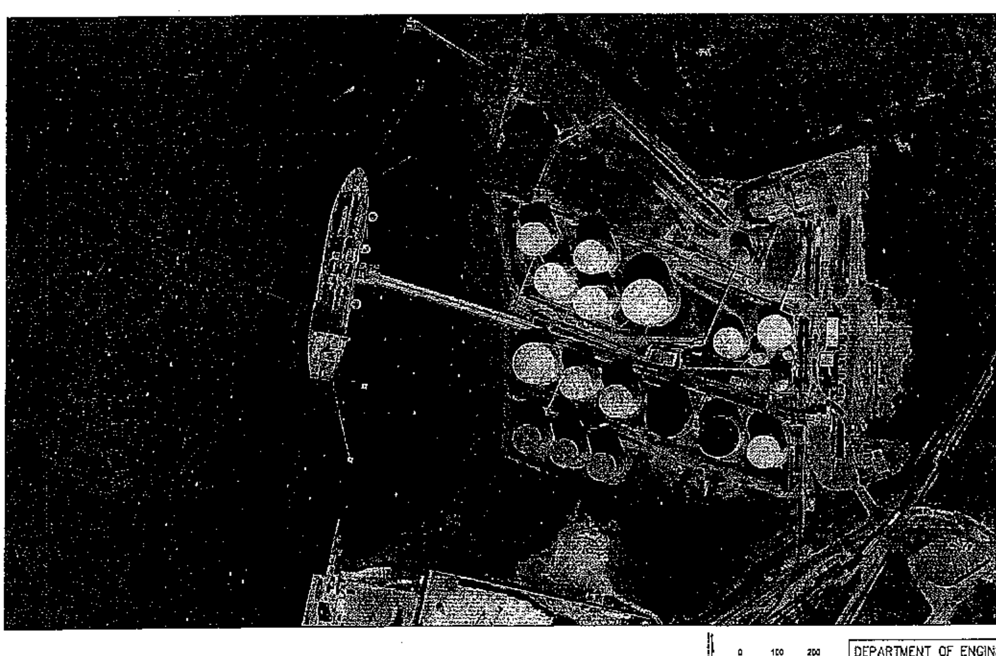


RECEIVED

NOV 17 2015

DCM- MHD CITY

THESE WILL NOT BE MOVED BACK, THEY WILL BE REMOVED.



DEPARTMENT OF ENGINEERING

RELOCATION OF LIQUID BULK PIER

REV	DESCRIPTION	APP	DATE	SEAL	PROJECT MANAGER
					SHEET OF

FILE NO. PLOT DATE: SCALE:

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

Coastal Management
ENVIRONMENTAL QUALITY

BRAXTON DAVIS
Director

November 30, 2015

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

NC State Ports Authority
c/o Jeffrey Miles
PO Box 9002
Wilmington, NC 28401

Dear Mr. Miles:

This letter is in response to your application for a Major Modification to Permit No. 47-87 under the Coastal Area Management Act (CAMA), in which authorization was requested to relocate the existing liquid bulk pier, associated mooring dolphins and breasting cells, and expand the turning basin dredging limits adjacent to the Cape Fear River, at 1 Shipyard Boulevard, in New Hanover County. Processing of the application, which was received as complete by the Division of Coastal Management's Wilmington Office on October 16, 2015 is now complete. Based on the state's review, the Division of Coastal Management has made the following findings:

1) The proposed project is a Major Modification to CAMA Major Permit No. 47-87. Permit No. 47-87 was originally issued on February 17, 1987 and has undergone several modifications and renewals. The original permit authorized hydraulic dredging of the NC State Ports Authority shipping berths. The liquid bulk pier was authorized through a Minor Modification to the permit on March 16, 1999.

2) The subject property is located adjacent to the Cape Fear River and is located within a Primary Nursery Area (PNA), as designated by the North Carolina Marine Fisheries Commission.

3) The proposed project would shorten the existing liquid bulk pier a total distance of approximately 200 feet.

4) The application indicates, that based on the latest hydrographic survey conducted on September 4, 2015, the water depth in the location of the existing liquid bulk pier range from approximately -8.7 to -30' mean low water. Current water depths in the proposed liquid bulk pier location range from approximately -0.5' to -1.0' mean low water.

5) The applicant currently has authorization to maintain the turning basin at a width of 1,200' and the shipping berth channel immediately adjacent to the federal navigation channel at dimensions of 1,000' in length by 50' in width, and to a final project depth of -44' mean lower low water (MLLW).

6) The applicant proposes to expand the dredge limits to allow for new excavation adjacent to the relocated liquid bulk pier at dimensions of 1,000' in length by 320' in width, and to a final project depth of -42' +2' MLLW.

7) The proposed excavation would increase the width of the existing turning basin from 1,200' to 1,400'.

8) The proposed project is intended to allow larger ships to access the North Carolina State Port Facilities. The need to accommodate these larger ships corresponds with the recent expansion of the Panama Canal.

9) Based upon the above referenced findings, the Division has determined that the proposed project is inconsistent with the following Rule of the Coastal Resources Commission:

   a) 15A NCAC 07H.0208(b)(1), which states: "Navigation channels, canals, and boat basins shall be aligned or located so as to avoid primary nursery areas, shellfish beds, beds of submerged aquatic vegetation as defined by the MFC, or areas of coastal wetlands except as otherwise allowed within this Subchapter."

Given the preceding findings, it is necessary that your request for issuance of a CAMA Major Permit under the Coastal Area Management Act be denied. This denial is made pursuant to N.C.G.S. 113A-120(a)(8) which requires denial for projects inconsistent with the state guidelines for Areas of Environmental Concern or local land use plans.

If you wish to appeal this denial, you are entitled to a contested case hearing. The hearing will involve appearing before an Administrative Law Judge who listens to evidence and arguments of both parties before making a final decision on the appeal. Your request for a hearing must be in the form of a written petition, complying with the requirements of §150B of the General Statutes of North Carolina, and must be filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714, within twenty (20) days from the date of this denial letter. A copy of this petition should be filed with this office.

Another response to a permit denial available to you is to petition the Coastal Resources Commission for a variance to undertake a project that is prohibited by the Rules of the Coastal Resources Commission. Applying for a variance requires that you first acknowledge and recognize that the Division of Coastal Management applied the Rules of the Coastal Resources Commission properly in processing and issuing this denial. You may then request an exception to the Commission's Rules based on hardships to you resulting from unusual conditions associated with the property. To apply for a variance, you must file a petition for a variance with the Director of the Division of Coastal Management and the State Attorney General's Office on a standard form, which must be accompanied by additional information on the nature of the project and the reasons for requesting a variance. The standard variance forms may be obtained by

contacting a member of my staff, or by visiting the Division's web page at: http://www.nccoastalmanagement.net/web/cm/90.

Members of my staff are available to assist you should you desire to modify your proposal in the future. If you have any questions concerning this matter, please contact Ms. Heather Coats at (910) 796-7302.

Sincerely,

Braxton C. Davis

cc: U.S. Army Corps of Engineers, Wilmington, NC
OCRM/NOAA, Silver Spring, MD

This map was produced by the Geographic Information Systems (GIS) program. Informational data used to create this map were collected from federal, state, county, and private organizations. This map is a general guide to assist the public and is for illustrative purposes only. While every effort is made to keep this map accurate and up-to-date, it is not intended to replace any official source. Under no circumstances shall the State of North Carolina be liable for any actions taken or omissions made from reliance on any information contained herein from whatever source nor shall the State be liable for any other consequences from any such reliance.

Background imagery are U.S. Geological Survey 1:100,000-scale planimetric maps.

locator map

Fishery Nursery Areas
- Primary
- Permanent Secondary
- Special Secondary

Military Danger Zones and Restricted Areas

Inland waters (WRC jurisdiction)

Fishery Nursery Areas

Map 27

Map Datum: NAD83
Map Projection: NC State Plane
Map Date: March 2011

1000 0 1000 2000 Yards

0.7 0 0.7 1.4 Miles

NORTH CAROLINA MARINE FISHERIES

Economic Contribution of the North Carolina Ports

Daniel J. Findley, Ph.D., P.E.
J. Douglas Small
Wah Tran
Adrienne Heller
Steven A. Bert
Sarah E. Searcy
Institute for Transportation Research and Education (ITRE)
North Carolina State University

William W. Hall, Jr., Ph.D.
Swain Center for Business and Economic Services
Cameron School of Business
University of North Carolina Wilmington

Prepared for the
North Carolina State Ports Authority

November 17, 2014

DISCLAIMER

The contents of this report reflect the views of the authors and not necessarily the views of the North Carolina State Ports Authority. The authors are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of North Carolina State University at the time of publication. This report does not constitute a standard, specification, or regulation.

ACKNOWLEDGEMENTS

The research team wishes to thank the North Carolina State Ports Authority for supporting this project. The research team greatly appreciates the tremendous support and efforts provided by Stephanie Ayers and Lindsey Terestre. Special appreciation is also given to Paul Cozza, Chief Executive Officer of the Authority, for his valuable insight and support of the study.

The research team received important technical support from the North Carolina Department of Commerce in using IMPLAN®, the economic modeling software for estimating the economic contribution of businesses and industries throughout North Carolina. Special thanks are extended to Derek Ramirez for his support in using IMPLAN®.

EXECUTIVE SUMMARY

The North Carolina State Ports Authority (the Authority) commissioned the Institute for Transportation Research and Education (ITRE) at NC State University to assess the economic contribution of the state's ocean ports. The Authority owns and operates two ocean ports on the eastern seaboard: the Port of Wilmington and the Port of Morehead City. This project examined the current economic contribution of port services for these two publicly-owned ocean ports in North Carolina, both on a statewide and economic development region level.

The findings of the study show that there is approximately $14 billion in annual economic contribution to the state's economy constituted by goods moving through North Carolina ports ($12.9 billion attributed to the Port of Wilmington and $1.1 billion attributed to the Port of Morehead City). The ports directly and indirectly support over 76,700 jobs across North Carolina; thus, deepwater port shipping is clearly a substantial economic factor for the state. The availability of the Port of Wilmington and the Port of Morehead City plays an important role in the supply chain decisions of companies which currently have operations in North Carolina and those considering locating manufacturing and distribution operations in North Carolina. This study documents the economic contribution of the existing deep water ports in North Carolina which foster economic development across the state. This study examines a variety of the key components of economic contribution, including direct, indirect, and induced contributions to output or gross revenue, employee compensation, jobs, and tax collections. The direct contributions featured in this report were derived from commodity data, while IMPLAN® multipliers were used to generate estimates of the indirect and induced contributions of activity at the ports, as well as the analysis of tax contributions. IMPLAN® is a widely used software model for economic contribution studies of ports and other transportation assets.

In the study period, June 1, 2013 to May 31, 2014, (the latest full-year dataset available), the North Carolina Ports supported $4.3 billion in employee compensation for North Carolina workers. Taxes generated by economic activity through the Ports provide additional contributions to local communities and the state of North Carolina. An estimate of approximately $707 million in sales, property, corporate, and personal taxes was received by state and local governments due to activity supported by the Ports. The Port of Wilmington supported the collection of $226 million in county property taxes, while the Port of Morehead City supported $13 million. Together, the Ports resulted in the accumulation $355 million in sales tax collections across the state. Additionally, state corporate and personal taxes of over $113 million were collected due to activity supported by the Port of Wilmington and the Port of Morehead City.

In the global marketplace, business access to foreign markets and materials is critical for success. The future global strength of North Carolina firms will correlate with strategic infrastructure investments in transportation systems, including highways, rail, and shipping channels. The Ports of Wilmington and Morehead City are a critical link in the supply chain which can be a tool for economic growth and job creation throughout the state. The estimated direct impact of potential changes in port activity were projected in this study for a variety of scenarios, including $3.77 billion for the attraction of a new Far East super post-Panamax container service, $780 million for a new bulk facility at the Port of Wilmington, and $100 million for a 15% change in bulk and breakbulk tonnage at the Port of Morehead City.

TABLE OF CONTENTS

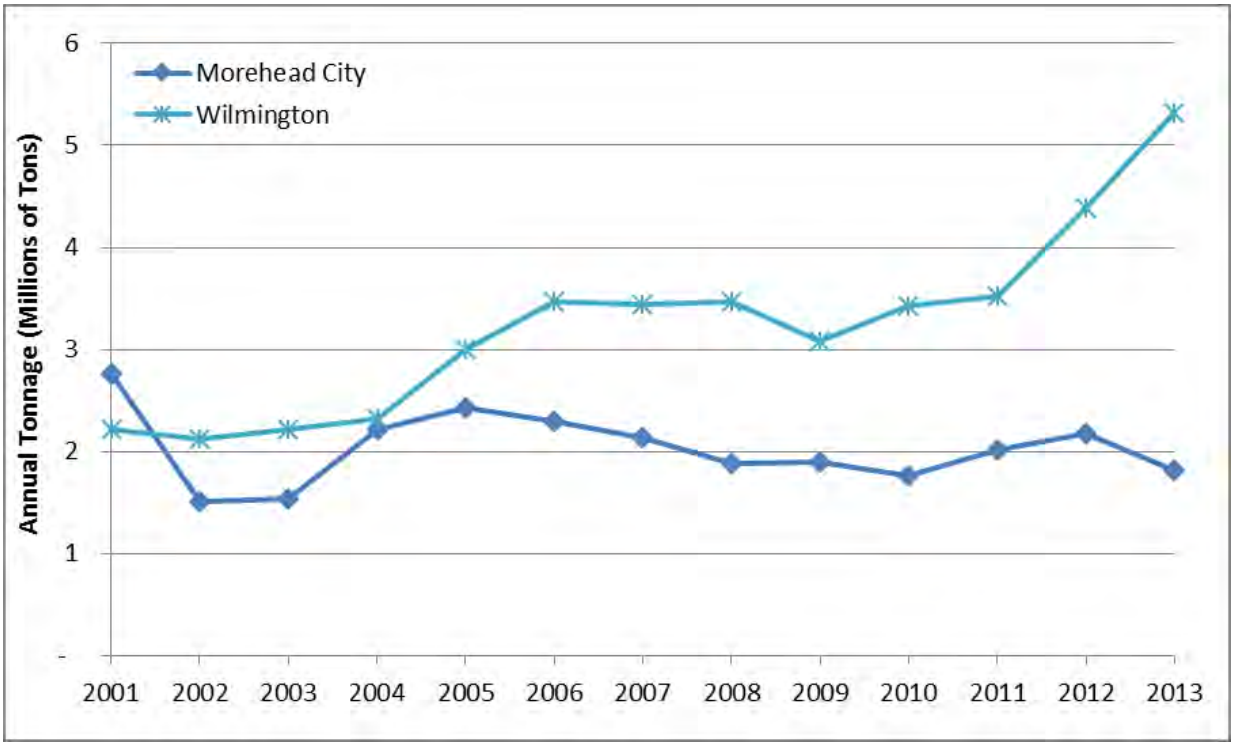
LIST OF EXHIBITS

INTRODUCTION

BACKGROUND

The North Carolina State Ports Authority owns and operates two ocean ports on the eastern seaboard, the Port of Wilmington and the Port of Morehead City. The objective of this project was to conduct an economic assessment of the existing North Carolina ports at Wilmington and Morehead City. This study builds on earlier work analyzing 2009 data (Findley et al 2011). The economic contribution of the ports changes over time, just as the tonnage shipped through the ports changes over time (Exhibit 1). Overall economic conditions can impact port tonnage, as indicated by the two economic recessions since 2001 – March 2001 to November 2001 and December 2007 to June 2009 (NBER 2014). The changes in the amount, origin and destination, and type of cargo shipped through the North Carolina ports should be considered when examining the results presented in this study, as these will change the economic contribution of the ports over time.

Exhibit 1 – North Carolina Ports Annual Tonnage (2001 to 2013)



Source: NCSPA 2014

The purpose of this project is to examine and report the current economic contribution of port services for the two publicly-owned and operated deepwater ports in North Carolina, both statewide and for the state's seven economic development regions. The methodology for the study is documented in this report and is a replication of the methodology applied to the North Carolina Ports using 2009 data (Findley et al 2011). This methodology follows accepted economic impact and contribution assessment techniques and was consistent with methodologies applied in other

states (Humphreys, J.M. 2007, Wilbur Smith Associates 2008, Pearson, R.L., et al 2008, Humphreys, J.M.2012).

NC PORTS OVERVIEW

The Port of Wilmington services container cargo destined for North Carolina and other surrounding states and a portion of the bulk and break bulk cargo that moves through the Authority's ports. The Port of Wilmington is also equipped to handle refrigerated containers. The Port of Morehead City provides services unique to bulk and break bulk cargo. In addition to ocean traffic, the Port of Morehead City supports a thriving barge industry, primarily for moving phosphate along the Intercoastal Waterway. Each facility is served by a single Class 1 railroad (CSX for the Port of Wilmington and Norfolk Southern for the Port of Morehead City). Both ports offer cargo handling and storage facilities.

Jobs at the Authority's facilities include administration, security, longshoremen, river pilots, stevedores, and others. Businesses that facilitate trade through the ports include third party logistics (3PLs) providers, customs house brokers, freight forwarders, rail lines, truck lines, steamship lines, and tugboat operators. In addition, companies across the state and beyond its borders ship their cargo and products through NC ports.

NC PORTS CARGO MOVEMENT

The movement of cargo through the Authority's ports connects businesses and customers with distribution facilitators such as warehousing, transportation, financial, and insurance providers that support numerous jobs across North Carolina. In 2013, over 260,000 TEUs (twenty-foot equivalent unit, a measure used for capacity in container transportation), 3 million tons of bulk, and 325,000 tons of break bulk commodities flowed through the Port of Wilmington in the study period. At the Port of Morehead City, over 220,000 tons of break bulk and almost 1.6 million tons of bulk cargo flowed through the port. The Port of Wilmington served 432 ships and the Port of Morehead City served 121 ships and 446 barges in 2013 (NCSPA 2014).

The ports serve a range of industries in North Carolina and surrounding states. The top import commodities based on volume at the Port of Wilmington were grains (1,539,391 tons) and chemicals (447,402 tons). Forest products (443,428 tons) and woodchips (323,346 tons) were the top export commodities (Exhibit 2). The top import commodities at the Port of Morehead City were sulfur products (275,783 tons) and metal products (211,222 tons). Phosphate (933,168 tons) and woodchips (190,944 tons) were the top export commodities (Exhibit 2). (NCSPA 2014). These imports and exports provide critical support for many industries across North Carolina, including retail stores, agriculture, apparel, fertilizer manufacturing, textile mills, wood product manufacturing, and construction.

Exhibit 2 – Top Five Commodities by Port in Fiscal Year 2013

Port of Wilmington - Top Five Commodities			
Import Commodity	**Import Tonnage**	**Export Commodity**	**Export Tonnage**
Grains	1,539,391	Forest Products	443,428
Chemicals	447,402	Wood chips	323,346
Fertilizers	428,862	Woodpulp and Paper Products	342,362
Equipment, Machinery, and Parts	164,953	Food	108,840
Ores and Minerals	99,144	General Merchandise/Miscellaneous	98,888
Port of Morehead City - Top Five Commodities			
Import Commodity	**Import Tonnage**	**Export Commodity**	**Export Tonnage**
Sulfur Products	275,783	Phosphate	933,168
Metal Products	211,222	Woodchips	190,944
Rubber	141,996	Metal Products	16,687
Ores and Minerals	9,441	Pulp and Paper Products	5,908
Vehicles and Equipment	1,310	Ores and Minerals	2,416

Source: NCSPA Website 2014

The ports facilitate trade among surrounding states as well as international partners. Brazil is the largest shipping partner for the Port of Wilmington, with a total of 1,153,000 tons imported and exported in 2013. The largest shipping partner at the Port of Morehead City is India, with 551,000 tons exchanged in 2013 (Exhibit 3).

Exhibit 3 – Top Ten Trading Partners by Port in Fiscal Year 2013

Port of Wilmington Top Ten Trading Partners					
Import Partner	**Import Tonnage**	**Export Partner**	**Export Tonnage**	**Partner**	**Total Trade (tons)**
Brazil	1,153,429	China	503,208	Brazil	1,153,429
China	355,334	Turkey	323,703	China	858,542
Argentina	260,977	South Korea	267,157	South Korea	404,445
Saudi Arabia	215,902	Belgium	176,716	Belgium	359,056
Trinidad, Tobago	209,795	Great Britain	140,669	Turkey	323,703
Belgium	182,340	Italy	98,412	Argentina	260,977
Canada	146,361	Taiwan	82,770	Saudi Arabia	225,098
South Korea	137,289	Honduras	45,254	Trinidad, Tobago	209,795
Romania	79,064	Netherlands	37,556	Great Britain	204,678
Netherlands	78,169	Guatemala	20,964	Canada	146,361
Port of Morehead City Top Ten Trading Partners					
Import Partner	**Import Tonnage**	**Export Partner**	**Export Tonnage**	**Partner**	**Total Trade (tons)**
Mexico	147,168	India	551,495	India	551,535
Indonesia	131,001	Brazil	247,538	Brazil	371,299
Brazil	123,761	Turkey	190,944	Turkey	190,944
Venezuela	107,693	Bahamas	70,107	Mexico	147,168
United Kingdom	30,900	Argentina	27,591	Indonesia	131,001
Poland	27,456	Columbia	24,240	Venezuela	112,102
Russia	20,923	Peru	17,147	Bahamas	70,107
Thailand	11,194	Chile	6,321	United Kingdom	30,900
Canada	11,053	Venezuela	4,409	Argentina	27,591
Norway	9,442	Panama	4,409	Poland	27,456

Source: NCSPA Website 2014

ECONOMIC CONTRIBUTION DEFINITIONS

A number of terms and concepts will appear throughout this report which are specific to economic contribution studies and port activity. The following section will provide readers with a foundation for understanding the results presented in this report. To measure the contribution of the ports to North Carolina's economy, four metrics were used: output (gross revenue), the number of full-time payroll employees, employee compensation (total payroll costs), and tax receipts of state and local governments.

The economic contribution results are presented in three categories: direct, indirect, and induced impacts. The indirect and induced impacts capture multiplier impacts and are typically generated using software packages to develop economic impact models.

- Direct impacts result from firms that are directly engaged in the movement of goods through the NC ports, which can include manufacturing, shipping, receiving, exporting, distributing, transporting, handling, or processing the goods which move through the ports, and personnel employed by the ports.
- Indirect impacts represent the impacts of spending by firms directly engaged in port activities on products and services provided by support businesses (such as office supply companies, property maintenance, etc.).
- Induced impacts result from payroll expenditures of employees of directly- and indirectly-related firms that produce successive spending (money that is recirculated in an economy resulting in additional economic impact).

There are three commodity flows in and out of ocean ports: imports, exports, and domestic flows. Imports arriving in the United States at NC ports generate jobs and income through the transportation of goods from the ports to their next destination, further assembly or manufacture of raw or partially processed materials, and/or wholesale and retail selling of finished products in-state. Exports leaving the United States from North Carolina through NC ports similarly generate jobs and income for North Carolina from the growth, harvesting, and processing/packaging of in-state agricultural products, extraction of minerals and materials, assembling and manufacturing of products, and transportation of goods to the ports. Domestic flows include cargo being moved from one part of the United States to another region, which have similar impacts to those of imports or exports.

THE ROLE OF PORTS IN THE SUPPLY CHAIN

The competitive success of firms is grounded in providing product availability at the lowest cost while maintaining the flexibility to meet demand fluctuations. In order to accomplish these objectives, firms strive to maintain lean supply chain operations which are primarily based on reducing time, inventory levels, and costs. In a global economy, consistent access to deep water ports is a crucial requisite for supply chain design decision-making. When market and supply decisions are made, the total costs of doing business must be considered. Major factors considered in this process include the costs of maintaining adequate inventory levels, the length of time required to replenish inventory reserves, costs of transportation, related import/export documentation and fees, cost of doing business, and ease of distribution to other locations.

Furthermore, the magnitude of supply chain risk exposure is substantially affected by the efficiency and consistency of port operations. Predictable movement of goods through ports and productive connections with allied transportation networks can reduce business costs, increase competitiveness, and improve profitability. Responding to these needs has a noticeable economic effect on the businesses utilizing the ports.

In many cases, the choice of port is made indirectly through the choice of carrier or other intermediary. Thus, the ability to increase traffic through the ports in North Carolina is driven by the number of carriers that can be attracted to provide service. Carriers seek ports that have sufficient capacity to provide their required services and a fee structure that enhances profitability. Sufficient channel depth is a key factor for accommodating large vessels. Firms are attracted to use ports that provide ease of access and have a choice of carriers, with capabilities to transport via sea or land, and that provide service to both origins and destinations which are of importance to the firm. Improved efficiency of ports and carriers will result in shorter transportation time, which will allow the firm to maintain lower inventory levels and costs, and provide the opportunity to benefit from lower transportation costs. As fuel prices continue to rise, costs associated with transportation will become increasingly important in expense analysis.

ECONOMIC CONTRIBUTION METHODOLOGY

Many North Carolina businesses generate revenues based on import, export, and domestic cargo activities at North Carolina ports. Profits are affected by the use of facilities and services and the employment of workers both on-site at the ports and off-site. Therefore, the NC ports contribute to the economic vitality of the state. To quantify how much, what type, and where these contributions occur, the project team conducted an economic contribution study. This was accomplished by measuring the outputs of business activities supported by shipping and receiving commodities via the deepwater seaports in Morehead City and Wilmington, North Carolina.

A common problem when conducting an assessment of economic impact and contribution is a lack of transparency in the methodology used to generate the estimates of the economic value. To remedy this issue, the current study utilized manifests supplied by the North Carolina State Ports Authority to determine commodity quantities and derive their impacts. By selecting commodities as the primary driver of economic contribution and ensuring the significance of that value, the research team could verify that the direct and multiplier effects were estimated in an objective and transparent manner.

The findings from studying the economic contributions of the ports include an assessment of the total (direct, indirect, and induced) contributions to economic output, jobs, and employee compensation. The direct contributions came from commodity data. IMPLAN® (IMpact Analysis for PLANning) multipliers (from the Minnesota IMPLAN® Group) were used to generate the indirect and induced contributions of the ports activity. IMPLAN® multipliers were also used for the tax analysis. The indirect contributions represent spending by port-related firms on goods and services provided by support businesses (such as office supply companies, property maintenance, etc.). The induced contributions result from payroll expenditures by employees of directly- and indirectly-related firms that produce successive spending. Total contributions were generated by modeling each port's contributions. Import and export data from the Port Import Export Reporting Service (PIERS) enabled the team to distribute the impacts for the Authority's ports across the state based on the origin and destination of the commodities.

The quantity of commodities used for the direct contributions was estimated using vessel manifest data supplied by the Authority. The contributions were categorized by port and by the type of goods (container and bulk/break bulk). The values of and value-added to the commodities were estimated using data from the Commodity Flow Survey provided by the Bureau of Transportation Statistics with a conversion to 2014 dollars using the implicit gross domestic product deflator index (BTS 2012, BEA 2014).

The project team used IMPLAN®, an economic modeling software provided and used by the North Carolina Department of Commerce, to estimate the multiplier contributions of the Authority's ports. IMPLAN® uses data compiled from a wide variety of sources, including unique local data and census information, not estimated from national averages (IMPLAN 2014). IMPLAN® is widely used by analysts as a tool to calculate the economic contribution of ports and other transportation facilities and other changes in economic structure.

ECONOMIC CONTRIBUTION RESULTS

Introduction

The final results of the project include values for output, employment, employee compensation, and taxes. The following sections provide the breakdowns of the economic contribution of North Carolina's ports by direct, indirect, and induced contributions for each port and subtotals by category. The results are based on the value of exported commodities produced in North Carolina and the value added to imported commodities which remain in North Carolina. Approximately $12.2 billion worth of goods were transported through North Carolina ports between June 1, 2013 and May 31, 2014 with approximately $7.03 billion originating or terminating within the state (NCSPA 2014).

Over 3.5 million tons of goods worth $6.2 billion were imported through North Carolina ports (Exhibit 4). The impact of imported goods was derived from the value added to imported goods which remain in the state, which totaled over $5.8 billion. Exhibit 4 shows the value of goods imported to each port by type of goods, the value of goods remaining in North Carolina, the value added to the goods that remain in North Carolina, and the total tons imported.

Exhibit 4 – Value of Imported Goods by Total, NC Component, and Value Added

Type of Goods	Port	Total Value of Transported Goods ($)	Value of Transported Goods Remaining in NC ($)	Value Added to NC Imports ($)	Total Tons
Container	Wilmington	5,959,650,000	3,568,720,000	3,369,240,000	797,000
Bulk/Breakbulk	Morehead City	1,657,400,000	825,380,000	431,530,000	769,000
	Wilmington	4,614,940,000	2,639,000,000	2,452,440,000	2,761,000
Port of Wilmington Subtotal		10,574,590,000	6,207,720,000	5,821,680,000	3,558,000
Port of Morehead City Subtotal		1,657,400,000	825,380,000	431,530,000	769,000
North Carolina State Ports Total		12,231,990,000	7,033,100,000	6,253,210,000	4,327,000

Source: NCSPA 2014, BTS 2012, BEA 2013

In the study period, 2.3 million tons of goods worth $6.3 billion were exported through North Carolina ports (Exhibit 5). The impact of exported goods was derived from the value of transported goods which were produced in North Carolina, which totaled over $2.7 billion. Exhibit 5 shows the value of goods exported from each port by type of goods, the value of goods produced in North Carolina, and the total tons exported.

Exhibit 5 – Value of Exported Goods by Total and NC Component

Type of Goods	Port	Total Value of Transported Goods ($)	Value of Transported Goods Produced in NC ($)	Total Tons
Container	Wilmington	4,074,590,000	1,721,090,000	1,300,000
Bulk/Breakbulk	Morehead City	666,550,000	264,060,000	794,000
	Wilmington	533,770,000	199,860,000	205,000
Port of Wilmington Subtotal		4,608,360,000	1,920,950,000	1,505,000
Port of Morehead City Subtotal		1,657,400,000	825,380,000	769,000
North Carolina State Ports Total		6,265,760,000	2,746,330,000	2,274,000

Source: NCSPA 2014, BTS 2012, BEA 2013

Output Contribution

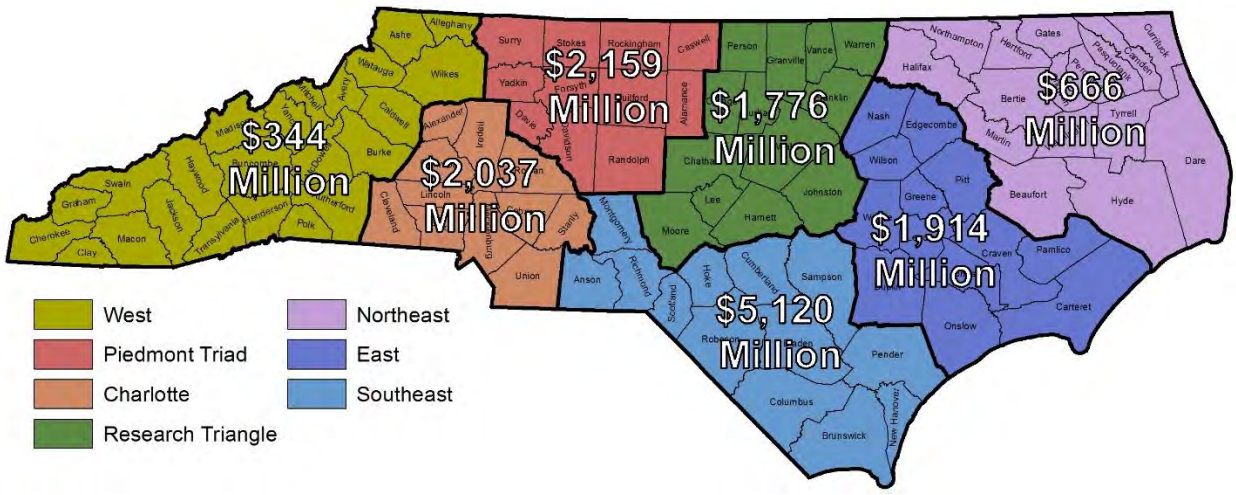
Through the provision of goods' movement services at a marine port, the NC ports supported over $14 billion in gross revenues for North Carolina businesses during the study period (Exhibit 6). The Authority's contribution to the gross revenues of North Carolina businesses results from the trade facilitated by the availability of transporting goods through the ports in Wilmington and Morehead City. These transported goods support a diverse set of industries across the state. The majority of the output contribution is derived from the activity at the Port of Wilmington, with a contribution of almost $13 billion. Exhibit 7 shows the distribution of output contribution across the state's seven economic development regions.

Exhibit 6 – Output Contribution

Type of Goods		Port	Output (2014 Dollars) Direct	Indirect	Induced	Total
Imports	Container	Wilmington	$3,369,240,000	$1,165,230,000	$1,289,550,000	$5,824,020,000
	Bulk/ Breakbulk	Morehead City	$431,530,000	$173,500,000	$111,120,000	$716,150,000
		Wilmington	$2,452,440,000	$801,860,000	$845,790,000	$4,100,090,000
Exports	Container	Wilmington	$1,664,000,000	$669,270,000	$335,290,000	$2,668,570,000
	Bulk/ Breakbulk	Morehead City	$255,870,000	$100,890,000	$37,440,000	$394,200,000
		Wilmington	$193,270,000	$76,560,000	$43,030,000	$312,850,000
Port of Wilmington Subtotal			$7,678,950,000	$2,712,920,000	$2,513,660,000	$12,905,530,000
Port of Morehead City Subtotal			$687,400,000	$274,390,000	$148,560,000	$1,110,350,000
North Carolina State Ports Total			$8,366,350,000	$2,987,310,000	$2,662,220,000	$14,015,880,000

Source: NCSPA 2014, IMPLAN 2014

Exhibit 7 – Output Contribution Across North Carolina Economic Development Regions



As a frame of reference for the magnitude of the Authority's ports' impact on the state's economy, the contribution was compared to the North Carolina gross domestic product (GDP).

North Carolina's GDP in 2013 was $439.6 billion (BEA 2013). Therefore, the Authority's contribution of $14 billion to the state's GDP was approximately 3%. This is an approximation as the contribution is based on 2014 dollars.

Another useful comparison can be made to the impact of another important component of the state's economy, namely, travel. Travel is defined as all the activities that are associated with every day trip or overnight trip which is 50 miles or greater from a traveler's origin and those overnight trips which include paid accommodations (NCDOC 2013). Travel has impacts on many industries, including: gasoline, car rental, entertainment, art, recreation, food service, retail, lodging, public transportation, travel agencies, and others. The 2013 economic impact of travel in North Carolina was $20.2 billion. Therefore, the contribution to North Carolina's economy supported by activity at the Authority's ports is approximately two-thirds of the statewide impact of travel.

Employment Contribution

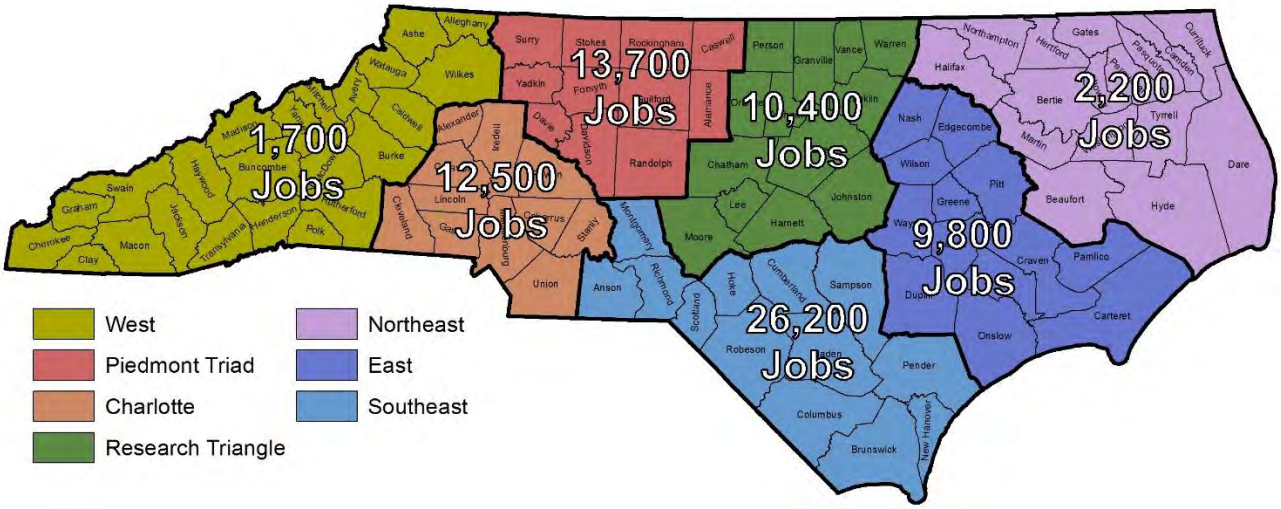
The North Carolina ports supported, through the provision of goods' movement services at a marine port, 76,700 full-time jobs at North Carolina businesses (Exhibit 8). The majority of the employment contribution is derived from the activity related to imports at the Port of Wilmington, with a contribution of over 61,000 jobs. The majority of jobs (40,400) were directly related to activity supported by the ports, while an additional 36,300 jobs were supported through indirect and induced activities. Full-time jobs were estimated from IMPLAN® data using a full-time equivalent conversion based on data from the Bureau of Economic Analysis (BEA 2014). Exhibit 9 shows the distribution of employment contribution across the state's seven economic development regions.

Exhibit 8 – Employment Contribution

Type of Goods		Port	Employment (Full-time Jobs)			
			Direct	Indirect	Induced	Total
Imports	Container	Wilmington	24,100	7,300	9,200	40,700
	Bulk/Break-bulk	Morehead City	1,100	900	800	2,800
		Wilmington	9,700	5,200	6,000	20,900
Exports	Container	Wilmington	4,800	3,100	2,400	10,200
	Bulk/Break-bulk	Morehead City	200	400	300	900
		Wilmington	500	400	300	1,200
Port of Wilmington Subtotal			39,100	16,000	17,900	73,000
Port of Morehead City Subtotal			1,300	1,300	1,100	3,700
North Carolina State Ports Total			40,400	17,300	19,000	76,700

Source: NCSPA 2009, IMPLAN 2014

Exhibit 9 –Employment Contribution Across North Carolina Economic Development Regions



Employee Compensation Contribution

The North Carolina ports supported, through the provision of goods' movement services at a marine port, over $4.2 billion in employee compensation for North Carolina workers (Exhibit 10). Employee compensation is the total payroll cost, including salary, benefits, and payroll taxes. Approximately 56% of the employee compensation is from employment directly supported by activity related to the North Carolina ports.

Exhibit 10 – Employee Compensation Contribution

Type of Goods		Port	Employee Compensation (2014 dollars) Direct	Indirect	Induced	Total
Imports	Container	Wilmington	1,257,480,000	388,890,000	428,200,000	2,074,570,000
	Bulk/ Break-bulk	Morehead City	88,160,000	53,060,000	36,900,000	178,120,000
		Wilmington	788,010,000	289,630,000	280,850,000	1,358,490,000
Exports	Container	Wilmington	238,510,000	188,590,000	111,340,000	538,430,000
	Bulk/ Break-bulk	Morehead City	19,740,000	27,610,000	12,430,000	59,790,000
		Wilmington	31,360,000	23,360,000	14,290,000	69,000,000
Port of Wilmington Subtotal			2,315,360,000	890,470,000	834,680,000	4,040,490,000
Port of Morehead City Subtotal			107,900,000	80,670,000	49,330,000	237,910,000
North Carolina State Ports Total			2,423,260,000	971,140,000	884,010,000	4,278,400,000

Source: NCSPA 2014, IMPLAN 2014

State and Local Tax Contribution

State and local governments in North Carolina received $707 million in annual sales, county property, corporate, and personal tax collections due to activity supported by the Authority's ports (Exhibit 11). The county property tax related to activity at the Port of Wilmington is over $226 million, and the activity at the Port of Morehead City is $13 million across the state. The activity supported by the Authority's ports resulted in over $354 million in business sales tax collections across the state (Exhibit 12).

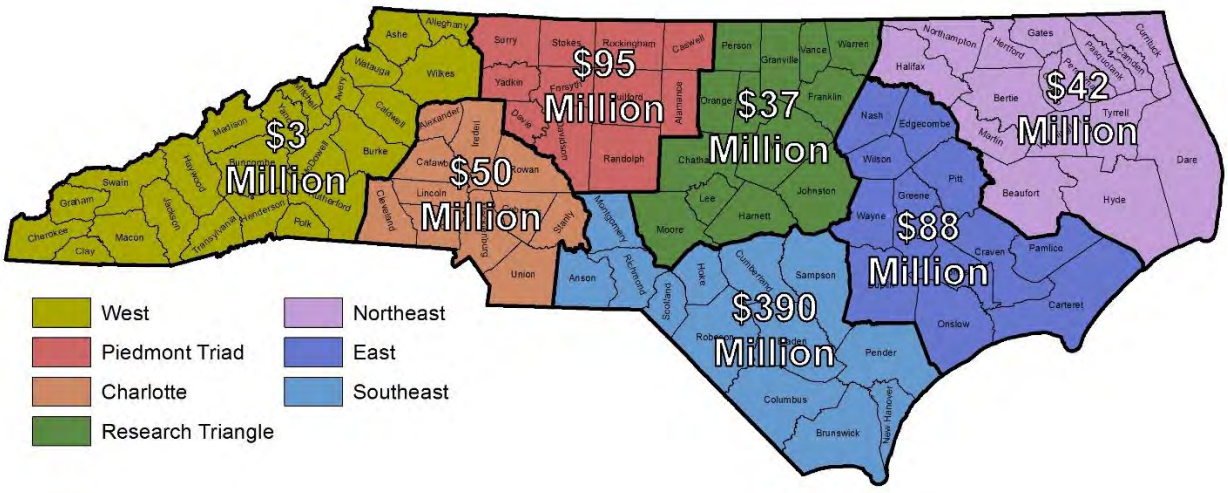
Exhibit 11 – State and Local Tax Contributions

Tax Description	Port of Wilmington (2014 dollars)	Port of Morehead City (2014 dollars)	Total (2014 dollars)
Business Sales Tax	335,560,000	19,190,000	354,750,000
Property Tax	226,230,000	12,940,000	239,170,000
State Corporate and Personal Tax	106,630,000	6,460,000	113,100,000
Total	668,420,000	38,590,000	707,020,000

Source: NCSPA 2014, IMPLAN 2014

The estimated property tax collections supported by the Authority can be used to determine the equivalent tax base. The weighted average county property tax rate, based on total taxable real estate, in the state was $0.608 per $100 valuation (NCDOR 2013). The total property tax collections of $239,170,000 would equate to a tax base of $39.3 billion, which is approximately 5% of the value of total taxable real estate statewide.

Exhibit 12 –Tax Contribution Across North Carolina Economic Development Regions



OPPORTUNITIES FOR INCREASED ECONOMIC GROWTH

Seaports in the United States move more than 99% of overseas cargo by volume and 65% by value (AAPA 2014b). In the global marketplace, it is critical for businesses to have access to foreign markets and materials. The future global strength of North Carolina firms will be correlated with strategic infrastructure investments in transportation systems, including highways, rail, and shipping channels. The Ports of Wilmington and Morehead City are a critical link in the supply chain which can be a tool for economic growth and job creation throughout the state. Continued investment in ports and associated inland infrastructure connecting markets and products can provide substantial benefits to the economy and citizens of North Carolina.

The estimated direct impact (not including indirect and induced effects) of potential changes in port activity are shown in Exhibit 13. This analysis relies on previously described data and analysis methods which include estimates of commodity types and values. The potential opportunities for increased economic growth at the Port of Wilmington and the Port of Morehead City were quantified for three general scenarios additional container services, a new agricultural product, and consistent growth in bulk and breakbulk commodities. The estimated direct impact scenarios range from $3.77 billion for the attraction of a new Far East super post-Panamax container service to $100 million for a 15% change in bulk and breakbulk tonnage at the Port of Morehead City.

Exhibit 13 – Estimated Impact of Future Changes in Port Activity

Detail of Opportunity	Line of Business	Facility	Estimated Direct Impact (2014 dollars)
One new Far East super post-Panamax service	Containers	Wilmington	$3.77 Billion
One new Far East Panamax service	Containers	Wilmington	$ 1.95 Billion
One new Trans-Atlantic service	Containers	Wilmington	$ 820 Million
New wood pellet exporting facility (1.5M tons)	Bulk/Breakbulk	Wilmington	$ 780 Million
One new South Atlantic container service	Containers	Wilmington	$ 560 Million
15% growth (or decline)	Bulk/Breakbulk	Wilmington	$ 400 Million
15% growth (or decline)	Bulk/Breakbulk	Morehead City	$ 100 Million

Source: NCSPA 2014

COMPARISON TO NEIGHBORING STATES' PORTS

To gain a sense of perspective of the contribution of the NC ports, the following discussion includes an assessment of ports in Georgia and South Carolina. The comparisons evaluated several characteristics of the ports, including static measures such as port access and dynamic measures such as port operations and economic contribution, which change from year to year.

The large difference in the Authority facilities' output and employment contribution compared to that of other South Atlantic ports mainly reflects differences in existing transportation infrastructure. Neighboring ports benefit from better rail and highway connections than Wilmington and Morehead City. Inadequate hinterland connectivity is a major factor limiting the geographical area that a port can serve. Given the noncompetitive inland connectivity, it is no surprise that Wilmington and Morehead City have a noticeably smaller economic impact than competing ports that are better supported. It is highly likely that if North Carolina were to improve the infrastructure that impacts Authority's ability to attract cargo, there would be an increase in employment, output, income and tax collections that would exceed the cost of the investment.

Port Access and Operations

By total trade, the Georgia Port moves the most cargo among North Carolina's neighboring ports (Exhibit 14). The Port of Wilmington moves approximately one-fifth of the tonnage at Savannah, two-fifths of the tonnage at Charleston, and twice the tonnage at Morehead City. The port operations comparison can provide valuable insight into the economic contribution values presented in Exhibit 16 and Exhibit 17. Although economic contribution levels are strongly related to the quantity of goods shipped through a port, other factors play an important role in the economic contribution of a port, including the value of the goods, import and export balance, quality of available landside transportation access, nearby consumer markets, and many other dynamics.

Exhibit 14 – Port Operations Comparison

Port	2013 Exports (metric tons)	2013 Imports (metric tons)	2013 Total Trade (metric tons)
North Carolina (Port of Morehead City)	1,086,100	663,500	1,749,600
North Carolina (Port of Wilmington)	1,714,600	4,122,400	5,837,000
North Carolina (Both Ports)	2,800,700	4,785,900	7,586,600
Georgia	17,907,000	13,424,000	31,331,000
South Carolina	6,492,100	8,896,700	15,388,800

Source: Census 2013a, Census 2013b

One such dynamic may include the amount of container traffic moving through regional ports. Relative to neighboring ports, the Port of Wilmington has increased its container traffic substantially in the past five years, increasing the number of container traffic by nearly a third over the previous five years (Exhibit 15).

Exhibit 15 – Port Operations Comparison – Five Year Growth in Container Traffic

Port	2013 Container Traffic (Imports & Exports)	2008 Container Traffic (Imports & Exports)	Five Year Growth (2008 to 2013)
North Carolina (Port of Wilmington)	260,363	196,040	32.8%
Georgia	3,034,010	2,616,126	16.0%
South Carolina	1,601,366	1,635,534	-2.1%

Source: AAPA 2014a

Port Economic Contribution

The neighboring ports in Georgia (Humphreys 2007, Humphreys 2012) and South Carolina (Wilbur Smith 2008) have each conducted economic contribution studies in recent years to document the role of their state's ports in the statewide economy. Each of the three studies utilized IMPLAN® for the development of indirect and inducted impacts. A comparison of the economic contribution of neighboring ports on their respective states is shown in Exhibit 16. A caveat is that the studies were conducted in different years, and accordingly, comparisons are approximate. In relation to the neighboring ports, the Authority's ports' total economic contribution is approximately one-quarter to one-third of that of neighboring ports.

Exhibit 16 – Output Contribution Comparison

Port	Study Base Year	Output (Millions of Dollars)			
		Direct	Indirect	Induced	Total
North Carolina (Port of Wilmington)	2013	7,679	2,712	2,513	12,906
North Carolina (Port of Morehead City)	2013	687	274	149	1,110
North Carolina (Both Ports)	2013	8,366	2,986	2,662	14,016
Georgia	2011	39,254		27,643	55,606
South Carolina	2007	26,643		18,177	44,820

Source: NCSPA 2014, IMPLAN 2014, Humphreys, J.M. 2012, Wilbur Smith Associates 2008

A comparison of the economic contribution, in terms of jobs, of neighboring ports on their respective states is shown in Exhibit 17. As study dates are different, the comparisons are approximate. In relation to the neighboring ports, the Authority's ports' total employment contribution is approximately one-quarter to one-third of that of neighboring ports. The relative contribution of North Carolina ports to the state economy and neighboring ports to their respective economies varies in terms of output and employment contributions because of the types of goods, value of goods, availability of in-state producers and consumers of goods, and other economic factors.

Exhibit 17 – Employment Contribution Comparison

Port	Study Base Year	Employment (Jobs)			
		Direct	Indirect	Induced	Total
North Carolina (Port of Wilmington)	2013	39,100	16,000	17,900	73,000
North Carolina (Port of Morehead City)	2013	1,300	1,300	1,100	3,700
North Carolina (Both Ports)	2013	40,400	17,300	19,000	76,700
Georgia	2011	153,884		198,263	352,146
South Carolina	2007	88,700		172,100	260,800

Source: NCSPA 2014, IMPLAN 2014, Humphreys, J.M. 2012, Wilbur Smith Associates 2008

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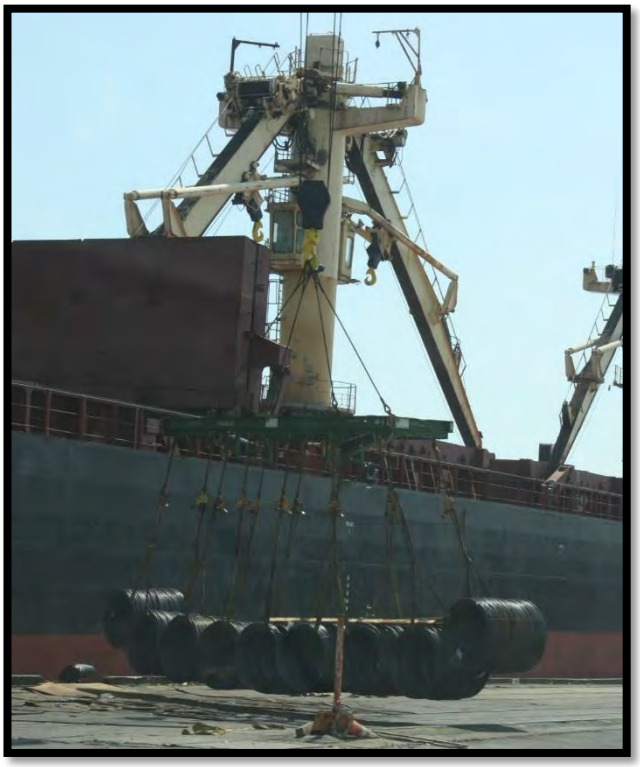

ESSENTIAL FISH HABITAT ASSESSEMENT

RELOCATION OF LIQUID BULK PIER AND WIDENING OF THE TURNING BASIN

PORT OF WILMINGTON
NORTH CAROLINA STATE PORTS AUTHORITY

OCTOBER 2015

DIAL CORDY
AND ASSOCIATES INC
Environmental Consultants

ESSENTIAL FISH HABITAT ASSESSEMENT

RELOCATION OF LIQUID BULK PIER AND WIDENING OF THE TURNING BASIN

PORT OF WILMINGTON

NORTH CAROLINA STATE PORTS AUTHORITY

October 23, 2015

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North Carolina State Ports Authority
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EXECUTIVE SUMMARY

Dial Cordy and Associates Inc. (DC&A) has prepared this Essential Fish Habitat (EFH) Assessment for the North Carolina State Ports Authority, Port of Wilmington (POW), as requested by the Wilmington District United States Army Corps of Engineers (USACE) and National Marine Fisheries Service (NMFS) for widening of the Turning Basin to accommodate larger panamax size vessels, which also requires relocating the Kinder Morgan Bulk Terminal platform, pier, and mooring dolphins. DC&A has evaluated potential effects on EFHs, managed, and associated species from proposed dredging activities associated with construction of this project. Relocating the existing structures is not anticipated to result in any associated effects on EFH and is therefore not discussed further in this document. The primary focus will be on effects of dredging activities.

The primary purpose and need of the NCSPA at the POW is to expand the present turning basin from 1,200 ft diameter to 1,400 ft diameter to meet larger vessels calling on the port in 2016. In order to meet this need, the liquid bulk terminal pier, loading platform and mooring dolphins will need to be relocated shoreward and approximately 8.53 acres of soft bottom habitat dredged to -42 ft. The NCSPA has confirmed that the authorized project depth of the Cape Fear River, -42 ft mean lower low water, is acceptable for the larger ships that are expected to call at Port of Wilmington, at least in the near term. In addition, the dock structures and the ship-to-shore cranes that exist at the Port are adequately sized to receive the larger vessels that will begin to deploy in 2016. Therefore, the existing diameter of the turning basin is the only impediment to receiving the vessels that will certainly begin to deploy in 2016. Failure to being able to service these vessels through constructing a 1,400 ft diameter basin could have a severe economic impact on the port and state of North Carolina as early as next fall.

The proposed project includes mechanical dredging of sediment (barge-mounted crane equipped with an environmental bucket or a long reach excavator boom) from the present berthing area while vessels are not present, followed by dredging of the balance of the widening area (8.53 acres) east of the present liquid bulk pier and loading platform. The mooring dolphins and loading platform of the liquid bulk pier will be removed and new ones constructed +/-180 feet (ft) east of their present location. Dredged material will be placed in scows, transferred across the river, re-fluidized and hydraulically pumped into the Eagle Island Confined Disposal Facility. The estimated quantity of sediments be dredged is 300,000 cubic yards, of which a majority are associated with dredging sediment from an existing elevation of -5 to -20 ft mean low water (MLW) to -44 ft MLW, with an average present depth of -20 ft MLW when including side-slopes. Construction is estimated to take five-to-six months to complete with a projected completion date of 30 June 2016 in order to meet larger vessel calls anticipated mid to late summer of next year.

The proposed project, including dredging of 8.53 acres and relocation of present pier, mooring platforms and dolphins, will result in the deepening of existing shallow water mud bottom EFH habitat located within state designated PNA, also considered a HAPC for some managed species (Figure 3). This will result in the loss of a portion of shallow water foraging habitat present along the Kinder Morgan Terminal to meet the NCSPA purpose and need for the project. A number of managed, associated, and prey species likely use this are for foraging activities during their juvenile and adult lifestages. However, this represents only 0.02 percent

of the available shallow water soft bottom habitat present in the lower CFR estuary. The newly dredged area can be used for foraging, however its depth, lack of light, and operational use by vessels will result in a less productive benthic community than presently resides at the present depth. Relocating the present mooring and pier structures shoreward will not result in any adverse effect on the water column or unvegetated mud bottom EFH's present at this site. Adult and most juvenile fish can avoid the dredging operations. Managed invertebrate species population occurring here may be adversely effected during dredging; however, most being motile can escape the clamshell/bucket grab.

The potential indirect effects on the estuarine/riverine water column and unvegetated mud bottoms would be spatially and temporally minimized through use of turbidity barriers around all dredging and pumping operations, and working towards a goal of maximizing dredging during falling tides. There are no SAVs, shellfish, or hardbottom habitat located within the proposed action area. A variance request for dredging in PNA has been submitted as part of the application package to the NCDENR/CRC.

Conservation/mitigation measures have been proposed which includes a conservation easement on 13.5 acres of coastal marsh on the Brunswick River and contribution of $750,000 to fund the planning, permitting, and design of a fish passage for Lock and Dam #2. The latter is only offered if all permits and agency approvals can be completed in less than 90 days from the date of application. Other conservation measures include use of best management practices, good engineering practices, turbidity barriers, and maximizing dredging during falling tides.

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AMD	Agitation Maintenance Dredging
ANAMAR	Anamar Environmental Consulting, Inc.
ASMFC	Atlantic States Marine Fisheries Commission
ATCA	Atlantic Tunas Convention Act
°C	Degrees Celsius
CDF	Confined Disposal Facility
CFR	Cape Fear River
CY	Cubic Yards
DC&A	Dial Cordy and Associates Inc.
DNA	Deoxyribonucleic Acid
DO	Dissolved Oxygen
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
F4F	Fish for Fun
FIFMP	Federally Implemented Fishery Management Plans
FMC	Fishery Management Councils
FMP	Fishery Management Plans
FT	Feet
GMFMC	Gulf of Mexico Fishery Management Council
HAPC	Habitat Areas of Particular Concern
HMS	Highly Migratory Species
LAW	Law Engineering and Environmental Services, Inc.
LCS	Large Coastal Sharks
LPC	Limiting Permissible Concentration
MAFMC	Mid-Atlantic Fishery Management Council
MG/L	Milligrams/Liter
MLLW	Mean Low Low Water
MLW	Mean Low Water
NC	North Carolina
NCAC	North Carolina Administrative Code
NCDCM	North Carolina Division of Coastal Management
NCDENR	North Carolina Department of Environment and Natural Resources
NCDMF	North Carolina Division of Marine Fisheries
NCDWR	North Carolina Division of Water Resources
NCDWQ	North Carolina Division of Water Quality
NCFMPS	North Carolina Fishery Management Plan for Shrimp
NCMFC	North Carolina Marine Fisheries Commission
NCSPA	North Carolina State Ports Authority
NCWRC	North Carolina Wildlife Resources Commission
NEFSC	Northeast Fisheries Science Center
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOAAFS	National Oceanic and Atmospheric Administration, Fisheries Service
NRC	National Research Council
NTU	Nephelometric Turbidity Unit
OCS	Outer Continental Shelf

ODMDS	Ocean Dredged Material Disposal Site
PNA	Primary Nursery Area
POW	Port of Wilmington
PPM	Parts per Million
PPT	Parts per Thousand
SAFMC	South Atlantic Fishery Management Council
SAFMP	South Atlantic Fishery Management Plan
SAR	South Atlantic Region
SAV	Submerged Aquatic Vegetation
SCS	Small Coastal Sharks
STFATE	Short Term Fate
UOF	University of Florida
US	United States
USACE	United States Army Corps of Engineers
USEC	United States East Coast
USEPA	United State Environmental Protection Agency
YOY	Young of the Year

1.0 INTRODUCTION AND BACKGROUND

The North Carolina State Ports Authority (NCSPA) Port of Wilmington (POW) is located approximately 25 miles upstream from the Cape Fear River's (CFR) confluence with the Atlantic Ocean (Figure 1). The CFR basin drains 9,322 square miles including all or part of 26 counties and 115 municipalities [North Carolina Division of Water Resources (NCDWR) 2012]. The CFR is the only North Carolina (NC) major trunk estuary discharging directly into the Atlantic Ocean while transporting significant sediment loads of Piedmont clay soils (Riggs and Ames 2003).

The Wilmington Harbor's commercial water depth is congressionally authorized at -42 feet (ft) mean lower low water (MLLW). The Wilmington District, United States Army Corps of Engineers (USACE) maintains the federal channel depths by annually dredging (October 1 through January 31) specific reaches which have shoaled above the -42-foot contour. The NCSPA annually contracts with the USACE to maintain project depths next to POW's quays at Kinder Morgan and Berths One – Nine. In an effort to maintain quay depths at a -42-foot depth year-round, the POW has implemented agitation maintenance dredging (AMD) since 1998 which augments the USACE annual hydraulic maintenance dredging.

The primary purpose and need of the NCSPA at the POW is to expand the present turning basin from 1,200 ft diameter to 1,400 ft diameter to meet larger vessels calling on the port in 2016. In order to meet this need, the liquid bulk terminal pier, loading platform and mooring dolphins will need to be relocated shoreward and approximately 8.53 acres of soft bottom habitat dredged to -42 ft mean low water (MLW).

The POW, NC, has operated on the CFR for 70 years, first serving bulk and breakbulk vessels, and then container vessels as that operating model became prevalent for many types of cargoes. The NCSPA has served containers vessels for over 30 years, and has served vessels in the Panamax class for more than 10 years. These are vessels with lengths of up to 965 ft, which are the maximum length allowable in the locks of the Panama Canal, which are 1,000 ft long (usable length) and 110 ft wide. The ongoing Panama Canal Expansion project is due to be complete in 2016, and the new locks will be 1,400 ft long by 180 ft wide.

Ocean carriers will take immediate advantage of the enlarged canal locks by deploying larger vessels, particularly from Asia to the United States (US) East Coast (USEC), which is a large part of the NCSPA business volume, as it is for many of the other ports on the USEC. It is vital for the NCSPA to remain competitive, providing benefits to the state and the nation, by enlarging the turning basin at the north end of the docks in Wilmington. The existing 1,200-foot wide basin is inadequate for the vessel deployments of the expanded Panama Canal. An NCSPA-owned liquid bulk pier is located on the east side of the turning basin. Relocating the pier eastward, closer to the existing shoreline, and dredging in front of the relocated pier will allow for a new turning basin diameter of 1,400 ft.

The NCSPA has confirmed that the authorized project depth of the CFR, -42 ft MLLW, is acceptable for the larger ships that are expected to call at the POW, at least in the near term. In addition, the dock structures and the ship-to-shore cranes that exist at the POW are adequately sized to receive the larger vessels that will begin to deploy in 2016. Therefore, the existing

diameter of the turning basin is the only impediment to receiving the vessels that will certainly begin to deploy in 2016. Failure to being able to service these vessels through constructing a 1,400 ft diameter basin could have a severe economic impact on the port and state of North Carolina as early as next fall.

The proposed project includes mechanical dredging of sediment (barge-mounted crane equipped with an environmental bucket or a long reach excavator boom) from the berthing area while vessels are not present, followed by dredging of the balance of the widening area (8.34 acres) east of the present pier and loading platform (Figures 1-3). The mooring dolphins and loading platform of the liquid bulk pier will be removed and new ones constructed +/-180 ft east of their present location. Dredged material will be placed in scows, transferred across the river, re-fluidized and hydraulically pumped into the Eagle Island Confined Disposal Facility (CDF). The estimated quantity of sediments be dredged is 300,000 cubic yards (cy), of which a majority are associated with dredging sediment from an existing elevation ranging from -20 ft MLW to -5 ft to a depth of -44 ft MLW (Figure 3), with an average present depth of -20 ft MLW when including side-slopes. Construction is estimated to take five-to-six months to complete with a projected completion date of 30 June 2016 in order to meet larger vessel calls anticipated mid to late summer of next year. A variance to allow for dredging in Primary Nursing Habitat has been requested from the North Carolina Department of Environment and Natural Resources (NCDENR). A summary of more construction details can be found in Appendix A.

The proposed mechanical dredging has the potential to affect the unvegetated mud bottom and the water column Essential Fish Habitats (EFHs) in shallow water east of the present liquid bulk platform and berthing area. These habitats are potentially used by various stages of managed species afforded protection under the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (16 U.S.C. 1801-1882), as amended in 2006 (Magnuson-Stevens Act). Section 10 Associated Species includes supplemental narrative for the shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*A. oxyrinchus oxyrinchus*) protected under the Endangered Species Act. This EFH has been prepared at the request of the USACE Regulatory Division, National Marine Fisheries Service (NMFS), and in coordination with the North Carolina Division of Coastal Management (NCDCM), the North Carolina Division of Marine Fisheries (NCDMF), the North Carolina Division of Water Quality (NCDWQ), and the North Carolina Wildlife Resources Commission (NCWRC).

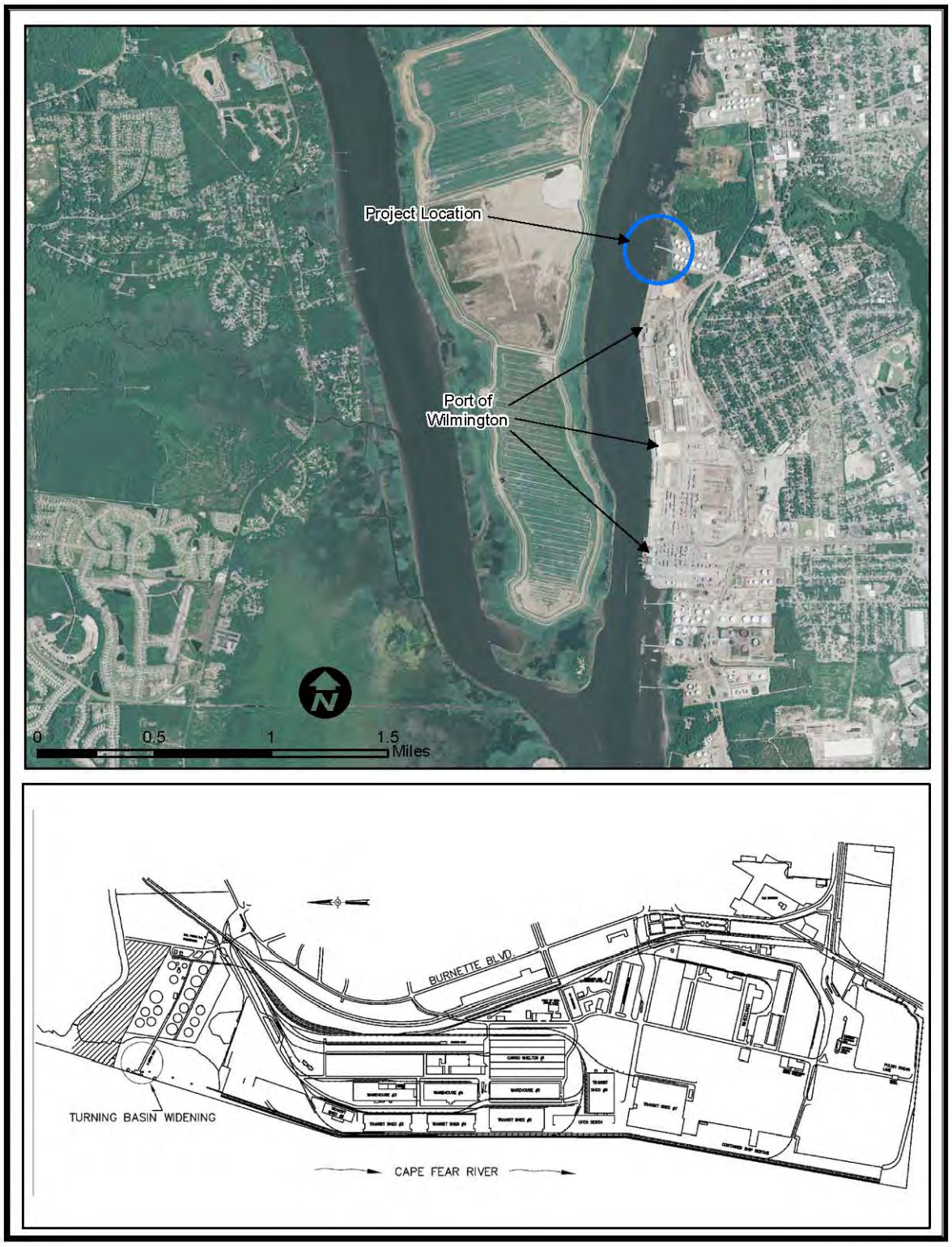

Figure 1. Location Map of Turning Basin Widening Project

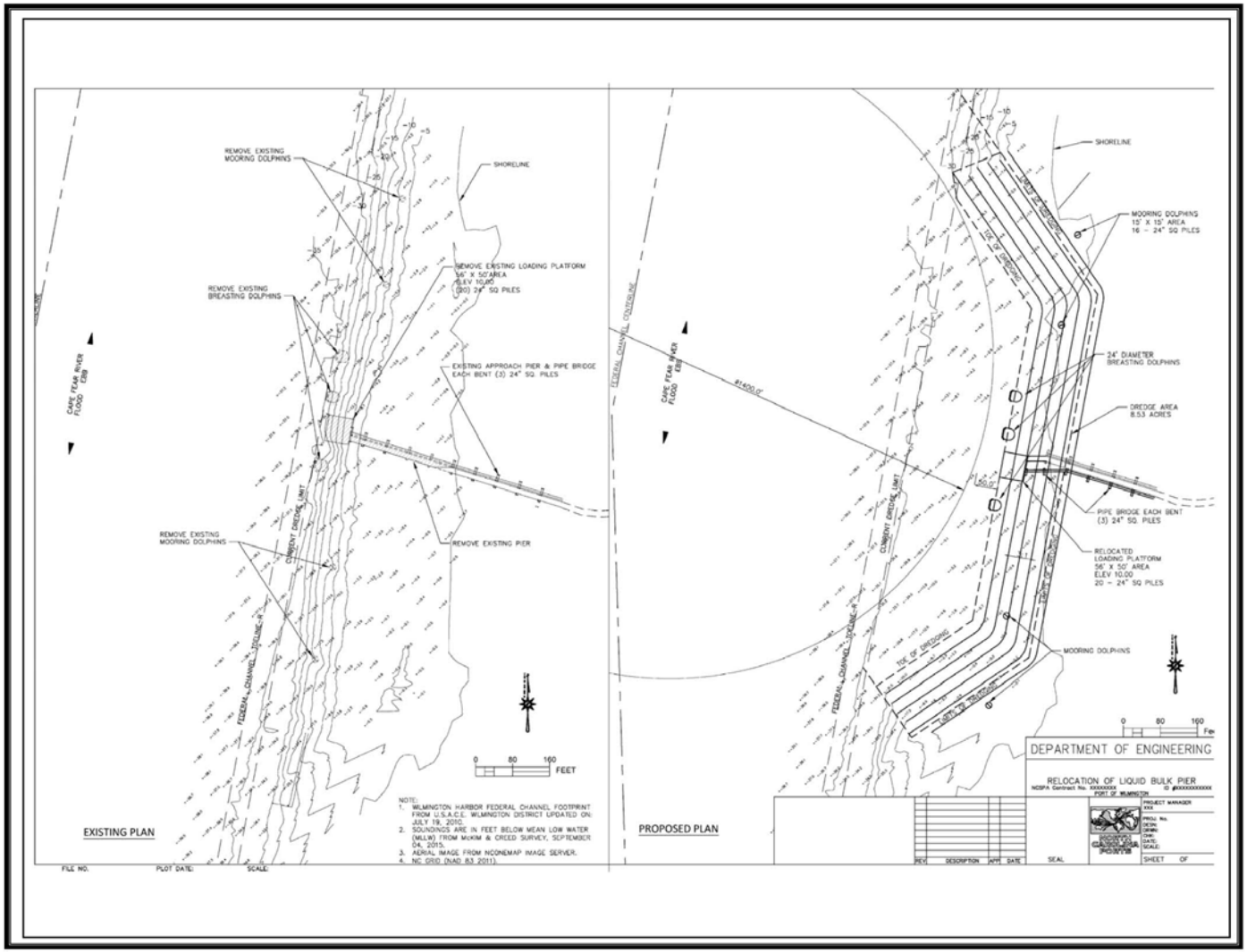

Figure 2. Existing and Proposed Plan View for Proposed Turning Basin Widening

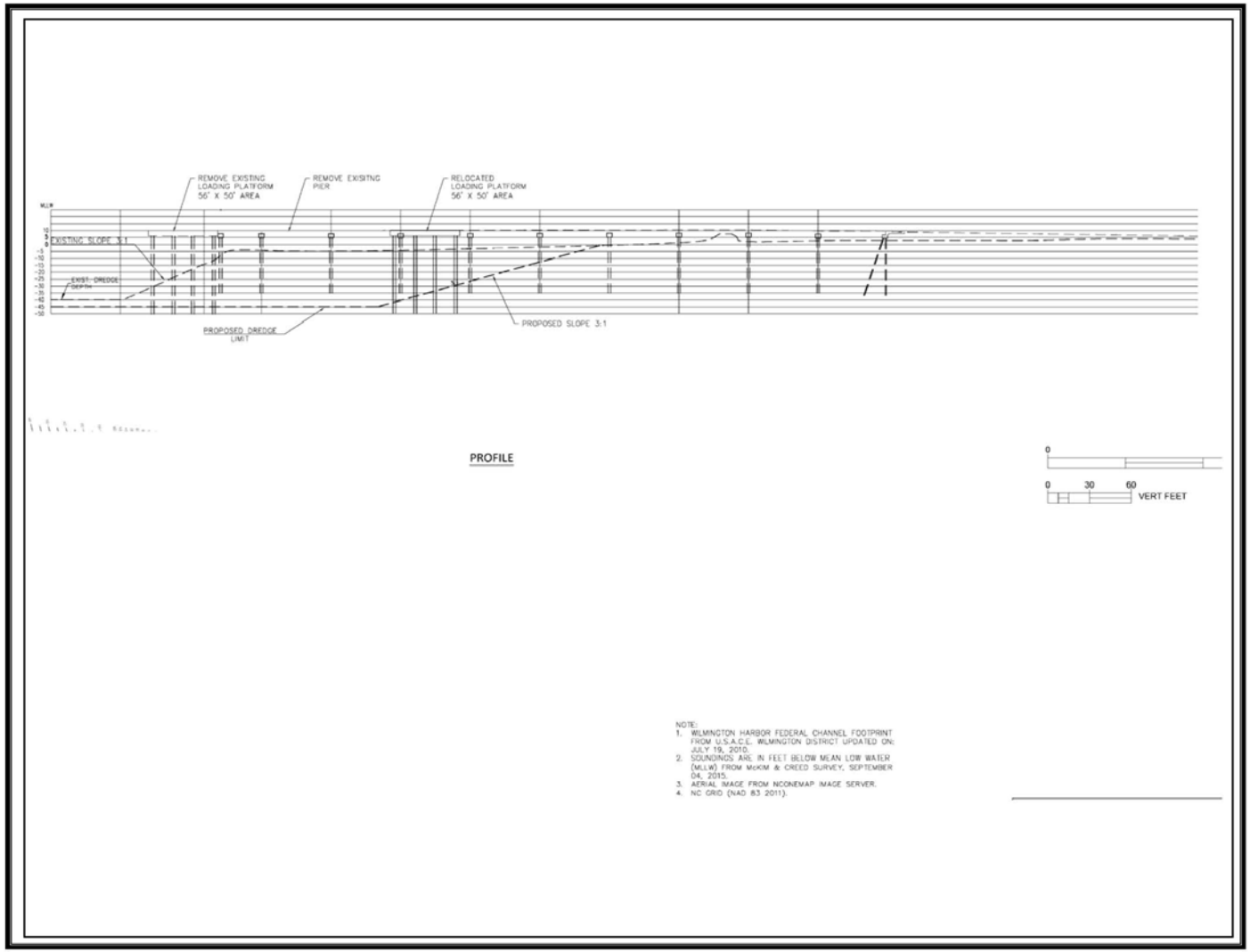

Figure 3. Profile View for Proposed Turning Basin Widening

2.0 AUTHORIZATION

This EFH Assessment was prepared at the request of the USACE Wilmington District associated with the NCSPA's application for permit approval for construction of the Turning Basin Widening project. A pre-application meeting was held between the Port and USACE on 13 October 2015. Based on the results of this meeting, the USACE will process a General Permit 291 for this project, which requires concurrence from the federal and state resource agencies.

This document was prepared in compliance with the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (16 U.S.C. 1801-1882), as amended in 2006 (Magnuson-Stevens Act) and in coordination with the NMFS, the NCDMF, and the NCWRC in association with permit requests to allow widening of the Turning Basin and relocation of the liquid bulk terminal loading platform and morning dolphins.

3.0 PROJECT DESCRIPTION

In order to facilitate expansion of vessel size of container ships calling on the POW by late summer of next year, widening of the Turning Basin is an economic necessity. The proposed project includes mechanical dredging of sediment (barge-mounted crane equipped with an environmental bucket or a long reach excavator boom) from the berthing area while vessels are not present, followed by dredging of the balance of the widening area (8.53 acres) east of the present pier and loading platform (Figure 1-4). The mooring dolphins and loading platform of the liquid bulk pier will be removed and new ones constructed +/-180 ft east of their present location. Dredged material will be placed in scows, transferred across the river, re-fluidized and hydraulically pumped into the Eagle Island CDF. The estimated quantity of sediments be dredged is 300,000 CY, of which a majority are associated with dredging sediment from an existing elevation of -20ft to -5 ft MLW to a depth of -44 ft MLW (Figure 3), with an average present depth of -20 ft MLW when including side-slopes. Construction is estimated to take five-to-six months to complete with a projected completion date of 30 June 2016 in order to meet larger vessel calls anticipated mid to late summer of next year. A variance to allow dredging in a Primary Nursery Area (PNA) has been requested from the NCDENR. A summary of more construction details can be found in Appendix A.

Figure 4. Photograph of Mechanical Dredging

4.0 PROJECT GOALS

The primary purpose and need for widening of the POW Turning Basin is to facilitate vessel calls by larger Panamax vessels from the POW's long-term clients. In order to keep the port's largest client calling on the POW, it is critical to be able to accommodate their new vessels. A goal of this EFH Assessment is to assess the effects of the proposed dredging and construction activities on EFH resources and managed species.

Mechanical dredging has been selected as the preferred dredging method due to the ability to minimize environmental effects with this method as compared to hydraulic dredging and based on availability of equipment during the winter/spring of 2016.

The potential EFH effects can be spatially and temporally managed by: 1) use of turbidity curtains and containment booms during construction 2) maximizing dredging operations during falling tide sequences, 3) restricting dredging operations in authorized dredging areas, and 4) placing an observer on board the dredge barge for monitoring occurrence and injury to managed or associated species, and 5) coordinating with the NCDCM, NCDMF, NCDWQ, NCWRC, and NMFS during construction, as needed.

5.0 MAGNUSON-STEVENS ACT

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) of 1976, with 1996 and 2006 amendments, mandates the identification and protection of essential marine and anadromous fish habitats by NMFS, regional Fishery Management Councils (FMC), and other federal agencies. The NMFS and FMCs define "essential fish habitat" for federally managed species, supporting a primary goal of maintaining sustainable fisheries. Through

implementation of Fishery Management Plans (FMP), this goal requires appropriate fisheries' habitat quality and quantity. Federal permitting agencies whose actions could adversely affect managed species and their EFHs must consult with the NMFS regarding a project's potential EFH effects.

EFH is defined in the Magnuson-Stevens Act as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." An EFH is further clarified with the following definitions: *waters* - aquatic areas and their associated physical, chemical, and biological properties used by fish, and may include aquatic areas historically used by fish; *substrate* - sediment, hardbottom, underlying structures, and associated biological communities; *necessary* - the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and *spawning, breeding, feeding, or growth to maturity* - stages representing a species' full life cycle where any EFH may be a subset occupied by species during life cycles [South Atlantic Region (SAR) 2008a].

6.0 FISHERY MANAGEMENT COUNCILS

As mandated in the Magnuson-Stevens Act and in coordination with NMFS, several FMCs including the South Atlantic Fishery Management Council (SAFMC), Mid-Atlantic Fishery Management Council (MAFMC), and the Atlantic States Marine Fishery Commission (ASMFC) oversee and manage species and EFHs found in NC. The SAFMC manages estuarine EFHs including emergent wetlands, submerged aquatic vegetation (SAV), oyster reefs and shell banks, intertidal flats, palustrine emergent and forested wetlands, aquatic beds, and the estuarine water column; as well as many marine features such as live/hardbottoms, coral and coral reefs, artificial/manmade reefs, *Sargassum*, and the marine water column. Similarly, the MAFMC manages estuarine EFHs including seagrass, creeks, mud bottom, and the estuarine water column as well as the marine water column (SAR 2008a, MAFMC 2011). The ASMFC coordinates conservation and management between states sharing nearshore fishery resources while working cooperatively with the United States East Coast Fishery Management Councils (ASMFC 2012a).

Management of EFH is further accomplished through the development and implementation of FMPs for marine finfish and invertebrates; applicable fishery councils and FMPs are defined in Table 1. Species determined commercially and recreationally important are managed for sustainability, conservation and management issues, sociological and economic issues, and regulatory issues [National Oceanic Atmospheric Administration (NOAA) 2012a]. Essential fish habitats can include multiple habitats supporting managed species' at various life stages. These various life stages may utilize many different habitats supporting reproduction, juvenile and adult development, feeding, protection, and shelter (NOAA 2012a and 2012b).

Table 1. Fishery management plans, councils, and species.

Fishery Management Plan	Fishery Council	Example Species
Shrimp	SAFMC	White, Pink, and Brown shrimp, Spiny lobster
Red drum	ASMFC	Red drum
Bluefish	MAFMC	Bluefish
Summer flounder, Scup, Black sea bass	MAFMC	Summer flounder, Black sea bass
Coastal Migratory Pelagics	SAFMC	King/Spanish mackerel and Cobia
Dolphinfish/Wahoo	SAFMC	Dolphinfish/Wahoo
Snapper/Grouper	SAFMC	Snappers/Groupers
Highly Migratory Species	Federally Implemented Fishery Management Plans (FIFMP)	Tunas, Billfish, Marlins
Highly Migratory Species	FIFMP	Small coastal sharks
Highly Migratory Species	FIFMP	Large coastal sharks
Highly Migratory Species	FIFMP	Prohibited/Research sharks
Dogfish	MAFMC	Spiny/Smooth dogfish

Source: NMFS 2009a, SAR 2008a

7.0 HABITAT AREAS OF PARTICULAR CONCERN

An additional habitat designation authorized by the FMCs is Habitat Areas of Particular Concern (HAPC). HAPCs are EFH partitions of rare, ecologically important, highly susceptible to human degradation, or environmentally stressed areas. HAPCs frequently include habitats used for migration, spawning, and rearing of fish and shellfish; offshore areas of high habitat value or vertical relief; and high value intertidal and estuarine habitats (SAR 2008a). HAPC are considered atypical, particularly ecologically important, susceptible to anthropogenic degradation, or located in environmentally challenged or stressed areas. The Magnuson-Stevens Act does not provide any additional regulatory protection to HAPCs; however, if HAPCs are potentially adversely affected, additional recommendations and conservation guidance may result during the NMFS consultation (SAR 2008a).

The SAFMC has designated several HAPCs within NC waters. South Atlantic Area Wide HAPCs are “state-designated areas of importance to managed species.” NC’s state-designated nursery areas as depicted in Figure 5 are considered HAPCs for post larvae/juvenile and subadult white shrimp (*Litopenaeus setiferus*) and brown shrimp (*Farfantepenaeus aztecus*). NC's tidal inlets, state-designated nursery areas, and SAV are considered HAPCs for red drum (*Sciaenops ocellatus*) (SAR 2008a). The POW’s location in the CFR’s turbid riverine reaches lacks submerged aquatic vegetation habitat (Deaton et.al. 2010).

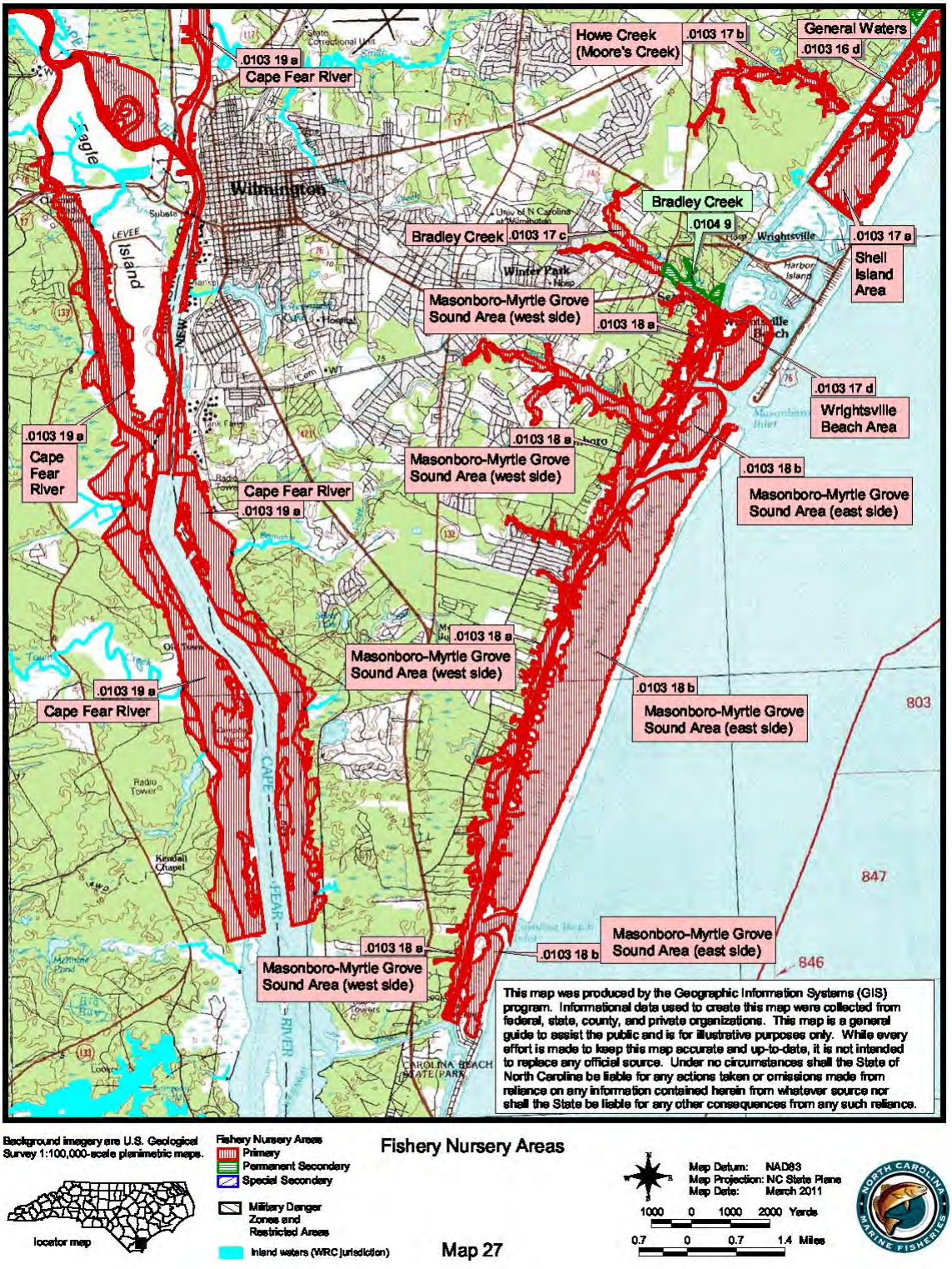

Figure 5. CFR Primary Nursery Areas

Submerged aquatic vegetation, oyster/shell bottoms, and state-designated nursery areas are considered HAPCs for the snapper-grouper complex. Mud bottoms and riverine habitat are considered HAPCs for developmental stages of the gray snapper (*Lutjanus griseus*) post larvae/juveniles and adults respectively (SAFMC 1998a and SAR 2008a). In 2008, the NC Marine Fisheries Commission and the NCWRC jointly designated an Anadromous Fish Spawning Area including most of the CFR's mainstem as an Inland PNA (Figures 6 and 7) (Deaton et.al. 2010).

Effects on HAPCs

Clamshell dredging affects in unconsolidated sediment include resuspension of sediments when the clamshell drops to the bottom and as material washes from the bucket as it rises through the water column. Operational controls such as reducing the bucket speed as it drops to the bottom and as it rises through the water column can reduce impacts, as will use of a closed bucket system

Direct effects of dredging on unvegetated mud bottom HAPC include the conversion of 8.53 acres of shallow water mud bottom habitat to deeper mud bottom habitat. This area ranges in depth from -20 ft to -5 ft MLW moving east from the present berth and will be dredged to -44 ft MLW, sloping back up to natural grade inshore (Figures 2 and 3). Shallow water habitat will still be present landward of the relocated platform and mooring pilings. This area converted to deeper soft bottom habitat will support a less diverse and abundant benthic invertebrate community and as a consequence not be as suitable for foraging by managed species and associated prey species. The shallow water benthic habitat likely supports some foraging use by invertebrate managed species, post-larval and juvenile managed finfish species and potentially by sturgeon, although infrequently.

Mechanical clamshell dredging could potentially indirectly affect the estuarine/riverine water column and unvegetated mud bottoms in shallower water adjacent to the dredging operations. A potential temporary effect would be a tidally dispersed sediment plume. Dredging induced far-field dispersion plumes are often controlled by specialized dredging equipment with managed production rates. Though successful in reducing sediment plume concentrations, such efforts do not eliminate sediment resuspension. The sediment plume's movement is primarily tied to gravitational settling and local horizontal advection effects. The gravitational settling rates are dependent on both the sediment composition and suspended sediment concentration. Several estuarine dredging projects have shown sediment settling rates ranging from centimeters/second to meters/second resulting in settlement primarily within the dredge site's immediate vicinity (Bohlen 2002). The larger grain sizes within the plume settle more rapidly and this stage is referred to as the dynamic phase. Coarse sands (>2 millimeters) and gravels settle almost immediately, often within a distance of less than 50 meters from the dredger(Challinor,2000).

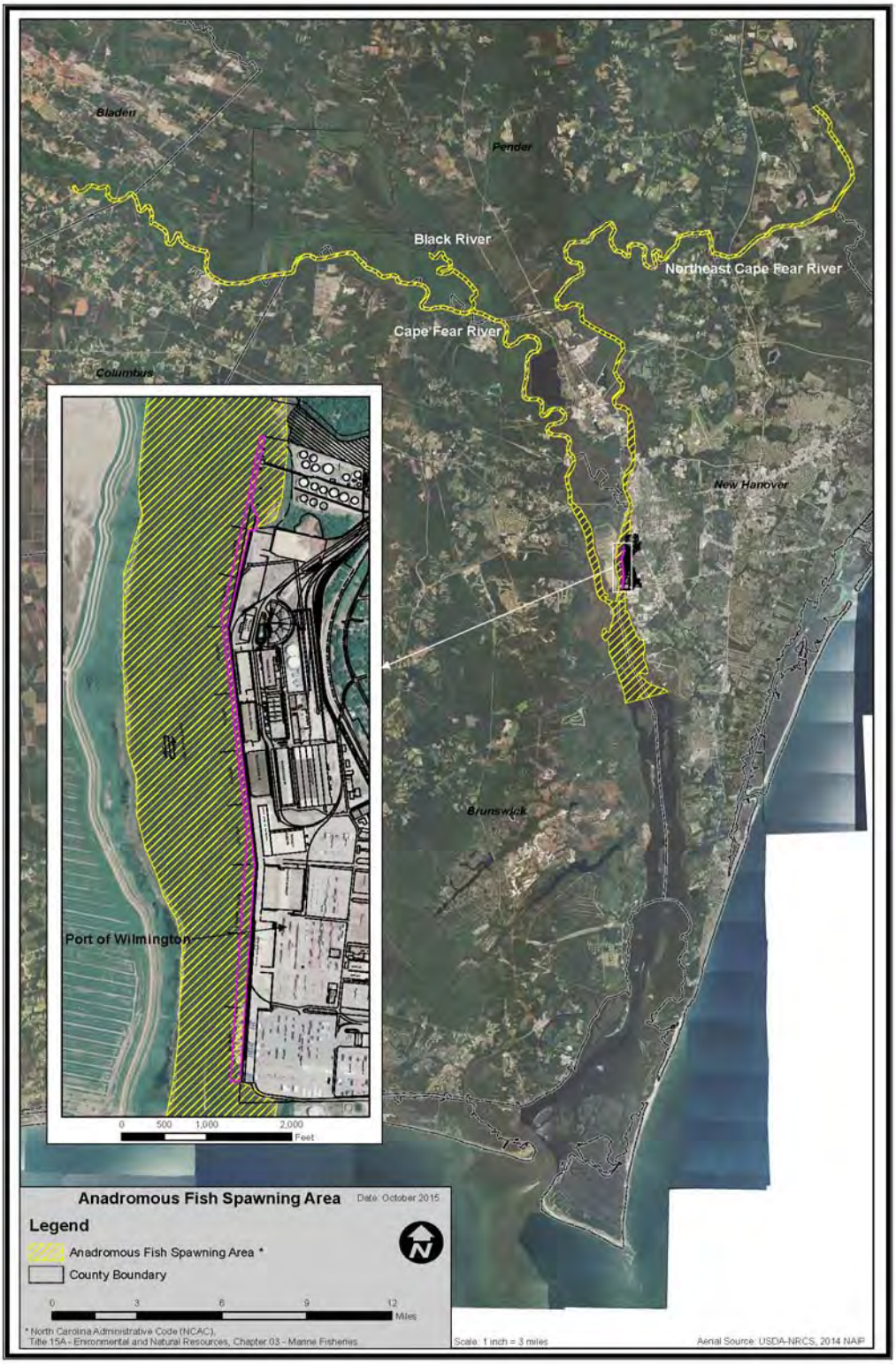

Figure 6. Anadromous Fish Spawning Areas

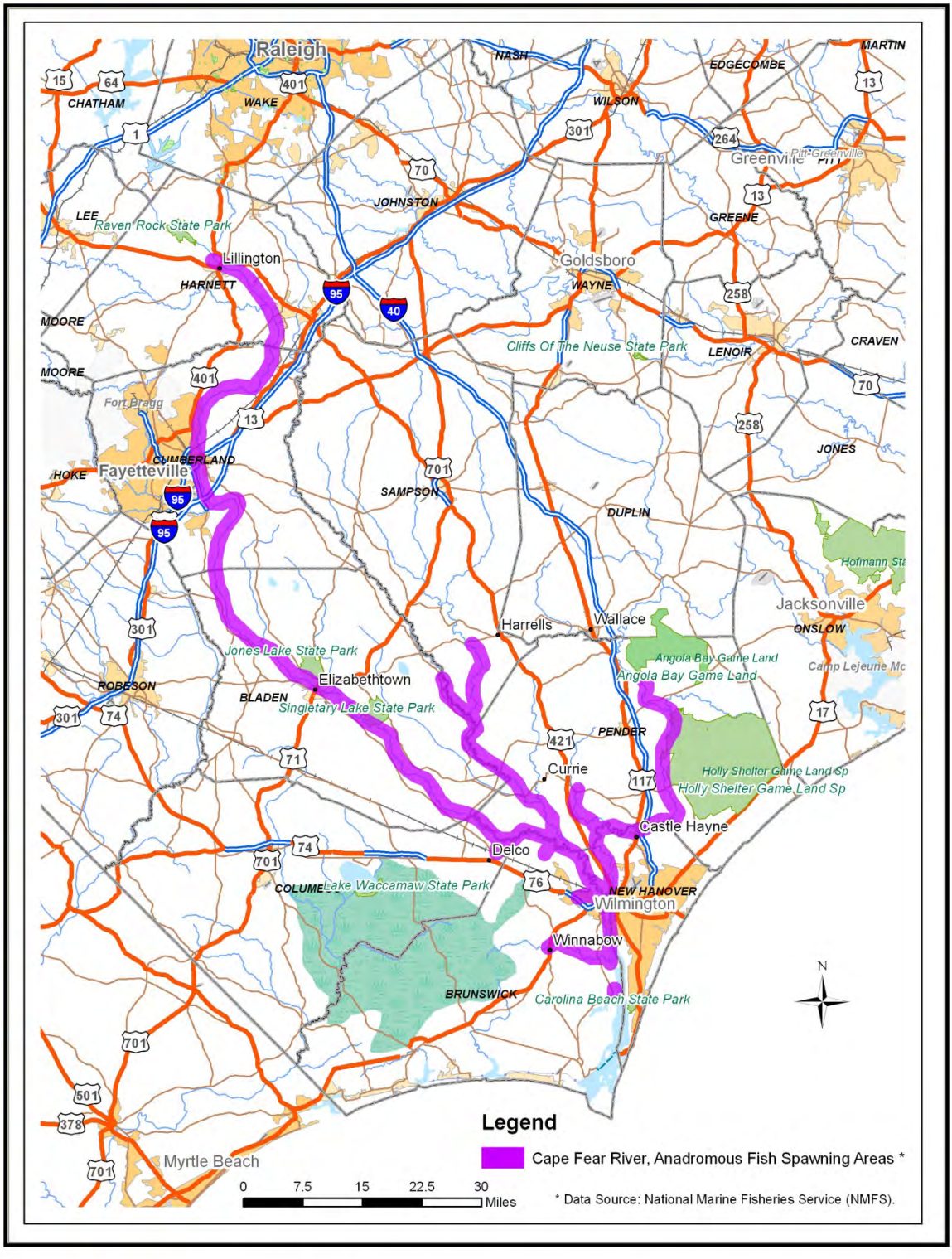

Figure 7. Cape Fear River Anadromous Fish Spawning Areas

While the present turning basin is within the "maintained channel" and as such excluded from being an HAPC, the widening area is within CFR's PNA and as such presently considered an HAPC for managed shrimp species and for post-larvae, juvenile, and adult gray snapper. As such, a variance is required from the NCDENR/CRC for dredging in the designated PNA. Additionally, there are no known SAVs or oyster bars within the proposed action area. However, the project area is within an associated species spawning area as delineated in 15A NCAC (North Carolina Administrative Code) 03R .0115 and 15A NCAC 10C .0603 Anadromous Fish Spawning Areas (Figures 5 and 6). .

The CFR's southern estuary contains approximately 37,800 acres of soft bottom habitat in waters < 6 ft and 188,549 acres in waters > 6 ft (Deaton et.al. 2010). The 8.53 acres of predominately shallow water unvegetated mud bottom area proposed to be affected by mechanical dredging is approximately 0.02 percent of the soft bottom river bottom mud habitat less than 6 ft in depth in the CFR's southern estuary. This represents a very small area of potential impact due to a relatively short-term event. Based on the results of past water quality studies, water quality is not likely to be significantly effected in the CFR as a result of this project. Therefore, no significant indirect effects on HAPCs or associated species spawning areas are anticipated.

As dredging is proposed to last for 5-6 months, there could be temporal effects for use of HAPCs. However, since clamshell dredging is being proposed, mobile species can quickly avoid plumes of elevated turbidity and the mechanical operations, even when migrating up river or foraging in shallow areas.

8.0 ESSENTIAL FISH HABITAT DESIGNATION

8.1 Introduction

The POW berths and private marine terminals berths are located on the CFR approximately 25 miles from the Atlantic Ocean. The POW's federally authorized channel depth is -42 ft MLLW. The mean tide range at the POW is approximately 3.8 ft with a river current velocity of approximately 2.3 to 3.5 miles per hour. The POW maintains this working depth along nine bulk, breakbulk, and container berths (approximately 6,800 linear ft) and the northern adjacent liquid bulk facility owned by Kinder Morgan. The federally authorized and maintained anchorage/turning basin (-42-foot depth, 1,200-foot diameter) is located west northwest of Berths One, Two, and Kinder Morgan (NCSPA 2012). The Turning Basin is proposed to be expanded by a diameter of 200 ft, encompassing the present Liquid Bulk Terminal berthing area and up to 180 ft of the eastern embayment. Widening will include up to 300,000 CY of mechanical dredging with disposal in the Eagle Island CDF.

The EFHs, with potential direct effects from dredging operations, include the estuarine/riverine water column and the unvegetated mud bottom. Potential indirect effects are possible within the federal channel and adjacent water column.

8.2 Estuarine/Riverine Water Column

Water column properties such as salinity, temperature, and nutrients are essential to a managed species' long-term survival and success. The transient boundaries of this EFH are maintained by wind and tide driven inlet and ocean sea water mixing with upland freshwater sources and land surface runoff. Freshwater rivers and stream inflows provide estuarine areas organic matter, nutrients, and finer grained sediments; whereas, the ocean driven tides provide coarser sediments and a transport mechanism for estuarine using species. Salinity, temperature, dissolved organic matter, dissolved inorganic nitrogen, and oxygen are components normally used to describe the water column. The CFR is the major NC source of direct river discharge into the Atlantic Ocean. March is known for large freshwater discharges affecting the water column's salinity and temperature (Deaton et. al. 2010). Even with elevated nutrient levels in the lower CFR, algal blooms are rare; as subject to turbidity and color restricting photosynthesis in concert with the river's high volume flushing (Mallin et. al. 2001). As reported by the Lower Cape Fear River Program from a CFR mainstem water quality monitoring station located downstream of downtown Wilmington and the POW, salinity was characterized as higher but more variable as compared to sites upstream of Wilmington. Salinity ranged from 0 parts per thousand (ppt) to 10 ppt averaging 5.2 ppt with higher salinity readings during summer low flows. Water temperatures ranged from 8.4 degrees Celsius (^{o}C) to 28.2^{o}C and dissolved oxygen (DO) averaged 8.9 parts per million (ppm) in the winter and 4.8 ppm in summer months (Mallin et. al 2000). Other descriptors such as adjacent structures (e.g. shoals, channels, marshes, outcrops), water depth, available wind distances or fetch, and turbidity are used to further describe the water column EFH habitats (SAFMC 1998a).

Riverine transport factors determining sediment spatial distribution include freshwater discharge volumes, channel cross-section and slope dimensions, tidal flow characteristics, the riverine/estuarine geometrics, as well as wind/wave effects [National Research Council (NRC) 1985]. The EFH water column provides both migratory and residential species of varying life stages the opportunity to survive in a productive, active, unpredictable, and at times strenuous environment. As the transport medium for nutrients and organisms between the ocean and estuarine systems, the water column is as essential a habitat as any marsh, seagrass bed, or reef (SAFMC 1998a).

Estuarine/Riverine Water Column Effects

The continued downstream or upstream movement of the unconsolidated alluvial material by means of mechanical dredging may potentially have direct effects on the water column as well as managed/associated species. Indirect turbidity effects could occur within the adjacent federal navigation channel and surrounding embayment and shorelines during dredging operations. Mechanical dredging resuspends finer alluvial material when lifting the clamshell or bucket to the scow as well as exposing finer sediment along the bottom to be picked up and transported. Most resuspension of sediment from mechanical dredging occurs near the bottom as the clamshell digs and first lifts the dredged material. As loaded scows will be transported to the opposing shoreline for mixing with water for hydraulic pumping to the CDFs, care must be taken to minimize overflows of the scows, which can increase the discharge of fine sediments into the water column.

While mechanical dredging can result in more impact in water quality than agitation dredging, the impacts of both types of activities are generally lower in the water column than on the surface. The only dredging method where water quality has been monitored at the POW is for agitation dredging. Water quality monitoring during the testing of the three agitation methods included sampling prior to, during, and after dredging [Law Engineering and Environmental Services (LAW) 1998, 1999a-f]. Sampling stations were located at the dredging initiation point and downstream, with sampling at the surface, mid-depth and near bottom depths. Parameters included turbidity [Nephelometric Turbidity Units (NTU)], temperature, and DO concentration [milligrams/Liter (mg/L)]. Of the three methods tested, none had any significant effect on temperature or DO, with the latter ranging from 4 to 6 ppm during the sled and beam tests, and 7 to 8 ppm during the jetting test monitoring. Observed effects on turbidity were short-lived and/or only showed insignificant (assuming ±2 NTUs standard error for sampling equipment) to minor increases at the mid-depth and/or near surface depths downstream. Downstream near bottom turbidity levels actually decreased following most of the agitation dredging tests. A permit condition requiring dredging to be maximized during a falling tide helps alleviate short-term effects due to the flushing effect of the ebb tide.

On the basis of these agitation tests, monitoring events in 1998 and 1999, and past studies on effects of mechanical dredging, it can be concluded that mechanical dredging is not likely to result in any adverse impact on water quality downstream of the POW. While short-term elevations in turbidity will likely be observed at the dredging location, no long-term or large spatial impacts as a result of dredging are expected to occur from dredging. Given that the berths and federal channel are dredging hydraulically on an annual basis with no negative effect, it is not likely that a single dredging event of this scale would result in any adverse effect.

While the area proposed for dredging is considered new dredging, the applicant is not proposing to discharge dredged material in the offshore Ocean Dredged Material Disposal Site (ODMDS) and as such should not require testing of sediment per the United States Environmental Protection Agency's (USEPA) normal screening. All material will be slurried and pumped to the Eagle Island CDF. The results of testing for offshore disposal of maintenance dredged material is summarized below.

As part of the USEPA required guidelines for offshore disposal of dredged material; the NCSPA, in concert with the USACE, tests maintenance dredge material every five years ensuring dredge material management options. This regular testing ensures compliance with the USEPA's offshore deposition standards. Personal communication with Phil Payonk (USACE 8 February 2012) indicated POW berth material is suitable for offshore disposal. In 2010, Anamar Environmental Consulting, Inc. (Anamar) tested maintenance dredge material in federal channel reaches of the Northeast CFR and within the POW's berthing areas. The following bulleted excerpts are from this document (Anamar 2010):

- **Simulations of the Water Quality Criteria Mixing Model Short-Term Fate (STFATE)**
    - The STFATE module of the ADDAMS model were run to establish the compliance of the water column toxicity for the Wilmington Harbor and NC State Ports, NC. Based on analytical results, no samples were selected for modeling Tier II – Water Quality Criteria as all results were below the CMC (National Recommended Water Quality Criteria: 2006, Criteria Maximum Concentration).

- **Testing Conclusion**
    - Based on the STFATE model results and liquid (suspended phase) bioassay results, ocean disposal of the tested sediments will not exceed the limiting permissible concentration (LPC) and complies with Part 227.6(c)(2) and 227.27(b).
    - These evaluations indicate that the Northeast Cape Fear River Turning Basin and NC State Port Authority sediments tested meet the criteria of the Environmental Protection Agency (EPA) Ocean Dumping Regulations and Criteria (40 Code of Federal Register 220-229) and are, therefore, acceptable for transportation for ocean dumping under Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended.

The CFR's southern estuary contains approximately 37,800 acres of soft bottom habitat in waters <6 ft and 188,549 acres in waters >6 ft (Deaton et.al. 2010). Significant indirect effects of mechanical dredging on EFH habitats or managed species are not anticipated considering that the turning basin widening mud bottom area is only 0.02 percent of the shallow river bottom from the POW to the inlet, that a majority of dredging could occur on falling tides and based on the conclusions of water quality monitoring in the CFR. The project's minimal spatial and temporal extents and good engineering/best management practices would minimize the potential direct, indirect, and cumulative effects of proposed dredging on the estuarine water column HAPC.

The general operational procedures and methods for mechanical dredging ensure that fine sediments are predominantly released near the bottom, thereby ensuring mixing with the water column while taking advantage of falling tide currents and the river's narrowing geometry. This management strategy thereby perpetuates the continuation of the natural downstream transport of suspended river sediment when dredging during falling tides. The expanded turning basin will be serviced by commercial vessels that by their volume displacement alone routinely affect the water column. The expanded area for the turning basin (8.53 acres) is a minor percentage of the CFR's potential water column volume thereby leaving the majority of the water column free for biological transport and/or natural avoidance responses. Considering the dredging method chosen, the limited affected area, and previous water quality monitoring/testing results, the proposed dredging is not anticipated to have significant effects on the estuarine/riverine water column EFH within the CFR. Cumulative effects of potential annual maintenance dredging of the expanded turning basin area, along with the ongoing annual channel and berth maintenance are not anticipated.

Estuarine/Riverine Water Column Conservation Measures

The primary conservation measures minimizing potential direct, indirect, and cumulative effects within the water column include managing mechanical dredging to minimize discharge in the upper water column, minimizing discharge of dredged material overboard from scows when adding water for hydraulic pumping to the CDF, dredging primarily during falling tides, use of turbidity barriers around the dredge and scows at all time while dredging (Figure 4), and use of precision navigation to ensure only authorized areas are dredged. By scheduling dredging with a falling tide, suspended material can be continued downstream thereby alleviating multiple dredging of the same sediment load. The clamshell bucket dredging tends to generate higher suspended loads near the bottom stratum, thereby minimizing upwelling of bottom sediments

into the mid and surface water column strata. Although an exemption is required from NCDMF for dredging during the anadromous fish closure period (February 15 through June 30), use of mechanical dredging rather than a hydraulic cutterhead dredge afford less risk to managed and prey species. DO levels will likely be much lower following conversion of 8.34 acres of shallow water habitat to the deeper Turning Basin depth, however, levels will not likely decline to lower then 5 mg/L, except during late summer months when values below 5mg/L do on occasion occur. Managed species migrating along the river during construction are mobile and can avoid the dredging activity and turbidity plumes. The project's minimal spatial and temporal extents, as well as good engineering/best management practices, should minimize any potential direct, indirect, and cumulative effects of mechanical dredging on the water column EFH.

8.3 Estuarine/Riverine Unvegetated Mud Bottoms

The CFR basin drains 9,322 square miles including all or part of 26 counties and 115 municipalities (NCDWR 2012). The CFR is the only NC major trunk estuary discharging directly into the Atlantic Ocean and transporting significant sediment loads of Piedmont clay soils (Riggs and Ames 2003). Sediment flocculation and the widening and slowing of the CFR in proximity of the POW results in USACE's annual removal of approximately 1.2 million CY of maintenance dredge material from the anchorage/turning basin and adjacent reaches near the POW.

Unvegetated mud bottoms, or soft bottom habitats, are characterized by variable salinities, water depths, hydrographic setting, sediment types, and geomorphology. Such soft bottoms can be further differentiated as freshwater (rivers, creeks, lake bottoms, and unvegetated shorelines) as well as estuarine (subtidal rivers, sounds, creek bottoms, and unvegetated shoreline/intertidal flats). The CFR's southern estuary contains approximately 37,800 acres of soft bottom habitat in waters <6 ft and 188,549 acres in waters >6 ft (Deaton et.al. 2010).

As described by Anamar (2010), POW sediments and adjacent Wilmington Harbor anchorage basin sediments were similar consisting of silts, clays, and small percentages of sands (Table 2). Sediment data from the proposed Turning Basin widening is limited, however, it is anticipated that grain-size distribution and the percent of fine fraction will be similar.

The POW sediments are relatively soft and unconsolidated. Of the sediment samples taken by Anamar, the POW material had the highest percentage of silt and clay at 54.7 percent and 41.0 percent, respectively, with 4.3 percent sand (Anamar 2010).

The primary factors affecting the estuarine benthic community species occurrence, distribution and abundance includes sediment grain-size and organic content, sediment depositional rates, dissolved oxygen and salinity. Mallin et.al. (2000) described the infaunal benthic diversity and richness as constant, as sampled over a four-year period downstream of downtown Wilmington and the POW. These samples were dominated by a variety of taxa, including oligochaetes and amphipods (*Gammarus, Lembos*, and *Monoculodes* spp.) and by polychaetes (*Maranzellaria*, *Mediomastus*, and *Streblospio* spp.). These taxa were considered relatively opportunistic

Table 2. Sediment characterization for all marine terminals.

Sediment Type	Sediment Gradation (millimeters)	POW Sediment (%)
Gravel	Particles ≥ 4.75	0.0
Sand	Particles ≥ 0.075 but ≤ 4.75	4.3
Silt	Particles ≤ 0.075	54.7
Clay	Particles ≤ 0.075	41.0

species typical of oligohaline to mesohaline areas. These species are considered proficient at recovering from bottom disturbances. Epibenthic species living on the sediment generally include gastropods, amphipods, and some insect larvae. Other more motile epibenthic such as juvenile fish, crabs, and shrimp vertically migrate within the water column on a daily basis. The general condition of an area is reflected in the benthic community's health; whereas, the epibenthic community present provides insight on the movement and timing of post-larvae and juvenile fish species important both commercially and recreationally (Mallin et.al. 2000).

Mechanical clamshell bucket dredging physically disturbs the bottom sediments as grabs are taken, with little water left in the bucket as sediment is placed in nearby scows (Figure 4). While some fine material is winnowed out of the bucket or clamshell following the grab, a majority of the sediment is captured for placement in the scow. It is estimated that dredging will run close to 24/7 for five to six months in order to complete the construction by June 30, 2016. In the event time allows, the POW will focus on dredging primarily during falling tides. Scows will be towed to the west shoreline and proceed to slurry the dredged material for pumping into the CDF. Turbidity booms will be used and monitored during both dredging and pumping operations.

8.4 Estuarine/Riverine Unvegetated Mud Bottom Effects

Important considerations when evaluating potential effects to the benthic community include: the ability of the community to recolonize the area after a disturbance; restoration of some measure of community parameters (e.g., species richness and diversity); and the functional property of the community to higher trophic levels (i.e., resident and migratory fish). Natural ecosystem processes and physical variations make it difficult to distinguish between natural and anthropogenic disturbances (Grober 1992). Production within a benthic community is tied to sediment grain size, light availability, temperature, and community biomass. Light availability is considered a primary factor attributed to benthos primary production rates (Deaton et.al. 2010). Benthic monitoring within the CFR mainstem downstream of downtown Wilmington and the POW described most of the dominating taxa as relatively opportunistic species found within oligohaline to mesohaline areas and capable of recovery from bottom affecting disturbances (Mallin et.al. 2000).

Widening of the Turning Basin through mechanical dredging, as proposed, will result in the conversion of approximately 8.53 acres of predominately shallow water unvegetated mud bottom habitat to deeper unvegetated mud bottom habitat. This results in a loss of suitable foraging habitat for some managed species and their prey, as shallower water within the photic

zone is much more productive, supporting a richer array of infaunal and epibenthic prey species than the deeper unvegetated mud bottoms. This change from shallow water to deeper channel depths represents a loss of 8.53 acres of predominately shallow water benthic habitat or 0.02 percent of the total of 37,800 acres of shallow water estuarine unvegetated habitat present in the CFR estuary.

Dredging will temporarily remove the present benthic community within this 8.53 acres of shallow water habitat, resulting in colonization of the deeper sediments within the proposed Turning Basin widening area. The benthic community productivity levels at the dredged channel depths are typically limited and comprised of opportunistic species capable of tolerating frequent disturbances as occurs during commercial vessel use and at depths with no or little light. Following dredging, recolonization of the benthic community will occur from adjacent mud bottom benthic communities and from pelagic larval settlement. Recovery from dredging in estuaries generally takes from 6 to 12 months, depending upon the degree and frequency of disturbances present and time of year of the dredging. Motile invertebrates such as clams and shrimp may actually avoid capture, as may juvenile and adult demersal fish and invertebrate species.

As part of the USEPA's required guidelines for offshore disposal of dredged material, the NCSPA, in concert with the USACE, tests maintenance dredge material every five years ensuring compliance with the USEPA's offshore deposition standards. In 2010, Anamar tested maintenance dredge material in federal channel reaches of the Northeast CFR and within the POW's berthing areas. The following bulleted excerpts are from this document (Anamar 2010).

- **Benthic Determinations (Whole Sediment Bioassay) Summary**
    - The whole sediment bioassays show that the tested sediment does not cause significant acute toxicity and meets the solid phase toxicity criteria of Part 227.6(c)(3).

- **Testing Conclusion**
    - Based on the STFATE model results and liquid (suspended phase) bioassay results, ocean disposal of the tested sediments will not exceed the limiting permissible concentration (LPC) and complies with Part 227.6(c)(2) and 227.27(b).

The shallow water unvegetated mud bottom area (8.53 acres) proposed for deepening is a small percentage (0.02 percent) of the CFR's present shallow water bottom area (< 6 ft) occurring from the inlet to the POW berths. While this does represent a reduction in foraging habitat for managed and prey species, it is not likely utilized to the fullest extent practicable due to present commercial vessel activity in and around the port. Other construction activities to replace the liquid bulk mooring platform, pile supported pipeline, and mooring dolphins will have limited to no negative effect on managed species or their prey.

Estuarine/Riverine Unvegetated Soft Bottoms Conservation Measures

The primary conservation measures minimizing potential direct, indirect, and cumulative effects by mechanical dredging within the shallow soft bottom habitats are the proposed use of turbidity barriers around the dredging and pumping operations, the limited area of proposed dredging, and maximizing dredging to occur predominantly during falling tides. The proposed dredging

area is a small percentage of the available shallow water riverine/estuarine bottoms from the CFR's inlet mouth to the POW (0.02 percent). With a goal of maximizing dredging with a falling tide, unconsolidated sediment is diffused along the bottom and continues downstream. This action also reduces potential benthic effects. The limited spatial area and temporal duration of event (six month dredging schedule), as well as good engineering/best management practices, should minimize the potential effects of dredging on soft bottom habitat present adjacent to the proposed dredging area. Dredging will result in a direct loss of shallow water unvegetated mud bottom, thereby reducing the availability of 8.53 acres of suitable shallow water foraging habitat for managed and prey species as it is deepened to channel depths for the Turning Basin.

8.5 Potential Indirect Effects on Essential Fish Habitat

Estuarine marshes are normally nature's margins of bays and sounds and can include estuarine forests, estuarine shrub/scrub, and salt/brackish marsh. A coastal marsh is defined by the NCDCM by the on-site vegetation. Those NCDCM species are salt marsh cordgrass (*Spartina alterniflora*), black needlerush (*Juncus roemerianus*), saltworts (*Salicornia* spp.), salt grass (*Distichlis spicata*), sea lavender (*Limonium* spp.), bulrush (*Scirpus* spp.), saw grass (*Cladium jamaicense*), cattail (*Typha* spp.), salt meadow grass (*Spartina patens*), and giant cordgrass (*Spartina cynosuroides*). These riparian vegetated communities provide critical functions for various finfish life stages including: refuge, foraging, and development. However, most juvenile finfish found in the riparian marsh nurseries were spawned offshore and transported into the estuary through tidal inlets.

The potentially affected estuarine/riverine marshes include the wetland fringe inshore of the Kinder Morgan pier and Eagle Islands' wetland fringe approximately 1,300 ft west of the pier. The greatest potential indirect effect on tidal marshes would be a tidally migrating sediment dispersion plume. As dredged material will be managed from placement in a scow through rehydrating and pumping to the CDF, as well as booms maintained around the operation; the deposition of sediment within the shallow fringing marshes is highly unlikely.

Considered HAPCs, the proposed dredging area is within NCDMF designated PNA (Figure 5). Due to the goal of trying to limit dredging to during falling tides, the river's high tidal velocity, the high sediment carrying capacity of the river, and the limited dredging schedule; sediment accumulation within the adjacent or downstream wetland fringes and/or significantly affecting downstream PNAs is not anticipated. As depicted in Figures 5 and 6, the North Carolina Marine Fisheries Commission (NCMFC) and NCWRC have designated areas from the POW upstream into Columbus, Bladen, Pender, and other inland NC Piedmont counties as anadromous fish spawning areas. The structural area displacement and the supporting vessel's activities would evoke natural evasive response mechanisms from managed species and juvenile prey species, thereby avoiding the active dredging and construction areas. As a result of the low temporal use and minimal spatial area of dredging, the falling tide operational goal, and the extensive area designated as anadromous spawning areas; potential adverse effects on anadromous fish within the CFR from dredging is considered minor. A separate Biological Assessment addressing effects of proposed dredging and construction on the two sturgeon species present has been prepared (DC&A 2015)

8.6 Potential Cumulative Effects on Essential Fish Habitat

Potential cumulative effects are those resulting from any or all past, present, and reasonably foreseeable actions, including the potential incremental effects from the authorized dredging. Uses of adjacent waters and water courses by various NC military installations, commercial and recreational fishing, recreational boaters, and international trade will continue influencing the CFR's estuarine/riverine EFHs, managed, and associated species. Dredging of the federally authorized channel occurs annually with dredging of the quays and berths generally occurring every one to two years as piggybacking on the dredging contractor while present in the harbor. Since the July 1998 NCDCM authorization for agitation dredging, all operational stipulations have been adhered and each (an average of one event per year) "out of window" action has been coordinated with NCDCM, NCDMF, NCDWQ, NCWRC and NMFS. The operational techniques and frequency have not changed as referenced in NOAA's 2006, 2012 and 2014 consultation and the POW's purpose and need for maintaining federally authorized quay depths year-round remains a constant in the POW marine terminals' ability to market and maintain their customer base. The minimal spatial and temporal extents of proposed dredging as well as good engineering/best management practices will continue to minimize the potential for cumulative effects within the CFR's EFH. The only cumulative effect likely would be if multiple terminals were dredging during the same falling tide event; however, this is highly unlikely due to the limited frequency of dredging at the NCSPA and private terminals. Since the proposed dredging of 8.34 acres for the expanded Turning Basin is a one-time event, it is not expected that this project along with the other annual dredging events will result in a negative cumulative effect. Therefore, it is not likely to be any significant cumulative effect of dredging activities on associated EFH.

9.0 MANAGED SPECIES

9.1 Introduction

The NMFS, SAFMC, MAFMC, and ASMFC are responsible for managing specific species/life stages that may occur within the CFR and/or near the POW. Table 3 identifies those species and their lifestage(s) potentially occurring in the vicinity of the POW. The EFH species data was provided by the NMFS Habitat Conservation Division, Beaufort, NC (NOAA 2012a and Appendix B).

Table 3. Essential fish habitat species.

Species		Life Stages
Common Name	**Scientific Name**	**Cape Fear River to US 421**
INVERTEBRATES		
Brown shrimp	*Farfantepenaeus aztecus*	L, J, A
White shrimp	*Litopenaeus setiferus*	L, J, A
Pink shrimp	*Farfantepenaeus duorarum*	L, J, A

Table 7. (concluded)

Species		Life Stages
Common Name	**Scientific Name**	**Cape Fear River to US 421**
COASTAL DEMERSALS		
Red drum	*Sciaenops ocellatus*	E, L, J, A
Bluefish	*Pomatomus saltatrix*	J, A
Summer flounder	*Paralichthys dentatus*	L, J, A
COASTAL PELAGICS		
Spanish mackerel	*Scomberomorus maculatus*	J, A
King mackerel	*Scomberomorus cavalla*	J, A
Cobia	*Rachycentron canadum*	J, A
SNAPPERS/GROUPERS		
Black sea bass	*Centropristis striata*	J
Rock sea bass	*Centropristis philadelphica*	J
Gag grouper	*Mycteroperca microlepis*	J
Red grouper	*Epinephelus morio*	J
Black grouper	*Mycteroperca bonaci*	J
Lane snapper	*Lutjanus synagris*	J
Mutton snapper	*Lutjanus analis*	J
Gray snapper	*Lutjanus griseus*	J
Yellow jack	*Carangoides bartholomaei*	J
Blue runner	*Caranx crysos*	J
Crevalle jack	*Caranx hippos*	J
Bar jack	*Caranx ruber*	J
Atlantic spadefish	*Chaetodipterus faber*	J
Sheepshead	*Archosargus probatocephalus*	J, A
SHARKS		
Smooth dogfish	*Mustelus canis*	J
SMALL COASTAL SHARKS		
Atlantic sharpnose shark	*Rhizoprionodon terraenovae*	J, A
Finetooth shark	*Carcharhinus isodon*	J, A
Blacknose shark	*Carcharhinus acronotus*	J, A
Bonnethead shark	*Sphyrna tiburo*	J, A
LARGE COASTAL SHARKS		
Silky shark	*Carcharhinus falciformis*	J, A
Tiger shark	*Galeocerdo cuvieri*	J, A
Blacktip shark	*Carcharhinus limbatus*	J, A
Spinner shark	*Carcharhinus brevipinna*	J, A
Bull shark	*Carcharhinus leucas*	J, A
Lemon shark	*Negaprion brevirostris*	J, A
Nurse shark	*Ginglymostoma cirratum*	J, A
Scalloped hammerhead	*Sphyrna lewini*	J, A
Great hammerhead	*Sphyrna mokarran*	J, A
Smooth hammerhead	*Sphyrna zygaena*	J, A

Legend: E, Egg; L, Larval; J, Juvenile; A, Adult
Source: Habitat Protection Division, Pivers Island, NC

9.2 Invertebrates

Major NC rivers, NC's southern coast, Pamlico Sound, and Core Sound are major shrimping areas. These locations provide annual crops of brown, white, and pink shrimp; all are managed by the SAFMC [South Atlantic Fisheries Management Plan (SAFMP) 2004]. The more common NC species are the brown and pink; while the white shrimp is more established in southeastern coastal NC, South Carolina, Georgia, and Florida [North Carolina Fishery Management Plan for Shrimp (NCFMPS) 2006]. The loss or degradation of juvenile nursery habitat is the most serious threat to stocks; specifically salt marsh for brown and white shrimp, and the inshore seagrass for pink shrimp. River mouths and inlet entrances, specifically into Core and Pamlico Sounds, are particularly important to NC's shrimp estuarine recruitment (NCFMPS 2006). All coastal inlets and state-designated nursery habitats are of particular importance to shrimp. In NC, all primary and secondary nursery areas meet the criteria for EFH-HAPCs (SAFMP 2004).

Brown Shrimp *(Farfantepenaeus aztecus)*

Brown shrimp support an important commercial fishery along the South Atlantic coast, primarily in North and South Carolina; however, they do occur from Massachusetts, around the Florida Keys, and into the Gulf of Mexico. Brown shrimp are found throughout NC's estuaries, with a higher abundance in the Neuse tributaries; Core Sound; Stump Sound; and in Brunswick County's Intracoastal Waterway. This species spawns in deep ocean waters during late winter or early spring, reaching sexual maturity at a 5.5 to 5.7 inch length. Brown shrimp may occur seasonally along the Mid-Atlantic coast; however, breeding populations seemingly do not range north of NC. Carried by currents and wind into estuaries, the larvae develop into post-larvae within 10 to 17 days. Juveniles develop in four to six weeks, continuing into rapid sub-adult development depending on salinities and temperatures. As they increase in size, they move to deeper and saltier waters of the sound, until returning to the sea in late fall. They have a maximum life span of 18 months. Brown shrimp are omnivores and prefer muddy and peat bottoms, but can be found on sand, silt, or clay mixed shell hash bottoms (SAFMP 2004, NCFMPS 2006).

White Shrimp *(Litopenaeus setiferus)*

White shrimp are found along the Atlantic coast from New York to Florida. In NC, white shrimp are mostly concentrated in the CFR estuary, Brunswick County estuaries, New River, and tributaries of Pamlico Sound. White shrimp reproduce offshore from March to November and post-larvae move inshore on tidal currents, entering the estuaries two to three weeks after hatching. Shallow muddy bottoms in low to moderate salinities are the optimum nursery areas for these benthic juvenile white shrimp. By June or July, the juveniles move to deeper creeks, rivers, and sounds. During fall and early winter, white shrimp migrate south; providing a valuable fishery in southern NC, South Carolina, and Georgia. White shrimp are omnivores, preferring soft muddy bottoms in areas of expansive brackish marshes (SAFMP 2004, NCFMPS 2006).

Pink Shrimp *(Farfantepenaeus duorarum)*

Pink shrimp can be found from southern Chesapeake Bay, around the Florida Keys, and into the Gulf of Mexico. Major numbers of pink shrimp are found off NC and along the northeast Florida coast, with the large populations off southwestern Florida. Pink shrimp ocean-spawn during April through July, and are transported by wind-driven currents into the estuaries. NC maintains the northernmost reproducing population; with female pink shrimp reaching sexual maturity at 3.35 inches. Within the estuarine nursery areas, pink shrimp experience rapid growth; as they increase in size, they move to deeper and saltier waters of the sound. Appreciable numbers of pink shrimp over-winter in NC estuaries before entering the ocean; pink shrimp have a maximum life span of about two years. Pink shrimp are primarily bottom feeders and feed essentially among shallow water marine plants. SAVs are particularly critical as a nursery area for juvenile pink shrimp; abundance appears greater in estuarine SAV beds as compared to soft bottoms, marsh edges, or shell bottoms (NCFMPS 2006).

Potential Project Effects on Invertebrates

The dredging may affect the managed invertebrate species using the estuarine/riverine water column EFH and will affect the unvegetated mud bottom EFH. The water column EFH acts as the transport medium between the ocean and estuarine/riverine systems. The managed invertebrate species reproduce offshore during the spring and early summer months and larvae are then carried by wind and tidal currents into the estuaries. These earlier life stages have the least capability for avoiding water column disturbances, such as during dredging. The adult and juvenile motility would allow for operation avoidance during late fall migrations. Potential larval effects from turbidity may occur during dredging operations; however, the minimized operational window goal, and small dredging area would minimize the potential for effects. Due to the deepening of shallow water unvegetated mud bottom EFH within the PNA, there will be a small loss of 8.43 acres of potential nursery and foraging area for managed invertebrate species. Other than this direct loss of habitat, there will limited spatial and temporal impacts outside of the direct dredging area.

The dredging operation could have potential indirect effects on estuarine/riverine marshes and PNAs; each providing potential shelter and foraging habitats for the developing shrimp life stages. The Kinder Morgan pier-head line is approximately 1,300 ft east of Eagle Island's wetland fringe and approximately 350 ft west of the adjacent shoreline wetland fringe. A potential invertebrate indirect effect could be a tidally migrating sediment dispersion plume. Significant turbidity effects from mechanical dredging operations on these habitats are not anticipated. There are no SAV or oyster rock habitats within or near the proposed dredging area. Since the dredging area is within designated PNA, a variance has been requested from the NCDENR. Use of turbidity barriers and good engineering/best management practices will minimize the potential for effects on managed invertebrate species elsewhere within the CFR.

9.2.1 Coastal Demersal Species

Demersal fish are primarily bottom feeders compared to pelagic species living in the open water column away from the bottom. Most demersal species have a flat ventral body region facilitating their substrate positioning. Many demersal species exhibit an inferior mouth (pointed

downward) for substrate feeding. Managed coastal demersal species potentially found within the existing and or proposed AMD area EFHs are red drum, bluefish, and summer flounder, each which are discussed below.

Red Drum *(Sciaenops ocellatus)*

The red drum is a coastal and estuarine species found in the Gulf of Mexico from southwest Florida to Tuxpan, Mexico and along the US east coast from Key West to Massachusetts. In 1971, NC's General Assembly designated the red drum as the state's official salt water fish (Case 2007). The red drum, unlike the black drum, has no chin barbells but does have a sub-terminal or inferior mouth facilitating bottom feeding (SAFMC 2012a). Producing up to two million eggs a season, red drum females spawn in nearshore waters at night during summer and fall. Hatching within three days, larvae are transported into estuarine areas by wind and tidal currents. Zooplankton, small crabs, and shrimp make up the juvenile and sub-adult diet; and with maturation, larger invertebrates and fish become the diet staples. Adults seasonally migrate offshore or south during the winter. Males mature between age one and four, while females between age three and six. Red drum may live 60 years and reach greater than 90 pounds (ASMFC 2012b).

Bluefish *(Pomatomus saltatrix)*

Bluefish are found throughout most temperate coastal regions and along the US Atlantic coast from Maine to Florida. Bluefish are one of the most sought after recreational species along the Atlantic coast (ASMFC 2012c). Bluefish spawn offshore from Massachusetts through Florida in distinct groups referred to by the season; spring-spawned or summer-spawned. Eggs are externally fertilized, pelagic, and highly buoyant; they are released in open ocean waters hatching within 48 hours with immediate larval development. As developing juveniles, bluefish move into coastal sounds and estuaries of the Mid-Atlantic Bight and to a lesser degree the South Atlantic Bight (MAFMC 1990). Juveniles prefer sandy bottom habitats; but will use a mud or silty bottom as well as vegetated SAV areas, seaweed, and marsh grass. Bluefish are insatiable carnivores and will eat almost anything they can catch and swallow. Bluefish stomach contents have revealed over 70 species of fish including: butterfish (*Peprilus triacanthus*), alewife (*Alosa pseudoharengus*), silverside (*Menidia menidia*), and spot (*Leiostomus xanthurus*). Bluefish are sexually mature by year two, and can live up to 12 years reaching three feet in length and exceeding 30 pounds (MAFMC 1990, ASMFC 2012c).

Summer Flounder (*Paralichthys dentatus*)

The summer flounder's ecological range includes shallow estuarine and outer continental shelf waters from Nova Scotia to Florida and the northern Gulf of Mexico [Northeast Fisheries Science Center (NEFSC) 1999]. From late spring through early fall, summer flounder are concentrated in estuaries and sounds until migrating to the offshore outer continental shelf wintering grounds (NEFSC 1999, ASFMC 2012d). During fall and early winter, offshore spawning occurs and the larvae are carried by wind currents into coastal areas. Post larvae and juvenile development occurs principally within the estuaries and sounds (NEFSC 2012a).

Summer flounder eggs are pelagic, buoyant, and spherical with a transparent rigid shell with the yolk occupying approximately 95 percent of the egg volume (ASFMC 2012d and 2012e). Larvae migrate to inshore coastal areas from October to May where they bury into the sediment and develop into juveniles. Late larval and juvenile summer flounder are active predators; preying on crustaceans, copepods, and polychaete parts (NEFSC 1999). Juveniles inhabit marsh creeks, mud flats, and seagrass beds; preferring primarily sandy shell substrates. Juveniles often remain in NC sounds for 18 to 20 months. Males reach maturity at a length of approximately 9.8 inches while female reach maturity at approximately 11 inches (NEFSC 1999, ASFMC 2012e). Adults primarily inhabit sandy substrates, but have been documented in seagrass beds, marsh creeks, and sand flats (ASFMC 2012d and 2012e, NEFSC 1999). Adults are active during daylight hours and normally inhabit shallow, warm, coastal estuarine waters before wintering offshore on the outer continental shelf (OCS). Some research suggests that some older individuals may remain offshore year-round (NEFSC 1999).

Potential Project Effects on Coastal Demersal Species

Dredging may have effects on coastal demersal species managed and potentially found within the project area. Deeping of the shallow water mud bottom habitat could result in the loss of larvae or small juveniles from a number of demersal species during dredging. While many could escape the dredging, some would be entrained in the clamshell/bucket grab. Bluefish and summer flounder reproduce offshore during the winter and larvae are then carried by wind and tidal currents into the estuaries. However, due to the small or limited area of dredging, the actual loss would be expected to be minimal. The juveniles and adults would avoid operational areas during migrational periods. Red drum spawns primarily close to inlets during the late summer and fall, peaking in September and October. The red drum's pelagic eggs and larvae are then transported by currents into the estuarine nursery areas (ASMFC 2012f). Some larval effects (turbidity) may occur during dredging; however, the timing and size of the affected area would minimize potential effects. Dredging would displace potential benthic prey resources commonly found in shallow water mud bottom habitats; however, the spatial effects would be minimal considering available adjacent foraging bottoms. Given the large water column available for movement and small area impacted by the dredging operations, there would be limited effects on migrating species.

The dredging operation could have potential indirect effects on estuarine/riverine marshes and PNAs; each providing potential shelter and foraging habitats for the coastal demersal life stages. The Kinder Morgan pier-head line is approximately 1,300 ft east of Eagle Island's wetland fringe and approximately 350 ft west of the adjacent shoreline wetland fringe. A potential indirect effect could be a tidally migrating sediment dispersion plume. Significant turbidity effects from mechanical dredging operations on these habitats are not anticipated. There are no SAV or oyster rock habitats within or near the proposed dredging area. Since the dredging area is within designated PNA, a variance has been requested from NCDENR. Due to the deepening of shallow water mud bottom habitat with PNA, there will be a small loss of potential nursery and foraging area for coastal demersal species. Other than this direct loss of habitat, there will limited spatial and temporal impacts outside of the direct dredging area. Use of turbidity barriers and good engineering/best management practices would serve to minimize the potential effects on managed coastal demersal species and their prey adjacent to the proposed dredging area.

All NC coastal inlets and state designated primary/secondary nursery areas are considered HAPCs for many managed species including red drum, bluefish, and summer flounder (SAFMC 1998b). Dredging could have indirect effects on proximal wetland fringes, downstream water columns, and PNAs each providing potential pathways and foraging habitats for coastal demersal developmental stages; however, significant turbidity effects would not be anticipated. The spatial and temporal extents of the proposed dredging, as well as good engineering/best management practices minimize the potential for indirect effects on managed coastal demersal species within the CFR and near the POW.

9.3 Coastal Pelagic Species

Coastal pelagic species potentially found near the POW include king mackerel, Spanish mackerel, and cobia. Each species is generally distributed from New England to Brazil. These highly sought after game fish have common attributes; such as extended spawning periods, rapid growth, and early maturation. These species are also fast swimming and schooling predators with insatiable feeding habits. Regarding Spanish and king mackerel, the SAFMC and the Gulf of Mexico Fishery Management Council (GMFMC) distinguish two separate migratory groups (NMFS 2009a, NOAA 1983).

Spanish Mackerel (*Scomberomorus maculatus*)

Spanish mackerel management has resulted in a steady stock abundance increase since 1995; and based on previous data, the population is not over-fished. This species prefers open waters, but can be found over deep reefs, grass beds, and estuarine shallows (ASMFC 2012g). Smaller than its relative the king mackerel, the Spanish mackerel's average weight is two to three pounds reaching lengths of three feet. Spanish mackerel are a fast-growing species, with both sexes capable of reproduction by the second or third year (SAFMC 2012b and Mercer et.al. 1990). Spanish mackerel have a life span of five to eight years (ASMFC 2012g). Spanish mackerel spawn in groups over the inner continental shelf, and spawning starts off the Carolinas in April. Females grow faster and larger than males; and by age two, females may release up to 1.5 million eggs (Mercer et.al. 1990). Larvae grow quickly and may be found inshore at shallow depths less than 30 feet. Juveniles use estuaries as nursery areas but most remain in nearshore ocean waters. The continental shelf, tidal estuaries, and coastal waters are all habitats for adult Spanish mackerel; however, the adults spend most of their life in the open ocean (ASMFC 2012g and 2012h, and Mercer et.al.1990). Spanish mackerel are carnivores and primarily piscivorous as juveniles and adults (Mercer et.al. 1990).

King Mackerel (*Scomberomorus cavalla*)

Elongated and laterally compressed, the king mackerel can reach lengths of 5.5 feet and weigh up to 100 pounds. Juvenile king markings can be confused for large Spanish; however, the sharply dipping lateral line clearly distinguishes the king mackerel (GMFMC and SAFMC 1983 and SAFMC 2012c). Primarily a coastal species, the king mackerel's range is from Brazil to Maine including the Gulf of Mexico. Migration movements are tied to water temperature changes and may vary with age and size. Smaller individuals of similar size form significant

schools congregating in areas of bottom relief or reefs; where larger solitary individuals prefer anthropogenic structures and/or wrecks. Reproductive maturity occurs in males at age four and females at age three. A well-defined spawning area has not been determined in that larvae and juvenile have been seen from May to November off Miami, Canaveral, and the Carolinas. King mackerel may reach an age of at least 14 years (GMFMC & SAFMC 1983).

Cobia (*Rachycentron canadum*)

Cobias are prominent in warm seasonal east coast waters from Chesapeake Bay south through the Gulf of Mexico, migrating from tropical waters in the winter to warm temperate waters in the spring through fall. As a migratory pelagic fish, cobia are found around offshore reefs and over the continental shelf; preferring structures, platforms, and flotsam. Cobia also inhabit inshore inlets and bays near piers, piles, and inshore structure [University of Florida (UoF) 2012a, Fish4Fun (F4F) 2011]. Cobias spawn off NC's coast in May and June, releasing eggs and sperm into offshore open waters; however, cobias have also been documented to spawn in estuaries and bays. After 24 to 36 hours following fertilization, larvae are released and move inshore to lower salinities. Cobia documented off NC had maximum ages of 14 years for males and 13 years for females; both reaching sexual maturity at ages two and three, respectively. Cobia average 20 to 40 pounds, but may reach up to 130 pounds (SAFMC 1983, UoF 2012a, and SAFMC 2012d). Cobias are carnivores, feeding on small fish such as mullet, pinfish (*Lagodon rhombodies*), Atlantic croakers (*Micropogonias undulatus*), and Atlantic herring (*Clupea harengus*), as well as crustaceans and cephalopods, with crab being a favorite prey. Cobia will follow or track sharks, turtles, and rays scavenging available orts (SAFMC 1983, UoF 2012a).

Potential Project Effects on Coastal Pelagics

Proposed dredging may affect NC coastal pelagic species, but likely would have minimal to no species' population consequences. Each of the three potential species spawns offshore starting in the spring and into early fall as in the case of king mackerel. Wind and tides transport the larvae into the estuaries and potentially up the CFR. All NC coastal inlets and state designated primary/secondary nursery areas are considered HAPCs for many managed species (SAFMC 1998b). The species' juvenile and adult lifestages (lifestages potentially to occur near the POW) would employ natural avoidance responses minimizing potential effects during dredging. The probability of directly impacting juveniles while dredging within the PNA shallow water mud bottom habitat is unlikely given the low probability of occurrence near the port.

Mechanical dredging could have potential indirect effects on proximal soft bottoms, wetland fringes, and downstream water columns each providing potential pathways and foraging habitats for coastal pelagic juveniles and adults. Potential turbidity effects on these habitats would not be anticipated. The minimal spatial and temporal extents of proposed dredging, as well as good engineering/best management practices would continue to minimize the potential for indirect effects on managed coastal pelagic species within the CFR and near the POW.

9.4 Snapper/Grouper Complex

The snapper/grouper complex is a large assemblage of 73 species whose similarities revolve around a life cycle stage dependent/coupled with hardbottoms and reef fishery habitats. The diversity within the complex results in considerable differences of habitat use and life history (NOAA 2012c). EFH for nearshore and estuarine dependent species include hardbottoms, artificial reefs, estuarine emergent marshes, oyster rocks, and submerged aquatic vegetation. All NC inlets, primary and secondary nursery areas are considered HAPCs for snapper/grouper species. Offshore bottom areas with high to medium elevation grades such as The Point, Big Rock, and the Ten Fathom Ledge are also HAPCs where spawning and periodic spawning aggregations occur (NOAA 2012d). Many members of the snapper/grouper complex are long-lived, late maturing, and slow growing; exacerbating management strategies. Stock rebuilding efforts can take years to achieve stock recovery (SAFMC 2012e). For the purposes of this document, succinct biological descriptions are provided for example species whose multiple life stages potentially use the POW's AMD areas.

Black Sea Bass (*Centropristis striata*)

Black sea bass are distributed from Nova Scotia to Florida and into the Gulf of Mexico, with Cape Hatteras serving as a geographic boundary between overlapping northern and southern stocks (ASMFC 2012i). Black sea bass, a temperate reef fish, prefer a habitat of structures such as oyster beds, wrecks, rock bottom piles, or reefs (SAFMC 2012f, ASMFC 2012i). Black sea bass may achieve sizes up to 23.5 inches, weigh up to eight pounds, and reach a maximum age of 15 to 20 years (NEFSC 2012b). Black sea bass will spend summers inshore and as coastal water temperatures decline, they migrate and winter in offshore waters (ASMFC 2012j). Black sea bass spawn from February to May on the continental shelf and these ocean waters are EFH for black sea bass eggs and larvae (NOAA 2012e). Not yet fully understood, black sea bass will change their sex from female to male (protogynous hermaphroditic). Though born as females, individuals will change sex between the ages of two and five (ASMFC 2012i). A two to five year old black sea bass can produce 280,000 eggs, which float within the water column until hatching a few days after fertilization. Young black sea bass will migrate into estuaries and bays, seeking shelter in various habitats such as oyster reefs, anthropogenic structures, and SAVs (ASMFC 2012i). Estuarine habitats provide post-larvae and juveniles an environment suitable for development and growth. Rough shell/sandy bottoms, SAVs, and man-made structures are EFH for juvenile black sea bass (NOAA 2012e). Offshore structures, man-made or natural, are EFHs to offshore wintering black sea bass (NOAA 2012e).

Gag Grouper (*Mycteroperca microlepis*)

The gag grouper is a widely distributed species with adults ranging from NC to Brazil and into the Gulf, with juveniles found in estuaries from Massachusetts to Cape Canaveral. Spawning takes place offshore the NC coast in February producing transparent and pelagic eggs. The kite-shaped larvae/post larvae migrate inshore to oyster reefs, salt marshes, and SAVs. Juveniles remain in these protected areas for three to five months before moving to offshore structures. Like the black sea bass, gag groupers are protogynous hermaphrodites (beginning life as females and following multiple spawns some change to males). Adults school from 5 to

50 individuals, but are routinely found as solitary individuals. All fish less than 35 inches tail length are females while most are male at or beyond 45 inches. Juveniles less than eight inches in length feed on crustaceans found in shallow SAVs, while adults may weigh up to 80 pounds and can live up to 26 years; preying on squid, shrimp, crabs, snappers, grunts, and sardines (SAFMC 2012g, UoF 2012b).

Gray Snapper (*Lutjanus griseus*)

Gray snapper occurs in marine and estuarine waters from NC to Bermuda (NOAA 2012f). Early stages can be found in marine and estuarine areas, with bottom types varying from marl mud with shell, seagrass flats, shallow basins with seagrass, to mud banks. The gray snapper is found within the inter- and sub-tidal zones and is considered a commercial, recreational, and prey species (SAFMC 1998a). Spawning occurs offshore during the summer and early fall; eggs and larvae are planktonic and the larval interval is estimated at 25 to 40 days. Gray snapper settlement sizes range, but seem able to settle at an age of three-to-five weeks (NOAA 2012f). Specifically in Middle Marsh of Carteret County, NC, gray snapper preferred shell bottom adjacent to SAVs; allowing access to both habitats for prey and refuge (Street et.al. 2005). Late juveniles moving offshore will use nearshore hardbottom areas as an intermediate nursery habitat (Street et.al. 2005). Adults are euryhaline and prefer deeper marine habitats; such as offshore hardbottoms, channel ledges, and artificial structures (NOAA 2012f). The gray snapper habitat varies from offshore irregular bottoms at depths of about 300 ft to inshore habitat over smooth bottoms usually near structure or seagrass beds (SAFMC 2012h). An adult's maximum age is estimated at up to 21 years; gray snapper may weigh up to 25 pounds (NOAA 2012f, SAFMC 2012h). Juveniles have been documented as far north as Massachusetts, with transforming larvae having been collected at Ocracoke and Oregon Inlets during ichthyoplankton sampling events (Burton 2000). Adults and juveniles are late afternoon or nocturnal predators, primarily consuming fish; but will take crabs and shrimp (NOAA 2012f, SAFMC 2012h).

Crevalle Jack (*Caranx hippos*)

The crevalle jack ranges as far north as Nova Scotia, southward to Uruguay, and includes the northern Gulf of Mexico. Crevalle jack can be found in riverine, estuarine, and oceanic locations dictated primarily by life stages. Spawning occurs offshore in the southeast Atlantic during early March to early September. The crevalle jack spawn in both subtropical and tropical waters and their larvae are transported into estuarine nursery areas. Larger adults are normally found over the continental shelf; larvae and young can be found in shallower brackish estuaries. Adults and juvenile school; however, larger individuals may become solitary. Crevalle jacks can reach 55 pounds and live up to 19 years; females are typically larger. Sexual maturity can occur by age four and five for males and females respectively. They are diurnal predators with a diet composed of shrimp, small fish, and other invertebrates (SAFMC 2012i, UoF 2012c).

Sheepshead (*Archosargus probatocephalus*)

Sheepshead is found along North America's Atlantic coast from Nova Scotia to Cedar Key, Florida; with two subspecies in the western Gulf and south to Rio de Janeiro. Sheepshead is

euryhaline, but prefers brackish water and normally is found inshore near pier, jetties, and rock pilings, but also within tidal creeks. Spawning occurs offshore during late winter and early spring followed by the adults returning to nearshore and estuarine waters. Their dark pelagic eggs develop into larvae that make their way to inshore nursery areas where juveniles use seagrass flats and mud bottoms (SAFMC 2012j, UoF 2012d). At a few inches in length, young sheepsheads leave the SAV and join the adults near structure. Sheepshead is an omnivorous species with younger individuals eating midge larvae, zooplankton, and polychaetes; however, juveniles and larger adults prey on small fish, clams, oysters, blue crab, and barnacles. Sheepshead commonly reach one to eight pounds, but can attain up to 22 pounds and have a maximum lifespan or approximately 20 years (UoF 2012d).

Potential Project Effects on the Snapper/Grouper Complex

Mechanical dredging will have direct effects within the unvegetated mud bottom EFH due to the loss of shallow water nursery habitat where post-larvae, juvenile, and adult fish within this species group on occasion forage for invertebrates such as clams and crabs. Although the area is small, it is likely subject to use by members of this group. There are likely to be minimal effects on the snapper/grouper complex in the estuarine/riverine water column during dredging. The members of the snapper/grouper complex potentially seen within the dredging area spawn offshore during the winter with their pelagic eggs and post-larvae being transported by wind and tidal currents into the estuaries. NC's estuarine SAVs, macro-algae beds, and oyster rocks are considered HAPCs for larvae and juvenile of many managed species within the snapper/grouper complex (SAR 2008b). Juveniles and sub-adults, the lifestages potentially seen within the dredging area, are motile and would likely exhibit natural evasive movement if encountering equipment. Inlets and state designated primary/secondary nursery areas are considered HAPCs for many managed snapper/grouper species. The area proposed for dredging resides in a PNA and would as such be considered an HAPC (SAFMC 1998a).

Mechanical dredging could have potential indirect effects on proximal soft bottoms, wetland fringes, and downstream water columns each providing potential pathways and foraging habitats for snapper/grouper juveniles. Potential turbidity effects on these managed species and habitats would not be anticipated. The limited spatial and temporal extents of dredging, as well as good engineering/best management practices would minimize the potential for indirect effects on managed snapper/grouper species within the CFR and near the POW

9.5 Highly Migratory Species

Many Highly Migratory Species (HMS) are identified as “overfished” [e.g. bluefin tuna (*Thunnus thynnus*), bigeye tuna (*Thunnus obesus*), swordfish (*Xiphias gladius*), and large coastal sharks (LCS)]. The management challenges are exacerbated by enforcement and oversight inconsistencies among several nations [National Oceanic and Atmospheric Administration, Fisheries Service (NOAAFS) 2010]. The Magnuson-Stevens Act and the Atlantic Tunas Convention Act (ATCA) have dual management responsibilities for HMS. The final HMS FMP combined the management of Atlantic HMS into one FMP, combining and simplifying objectives (NMFS 2006). Within the vicinity of the POW’s AMD, several sharks are noted under a Secretarial/FIFMP EFH management council (Table 4). For the purposes of this document,

Table 4. Shark management groups.

Large Coastal	Small Coastal
Silky shark	Atlantic sharpnose shark
Tiger shark	Finetooth shark
Blacktip shark	Blacknose shark
Spinner shark	Bonnethead shark
Bull shark	
Lemon shark	
Nurse shark	
Scalloped Hammerhead shark	
Great Hammerhead shark	
Smooth Hammerhead shark	

Source: NMFS 2006

succinct biological descriptions are provided for example species of small coastal sharks (SCS), LCS, and the smooth dogfish shark, whose life stages potentially use the AMD areas.

Based on the managed species listing for the "CFR to US421" provided by the Habitat Conservation Division of NOAA on Pivers Island, Beaufort NC (Appendix B); Pelagic, Prohibited, and Research sharks are not likely to be encountered near the POW and therefore, not addressed in this EFH assessment.

Sharks

The diversity in behavior, reproduction, feeding habits, and size has resulted in the shark's evolutionary success. Compared to other marine fish, sharks have a low reproductive potential and in some species an extended life span living up to 40 years. Slow growth, one-to-two year reproductive cycles, late sexual maturity, and a small number of young per brood result in many shark species being vulnerable to overfishing. Sharks' reproductive adaptations are grouped in three manners: oviparity (eggs hatch outside body), ovoviviparity (eggs hatch inside body), and viviparity (live birth). Nurseries are normally shallow coastal or estuarine waters supporting fewer predators and copious fish and crustaceans. Young leave these nursery areas as winter approaches and water temperatures drop (NMFS 2006, NMFS 2009b).

Along the US Atlantic coast, the Gulf, and Caribbean; many species of shark are known to exist. Thirty-nine are managed under the HMS and are divided into four species management groups: LCS, SCS, pelagic sharks, and prohibited sharks (NMFS 2006 and Cortés 2002). Brief species specific narratives are provided for LCS, SCS, and the smooth dogfish shark (*Mustelus canis*). .

Large Coastal Sharks

Many LCS are considered important commercial species thereby supporting justification for management. LCS examples described below include nurse, bull, great hammerhead, and sandbar sharks (NMFS 2006, NMFS 2009b).

Nurse shark (*Ginglymostoma cirratum*): Inhabiting tropical and subtropical waters, nurse sharks can be found in the western Atlantic from Cape Hatteras to Brazil. Preferring shallow waters, nurse sharks are often found under or near rocks/coral reefs and are known to congregate in large numbers. A nurse shark's range does not vary in that they may spend their entire life within a few hundred square miles. Their gestation period is approximately five to six months with litters consisting of 20 to 30 pups. Nurseries include shallow turtle grass (*Thalassia testudinum*) as well as shallow coral reefs (NMFS 2009b).

Bull shark (*Carcharhinus leucas*): The bull shark is found in warm seas and estuaries. A large shark, bulls are a shallow water species and the only shark species physiologically able to spend extensive time in freshwater. Bull sharks have an estimated gestation period of 10 to 11 months with varying birth sizes and litters ranging from one to ten pups. Nursery areas are in reduced salinity estuaries such as coastal lagoons and bays. Juveniles and adults are documented along the US East Coast from Florida to the Carolinas (NMFS 2009b).

Great hammerhead shark (*Sphyrna mokarran*): The great hammerhead is a very large shark found worldwide in warm shallow coastal waters as well as in open oceans. The great hammerhead is normally solitary unlike the more common scalloped hammerhead known to school in large numbers. Their unique head morphology is thought to aid in lateral prey recognition and mobility. Great hammerheads have biennial reproduction cycles with gestation periods of approximately 11 months and litters ranging from 20 to 40 pups. Young of the year (YOY), juveniles, and adults are found in US East Coast waters from the Florida Keys to New Jersey (NMFS 2009b).

Sandbar shark (*Carcharhinus plumbeus*): The sandbar shark is a common species found in many warm temperate and tropical coastal habitats. Migrating seasonally, the sandbar shark is found from Cape Cod to the western Gulf. The sandbar is a benthic dwelling shark preferring depths of 60 to 100 ft. The sandbar shark is slow growing, giving birth from March to July with litters averaging nine pups. Nursery areas are normally shallow coastal waters from Cape Canaveral to Delaware Bay including waters off Cape Hatteras. The Outer Banks, areas of Pamlico Sound, and adjacent waters of Hatteras and Ocracoke Islands are classified as a HAPC nursery area. The sandbar shark is considered very susceptible to overfishing based on its slow maturation and significant fishing pressures (NMFS 2009b).

Small Coastal Sharks

Several of these SCS are commercially targeted; however, many numbers of these species are lost as by-catch in an assortment of fisheries particularly the shrimp trawl fishery (NMFS 2002, NMFS 2006 and Cortés 2002).

Atlantic sharpnose shark (*Rhizoprionodon terraenovae*): The Atlantic sharpnose are year-round inhabitants of the Gulf of Mexico; along the coasts of Florida and South Carolina; and are routinely found during summer months off the Virginia coast. Atlantic sharpnoses school by uniform size and sex and are considered very plentiful, yet are the most exploited SCS in the US Atlantic and Gulf waters. Off South Carolina in shallow coastal waters, young are born in late May in litters ranging from four to seven pups. YOY and juveniles can be found in seagrass beds as well as over sand and/or mud bottoms. Juvenile Atlantic sharpnose are thought not to

exhibit philopatry (returning to a specific breeding location) but facilitate an area's coastal bay/estuarine system (NMFS 2009b).

Finetooth shark (*Carcharhinus isodon*): This coastal species is common off South Carolina during summer months, yet spend winter months off Florida. Finetooth sharks often form large schools consisting of adults and juveniles. With a gestation period of approximately 12 months, finetooth are viviparous giving live birth in late May to mid-June of one to six pups (UOF 2012e).

Blacknose shark (*Carcharhinus acronotus*): Blacknose are a common coastal species found from NC to southeast Brazil. They are abundant during fall and summer from parts of the Gulf, Florida, up to NC. Blacknose tolerate varying levels of DO in a variety of bottom habitats. Blacknose are extremely philopatric and habitats are shared between juveniles and adults. Blacknose are abundant in coastal waters off South Carolina from May to October; however, data suggests that nearshore waters are not used as a nursery; blacknose litters can range from three to six pups. YOY, juveniles, and adults are found from Louisiana to Cape Hatteras (NMFS 2009b).

Bonnethead shark (*Sphyrna tiburo*)*:* Bonnetheads do not exhibit distant migratory patterns, preferring warmer shallow coastal waters. Adults are documented from the mid-coast of Florida up to Cape Lookout. Feeding primarily on mollusks and crustaceans, bonnetheads are found over muddy and/or sandy bottoms. Bonnetheads have one of sharks' shortest gestation periods and reproduce annually with litters of 8 to 12 pups. A US aquarium proved through deoxyribonucleic acid (DNA) testing, a female bonnethead underwent parthenogenesis (development of an embryo from an egg without male genetic contribution) giving birth to a healthy female pup. Bonnetheads are not a commercially targeted, but are a bycatch in gill netting fisheries (NMFS 2009b).

Smooth Dogfish Shark (*Mustelus canis*): A common coastal species, smooth dogfish sharks are found from Massachusetts to Argentina. Smooth dogfish are normally found on continental shelves in water depths down to approximately 500 ft. Wintering offshore of NC and the Chesapeake Bay, smooth dogfish are migratory species responding to water temperatures and moving along the east coast as bottom waters warm. Smooth dogfish prey on invertebrates focusing on crabs; but also consume lobsters, menhaden, porgies, puffers, and wrasses. Mating occurs between May and September with an 11 to 12 month gestation period, producing 3 to 18 pups per litter. Marsh creeks are very important nursery areas for newborns during the summer months and YOY grow rapidly before migrating out of the estuaries in late fall (NMFS 2010).

Within a 2010 Final EIS, NOAA proposed the inclusion of smooth dogfish shark under NOAA's Fisheries Service management beginning in 2012. This action would require recreational and commercial fishermen obtain federal fishing permits for smooth dogfish before the 2012 season (NOAA 2010).

Potential Project Effects on the Highly Migratory Species

Several specific HMS (sharks) life stages use the CFR Inlet for access into the estuaries and up the CFR. Potential significant effects on Atlantic HMS would be unlikely as a result of dredging operations. Many of these species life stages utilize offshore habitats; however, some species

do utilize the nearshore and inshore waters during their YOY and juvenile stages. Many HMS species have YOY, juvenile, and adult EFH designations over NC's continental shelf areas. NC's estuarine SAVs, creeks, and oyster rocks are considered nursery areas for many HMS YOY and juveniles (NMFS 2010). Dredging may have minimal effects on the area's estuarine/riverine water column; however, significant effects to these species would not be anticipated. These potential effects could result from potential interference with the dredging equipment as certain shark species' YOY migrate inside to nursery areas including SAVs, coastal creeks, and estuarine/riverine muddy/sandy bottoms. Potential YOY and juvenile effects may occur during dredging operations; however, the timing would significantly limit potential effects and are further lessened by the species' ability to avoid water column and bottom disturbances. The deepening of the shallow unvegetated mud bottom by dredging could result in the loss of foraging area, albeit minimally.

Mechanical dredging could have potential indirect effects on proximal soft bottoms, wetland fringes and downstream water columns each providing potential pathways and foraging habitats for potential shark juveniles and adults. Potential turbidity effects on these managed species and habitats would not be anticipated. The spatial and temporal extents of dredging, as well as good engineering/best management practices would minimize the potential for effects on managed shark species within the CFR and near the POW.

10.0 ASSOCIATED SPECIES

Associated species occur in conjunction with the EFHs, managed species, as well as marine mammals. These living resources would include primary prey species and other flora and fauna occupying EFHs or nearby habitats. A potential for effects on associated species would be a tidally migrating sediment dispersion plume and temporary loss of benthic foraging areas.

The benthic community reflects an area's general condition; whereas, the epibenthic community provides insight to fishery species migrations and movements. There are predator benthic species, yet most found in the CFR system are facultative or obligate detritivores or herbivores. These taxa are important food resources for many juvenile fish in estuarine/riverine systems (Mallin et.al. 2000). Epibenthic sampling sleds indicate several species such as Atlantic croakers and spot move into the area of the POW during late winter and early spring. These fish species rely on benthic food resources and their arrivals coincide with a high abundance of some benthic and epibenthic organisms (Mallin et. al. 2000).

Many commercial and/or recreational fish species would be included as associated species. The project area is within a spawning area as delineated in 15A NCAC 03R .0115 and 15A NCAC 10C .0603 Anadromous Fish Spawning Areas. The NCWRC and NCMFC have designated most of the CFR's mainstem as a Primary and an Inland Primary Nursery Area (Deaton et.al. 2010) (Figures 5, 6, and 7). The ASMFC oversees and manages many of these commercially and recreationally important anadromous species such as American shad (*Alosa sapidissima*), alewife, hickory shad (*A. mediocris*) and blueback herring (*A. aestivalis*) (ASMFC 2012a). The above-mentioned species represent the common taxa found in the epibenthic sampling; however, a total of 150 taxa have been identified from the CFR epibenthic sampling (Mallin et.al. 2000).

Protected Anadromous Species

There are two anadromous fish species potentially found within the proposed dredging area which are protected under the Endangered Species Act.

Shortnose Sturgeon (*Acipenser brevirostrum*)

The shortnose sturgeon inhabits large Atlantic coast rivers from the St. Johns River in northeastern Florida to the St. John River in New Brunswick, Canada. Shortnose sturgeons occur primarily in slower moving rivers or nearshore estuaries associated with large river systems. Adults in southern rivers are estuarine anadromous, foraging at the freshwater-saltwater interface and moving upstream to spawn in the early spring. Shortnose sturgeons spend most of their life in their natal river systems and rarely migrate to marine environments. Spawning habitats include river channels with gravel, gravel/boulder, rubble/boulder, and gravel/sand/log substrates. Spawning in southern rivers begins in later winter or early spring and lasts from a few days to several weeks. Juveniles typically move upstream during the spring and summer and downstream during the winter, with movements occurring above the freshwater-saltwater interface. In southern rivers, both adults and juveniles are known to congregate in cool, deep thermal refugia during the summer. Shortnose sturgeons are benthic omnivores, feeding on crustaceans, insect larvae, worms, and mollusks. Juveniles randomly vacuum the bottom and consume mostly insect larvae and small crustaceans. Adults are more selective feeders, feeding primarily on small mollusks (NMFS 1998).

Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)

On 6 February 2012, the NMFS published the Final Listing Rules for five distinct Atlantic sturgeon population segments along the Atlantic Coast (77 FR 5914, 77 FR 5880). The New York Bight, Chesapeake Bay, Carolina, and South Atlantic distinct population segments were listed as endangered; and the Gulf of Maine distinct population segment was listed as threatened. The historic range of the Atlantic sturgeon included estuarine and riverine systems from Labrador, Canada to the St. Johns River in Florida. The historical distribution in the US included approximately 38 rivers from the St. Croix River in Maine to the St. Johns River in Florida, including spawning populations in at least 35 rivers. The current distribution in the US includes 35 rivers, with spawning known to occur in at least 20 rivers. Atlantic sturgeons spawn in freshwater, but spend most of their adult life in the marine environment. Spawning adults generally migrate upriver in the spring/early summer. A fall spawning migration may also occur in some southern rivers. Spawning is believed to occur in flowing water between the salt front and fall line of large rivers. Post-larval juvenile sturgeons move downstream into brackish waters, and eventually move to estuarine waters where they reside for a period of months or years. Subadult and adult Atlantic sturgeons emigrate from rivers into coastal waters, where they may undertake long range migrations. Migratory subadult and adult sturgeons are typically found in shallow (33-164 ft) near shore waters with gravel and sand substrates. Although extensive mixing occurs in coastal waters, Atlantic sturgeons return to their natal river to spawn (ASSRT 2007).

Potential Project Effects on Protected Sturgeons

Between 1990 and 2007, dredging operations along the North Atlantic Coast and South Atlantic Coast resulted in the take of 11 Atlantic sturgeons and 11 shortnose sturgeons. All of the shortnose sturgeons takes occurred in rivers along the North Atlantic Coast (Delaware River and Kennebec River). Shortnose sturgeons were taken by cutterhead (5), hopper (5) and clamshell (1) dredges. Atlantic sturgeons takes included two along the North Atlantic Coast and nine along the South Atlantic Coast. Atlantic sturgeons were taken by hopper (9) and clamshell (2) dredges (USACE 2008). A clamshell/bucket dredge is proposed to be used for dredging. It is important to note that quay bottoms and shallower embayments within the POW's terminal areas do not contain gravel, rubble, or high percentages of sand. Considering the sturgeons' mobility, the affected area's small size, and the availability of alternative foraging habitat; significant effects on sturgeons are not anticipated. Dredging could have potential indirect effects on proximal soft bottoms, wetland fringes and downstream water columns; each providing potential pathways and foraging habitats for potential sturgeon juveniles and adults. Significant turbidity and bottom effects on these protected species and habitats would not be anticipated. The minimal spatial and temporal extent of dredging as well as good engineering/best management practices would minimize the potential for effects on protected sturgeon species within the CFR and near the POW.

The loss of shallow water mud bottom habitat due to deepening could temporarily affect higher trophic levels' foraging patterns in a localized area. Dredging activities would temporarily increase turbidity levels within the berthing areas. Turbidity can affect light scattering which can impede fish predation (Benfield 1996). Both juvenile and adult fish are primarily visual feeders. Consequently, the visual effects of turbidity as outlined above would apply. Suspended sediment can impair feeding ability by clogging the gill rakers' inter-raker space or the mucous layers of filter feeding species (Gerking 1994). However, because these fish have the ability to migrate away from dredging activities then potential temporary effects from turbidity plumes would be minimal. Consequently, dredging operations would have minimal effects on juvenile and adult managed and non-managed fish in the area. The reduction in benthic epifaunal and infaunal prey in the immediate proposed dredging area would have minimal and short-term effects on juvenile and adult fishes. These lifestages can migrate to, and forage in, adjacent locations that are not within the active dredged area.

Dredging could have potential indirect temporary effects on proximal soft bottoms, wetland fringes and downstream water columns, each providing potential pathways and foraging habitats for associated species. Significant turbidity effects on these associated species and habitats would not be anticipated. The minimal spatial and temporal extents of dredging, as well as good engineering/best management practices would minimize the potential effects on associated species within the CFR and the POW.

11.0 CONSERVATION MEASURES

The NCSPA at the POW have successfully managed maintenance and agitation dredging for many years with strict adherence to environmental windows (unless high shoaling rates resulted in necessity to dredge), permit conditions, use of best management practices, and permit

required monitoring. No incidental takes of sturgeon species have occurred during dredging operations. In 2014, the POW and other private terminals were granted approval to use agitation dredging as a temporal and cost-effective way to maintain navigable depth with their berths and quays.

For this proposed project the POW is asking for approval to dredge 8.53 acres of shallow unvegetated mud bottom EFH habitat located with PNA and an HAPC for some managed species groups. This will result in the loss of foraging habitat for juvenile lifestages of some managed species and associated species. Indirect effects will be limited to altering fish movements during dredging, short-term effects of the water column EFH and managed species due to generation of higher sediment loads and turbidity during dredging.

The NCSPA has offered the following conservation/mitigation measures to compensate for unavoidable effects and habitat loss associated with the proposed project and to avoid or minimize effects on EFH resources, managed species, and associated species. These measures include conveyance of a conservation easement on 13.4 acres of coastal marsh habitat present on property owned by the NCSPA since 1965 and payment of $750,000 towards planning, permitting and design of the Lock and Dam #2 Fish Passage on the CFR. Along with the funds appropriated by the NC State legislature this past session, this will allow for completion of all services needed to develop the fish passage project into a “shovel ready” project within two years. The latter measure is only proposed if this project can be fully permitted and approved by all parties, including an informal Section 7 consultation letter from the NMFS in less than 90 days from the initial date of application (October 16, 2015). A description of each measure is provided below.

Mitigation/Conservation Measures

Conservation of 13.4-Acre Tract on Brunswick River

The NCSPA has owned this property since 1965. As shown in Figure 1, this site is located on the west side of the Brunswick property in the Town of Belville, NC. The NCSPA has agreed to place a conservation easement on the 13.4-acre property, a majority of which is coastal marsh habitat within primary fisheries nursery habitat of NC. This action will ensure conservation of potential foraging habitat of sturgeon species documented to occur in the river. Within 60 days of permit issuance, the applicant will register the conservation easement with the NCDENR

Fish Passage for Lock and Dam #2 – Cape Fear River

One of the overarching goals of the Cape Fear River Partnership, as well as state and federal resource agencies (NMFS, USFWS, NCDENR, NCDMF) is restoring access to historic migratory fish habitat in the upper Cape Fear River Basin. To this end, Cape Fear River Watch and other public and private partners have applied for NOAA and state grants over the past several years. This past NC legislative session approved allocation of $250,000 as matching funds to kick this initiative forward. NOAA OR&R has also voiced considerable interest in moving this restoration initiative as a top priority for the basin. The NCSPA agrees to contribute the balance of funds needed to make this project “shovel ready” so as to better ensure that construction dollars have a better chance of being allocated through federal grants and state funding. As stated above, the NCSPA agrees to allocate these funds if all state and federal

agencies ensure that full permitting approval is granted for the proposed action in less than 90 days. Information on the project is provided below.

Site Locations

Lock and Dam #2 is located within the Cape Fear River basin on the CFR in Bladen County, NC, (Lat: 34 37' 36.25" N; Long: 78 34' 38.47" W). Lock and Dam #2 is accessible to public use by way of SR 1703 from NC State Highway 87 (Figure 2).

Project Description

The applicant, along with matching funds from the State of NC, proposes to contribute funds to complete the planning, design and permitting of the rock ramp fishway at Lock and Dam #2 in the CFR to restore access to lost spawning and nursery habitat in order to improve the resilience of anadromous fish populations, including endangered Atlantic and shortnose sturgeon.

Fragmentation by dams is an important impediment to the resilience of coastal river ecosystems in the face of advancing climate change and associated extreme weather periods and events. Spatial limitations on the amounts of spawning habitat for anadromous species are imposed by dams in most river systems throughout the US eastern seaboard. The resulting reduction in spawning and nursery habitat adversely impacts the resilience of numerous fish species by reducing their available refuge from low flow periods due to droughts and increasing water temperatures in southernmost river basins. Valuable spawning habitats for federally endangered shortnose and Atlantic sturgeon exist in the CFR near the Fall Line but are currently blocked by Lock and Dams #2 and #3. The proposed project will also improve access to critical habitats for numerous managed anadromous fish species, including striped bass, American shad, river herring, and American eel; which will improve the resilience of these populations as well.

Project Performance Measures and Outcomes

The proposed project includes restoration of access to approximately 20-40 percent of remaining historic habitat that is currently blocked by Lock and Dam #2. After construction of the fish passage for Lock and Dam #2 and eventually Lock and Dam #3, over 84 free-flowing river mainstem miles and 995 tributary stream miles and more than 192 acres of migratory fish habitat will be made accessible to anadromous fish for spawning. The anticipated long-term ecological and socioeconomic outcomes include improved recruitment among the numerous anadromous species listed above. The restoration of a degraded fisheries will, in turn, result in increased revenue to the businesses and improved quality of fishing for recreational users of the CFR. The expansion of the economic benefits from recreational fishing activity in this section of the river has been projected to yield an increase in net annual economic benefits upwards of $188,000 and contribute $961,000 in industry production and business sales in the state economy (Hadley 2014)

Conservation measures to avoid and or minimize additional effects on managed and associated species within their associated EFH in the project area includes the following:

- Turbidity booms will be deployed around dredging and pumping operations at all times to minimize movement of suspended sediments and turbidity.
- Turbidity booms will be monitored by the POW to ensure compliance with the above requirement.
- The POW will establish a goal of maximizing dredging during falling tides if the project can be constructed by June 30, 2016 without dredging during rising tides.
- Best management practices will be used throughout construction to minimize turbidity and any indirect effects on managed and associated species.
- Due to the performance of mechanical dredging during the higher activity and migration period of the year for sturgeons, the applicant agrees to place an observer on the clamshell barge to observe for sturgeons either entrained in the bucket dredge or injured/killed during dredging. Weekly reports will be provided to NCDENR and NMFS as to weekly observations.

12.0 CONCLUSIONS

The proposed project, including dredging of 8.53 acres and relocation of present pier, mooring platforms and dolphins, will result in the deepening of existing shallow water mud bottom EFH habitat located within state designated PNA, also considered a HAPC for some managed species (Figure 3). This will result in the loss of a portion of shallow water foraging habitat present along the Kinder Morgan Terminal to meet the NCSPA purpose and need for the project. A number of managed, associated, and prey species likely use this are for foraging activities during their juvenile and adult lifestages. However, this represents only 0.02 percent of the available shallow water soft bottom habitat present in the lower CFR estuary. The newly dredged area can be used for foraging, however its depth, lack of light, and operational use by vessels will result in a less productive benthic community than presently resides at the present depth. Relocating the present mooring and pier structures shoreward will not result in any adverse effect on the water column or unvegetated mud bottom EFH's present at this site. Adult and most juvenile fish can avoid the dredging operations. Managed invertebrate species population occurring here may be adversely effected during dredging, however, most being motile can escape the clamshell/bucket grab.

The potential indirect effects on the estuarine/riverine water column and unvegetated mud bottoms would be spatially and temporally minimized through use of turbidity barriers around all dredging and pumping operations, and working towards a goal of maximizing dredging during falling tides. There are no SAVs, shellfish, or hardbottom habitat located within the proposed action area. A variance request for dredging in PNA has been submitted as part of the application package to the NCDENR/CRC.

Conservation/mitigation measures have been proposed which includes a conservation easement on 13.5 acres of coastal marsh on the Brunswick River and contribution of $750,000 to fund the planning, permitting, and design of a fish passage for Lock and Dam #2. The latter is only offered if all permits and agency approvals can be completed in less than 90 days from the date of application. Other conservation measures include use of best management practices, good engineering practices, turbidity barriers, and maximizing dredging during falling tides.

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APPENDIX A

Construction Methods

Relocation of Liquid Bulk Pier
Construction Methodology

Dredging

While the berth is vacant, the selected dredging contractor will use a mechanical dredge to dredge the project area in stages. Prior to initiating dredging, the selected dredging contractor will install turbidity curtains around the proposed dredge area. The selected dredging contractor will remove soil and sediments using either a barge-mounted crane equipped with an environmental bucket or a long reach excavator boom and bucket if rock is encountered. The dredged material will be loaded into watertight barges or scows and transported across the Wilmington River were the selected dredging contractor will re-fluidize the sediments and hydraulically pump the dredged material to Eagle Island.

New Pier Construction

The pier, including the new loading platform, pipe trestle and dolphins, will be constructed while the existing pier remains in place and is operational. A boom will be placed around the work area or areas. Temporary driving frames or templates, constructed of steel H or pipe piles and steel framed grid structure will be erected to facilitate placement of the breasting dolphin sheet piling and the bearing piles for the pipeway trestle, the loading platform and the mooring dolphins. The falsework frames / templates, as well as subsequent construction operations, will be erected using a spud or jackup barge mounted construction crane and timber float stages for personnel access. One or two supply barges will be used throughout all erection operations to deliver and store piles, precast concrete elements and other appearances. The temporary piles supporting the template will be installed using vibratory hammers; the grid frame will be set in place with a crane. Dockbuilders will make burn steel and make member connections working from float stages or atop framing as erected.

Once falsework is completed, new precast-prestressed concrete piles will be driven using fixed leads and an impact hammer on the barge crane. Should predrilling for piles be required, it will be done through a casing and all materials will be collected airlifted or pumped out of the casing and not discharged into the waterway. Once piles are complete, precast pile caps for the pipeway bridge and loading platform will be set onto the driven piles using the barge mounted crane. Preformed pockets in the pilecaps for connecting them to the piles will be concreted by pumping concrete from shore. Pumping hoses will be layed atop the existing vehicular trestle to discharge point. Once cured, precast concrete deck planks will be set atop the loading platform pile caps. A cast-in-place concrete topping will be pumped from shore to lock the entire deck together into a unit. A steel pipe frame will be erected onto the pipeway trestle pile caps and on the platform deck using the barge mounted crane or a cherry picker operating from the existing vehicular trestle. Product piping will then be installed in manner similar to the pipe frame.

Breasting Dolphins
Circular cofferdams sheet piling for the breasting dolphins will be driven using a vibratory hammer inside the template. When the cell is complete, unsuitable material within the cofferdams will be removed using an environmental clamshell bucket as for dredging. The cells will then be backfilled with clean sand fill and vibrocompacted.

Mooring Dolphin platform caps will be formed in place over the water and cast-in-place concrete will be poured by pumping from upland.

Existing Pier Removals
When all new works have been completed, product piping will be disconnected onshore at inboard end trestle and reconnected to the new facility piping. The existing dolphins, loading platform and outboard portion of the approach trestle will then be demolished including original product piping back to shore. Containment booms will be installed around all structures to be removed and structures demolished using the barge mounted crane and then loaded into barges or scows for recycling or disposal including:

- Loading Platform and outboard part of vehicular trestle will be sawcut into manageable size pieces, the tops of piles cut then cut deck will be lifted off.
- Mooring dolphin cap will be removed after cutting off the tops of piles.
- Breasting dolphin bracing pile brackets will be unbolted and removed.
- Piles of Loading Platform, Dolphins and Outboard end of trestle will be extracted (to preclude any future hazards to navigation) and loaded for disposal in scow(s) or atop deck barge(s) surrounded with sediment barriers to preclude any adherent mud stuck to the pile from washing overboard into the waterway.
- The top 3’-6” +/- of the breasting dolphin cap cut will be off (down to top of fill inside), sawcut into pieces if needed, and lifted off.
- Existing fill within breasting dolphin will be excavated, using an environment bucket, down to proposed dredge line.
- Breasting dolphin top encasement will be vertically wire or sawcut into pieces around perimeter down to bottom of encasement at approximately 2 feet below MLLW. Cut portions will be extracted with sheet piles if possible. If not possible or practicle, alternately the sheet piling may be burnt but divers just below encasement and the encased cut piece lifted off individually. This will be followed by extraction of sheet piles. Sheet piles will be transported in a scow or a deck barge in similar manner as other piles.

Upon completion of all removals, any remaining mounds of sediment beneath removed structures will be dredged as described hereinbefore. The bottom will be inspected for any debris then the reconstructed facility will be commissioned.

APPENDIX B

EFH Habitat Species by Water Body in North Carolina

List of Essential Fish Habitat Species by Waterbody in North Carolina
July 2009

E-EGGS L-LARVAL J-JUVENILE A-ADULT N/A-NOT FOUND		Cape Fear River to US 421	NE Cape Fear River to US 117	Lockwoods Folly to NC 211	Shallotte River to US 17	Little River Inlet	Calabash River	Atlantic Ocean North of Cape Hatteras	Atlantic Ocean South of Cape Hatteras			
COASTAL DEMERSALS												
Red Drum		E L J A	E L J A	E L J A	E L J A	E L J A	E L J A	J A	J A			
Bluefish		J A	J A	J A	J A	J A	J A	E L J A	E L J A			
Summer Flounder		L J A	L J A	L J A	L J A	L J A	L J A	E L J A	E L J A			
INVERTEBRATES												
Brown Shrimp		L J A	L J A	L J A	L J A	L J A	L J A	E L J A	E L J A			
Pink Shrimp		L J A	L J A	L J A	L J A	L J A	L J A	E L J A	E L J A			
White Shrimp		L J A	L J A	L J A	L J A	E L J A	L J A	E L J A	E L J A			
Calico Scallop		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			
COASTAL PELAGICS												
Dolphinfish		N/A	N/A	N/A	N/A	J A	N/A	E L J A	E L J A			
Cobia		J A	J A	J A	J A	L J A	J A	E L J A	E L J A			
King Mackerel		J A	N/A	J A	J A	J A	J	E L J A	E L J A			
Spanish Mackerel		J A	J	J A	J A	L J A	J A	E L J A	E L J A			
HIGHLY MIGRATORY												
Bigeye Tuna		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			
Bluefin Tuna		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	J A			
Skipjack Tuna		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	J A			
Yellowfin Tuna		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			
Swordfish		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			
Blue Marlin		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			
White Marlin		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			
Sailfish		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			
Little Tunny		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			

E-EGGS L-LARVAL J-JUVENILE A-ADULT N/A-NOT FOUND		Cape Fear River to US 421	NE Cape Fear River to US 117	Lockwoods Folly to NC 211	Shallotte River to US 17	Little River Inlet	Calabash River	Atlantic Ocean North of Cape Hatteras	Atlantic Ocean South of Cape Hatteras			
SHARKS												
Spiny Dogfish		N/A	N/A	J A	N/A	J A	N/A	J A	J A			
Smooth Dogfish		J	N/A	J	J	J A	J	J A	J A			
Small Coastal Sharks		J A	J A	J A	J A	J A	J A	J A	J A			
Large Coastal Sharks		J A	N/A	N/A	N/A	J A	N/A	J A	J A			
Pelagic Sharks		N/A	N/A	N/A	N/A	N/A	N/A	J A	J A			
Prohibited/Research Sharks		N/A	N/A	N/A	N/A	J A	N/A	J A	J A			
SNAPPER/GROUPER												
Black Sea Bass		J	N/A	J	J	J	J	E L J A	E L J A			
Bank Sea Bass		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Rock Sea Bass		J	N/A	J	J	J	J	L J	E L J A			
Gag		J	J	J	J	J	J	E L J A	E L J A			
Graysby		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Speckled Hind		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Yellowedge Grouper		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Coney		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Red Hind		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Goliath Grouper		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Red Grouper		J	N/A	N/A	N/A	J	N/A	N/A	E L J A			
Misty Grouper		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Warsaw Grouper		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Snowy Grouper		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			

E-EGGS L-LARVAL J-JUVENILE A-ADULT N/A-NOT FOUND		Cape Fear River to US 421	NE Cape Fear River to US 117	Lockwoods Folly to NC 211	Shallotte River to US 17	Little River Inlet	Calabash River	Atlantic Ocean North of Cape Hatteras	Atlantic Ocean South of Cape Hatteras			
Yellowmouth Grouper		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Black Grouper		J	N/A	N/A	N/A	J	N/A	N/A	E L J A			
Scamp		N/A	N/A	N/A	N/A	J A	N/A	N/A	E L J A			
Blackfin Snapper		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Red Snapper		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Cubera Snapper		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Lane Sanpper		J	N/A	N/A	N/A	J	N/A	N/A	E L J A			
Silk Snapper		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Vermillion Snapper		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Mutton Snapper		J	N/A	N/A	N/A	J	N/A	N/A	E L J A			
Gray Snapper		J	J	J	J	J	J	J A	E L J A			
Gray Triggerfish		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Yellow Jack		J	N/A	J	J	J	N/A	J A	E L J A			
Blue Runner		J	N/A	J	J	J	N/A	J A	E L J A			
Crevalle Jack		J	J	J	J	J	J	J A	E L J A			
Bar Jack		J	N/A	J	J	J	J	J A	E L J A			
Greater Amberjack		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			
Almaco Jack		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			
Banded Rudderfish		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			
Atlantic Spadefish		J	N/A	J	J	J	J	E L J A	E L J A			
White Grunt		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Tomtate		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Hogfish		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Puddingwife		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Sheepshead		J A	N/A	J A	J A	E L J A	J	J A	E L J A			

		Cape Fear River to US 421	NE Cape Fear River to US 117	Lockwoods Folly to NC 211	Shallotte River to US 17	Little River Inlet	Calabash River	Atlantic Ocean North of Cape Hatteras	Atlantic Ocean South of Cape Hatteras			
Red Porgy		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Scup		N/A	N/A	N/A	N/A	N/A	N/A	E L J A	E L J A			
Blueline Tilefish		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
Sand Tilefish		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E L J A			
MORE BELOW												

SMALL COASTAL SHARKS							PROHIBITED SHARKS					
		Atlantic Sharpnose Shark										
		Finetooth Shark								Sand Tiger		
		Blacknose Shark								Bigeye Sand Tiger		
		Bonnethead								Whale Shark		
										Basking Shark		
LARGE COASTAL SHARKS										White Shark		
		Silky Shark								Dusky Shark		
		Tiger Shark								Bignose Shark		
		Blacktip Shark								Galapagos Shark		
		Spinner Shark								Night Shark		
		Bull Shark								Reef Shark		
		Lemon Shark								Narrowtooth Shark		
		Nurse Shark								Carribean Sharpnose Shark		
		Scalloped hammerhead								Smalltail Shark		
		Great Hammerhead								Atlantic Angel Shark		
		Smooth Hammerhead								Longfin mako		
										Bigeye Thresher		
PELAGIC SHARKS										Sharpnose Sevengill shark		
		Shortfin Mako								Bluntnose sixgill Shark		
		Porbeagle								Bigeye Sixgill Shark		
		Thresher Shark										
		Oceanic Whitetip Shark										
		Blue Shark					RESEARCH SHARKS					
										Sandbar Shark		

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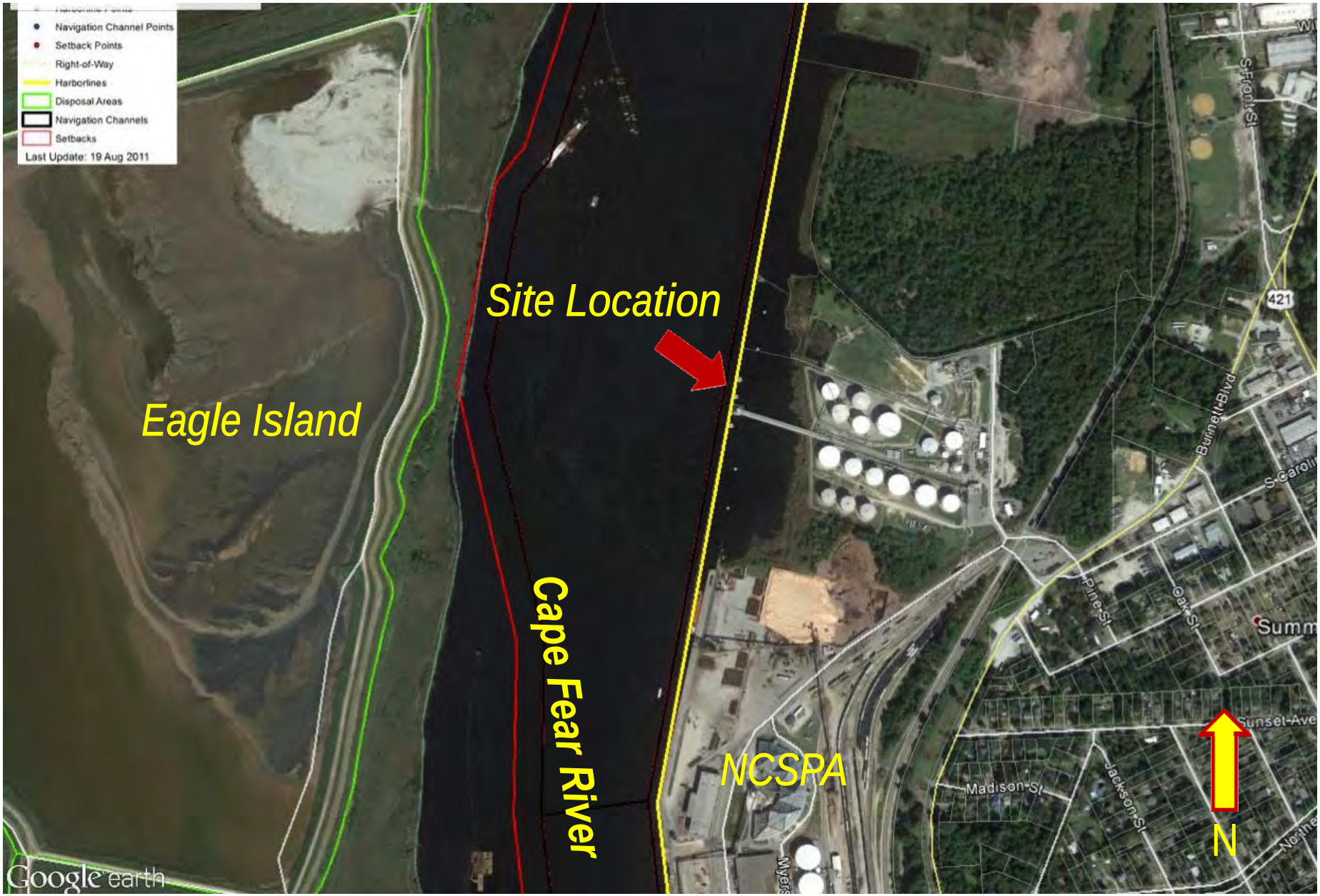
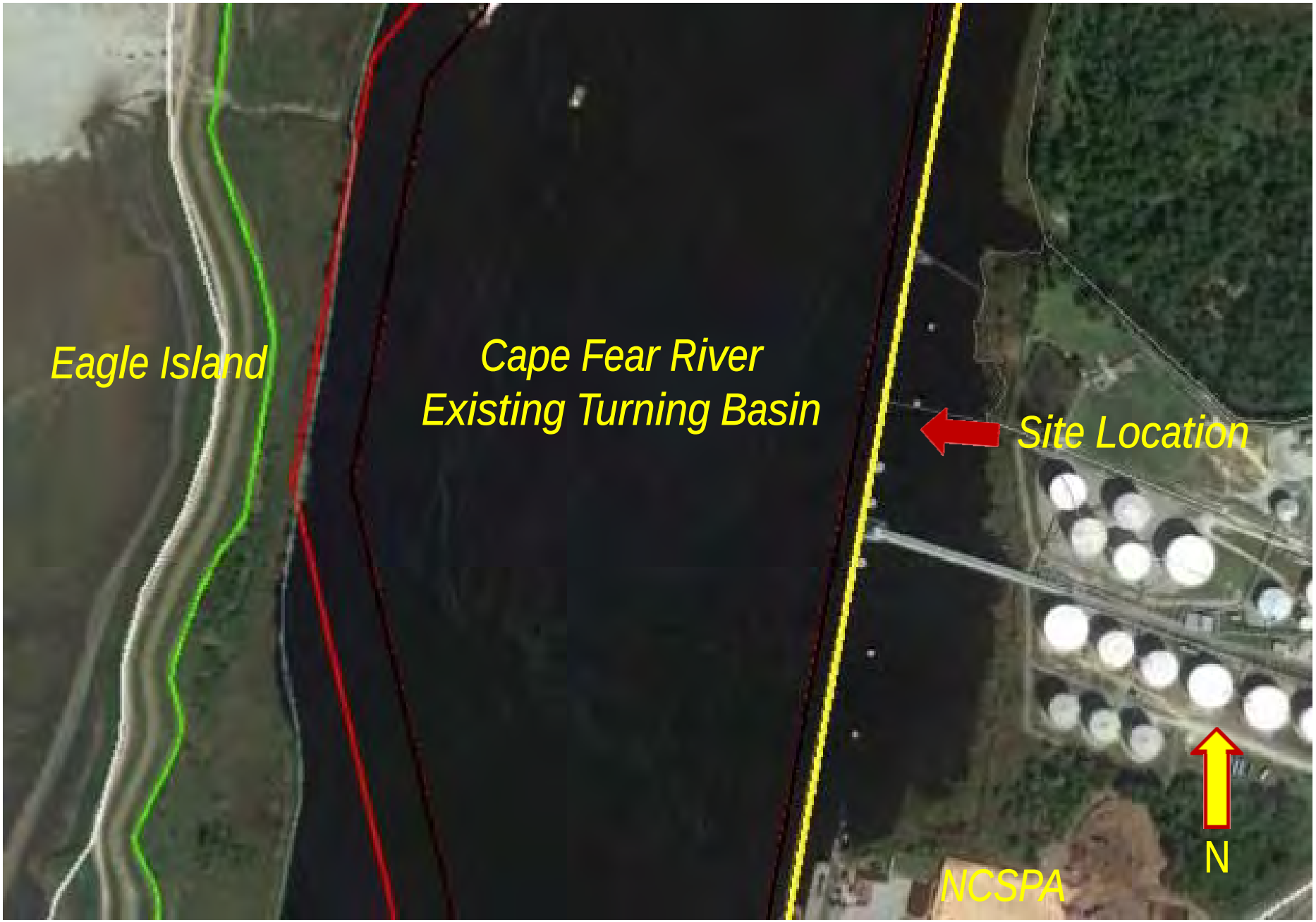
N.C. State Ports Authority Variance Request
December 8, 2015

Department of Environmental Quality

Department of Environmental Quality


Navigation Channel Points
Setback Points
Right-of-Way
Harborlines
Disposal Areas
Navigation Channels
Setbacks
Last Update: 19 Aug 2011
Site Location
Eagle Island
Cape Fear River
NCSPA
Burnett-Blvd
421
Pine-St
Oak-St
Sunset-Ave
Madison-St
Jackson-St
N
Google earth

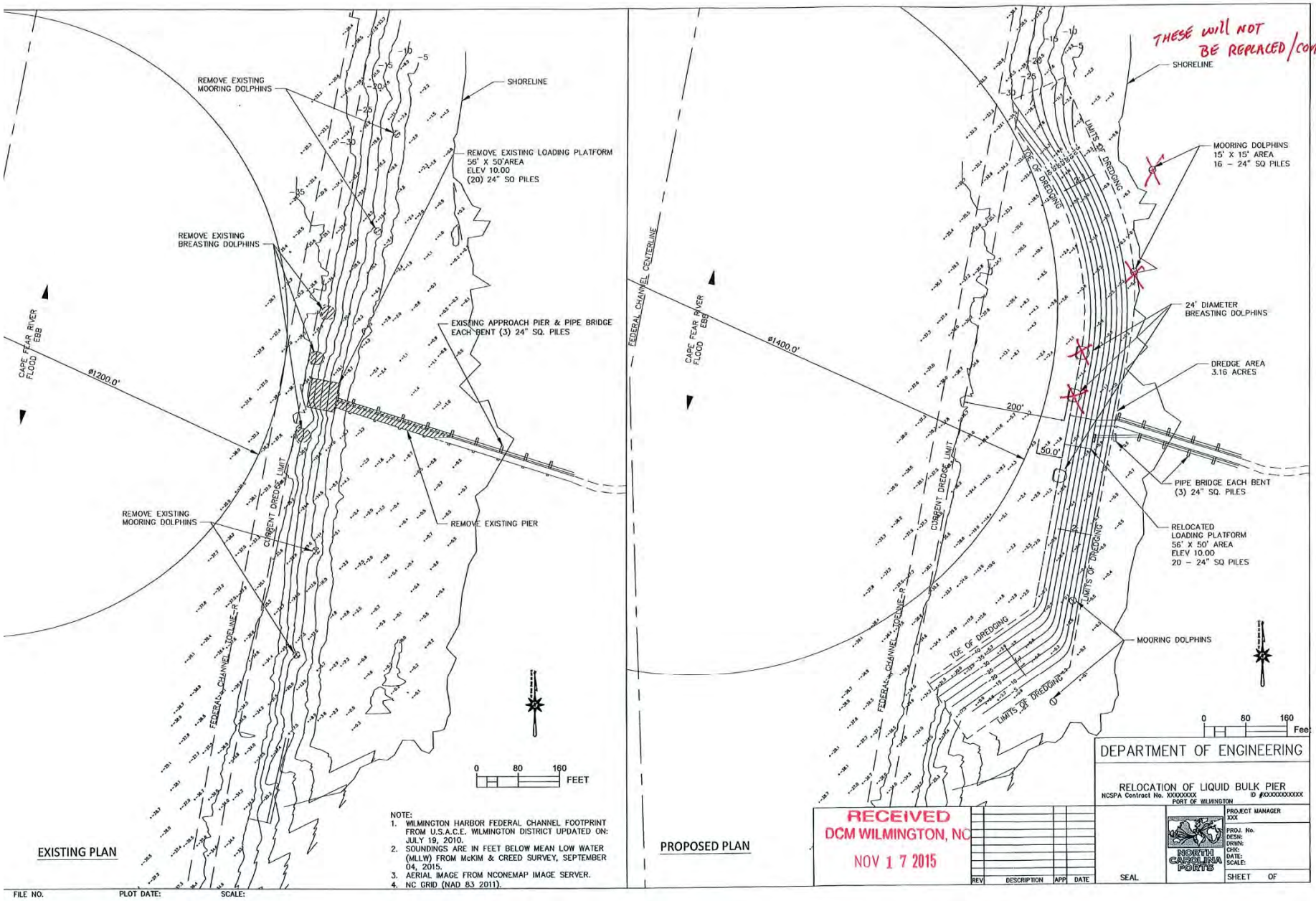

Eagle Island
Cape Fear River
Existing Turning Basin
Site Location
N
NCSPA

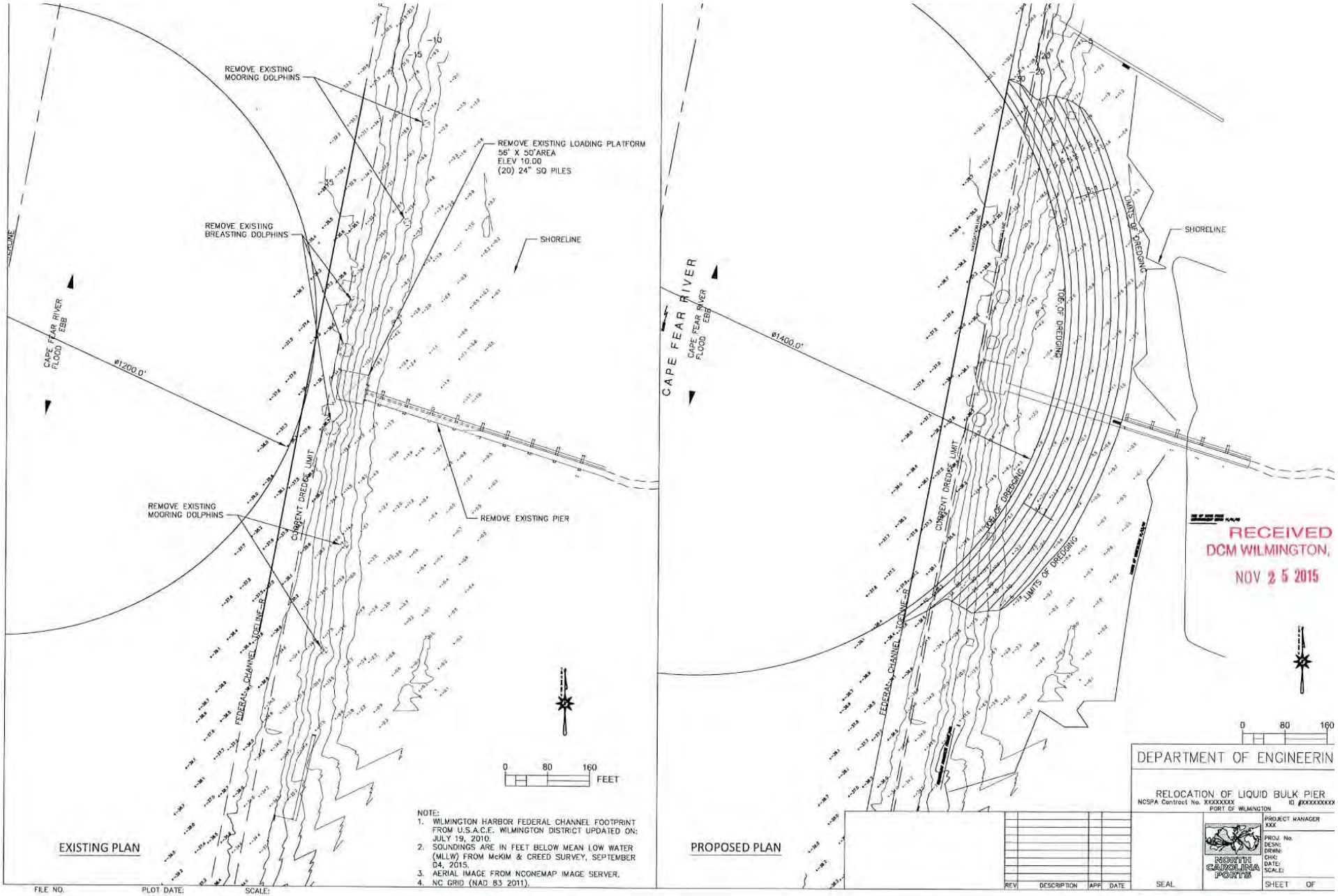

NCSPA
VIEW OF PROJECT SITE FACING EAST
DCM AERIAL PHOTOGRAPHY OCTOBER 8, 2015


NCSPA
VIEW OF PROJECT SITE FACING EAST
DCM AERIAL PHOTOGRAPHY MARCH 13, 2013


VIEW OF PROJECT SITE FACING WEST
DCM AERIAL PHOTOGRAPHY JANUARY 29, 2013
Cape Fear River
Existing Turning Basin
Site Location
NCSPA


VIEW FROM PROJECT SITE FACING SOUTH
DCM PHOTOGRAPHY AUGUST 24, 2015


THESE will NOT BE REPLACED/CONSTRUCTED
REMOVE EXISTING MOORING DOLPHINS
SHORELINE
REMOVE EXISTING LOADING PLATFORM 56' X 50'AREA ELEV 10.00 (20) 24" SQ PILES
REMOVE EXISTING BREASTING DOLPHINS
EXISTING APPROACH PIER & PIPE BRIDGE EACH BENT (3) 24" SQ. PILES
CAPE FEAR RIVER FLOOD EBB
@1200.0'
CURRENT DREDGE LIMIT
REMOVE EXISTING MOORING DOLPHINS
REMOVE EXISTING PIER
FEDERAL CHANNEL CENTERLINE
0 80 160 FEET
NOTE:
1. WILMINGTON HARBOR FEDERAL CHANNEL FOOTPRINT FROM U.S.A.C.E. WILMINGTON DISTRICT UPDATED ON: JULY 19, 2010.
2. SOUNDINGS ARE IN FEET BELOW MEAN LOW WATER (MLLW) FROM McKIM & CREED SURVEY, SEPTEMBER 04, 2015.
3. AERIAL IMAGE FROM NCONEMAP IMAGE SERVER.
4. NC GRID (NAD 83 2011).
EXISTING PLAN
FILE NO.
PLOT DATE:
SCALE:
FEDERAL CHANNEL CENTERLINE
CAPE FEAR RIVER FLOOD EBB
@1400.0'
200'
50.0'
CURRENT DREDGE LIMIT
TOE OF DREDGING
LIMITS OF DREDGING
SHORELINE
MOORING DOLPHINS 15' X 15' AREA 16 – 24" SQ PILES
24' DIAMETER BREASTING DOLPHINS
DREDGE AREA 3.16 ACRES
PIPE BRIDGE EACH BENT (3) 24" SQ. PILES
RELOCATED LOADING PLATFORM 56' X 50' AREA ELEV 10.00 20 – 24" SQ PILES
MOORING DOLPHINS
0 80 160 Feet
PROPOSED PLAN
DEPARTMENT OF ENGINEERING
RELOCATION OF LIQUID BULK PIER
NCSPA Contract No. XXXXXXXX
PORT OF WILMINGTON
ID #XXXXXXXXXXX
RECEIVED
DCM WILMINGTON, NC
NOV 17 2015
REV DESCRIPTION APP DATE
SEAL
NORTH CAROLINA PORTS
PROJECT MANAGER XXX
PROJ. No.
DESN:
DRWN:
CHK:
DATE:
SCALE:
SHEET OF


REMOVE EXISTING MOORING DOLPHINS
REMOVE EXISTING LOADING PLATFORM 56' X 50' AREA ELEV 10.00 (20) 24" SQ PILES
REMOVE EXISTING BREASTING DOLPHINS
SHORELINE
CAPE FEAR RIVER EBB
CAPE FEAR RIVER FLOOD
Ø1200.0'
CURRENT DREDGE LIMIT
FEDERAL CHANNEL SIGHTLINE
REMOVE EXISTING MOORING DOLPHINS
REMOVE EXISTING PIER
0 80 160 FEET
NOTE:
1. WILMINGTON HARBOR FEDERAL CHANNEL FOOTPRINT FROM U.S.A.C.E. WILMINGTON DISTRICT UPDATED ON: JULY 19, 2010.
2. SOUNDINGS ARE IN FEET BELOW MEAN LOW WATER (MLLW) FROM McKIM & CREED SURVEY, SEPTEMBER 04, 2015.
3. AERIAL IMAGE FROM NCONEMAP IMAGE SERVER.
4. NC GRID (NAD 83 2011).
EXISTING PLAN
FILE NO.
PLOT DATE:
SCALE:
CAPE FEAR RIVER
CAPE FEAR RIVER EBB
CAPE FEAR RIVER FLOOD
Ø1400.0'
SHORELINE
LIMITS OF DREDGING
TOE OF DREDGING
CURRENT DREDGE LIMIT
FEDERAL CHANNEL SIGHTLINE
RECEIVED
DCM WILMINGTON,
NOV 2 5 2015
0 80 160
PROPOSED PLAN
DEPARTMENT OF ENGINEERIN
RELOCATION OF LIQUID BULK PIER
NCSPA Contract No. XXXXXXXX
PORT OF WILMINGTON
PROJECT MANAGER
XXX
PROJ. No.
DESN:
DRWN:
CHK:
DATE:
SCALE:
NORTH CAROLINA PORTS
SHEET OF
REV. DESCRIPTION APP. DATE
SEAL

MITIGATION LOCATION

DEPARTMENT OF ENGINEERING

RELOCATION OF LIQUID BULK PIER

NCSPA Contract No. XXXXXXXX ID #XXXXXXXXXX

PORT OF WILMINGTON

PROJECT MANAGER XXX

PROJ. No.
DESIGN:
DRAWN:
CHK:
DATE:
SCALE:

NO. DESCRIPTION APP. DATE

SEAL

SHEET OF

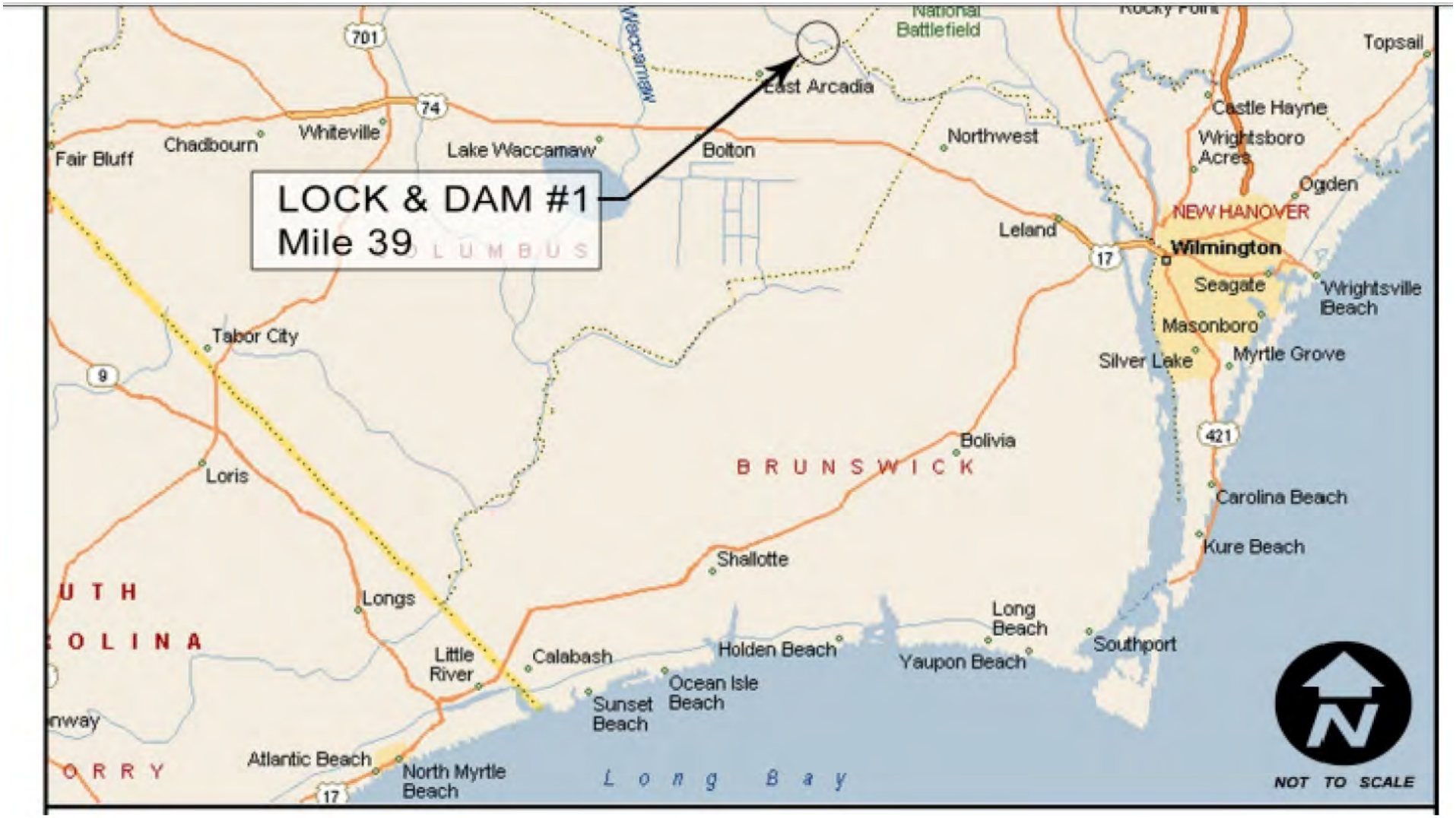
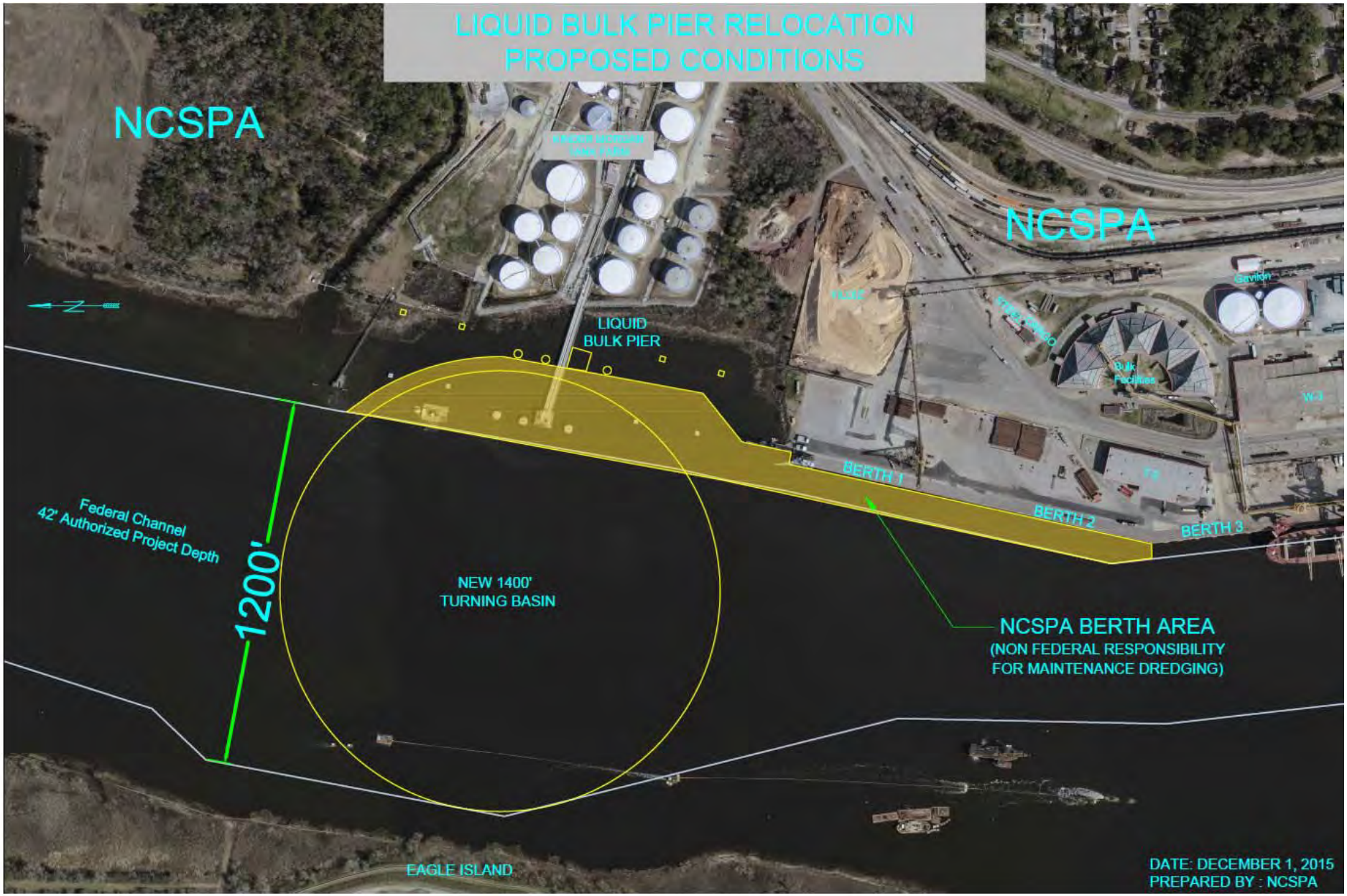


Figure 1. Location of Lock and Dams 1, 2, and 3 along the Cape Fear River, North Carolina.



Department of Environmental Quality