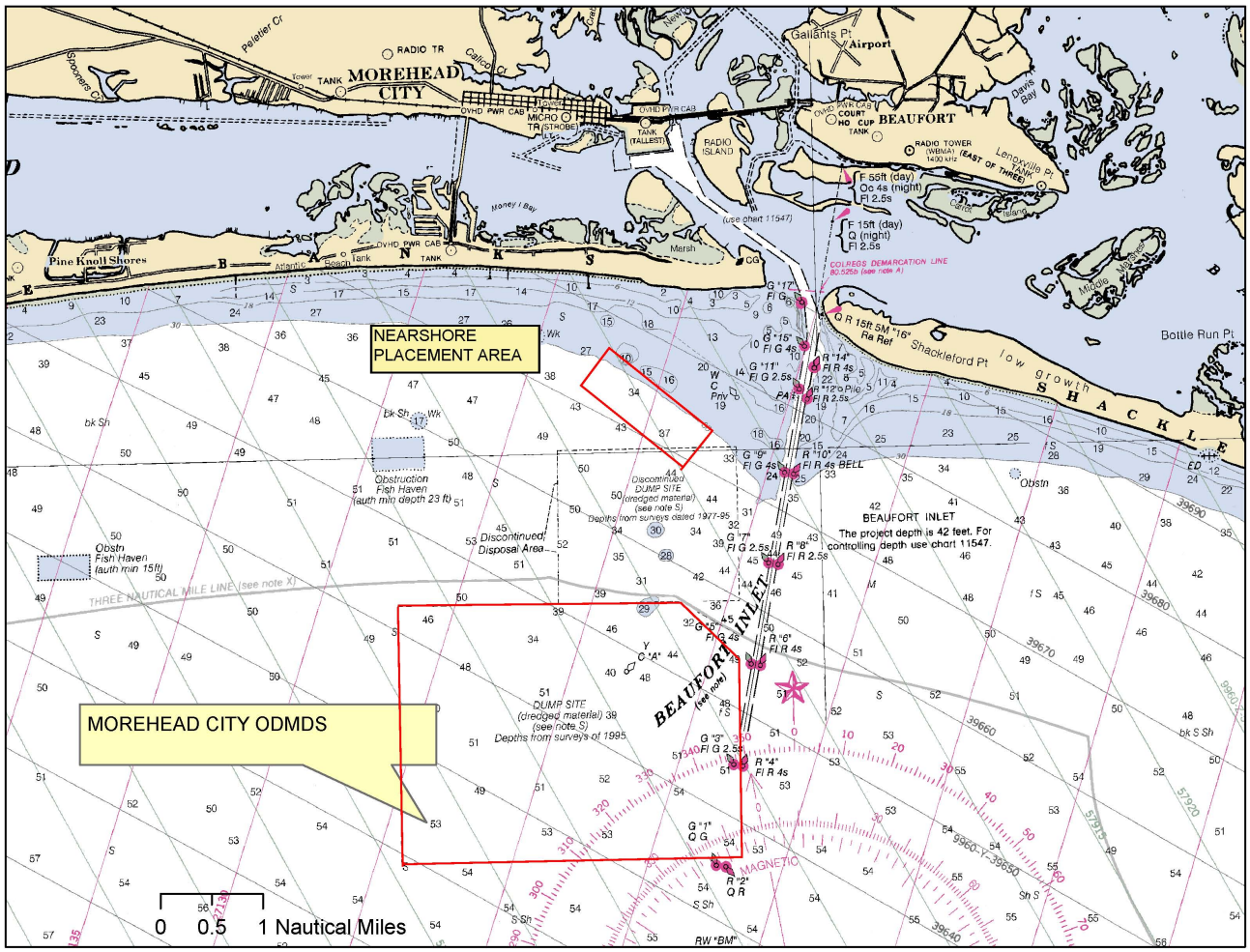
FEBRUARY 2010

MOREHEAD CITY
OCEAN DREDGED MATERIAL DISPOSAL SITE

U.S. Army Corps of Engineers

SITE MANAGEMENT AND MONITORING PLAN



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The following Site Management and Monitoring Plan for the Morehead City ODMDS has been developed and agreed to pursuant to the Water Resources Development Act Amendments of 1992 (WRDA 92) to the Marine Protection, Research, and Sanctuaries Act of 1972 for the management and monitoring of ocean disposal activities, as resources allow, by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers.

8 MAR 10

Jefferson M. Ryscavage Date

Colonel, U.S. Army
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3/26/10

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Acting Regional Administrator
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This plan is effective from date of signature for a period not to exceed 10 years. The plan shall be reviewed and revised more frequently if site use and conditions at site indicate a need for revision.

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FEBRUARY 2010

INTRODUCTION

Under the MPRSA (Marine Protection, Research, and Sanctuaries Act) of 1972, it is the responsibility of the EPA (U.S. Environmental Protection Agency) and the USACE (U.S. Army Corps of Engineers) to monitor and manage Ocean Dredged Material Disposal Sites (ODMDS). The goal of this management is to ensure that ocean dredged material disposal activities will not unreasonably degrade the marine environment or endanger human health or economic potential. MPRSA, WRDA (the Water Resources Development Act) of 1992, and a Memorandum of Agreement between EPA and USACE requires the development of a SMMP (site management and monitoring plan) to specifically address the disposal of dredged material at the Morehead City ODMDS. Following an opportunity for public review and comment, the SMMP provisions will be requirements for all disposal activities at the site. All section 103 (MPRSA) ocean disposal permits or evaluations shall be conditioned as necessary to assure consistency with the SMMP.

This SMMP has been prepared in accordance with the Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites (EPA and USACE, 1996). This document provides a framework for the development of site monitoring and management plans required by MPRSA and WRDA. The SMMP may be modified if it is determined that such changes are warranted as a result of information obtained during the monitoring process. The SMMP will be reviewed and revised as needed or every ten years, whichever time period is shorter.

A Morehead City ODMDS SMMP was prepared in October 1997. This SMMP updates the 1997 SMMP focusing on areas where site use and conditions and evolving ocean policy indicate a need for revision.

SCOPE OF THE SMMP

ODMDS management involves a broad range of activities including regulating the schedule of use, the quantity, and the physical/chemical characteristics of dredged materials dumped at the site. It also involves establishing disposal controls, conditions and requirements to avoid and minimize potential impacts to the marine environment. Finally, ODMDS management involves monitoring the site environs to verify that unanticipated or significant adverse effects are not occurring from past or continued use of the site and that permit conditions are met.

The SMMP shall include but not be limited to:

- A baseline assessment of conditions at the site;
- A program for monitoring the site;
- Special management conditions or practices to be implemented at each site that are necessary for the protection of the environment;

- Consideration of the quantity and physical/chemical characteristics of dredged materials to be disposed of at the site;
- Consideration of the anticipated use of the site over the long term;
- A schedule for review and revision of the plan.

OBJECTIVES OF SITE MANAGEMENT

There are three primary objectives in the management of the Morehead City ODMDS:

- Protection of the marine environment, living resources, and human health and welfare;
- Documentation of disposal activities at the ODMDS and provision of information which is useful in managing the dredged material disposal activities;
- Provide for beneficial use of dredged material whenever practical.

The purpose of the SMMP is to provide guidelines in making management decisions necessary to fulfill mandated responsibilities to protect the marine environment as discussed previously. Risk-free decision-making is an impossible goal. However, an appropriate SMMP can narrow the uncertainty.

MOREHEAD CITY OCEAN DREDGED MATERIAL DISPOSAL SITE (ODMDS)

The Morehead City ODMDS (Figures 1 and 2) was designated by EPA pursuant to Section 102(c) of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended, as suitable for the ocean disposal of dredged material. The final rule was promulgated by EPA on 14 August 1987 (F.R. Vol 52 No. 157), effective 14 September 1987. The boundary coordinates for the Morehead City ODMDS are:

(Assumed to be NAD 27 Geographic)	(NAD 83 State Plane - Feet)
34^0 38'30" N 76^0 45'00" W	N 332180 E 2676711
34^0 38'30" N 76^0 41'42" W	N 332560 E 2693251
34^0 38'09" N 76^0 41'00" W	N 330519 E 2696808
34^0 36'00" N 76^0 41'00" W	N 317482 E 2697112
34^0 36'00" N 76^0 45'00" W	N 317091 E 2677142

The site is located just beyond 3 nautical miles offshore (beyond 3 nautical miles from the baseline of the territorial sea) of Morehead City, North Carolina. The Morehead City ODMDS has an area of about 8.0-square nautical miles. Depths within the ODMDS range from about -30 to -55 feet local mean low water (m.l.w.) based on a composite of bathymetric surveys which include data from 1995 to 2007. Figure 3 shows the latest available survey for a particular area. Depths are shallowest in the northern (inshore) portion and gradually deepen to the south (offshore). Approximately 60% of the area is greater than -50 feet m.l.w. The bathymetry is essentially flat except for slight mounds of dredged material in the northeast third and middle of the ODMDS due to previous dredged material discharges and the influence of the Beaufort Inlet ebb tide delta.

Material has been excavated from the Morehead City ODMDS by Carteret County as a borrow source for nourishment of the Bogue Banks beaches in 2004 and 2007 (Post-Isabel and -Ophelia Sand Replenishment Projects). Approximately 1.2 million cubic yards of sand were removed from the northeast corner of the Morehead City ODMDS during those two events by hopper dredges and pumped out onto the Bogue Banks beaches. A bathymetric survey of this “borrow area” portion of the

Morehead City ODMDS is not known to be available.

DISPOSAL HISTORY

Historical Use of the Morehead City ODMDS. Disposal of dredged materials in the ocean has been associated with the Morehead City Harbor Federal navigation project for many years. Federal dredging projects in Morehead City Harbor were begun in 1910. Continued use of the Morehead City Federal navigation channel depends upon annual maintenance dredging. Only one non-federal maintenance dredging and ocean dredged material disposal permit (permitted pursuant to Section 103) has taken place in the Morehead City Harbor area, that being associated with the State maintained portions of the North Carolina State Ports.

The harbor improvements can be divided into dredging within inner harbor and Beaufort Inlet ocean bar channels. Dredging in the inner harbor areas has been performed with a hydraulic cutterhead dredge or very recently with a bucket and barge with dredged material disposal being upland, on the beach, or in the Morehead City ODMDS. The ocean bar channel dredging has been accomplished using a hopper dredge with disposal in the ocean or on the beaches of Bogue Banks. The ocean bar channels specifically include Range A, the Cutoff, and Range B (Figure 4). In 1910, the Morehead City Harbor ocean bar channel was deepened to 20 feet at a width of 300 feet. Improvements to the channel were made in 1936 and 1978 when the ocean bar channel was deepened to 30 feet by 400 feet and 42 feet by 450 feet, respectively. In 1994, the bar channel was dredged to its present dimensions of 47 feet deep and 450 to 600 feet wide.

The placement of dredged materials in the ocean off Beaufort Inlet since 1995 is documented in Table 1. Since 1987 (the date of site designation) ocean disposal of dredged materials from the Morehead City Harbor Federal project channels has been placed within the Morehead City ODMDS. Beginning in 1995 sediments dredged during the maintenance of the Morehead City navigation channels were also placed in the Morehead City nearshore placement area off Bogue Banks or more infrequently directly on Bogue Banks beaches (the Nearshore Placement Area is discussed further in sections to follow). Accordingly, the quantity of dredged material being transported to the ODMDS for disposal has declined as compared to the pre-1995 levels.

Recently, the Morehead City ODMDS has been used as a borrow area for Bogue Banks beach replenishment. Sand from the ODMDS has been dredged and subsequently discharged as beachfill. Additional use of dredged material from the ODMDS for beach replenishment is possible.

Table 1.
Summary of ocean dredged material placement records for Morehead City Harbor, 1995 to 2007. In 1995 placement in the NEARSHORE area occurred for the first time.

CALENDAR YEAR	NUMBER OF HOPPER LOADS (% OF TOTAL)					ESTIMATED VOLUME (CU YDS)*						
	ODMDS		NEARSHORE		TOTAL	ODMDS		NEARSHORE		TOTAL	HOPPER DREDGES USED	DREDGING DATES
1995	193	79%	51	21%	244	635,709	79%	172,472	21%	808,181	Eagle 1	1/5/95 - 2/14/95
1996	0	0%	328	100%	328	0	0%	656,646	100%	656,646	Padre Island	3/22/96 - 4/30/96
1997	476	62%	296	38%	772	1,143,400	59%	781,700	41%	1,925,100	Manhattan Island, Sugar Island, Northerly Island, Padre Island	11/3/97 - 12/29/97 4/25/97 - 5/8/97
1998a	209	41%	295	59%	505	270,400	27%	725,600	73%	996,000	Sugar Island, Padre Island, Northerly Island	1/1/98 - 2/16/98
1998b	161	100%	0	0%	262	209,990	100%	0	0%	209,990	Manhattan Island, Sugar Island, Northerly Island, Padre Island	11/26/98 - 12/31/98
1999	391	65%	208	35%	599	759,330	64%	425,760	36%	1,185,090	Sugar Island, Northerly Island, Padre Island	1/1/99 - 3/09/99
2000	98	17%	475	83%	573	149,595	16%	786,115	84%	935,710	Sugar Island, Northerly Island, Dodge Island	1/2/00 - 3/11/00
2001	259	100%	0	0%	259	718,655	100%	0	0%	718,655	Bayport	2/05/01 - 3/10/01
2002	0	0%	175	100%	175	0	0%	560313	100%	560,313	Wheeler, McFarland	1/18/02 - 2/21/02
2003	111	25%	337	75%	448	282,994	25%	858,298	75%	1,141,292	Padre Island, Manhattan Island	1/9/03 - 3/2/2003
2004	--	--	--	--	--	--	--	--	--	--	NO OCEAN PLACEMENT	--
2005	24	23%	81	77%	105	63,236	22%	220,419	78%	283,655	Bayport	2/24/05 - 3/19/05
2006	147	33%	305	67%	452	468,958	32%	993,926	68%	1,462,884	Eagle 1	1/23/06 - 3/11/06
2007**	194	52%	182	48%	376	536,610	55%	433,203	45%	969813	BE Lindholm, RN Weeks	1/15/07 - 3/26/07
TOTAL**	2263	44%	2733	54%	5098	5,238,877	44%	6,614,452	56%	11,853,329		

Note: * Estimated volumes are derived from vessel dump records provided by dredging contractor for ocean placement verification. They are not based on channel surveys or contract pay yardages. Prior to 1999, the volumes were computed using an average load volume for the hopper rather than a reported specific load volume.

** For 2007, direct beach placement on Bogue Banks Beaches occurred. For this table, the beach placement is shown and computed as NEARSHORE. Estimated volumes for 2007 were derived from contract records not ocean placement reporting.

Morehead City Harbor Dredged Material Management. Access from the Atlantic Ocean to the existing Port of Morehead City and Radio Island is through Beaufort Inlet, which is between Bogue Banks and Shackleford Banks. Ships travel through the Beaufort Inlet Channel and up the Federal Morehead City Navigation Channel to reach the Port of Morehead City and the west side of Radio Island. The Port terminal is located only four miles from the open sea and the channel is easily navigable. Three governmental agencies perform dredging to maintain Morehead City Inner harbor navigation. The USACE, Wilmington District maintains the Morehead City Harbor Federal Navigation Channel. The North Carolina State Ports Authority (NCSPA) maintains harbor facilities adjacent to the federally maintained navigation channel. These areas include berthing areas along the face of the Morehead City State Port wharfs and facilities along Radio Island. The United States Coast Guard (USCG) maintains Station Fort Macon within Bogue Sound, near Beaufort Inlet at the entrance to Morehead City Harbor. The continued viability of the Port of Morehead City depends upon maintenance dredging. Dredging is required to maintain the navigable efficiency and safety of Morehead City Harbor and provide economic benefits to the Port of Morehead City and the region. Environmentally acceptable disposal of dredged material from Morehead City Harbor is required in order to maintain navigable conditions.

Morehead City Harbor Federal Navigation Channel. The channel across the Beaufort Inlet ocean bar is authorized to a 47-foot depth. The Beaufort Inlet Channel varies in width from 450 feet to 800 feet. Cutoff Channel is 600 feet wide and Morehead City Channel is 400 feet wide. The east leg (adjacent to berths 1, 2, and 3) and the east turning basin are maintained to a 45-foot depth. The west leg, the northwest leg (adjacent to berths 4 through 9), and the west turning basin are maintained to a 35-foot depth.

Currently, maintenance of Morehead City Harbor involves dredging the inner harbor channels approximately every two years by hydraulic pipeline. The inner harbor dredged material is placed either in the Brandt Island Upland Diked Disposal Area (hereafter referred to as Brandt Island) or directly on the beaches on Bogue Banks. The outer harbor navigation channels are usually maintained annually by hopper dredge and the resultant material is placed either in the United States Environmental Protection Agency (EPA) designated Morehead City Ocean Dredged Material Disposal Site (ODMDS), the Morehead City nearshore placement area, or directly placed on area beaches. The Morehead City nearshore placement area lies along or near the -25 foot m.l.w. contour (Figure 4). Use of the nearshore area is regulated under the Clean Water Act of 1977. The goal of the nearshore placement area is to retain sand dredged from the channel within the Beaufort Inlet ebb tide delta.

Brandt Island is a 96-acre island located just south of the North Carolina State Ports at Morehead City. The island is owned by North Carolina State Ports Authority (NCSPA) and has been used as a dredged material disposal area since about 1955. Brandt Island has been a sand-recycling disposal facility. Morehead City inner harbor dredged material has been placed in Brandt Island about every other year.

Every 8 to 10 years maintenance material is pumped out of Brandt Island and placed on the ocean beaches of Bogue Banks. In FY 1986, FY 1994, and FY 2005 approximately 3.9 million, 2.5 million, and 2.9 million cubic yards of dredged material, respectively, were pumped out of Brandt Island and placed on Bogue Banks from Fort Macon State Park to Atlantic Beach.

During the FY 2005 pump out of Brandt Island, it was evident that a quantity of fine-grained sediment had accumulated near the disposal area spillway. This material is not compatible for placement on the beach and therefore a majority of the unsuitable material was avoided during the pump out activity and left in-place. Due to fine-grained sediment, Brandt Island will not be pumped out in the future. FY05, the Morehead City inner harbor area was also dredged with the dredged material placed directly on the ocean beaches of Bogue Banks. However, the dredging was limited as portions of the inner harbor material were found to contain unacceptable levels of fine-grained material for beach placement.

The NCSPA and the Wilmington District, USACE previously constructed an interior dike dividing Brandt Island into two cells. One cell (approximately 8 acres in size) provided a limited-capacity disposal cell for fine-grained, non-beach quality dredged material (greater than 10 percent silt and clay) encountered in the Morehead City Harbor and the other was retained for sand recycling. Due to the need for disposal of fine-grained material and the lack of alternative upland sites for fine-grained sediments, there will only be one cell in Brandt Island in the future. The rehabilitation and potential expansion of the Brandt Island confined disposal area dikes would reduce the potential for ocean placement of inner harbor dredged materials. As capacity in Brandt Island is finite, material in Brandt Island could potentially be periodically removed and ocean dumped provided necessary regulatory approvals are obtained.

Because of the recurring quantities of fine-grained materials to be dredged from the inner harbor and the limited capacity of Brandt Island, a requirement for direct ocean disposal of the inner harbor dredged material in the designated Morehead City ODMDS is foreseeable provided necessary regulatory approvals are obtained.

USCG Station Fort Macon. The United States Coast Guard (USCG) Station Fort Macon is located adjacent to the Morehead City Harbor Federal Navigation Project. The station is located within Bogue Sound, near Beaufort Inlet at the entrance to Morehead City Harbor. The USCG Station entrance channels and basins must be periodically dredged to maintain adequate depth.

The USCG boat basin is used as a permanent docking facility for five cutters (Aquidneck, Block Island, Elm, Smilax, and Staten Island), and is the home of the USCG's Fort Macon Marine Safety Team. USCG Station Fort Macon has many missions, including the safeguarding of navigational interests (government, commercial, and private), protecting North Carolina's coastline from pollution and marine accidents and enforcement of federal laws and responsibilities under the Homeland Security Act. While maintenance of USCG Station Fort Macon is not included in the federal Morehead City Harbor Federal Navigation Project, the maintenance and function of the USCG Station is important to the port.

The USCG Station basin is dredged to various depths, mostly –22 feet m.l.w. (local Beaufort datum). The portion of the basin presently proposed for dredging and ocean disposal was last dredged in 2006. Approximately 67,000 cubic yards were dredged from the USCG Station Fort Macon basin and placed in the portion of the Brandt Island disposal site set aside for non-beach quality sediments. The amount of material to be maintenance dredged solely from the station basin as a result of any single event is anticipated to be less than 75,000 cubic yards at any one time. Sediments of the USCG Station Fort Macon vicinity generally consist of sands, silts, and clays occurring in various mixtures. The sediments are generally unconsolidated and relatively soft.

North Carolina State Ports Authority (NCSPA) Maintenance and Projects. The NCSPA maintains harbor facilities that are adjacent to the federally maintained navigation channel. These areas include berthing areas along the face of the Morehead City State Port wharfs and facilities along Radio Island. Maintenance of these facilities is required to realize the benefits of having a channel leading to the port. Maintenance of these areas is usually performed at the same time that the maintenance of the Federal portion is accomplished. In addition, the NCSPA is pursuing port industrial development on Radio Island. The adjacent deep-water Federal navigation channel, the short distance to the open Atlantic Ocean, and existing rail and road access contribute to the benefits of this site for port development.

The North Carolina State Ports Authority (NCSPA) property also includes approximately 185 acres of Radio Island, including the former Aviation Fuel Terminal Inc. The public uses the eastern portion of Radio Island, known as East Beach, for recreational purposes. The northern end of the island contains a mix of residences, privately owned land, and marine-related businesses. The southern tip of the island is owned by the US Navy and is used for military deployment activities. A new general cargo facility is proposed for Radio Island. The new facility would include 2,000 feet of wharf, 300,000 square feet of warehouse space, support buildings, dredging from the Morehead City Channel to the face of the new wharf on Radio Island, and improvements to the road and rail access on Radio Island.

The proposed Radio Island project consists of two 1,000-foot berths constructed using a sheet-pile bulkhead. The face of the wharf would be located 700 feet from the near channel line of Morehead City Channel. Dredging will be required between the existing channel and the proposed wharf to allow for the maneuvering and docking of ships at the wharf. Dredging of approximately 37 acres of estuarine bottom to a depth of 45 feet would be required to connect the proposed berths to Morehead City Channel. The construction of the proposed project will require the dredging of approximately 1.7 million cubic yards of dredge material.

CHARACTERISTICS OF DREDGED MATERIALS

Grain Size. The sediments dredged from the Morehead City Harbor navigation channels consist of a variety of materials depending on location within the harbor and proximity to Beaufort Inlet. Shoals occur where specific physical factors promote deposition or movement of sediments. These factors may vary spatially and temporally. Generally, sediments from the Beaufort Inlet area are sands which meet the criteria established in EPA's Ocean Dumping Regulations and Criteria 40 CFR Part 227.13(b)(1) for environmental acceptability without further testing. The sediment characteristics are affected by the small sediment load of the Newport River which terminates in the area and by the dynamic nature of the Beaufort Inlet tidal currents and waves to further winnow small fractions in the sediments.

The sediments dredged from navigation channels in the Morehead City Harbor vicinity include flood-tide delta, barrier island, and nearshore marine sediments (fine to medium sand, littoral materials) as well as back-barrier, lagoonal, and tidal flat sediments (very fine, silty sands), and mixtures of both. Higher energy shoal areas in the inlet are comprised of fine to medium sands. Silt and very fine sand content increases moving in towards the inner harbor area. Shoals occur where specific physical factors promote deposition or movement of sediments. These factors may vary spatially and temporally. Sediment color gets increasingly darker inland away from the inlet, possibly due to an increase in organic material in the sediment.

The grain size characteristics of Morehead City Harbor navigation channel sediments are described in Appendix C. Based on recent sediment evaluations of Morehead City Harbor channel sediments, it is useful for project and dredged material disposal planning to define the harbor into three sections. The type of material present determines the disposal method feasibility.

Inner Harbor. Inner Range C, East Leg, West Leg, and Northwest Leg. Material is greater than 20% fines. This area has usually been dredged with a pipeline dredge.

Outer Harbor. Outer Range C, Range B, Cutoff, Range A to Station 110+00. Material has less than 10% fines. This portion of the harbor has been usually dredged with a pipeline dredge (Range C, and B) or a hopper dredge (Range B, Cutoff, and Range A).

Outer Entrance Channel. Range A from Station 110+00 to offshore limit of required dredging. Material is greater than 20% fines. This area has been historically dredged with a hopper dredge.

The Morehead City Harbor channel sediments which are beach-compatible sands meet the Part 227.13(b) criteria for compliance with the Ocean Dumping Regulations and Criteria without further testing. The Morehead City inner harbor sediments which have significant silt and clay components do not meet Part 227.13(b) criteria for exclusion from further evaluation. For those materials, additional information is necessary to determine compliance with the Ocean Dumping Regulations and Criteria.

Chemical and Biological Testing of Sediments. Representative samples of fine-grained sediments from the Morehead City Inner harbor area have been chemically and biologically tested and found acceptable for ocean disposal in accordance with EPA's *Ocean Dumping Regulations and Criteria*. This evaluation data is available in:

> U.S. Army Corps of Engineers, Wilmington District, 2006. Evaluation of Dredged Material Proposed for Ocean Disposal, Morehead City Inner Harbor and USCG Station Fort Macon, North Carolina, September 2006, Report prepared by ANAMAR Environmental Consulting.

EPA Region 4 has concurred with these findings.

DISPOSAL METHODS

Disposal of dredged material at the Morehead City ODMDS will occur using two methods; by hopper dredge, and by tug and barge or scow. For the outer ocean bar reaches, shoal material will likely be removed and transported to the ODMDS by a hopper dredge. Hopper dredges are designed to hydraulically dredge sediments, load and retain solids in the hoppers, and then haul them to the disposal site where disposal is accomplished by dumping through doors in the bottom of the hoppers or through the hull. For the inner harbor areas, shoal material will be removed by hopper dredge or by a hydraulic or mechanical dredge and placed into scows or barges moored next to the dredge. When full, the scow is pulled by a tug to the ODMDS and the load discharged through the bottom of the scow.

MANAGEMENT AND MONITORING CONCERNS OR ISSUES

Morehead City Harbor Dredged Material Management Plan (DMMP). The Wilmington District, US Army Corps of Engineers (USACE) is currently in the process of preparing a Dredged Material Management Plan (DMMP) for the Morehead City Harbor Project. The purpose of the DMMP is to provide for economically and environmentally sound management of dredged material generated by maintenance of the Morehead City Harbor project for a 20-year period. The DMMP will be prepared in accordance with USACE Engineer Regulation ER 1105-2-100 Section 3-2, b.(8). The DMMP will include the preparation of a new National Environmental Policy Act (NEPA) document and other necessary determinations. The DMMP is scheduled for completion in mid-2011. The Morehead City SMMP may have to be revised when the DMMP is implemented.

Nearshore Placement. Since 1995, beach-quality sediments dredged during the maintenance of the Morehead City navigation channels have been routinely placed in a nearshore placement disposal area off Bogue Banks (Figure 5). The intention is to keep material within the active littoral system without dramatically increasing the amount of annual maintenance dredging in the channel or the cost of the maintenance dredging. Placement of the dredged material in shallower water increases littoral system activity. However, it also increases concerns regarding hopper dredge operating conditions. A hopper dredge with a draft of nearly 20 feet or more is vulnerable to grounding in a nearshore placement operation as compared to the ODMDS, particularly if any ocean swell is present. It is unlikely that routine hopper operations can place material further inshore than the 25-foot contour. The placement of

sand in the Morehead City ODMDS removes the dredged material from the active littoral system, a loss which may become permanent if the sand is not used for future placement on beaches or nearshore areas. However, nearshore placed sand would be more difficult to obtain (dredge) for future direct beach placement than sand placed in the Morehead City ODMDS. Dredged material placed in the ODMDS may be more easily obtained source of beach material than material placed in the nearshore area. The Morehead City ODMDS may become a regular source for beach material.

In summary, nearshore placement may be an alternative to the future ODMDS placement of beach-quality Morehead City Harbor dredged materials. However the nearshore placement area does not preclude the need for the Morehead City ODMDS. One factor contributing to the need of the ODMDS is the fine-grained material in the inner harbor area. Placement of the fine-grained dredged material in the nearshore placement area and in close proximity to the Bogue Banks recreational beaches would likely raise public concerns. The ODMDS is also needed if the site conditions such as depths in the site, draft of the hopper dredge, or ocean swell too severely restrict the hopper operations and thus hamper maintenance of navigable conditions for the Port of Morehead City.

Direct Beach Placement. There are no active Federal hurricane and storm damage reduction projects on the Bogue Banks beaches in the Morehead City area. However, the beach communities of Atlantic Beach, Pine Knoll Shores, Indian Beach, Salter Path, and Emerald Isle have experienced severe storm damage and erosion problems, particularly as a result of Hurricane Fran in September 1996 and Hurricane Floyd in September 1999. During the period from 1996 through 1999, Hurricanes Bertha, Bonnie, Dennis, and Irene have also affected the area. The storm damage and associated erosion from six named storms has resulted in considerable damage to homes and loss of the natural protective berm and dune system since 1996. The erosion of the existing berm and dune system has increased the storm damage susceptibility of existing structures and infrastructure.

The Bogue Banks Hurricane and Storm Damage Reduction Study is being pursued under the Corps of Engineers' General Investigation (GI) Program. The Bogue Banks Study is being conducted in response to the following resolution adopted July 23, 1998:

> Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, that the Secretary of the Army is requested to review the report of the Chief of Engineers dated November 27, 1984, on Bogue Banks and Bogue Inlet, North Carolina, and other pertinent reports, to determine whether any modifications of the recommendations contained therein are advisable at the present time in the interest of shore protection and related purposes for Bogue Banks, North Carolina.

The sponsors' interest is in developing a plan of protection against storm damages. From the shoreline, the study area extends landward approximately 500 feet. Seaward, the study area extends from the shoreline approximately 1 mile. However, the study area also includes offshore borrow areas lying 1 to 8 miles from the shoreline and borrow areas in Beaufort Inlet and Bogue Inlet. The Bogue Banks feasibility study is investigating measures and plans for hurricane and storm damage reduction.

The study is also documenting incidental recreation benefits. Solutions considered for this study area are berm and dune beachfills using material dredged from offshore borrow sites, and in some cases building relocations.

Central to the consideration of any beach placement alternative is the availability of environmentally acceptable borrow sites with material of sufficient quality and quantity to construct and maintain the project for its authorized life. Investigations for borrow material may be made at Bogue and Beaufort Inlets, Brandt Island, offshore of Cape Lookout to Shackleford Banks, within the estuary, the area offshore of the proposed beach areas including, the Morehead City navigation channels (i.e., Range A, the Cutoff, etc.), the United States Environmental Protection Agency (USEPA) designated Morehead City Ocean Dredged Material Disposal Site (ODMDS), and the nearshore placement area.

The direct placement of beach quality sand from maintenance dredging of Morehead City Harbor on these beaches would have hurricane and storm damage reduction benefits. The Corps of Engineers undertakes operations and maintenance activities where appropriate and environmentally acceptable. All practicable and reasonable alternatives are fully considered on an equal basis. This includes the discharge of dredged or fill material into waters of the U.S. or ocean waters in the least costly manner, at the least costly and most practicable location, and consistent with engineering and environmental requirements (33 C.F.R. § 335.4). Section 145 of the Water Resources Development Act of 1976, P.L. 94-587, as amended by Section 933 of the Water Resources Development Act of 1986, P.L. 99-662, and other laws, 33 U.S.C. § 426j provides authority for placement of dredged material on a beach where it is more costly than the least costly acceptable alternative. Under these Section 933 projects, the USACE may participate in the additional placement costs when: (1) requested by the State; (2) the Secretary of the Army considers it in the public interest; and (3) the added cost of disposal is justified by hurricane and storm damage reduction benefits.

A Section 933 direct placement of sand on Bogue Banks Beaches from the Morehead City navigation channel was conducted in 2007. This Section 933 project was a federal/non-federal cost-sharing program under which dredged shoal material from the outer harbor of Morehead City Federal Navigation Project was placed on the shoreline of Pine Knoll Shores. Carteret County was the non-federal sponsor and the community of Pine Knoll Shores took on all the local cooperation terms, including the non-federal cost share and rights of entry.

Using local and other funding sources, the Bogue Banks beach communities have replenished sand on those beaches with sand from the Morehead City ODMDS and other borrow areas. The need for sand and the public demand for future replenishment of sand on the Bogue Banks beaches will likely continue and increase. It is expected that less dredged material (sand) will be placed in the Morehead City ODMDS and sand may be removed from that area to renourish Bogue Banks beaches.

Fine-Grained, Inner Harbor Material. Because of the recurring quantities of fine-grained materials to be dredged from the inner harbor area and the limited capacity for such materials in the Brandt Island dredged material disposal area, a requirement for periodic removal of the Brandt Island material and ocean disposal in the designated Morehead City ocean dredged material disposal site is anticipated. Currently, maintenance of Morehead City Harbor involves dredging the Morehead City Harbor inner harbor navigation channels about every two years by hydraulic pipeline. The inner harbor dredged material is placed either in the Brandt Island Diked Disposal Area (hereafter referred to as Brandt Island) or directly on the beaches on Bogue Banks. Brandt Island is a 96-acre island located just south of the North Carolina State Ports at Morehead City. The island is owned by North Carolina State Ports Authority (NCSPA) and has been used as a dredged material disposal area since about 1955. Morehead City inner harbor dredged material has been placed in Brandt Island about every other year. Every 8 to 10 years maintenance material has been pumped out of Brandt Island and placed on the ocean beaches of Bogue Banks. In FY 1986, FY 1994, and FY 2005 approximately 3.9 million, 2.5 million, and 2.9 million cubic yards of dredged material, respectively, were pumped out of Brandt Island and placed on Bogue Banks from Fort Macon State Park to Atlantic Beach. During the FY 2005 pump out of Brandt Island, it was evident that a quantity of fine-grained sediment had accumulated near the disposal area spillway. This material is not compatible for placement on the beach and therefore a majority of the unsuitable material was avoided during the pump out activity and left in-place. Future Brandt Island pump out events will have to take into consideration management of this fine-grained sediment. Also in FY05, the Morehead City inner harbor area was dredged with the dredged material placed directly on the ocean beaches of Bogue Banks. However, the dredging was limited as portions of the inner harbor material were found to contain unacceptable levels of fine-grained material for beach placement. Because of the recurring quantities of fine-grained materials to be dredged from the inner harbor area and the limited capacity for such materials in Brandt Island, there is a need for either periodic removal of the Brandt Island material using ocean disposal or direct ocean disposal of inner harbor dredged materials in the designated Morehead City ODMDS.

Mounding. Bathymetric surveys have indicated that the sandy and coarse dredged materials historically placed within the Morehead City ODMDS have the potential to mound appreciably when specific areas are repeatedly used for disposal. Such mounds may limit future use of specific areas of the ODMDS and may pose impairment to navigation including use by hopper dredges. These limitations should be minimized to the extent possible.

Site Use Management, Implementation, and Documentation. The best efforts of environmental management are for naught if the actual site use is not carried out in a manner that fulfills those management goals and objectives. The site use information must be readily available and used to facilitate monitoring and management. Correct implementation of the ocean disposal specifications is a management concern. Dredging equipment, particularly navigation and documentation has improved significantly in recent years and use of these improved technologies is a management goal.

Navigation Channel Alignment. If the Morehead City Harbor navigation channel alignment is extended in a straight line and beyond the normal dredging limits, it overlaps a portion (southeast corner) of the Morehead City ODMDS. Disposal of dredged material in the channel alignment extension area is not acceptable as it may pose impairment to navigation.

OCEAN DREDGED MATERIAL SITE MANAGEMENT

All ocean disposal at the Morehead City ODMDS must be conducted in accordance with the Ocean Dumping Regulations and Criteria (40 CFR Parts 220-229), whether conducted as a permit activity or as a Federal activity. The following are Morehead City ODMDS management requirements and all permits or evaluation concurrence shall be conditioned to include these requirements.

Types of Dredged Materials

Material Evaluation. Only dredged materials which have been evaluated in accordance with EPA's Ocean Dumping Regulations and Criteria and found in compliance with those criteria will be transported for disposal in the Morehead City ODMDS.

Guidance for evaluation of dredged materials under the MPRSA Section 103 program is provided in the Evaluation of Dredged Material Proposed for Ocean Disposal - Testing Manual, February 1991 and the Southeast Regional Implementation Manual (SERIM) for Requirements and Procedures for Evaluation of the Ocean Disposal of Dredged Material in Southeastern U.S. Atlantic and Gulf Coast Waters, May 2008. The determination of dredged material suitability for ocean disposal must be documented in a MPRSA Section 103 evaluation and approved by EPA Region 4 prior to disposal. Dredged materials will be reevaluated for suitability for ocean disposal in accordance with current USACE/EPA guidance at an interval not to exceed three years. Reevaluation and testing procedures will be coordinated with the Wilmington District USACE and EPA Region 4 before any sampling or testing.

Dredged Material Suitable for Beneficial Uses. "Beneficial uses" refers to the concept that dredged material can be disposed in a way that is economically and environmentally acceptable and accrues natural resource benefits to society.

Beach-compatible dredged materials (sands) dredged from the navigation channel should be placed on nearby beaches or within the active littoral system when it is economically feasible and environmentally acceptable to do so. Site capacity and mounding factors are favorably affected by not placing beach compatible sands in the ODMDS. Other beneficial uses of dredged materials are also encouraged pending appropriate environmental review.

As discussed previously, dredged material was excavated from the Morehead City ODMDS by Carteret County for sand replenishment of the Bogue Banks beaches in 2004 and 2007 (Post-Isabel and -

Ophelia Sand Replenishment Projects). Approximately 1.2 million cubic yards of historically placed Morehead City Harbor dredged material were removed from the northeast corner of the Morehead City ODMDS during those two events by hopper dredges and then pumped out onto the Bogue Banks beaches. This repository for dredged material provided good quality sand material and facilitated access for the beach replenishment. If beach-compatible sands are dredged during future maintenance of Morehead City Harbor navigation and disposed of in the Morehead City ODMDS, placement of those materials will be directed to a portion of the ODMDS or disposal zone where access and potential opportunities for recycling and beach nourishment are facilitated (see disposal zones). Accordingly, the northern half of the Morehead City ODMDS will be restricted for dredged material that is beach-compatible sand. Conversely, fine-grained materials may not be discharged there.

The sediment testing described in Appendix C confirmed the harbor channel areas where fine-grained materials occur and must be managed for disposal. Continued ocean disposal of these dredged materials is likely as other disposal options including beneficial uses of dredged material are either not available or not feasible. As discussed previously, only materials evaluated and found in compliance with the EPA's Ocean Dumping Regulations and Criteria can be transported to the ocean for disposal. In order to minimize interference with potential use of beach-quality sand for beach replenishment, the fine-grained sediments dredged from Morehead City Harbor navigation channels will be placed in the far southwest corner of the Morehead City ODMDS as shown on Figure 5. As discussed in Appendix C, the fine-grained sediments will come from the Morehead City inner harbor and very outer portion of the ocean bar channel.

Dredged Material With Debris. If significant quantities of debris (either wood or man-made) are present in the dredged materials, then debris management should be conducted. Significant quantities of debris are considered to be those which would materially interfere with fishing in areas near the Morehead City ODMDS or interfere with re-use of dredged material from within the ODMDS (i.e., beach nourishment borrow material). Debris management may involve the following:

- Removal of the debris from the dredged material before transportation to the ODMDS;
- Placement of dredged material in the ODMDS in a location (e.g., farthest distance possible from the fishing areas or borrow areas) such that debris interference is unlikely;
- Immobilizing the debris within the ODMDS by covering it (capping) with dredged material.

Methods of Disposal. Disposal may be by hopper dredge or dump scow. For each disposal project, a specific area within the ODMDS will be designated for use and a specific placement pattern will be prescribed. Dredged materials will be discharged within the ODMDS boundaries. Dredged material placement will not be allowed closer than 600 feet from the site boundary. The placement of dredged materials outside the ODMDS boundaries is not acceptable under MPRSA authorities. An approved ocean disposal verification plan must be carried out. Placement methods that minimize mounding of dredged material within the designated placement area will be required. Specific procedures which

accomplish these goals are discussed under the **Specific Requirements** section which follows.

Disposal Quantities. Quantities of dredged materials placed within the ODMDS will be limited to those amounts that do not produce unacceptable adverse effects to human health and welfare and the marine environment or human uses of that environment (as defined in EPA's Ocean Dumping Regulations and Criteria). The disposal quantity management objective for the Morehead City ODMDS is to regulate disposal quantities such that depths in the disposal area following disposal do not interfere with navigation. The disposal depth limitation will be -30 feet m.l.w. Current average depths in the ODMDS are approximately -45 to -50 feet m.l.w.

Timing of Disposal. There are no seasonal restrictions to the placement of dredged material within the Morehead City ODMDS. However, seasonal restrictions and seasonal special requirements apply to particular dredging activities at particular locations.

Channel Area. If the alignment of the Morehead City Harbor Range A channel is extended seaward, it crosses the eastern border of the ODMDS. In order to provide safe navigation, dredged material placement will not be allowed within approximately 1000 feet of the current limits of channel dredging. This area is shown on Figure 6. Placement of dredged material in this area will be allowed only after a review by Wilmington District USACE in consultation with EPA Region 4 and only if a determination is made that the proposed placement will specifically not interfere with navigation.

SPECIFIC REQUIREMENTS

Ocean Disposal Verification.

Disposal Monitoring. For all disposal activities, an electronic tracking system (ETS) must be utilized. The ETS will provide surveillance of the transportation and disposal of dredged material. The ETS will be maintained and operated to continuously track in real-time the horizontal location and draft condition (nearest 0.1 foot) of the disposal vessel (ie. hopper dredge or disposal scow) from the point of dredging to the disposal site, and return to the point of dredging. Data shall be collected at least every 500 feet during travel to and from the ODMDS and every minute or every 200 feet of travel, whichever is smaller, while approaching within 1,000 feet and within the ODMDS. The following information shall be electronically recorded for each disposal cycle:

- Sequential Load Number
- Disposal Vessel Name (or Number) and Type (e.g. scow)
- Tow Vessel Name (if applicable)
- Captain of Disposal or Tow Vessel
- Estimated Volume of Load
- Description of Material Disposed
- Source of Dredged Material (i.e., channel or reach name)

- Time, vessel position, and draft - in one minute intervals for the disposal cycle specified previously, draft in feet;
- Begin and end dump event times and positions;
- Date, Time and Position at Start at Initiation and Completion of Disposal Event

The monitoring/verification plan will include an automated system that will record the horizontal location and draft condition of the disposal vessel from the time it enters Range A outbound until it leaves Range A inbound. Vessel positioning as a minimum shall be global positioning system. No vessel shall leave for the disposal site without the ability to collect and record the ocean disposal verification data specified. The disposal positions reported shall be those of the disposal vessel itself (i.e., the scow not the tug).

Use of the USACE Silent Inspector (SI) system is required for ETS monitoring/verification at the Morehead City ODMDS. Information about the SI System can be found at http://si.usace.army.mil. The SI system must be operational throughout the dredging and disposal project and that project data must be submitted to the SI National Support Center in accordance with the specifications provided at the aforementioned website. The data collected by the SI system shall, upon request, be made available to the Regulatory Division/Branch of the U.S. Army Corps of Engineers, Wilmington District and to EPA Region 4. Uploading of raw project data to the SI Support Center is required. (USACE REGULATORY GUIDANCE LETTER No. 08-01 Date: 05 February 2008, SUBJECT: Guidance for Implementing the Silent Inspector (SI) system for dredging projects requiring Department of the Army (DA) permits). The use of SI is also required for USACE federal navigation projects.

Disposal monitoring and ETS data will be reported to EPA Region 4 and Wilmington USACE (via the SI system) on a weekly basis utilizing the eXtensible Markup Language (XML) specification and protocol (see the section to follow). EPA Region 4 and Wilmington USACE shall be notified within 24 hours if disposal occurs outside of the ODMDS or specified disposal zone or if excessive leakage occurs. Excessive leakage is any change in draft exceeding 1.5 feet from the point of departure from the dredging site to the disposal site.

Reporting and Data Formatting. Disposal monitoring data shall be provided to EPA Region 4 electronically on a weekly basis. Data shall be provided per the EPA Region 4 XML format and delivered as an attachment to an email to DisposalData.R4@epa.gov. The XML format is available from EPA Region 4.

A summary report of operations shall be provided by the Wilmington District, USACE to the EPA, Region 4, Ocean Dumping Coordinator at the completion of the dredging/ocean disposal project or activity within 90 days after project completion. For work under a Section 103 permit, the permit holder will be responsible for providing the requested information to the Wilmington District, USACE. Minimum required data to be included in the summary report is as follows:

- General Information
  1) Project name;
  2) Location;
  3) Public notice or permit date;
  4) Section 103 evaluation date;
- Disposal Site Used;
- Project Type - Either Federal or Section 103 permit;
- Type of Work - New or maintenance work;
- Method of dredging and disposal;
- Disposal dates - start to finish;
- Quantity of dredged material disposed - in cubic yards;
- Number of loads completed;
- Contractor conducting the work;
- Identification of any misplaced materials;
- Dates of bathymetric surveys of ODMDS;
- Point of contact for project.

The disposal summary reports should be accompanied by the bathymetry survey results (paper plot and X,Y,Z ASCII data file), track plots for each disposal trip, a scatter plot of all dump locations, and a summary table of the information required above. If all data is provided in the required XML format, track plots, scatter plots and summary tables will not be necessary.

Designated Route To and From the Morehead City ODMDS. A transportation route to and from the Morehead City ODMDS will be specified as the most direct and safest possible between the dredging area and the ODMDS. Transit to the ODMDS may not leave the channel until after passing buoys "9" and "10" and transit from the ODMDS must return to the channel at those buoys. Any traffic within the exclusion zone around the Queen Anne's Revenge is not permitted. The ocean disposal verification plan discussed previously provides verification that the approved route was taken.

Disposal 'Zones' Within the ODMDS. To manage site use, maximize site capacity, reduce multiple user conflicts, simplify monitoring and management, and reduce potential adverse impacts to the marine environment, the Wilmington District, USACE in consultation with EPA Region 4, will designate zones within the ODMDS for dredged materials from each specific ocean dumping activity. Two disposal zones will be designated, a zone for beach-compatible sand and a zone for fine-grained non beach compatible sediment. Site monitoring data will be used to adjust these zones relative to current site conditions. The location of these zones may be adjusted using monitoring information.

If beach-compatible sands are dredged during future maintenance of Morehead City Harbor navigation and disposed of in the Morehead City ODMDS, placement of those materials will be directed to a portion of the ODMDS or disposal zone where access and potential opportunities for recycling and beach nourishment are facilitated (see disposal zones). Accordingly, the northern half of the Morehead City ODMDS will be restricted for dredged material that is beach-compatible sand. Fine-grained materials may not be discharged in the beach-compatible zone.

In order to minimize interference with potential use of beach-quality sand for beach replenishment, fine-grained sediments dredged from Morehead City Harbor navigation channels will be placed in the far southwest corner of the Morehead City ODMDS as shown on Figure 5. As discussed in Appendix C, the fine-grained sediments come from the Morehead City inner harbor and very outer portion of the ocean bar channel. The coordinates of the fine-grained sediment disposal cell limits are:

(Assumed to be NAD 27 Geographic)	(NAD 83 State Plane - Feet)
34^0 37'02" N 76^0 45'00" W	N 323296 E 2676898
34^0 37'02" N 76^0 43'10" W	N 323381 E 2686088
34^0 36'00" N 76^0 43'10" W	N 317239 E 2686232
34^0 36'00" N 76^0 45'00" W	N 317091 E 2677142

BASELINE ASSESSMENT OF CONDITIONS AT THE MOREHEAD CITY ODMDS

Site Designation EIS Baseline. Baseline conditions at the Morehead City ODMDS are principally reported in the site designation Environmental Impact Statement (EPA and USACE, 1985). The baseline data contained in the EIS was obtained solely from the available scientific literature.

Information Obtained Since Site Designation. Site evaluations and monitoring since the site designation has produced supplemental information in the following areas:

Bathymetry. Bathymetric surveys have generally been conducted on portions of the ODMDS before and after each use since the site designation. These surveys have focused on the portions of the ODMDS actually used for dredged material disposal. A composite of the most recent bathymetric surveys of the Morehead City ODMDS is provided as Figure 3. The more recent surveys include areas that have been used for dredged material disposal more recently. The bathymetric surveys indicate that appreciable relict dredged material disposal mounds are present within the ODMDS in the northeast corner and middle of the ODMDS. The bathymetry shown in the northeast corner is not current and does not show the activity in that area where sand has been removed for beach nourishment.

Sediment Characterizations. The grain size characteristics of sediments in the vicinity of the Morehead City ODMDS were surveyed in 1979, 1984, and 1986 (USACE/EPA, 1986). As a part of the Wilmington District USACE's Bogue Banks Feasibility Study, vibracore borings were made in the ocean off Bogue Banks. Sediment grain size data in the vicinity of the Morehead City ODMDS is summarized in Appendix C. These surveys indicated that the ODMDS vicinity sediments were predominantly sands with smaller and varying amounts of silts, and clays. The quantity of shell present in the sediments varies from a trace to 25%. Hard bottom or reef-rock materials have not been reported in the sediment characterizations.

Benthic Communities. Benthic communities approximately 2 miles inshore of the Morehead City ODMDS were sampled by Peterson et al. (1999) as a part of the nearshore placement monitoring. The

stations were arranged in a grid of three transects with three stations on each transect at the 19-, 26-, and 36-foot isobaths. Taxa in order of abundance included polychaetes, annelids, bivalve molluscs, amphipod crustaceans, ecinoderms, and nematodes. The total density of infaunal invertebrates ranged from 5-14 per 76 cm^2 and total densities of larger epifaunal invertebrates ranged from 3 to 43 individuals per 10 m^2. This community of invertebrates sampled is thought to be representative of those occupying this environment over a broad geographic area. Data on hard bottom locations in North Carolina waters (i.e., within 3 nautical miles of shore) has been collected from the scientific community, SCUBA divers and dive shops, and recreational and commercial fishermen by Moser and Taylor (1995). No hard bottoms were reported in the vicinity of the Morehead City ODMDS.

SITE MONITORING

Goals of Site Monitoring. Site monitoring is conducted to ensure the environmental integrity of an ocean dredged material disposal site and to verify compliance with site designation criteria, any special site management conditions, and with permit conditions or federal authorization requirements. Monitoring should provide useful and pertinent information to support site management decisions. The main purpose of disposal site monitoring is to determine whether site management practices, including disposal operations need to be changed to avoid unacceptable impacts or to provide benefits to resource conditions. Site monitoring is not a stand alone activity. It is based on the site designation process, the characteristics of the dredged materials, and compliance with authorized activities.

To use site monitoring as an effective tool, site managers need to define in quantitative terms thresholds for unacceptable impacts and desired beneficial effects of dredged material disposal. Exceeding or not exceeding the thresholds triggers specific management actions. A tiered strategy for a monitoring program is desirable. With a tiered approach, an unacceptable result may trigger further and often more complex monitoring. Continuous monitoring of all physical, chemical, and biological parameters and resources in and around the ocean dredged material disposal site is not necessary. A monitoring program should be structured to address specific questions (hypotheses) and measure key indicators and endpoints, particularly those defined during site designation or specific project issues that arise. For the Morehead City ODMDS, the site designation environmental impact statement identified navigation, fishing (shrimping), and beach compatible sands as resources of concern.

The objectives of the site monitoring plan for the Morehead City ODMDS are to provide information to:

- Determine if the disposal activities are in compliance with site use restrictions and permit conditions;
- Determine the short and long-term fate of dredged materials placed at the site;
- Determine the effect of the dredged material disposal on uses of the marine environment within and outside the ODMDS.

Monitoring Methods and Rationale. Proposed monitoring strategies for the Morehead City ODMDS and thresholds for management actions are presented in Table 2 and discussed in the following paragraphs. These methods will provide information to address specific and current management issues at the site including; mounding (and site capacity); dumps occurring outside the disposal area; and movement or fate of material. As indicated in Table 2, information obtained during monitoring may indicate the need for additional monitoring at a higher, more complex, level. If more intensive monitoring is required, this monitoring plan must be revised and additional thresholds for action established.

Site Bathymetry. Before and after single transducer surveys of the areas of active placement plus 1000 feet beyond in all directions will be conducted for each disposal activity. Positioning using GPS will be required. Survey line spacing will be at most 100 feet. The vertical datum shall be m.l.w. (mean lower low water, Beaufort Datum) and the UTM, NAD 1983.

The survey data will be made available as a coordinate data file in an electronic format specified by the Wilmington District USACE and EPA Region 4. Pre-disposal and post-disposal surveys will be evaluated using surface modeling techniques. Consecutive surveys will be compared to establish apparent net direction of sediment movement. Estimates will be made of the quantities and types of materials retained in the ODMDS. The ocean disposal verification data base will be used to associate dredging project information with bathymetric features observed.

Sediment Sampling and Grain Size Characterizations. Sediment grab sampling within the ODMDS and monitoring grain-size distributions within those samples will be periodically conducted as needed to monitor for distribution, fate, and transport of fine-grained sediment disposed of in the ODMDS particularly with respect to transport towards ODMDS areas that may be used as a source for sand replenishment of the nearby beaches. This sampling may be augmented using LDFATE and MDFATE models (USACE dredged material disposal numerical models).

Disposal Site Use Records. All dredged material disposal activities at the Morehead City ODMDS will be conducted under an approved verification plan. The Wilmington District USACE will maintain a database of site use. The documented site use information along with other information collected during monitoring will be used to direct future ocean disposal and monitoring activities. The data requirements were discussed previously.

Annual Reporting. An annual summary report of monitoring activities and results shall be prepared by the Ocean Dumping Coordinators of the Wilmington District USACE and EPA Region 4.

ANTICIPATED SITE USE

It is anticipated that there will be a continued need for the Morehead City ODMDS. It is expected that the ODMDS will be used for non beach-quality materials dredged during maintenance of the Morehead City Harbor inner harbor and the outer ocean bar. The ODMDS will also be used when adverse weather conditions make use of the shallow water nearshore placement area hazardous to hopper dredges. The anticipated ODMDS use will be less than historic use as requirements and regulations increasingly demand that beach-quality materials are returned to nearby active littoral systems. The site can be expected to receive between about 150,000 and 400,000 cubic yards of dredged material per year. This projection is based on dredging records, currently available dredged material disposal options, and recent Wilmington District USACE sediment evaluations.

MODIFICATION OF THE MOREHEAD CITY ODMDS SMMP

Should the results of the monitoring surveys or valid reports from other sources indicate that continued use of the ODMDS would lead to unacceptable effects, then the ODMDS management will be modified to mitigate the adverse effects. The SMMP will be reviewed and updated at least every 10 years. The SMMP will be reviewed and updated as necessary if site use changes significantly. For example, the SMMP will be reviewed if the quantity or type of dredged material placed at site changes significantly or if conditions at the site indicate a need for revision. The plan should be updated in conjunction with activities authorizing use of the site.

IMPLEMENTATION OF THE MOREHEAD CITY ODMDS SMMP

This plan shall be effective from date of signature for a period not to exceed 10 years. The EPA Region 4 and the Wilmington District USACE shall share responsibility for implementation of the SMMP. Site users may be required to undertake monitoring activities as a condition of their permit. The Wilmington District USACE will be responsible for implementation of the SMMP for Federal maintenance and new work navigation projects.

Table 2. Morehead City ODMDS Monitoring Strategies and Thresholds for Action.

STRATEGY	THRESHOLD	MANAGEMENT OPTIONS	
Monitoring Strategy	**Predefined Threshold For Action**	**Threshold Not Exceeded**	**Threshold Exceeded**
Site Bathymetry	Mound Height > -30′ m.l.l.w.	* Continue monitoring after each disposal activity (project completion)	* Move disposal points within site * Limit quantity of material * Remove material above –25′ mllw * Cease use of specific area of site * Notify mariners of mound location and height
	Mound height approaching –30′ m.l.l.w.	* Continue monitoring after each disposal activity (project completion)	* Move disposal points within site * Continue use of area but increase frequency of monitoring * Limit dredge material quantities placed at site
Site Bathymetry – Sequential Survey Analysis	Sequential surveys indicate significant erosion of disposal mounds.	* Continue monitoring after each disposal activity (project completion) * Continue monitoring at a reduced level * Stop monitoring	* Move disposal points within site * Increase monitoring level to assess impacts of material movement * Reduce quantities placed at site
Sediment Sampling and Grain Size Characterizations	Monitoring information indicates a transport of fine-grained material from the fine-grained cell towards the beach-compatible disposal zone.	* Continue monitoring at a reduced level * Stop monitoring	* Increase level of monitoring * Implement a change in ODMDS use to minimize the potential for transport or change in beach-compatible zone material due to ODMDS use.
Disposal Site Use Records	Disposal records required by SMMP are not submitted or are incomplete	* Continue monitoring at same level	* Restrict site use until requirements are met
	Review of records indicates a dump occurred at a location other than as directed	* Continue monitoring at same level	* Dump occurred outside ODMDS boundary: Notify EPA-Region 4 and State of NC. Investigate why off-site dump(s) occurred. Remove material from off-site dump(s) if a hazard to navigation or the environment * Dump occurred in ODMDS but not in target area: Direct placement to occur as specified
Evaluation of Direction and Magnitude of Material Movement Using Numerical Models	Evaluations indicate the potential to move back to navigation channel or to adjacent areas	* Continue monitoring at a reduced level * Stop monitoring * Continue monitoring at same level	* Increase level of monitoring * Collect additional information needed to refine predictions * Change operational considerations, *i.e.*, location and method of placement

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http://www.epa.gov/region4/water/oceans/documents/Regional_Implementation_Manual.pdf

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FIGURES

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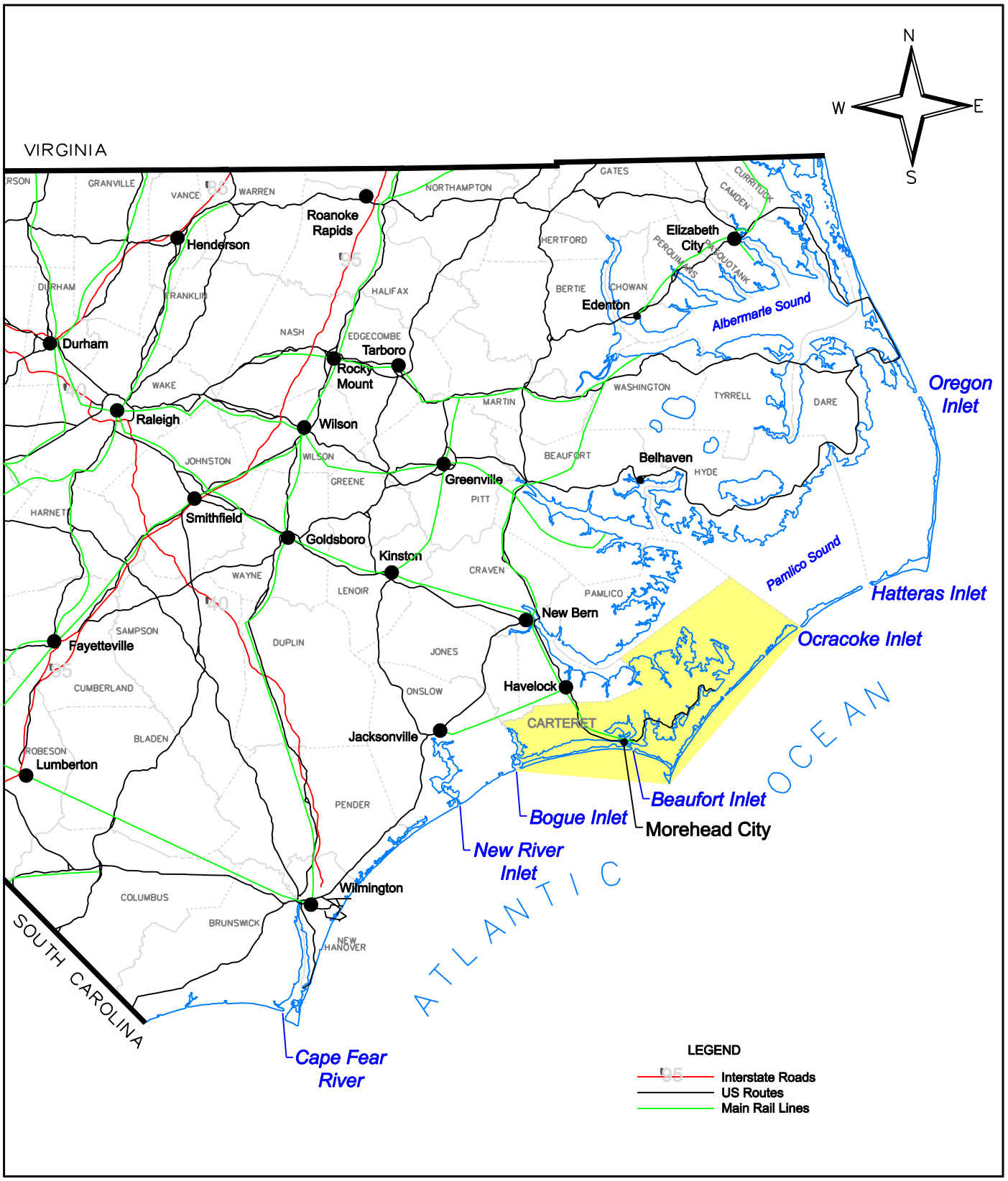

FIGURE 1
MOREHEAD CITY HARBOR, NC

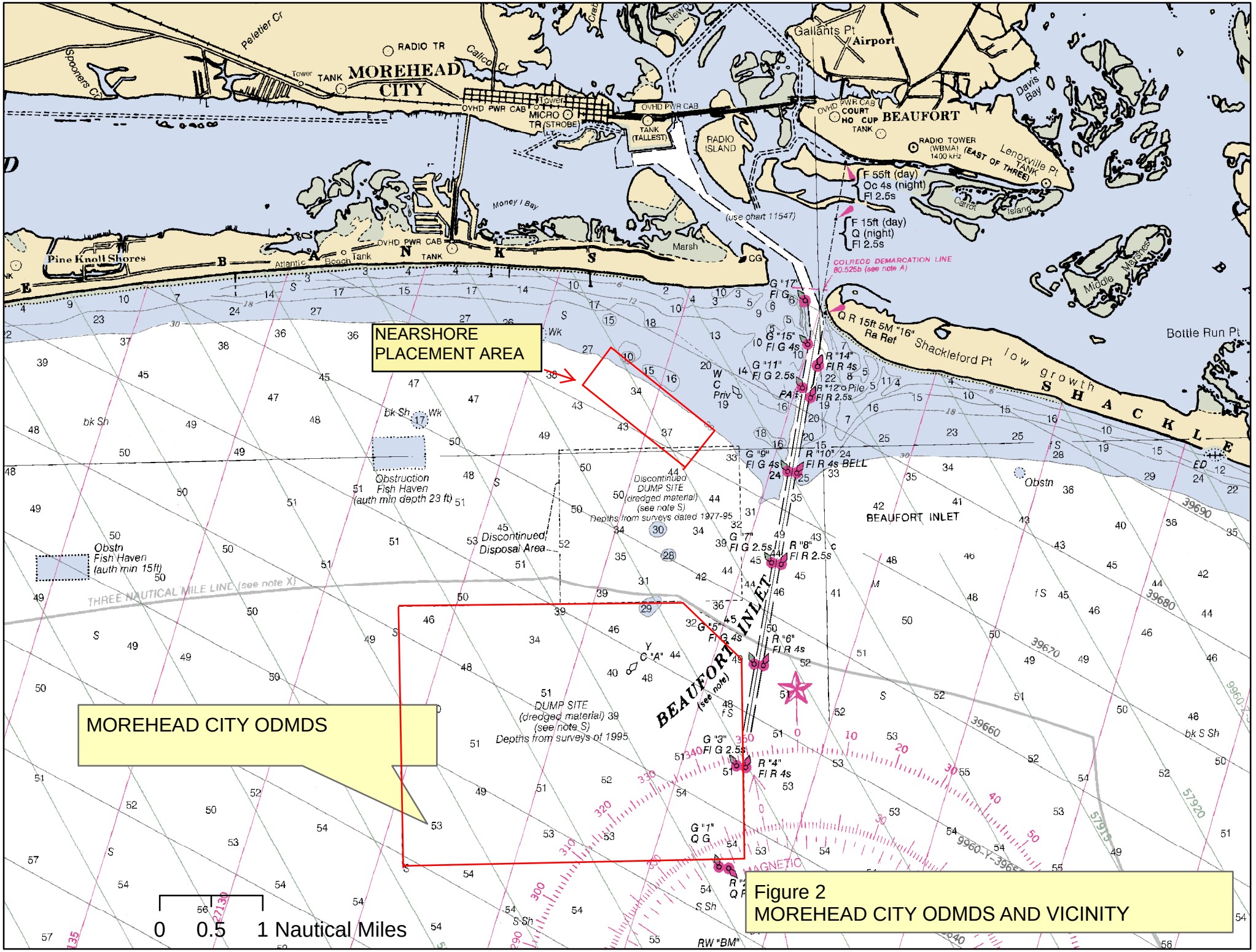

Figure 2
MOREHEAD CITY ODMDS AND VICINITY

2,680,000 2,685,000 2,690,000 2,695,000 2,700,000

330,000

325,000

320,000

Surveyed: Sept-Oct. 1995

Surveyed: Oct. 31, 2007

Surveyed: Dec. 15, 2001

Morehead City
Ocean Bar
Range A

Legend

countour_5ft

TIN_2007-2001-1995

Elevation

- -30 - -25
- -35 - -30
- -40 - -35
- -45 - -40
- -50 - -45
- -55 - -50
- -58.8 - -55

FIGURE 3. Morehead City ODMDS Site Bathymetry. Depths are feet below m.l.w. Beaufort Datum.

Map # sawgis-2008-088
Map Date: November 4, 2008

0 1,000 2,000 3,000 Feet

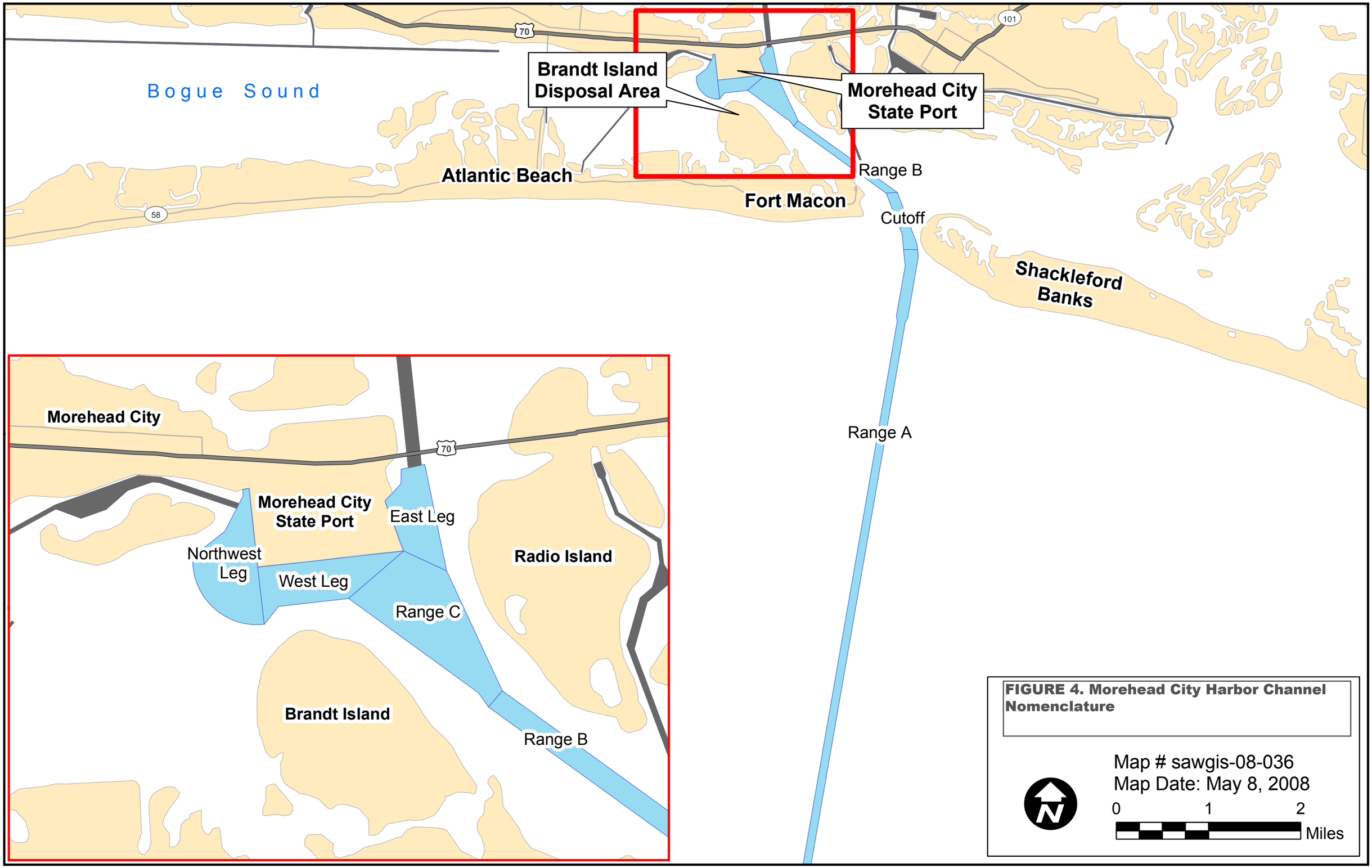

FIGURE 4. Morehead City Harbor Channel Nomenclature

Map # sawgis-08-036
Map Date: May 8, 2008

0 1 2 Miles

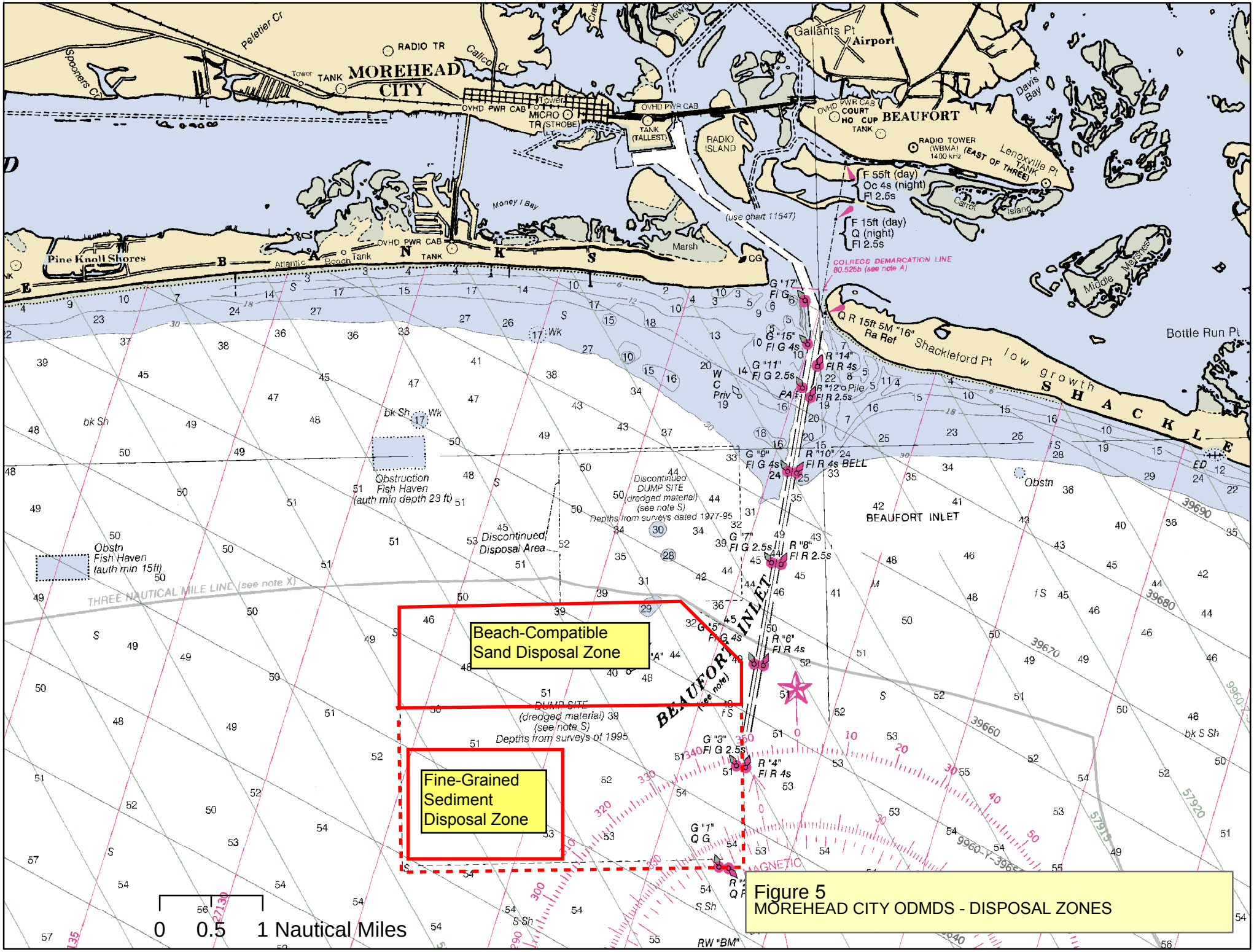

Figure 5
MOREHEAD CITY ODMDS - DISPOSAL ZONES

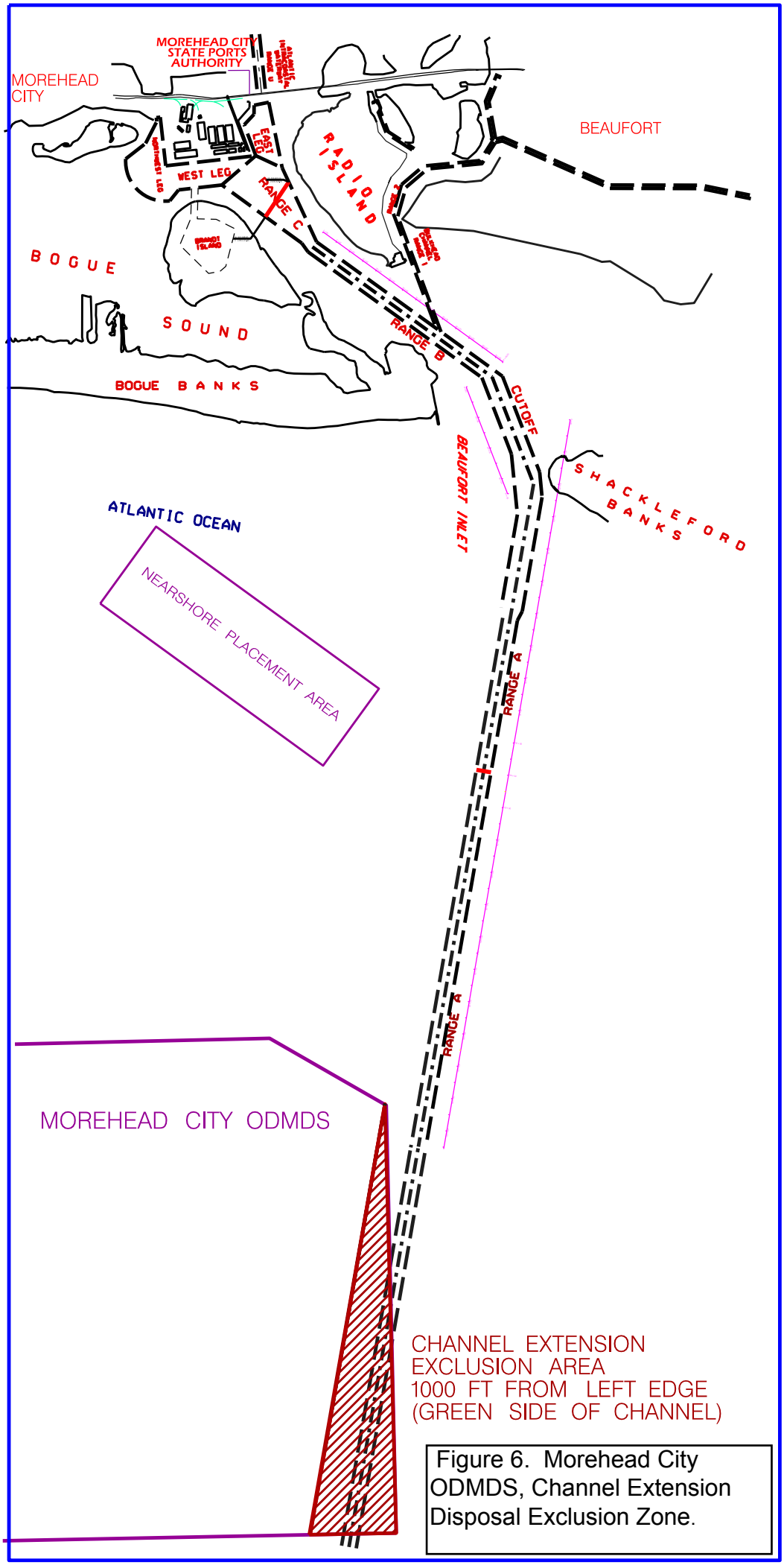

Figure 6. Morehead City ODMDS, Channel Extension Disposal Exclusion Zone.

APPENDIX A

NUMERICAL MODEL (STFATE) INPUT PARAMETERS

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Numerical Model (STFATE)
Input Parameters
Morehead City ODMDS

STFATE (Short-Term FATE of dredged material disposal in open water) models the discharge of a single load of dredged material from a scow or hopper. STFATE computes a prediction of the deposition and water quality effects of dredged materials disposed of in open water. This numerical model is used for required evaluations of initial mixing and water column effects. STFATE is an outgrowth of the first comprehensive model for predicting the fate of dredged material developed by Koh and Chang (1993). STFATE models three disposal phases, convective descent, dynamic collapse, and passive transport dispersion. STFATE models conventional displacement (bottom dumping) where the vast majority of the dredged material released from a barge or hopper dredge descends rapidly to the bottom in a high density jet known as the convective descent phase. The dynamic collapse phase begins when the jet impacts the bottom. The more dense material immediately deposits, while the less dense particles are spread outward as a density flow when the vertical energy is transferred into horizontal momentum. Over time the less dense material also settles.

Input data for the model includes information regarding the following:
Disposal operation
Disposal site
Dredged material
Model coefficients
Input/output/execution controls

The STFATE input parameters are to be used in future evaluations of disposal operations. These parameters are based on information obtained during site designation studies as presented in the Morehead City ODMDS FEIS, previous applications of the disposal models, and default parameters. Additional project and site-specific information should be used in future STFATE applications to improve the predictive capability of the model.

The STFATE model input parameters include site description, ambient velocity data, disposal operation information, and coefficients. A 50 by 50 grid was chosen to provide the highest resolution. The grid spacing in the north/south and east/west directions was selected at 250 feet to keep the disposal plume within the grid during the model execution. As discussed above, an average depth of 52 feet is used and a two-point density profile is used. A depth averaged logarithmic velocity profile was selected using median values to the East. Disposal operation and execution parameters include disposal site boundaries and disposal location and model time step and duration. The duration is set to 14,400 seconds (4 hours) to meet the 4-hour dilution requirement. Project specific disposal operations data (i.e., vessel speed, dimensions and draft) will depend on the individual projects. Likewise, dredged material characteristics may vary based on specific sediment testing information. Model default values are specified where appropriate.

ADDAMS Model

Section 103 Regulatory Analysis for Ocean Water, Tier III, Short-Term Fate of Dredged Material from Split Hull Barge or Hopper/Toxicity Run

Average sediment characteristics of recent sediment 103 evaluations were used to calculate the Volumetric Fractions. Parameters described in the disposal site were obtained from the Morehead City ODMDS Site Designation EIS (EPA, 1985), COE Bathymetric data, Nautical Charts, and The North Carolina Coastal Ocean Observing System www.NCCOOS.org., Buoy 41035. Map 1 shows the location and configuration of the reference station. STFATE model input parameters utilized in the module were as follows:

Site Description

Parameter	Value	Units
Number of Grid Points (left to right)	50	n/a
Number of Grid Points (top to bottom)	50	n/a
Spacing Between Grid Points (left to right)	250	ft
Spacing Between Grid Points (top to bottom)	250	ft
Constant Water Depth	52	ft
Roughness Height at Bottom of Disposal Site	0.0051	ft
Slope of Bottom in X-Direction	0	Deg.
Slope of Bottom in Z-Direction	0	Deg.
Number of Points in Ambient Density Profile Point	2	n/a
Ambient Density at Depth = 0 ft	1.0325	g/cc
Ambient Density at Depth = 52 ft	1.0325	g/cc

Ambient Velocity Data

Parameter	Value	Units
Water Depth	52	ft
Velocity Profile for Constant Depth	2-Point	n/a
X-Direction Velocity (3 feet)	0.29	ft/sec
Z-Direction Velocity (3 feet)	0	ft/sec
X-Direction Velocity (31.2 feet*)	0.11	ft/sec
Z-Direction Velocity (31.2 feet*)	0	ft/sec

* Assuming that average velocity is 40% of surface velocity, average velocity occurs at 6/10 of the total depth, and the direction of the current is due south (shortest distance to the boundary/worse case scenario)

Disposal Operation Data

Parameter	Value	Units
Vessel Type	Barge/Scow	n/a
Location of Disposal Point from Top of Grid	5,000^	ft
Location of Disposal Point from Left Edge of Grid	5,000^	ft
Dumping Over Depression	0	n/a
Length of Disposal Vessel Bin	300	ft
Width of Disposal Vessel	72.0	ft
Pre-Disposal Draft	17.0	ft
Post-Disposal Draft	5.0	ft

Parameter	Value	Units
Vessel Type	Barge/Scow	n/a
Time Needed to Empty the Disposal Bin (sec)	60	sec

^ Due to the large size of the ODMDS area, the Wilmington USACE has designated a 6,000 ft by 6,000ft block on the lower left hand side of the grid to manage the material that is not suitable for beach re-nourishment. For the purpose of running this model, the barge was located in the middle of this lower left hand side block and the dimensions of the ODMDS station were described as a 6,000 feet x 6,000 feet sub section of the full ODMDS.

Input, Execution and Output

Parameter	Value	Units
Location of the Upper Left Corner of the Disposal Site - Distance from Top Edge	2,000	ft
Location of the Upper Left Corner of the Disposal Site - Distance from Left Edge	2,000	ft
Location of the Lower Right Corner of the Disposal Site - Distance from Top Edge	8,000	ft
Location of the Lower Right Corner of the Disposal Site - Distance from Left Edge	8,000	ft
Duration of Simulation	14,400	sec
Long Term Time Step	600	sec

Material Description Data

Parameter	Value	Units
Dredging Site Water Density	1.03	g/cc
Number of Layers	1	n/a
Material Volume	4000	Cu. Yd.
Material Velocity (X-Dir)	3.4	ft/s
Material Velocity (Z-Dir)	0	ft/s
Duration of Simulation	14,400	sec
Long Term Time Step	600	sec
Volumetric Fraction – Sand	0.365	n/a
Volumetric Fraction – Clay	0.274	n/a
Volumetric Fraction – Gravel	0.007	n/a

Coefficients

Parameter	Keyword	Value
Settling Coefficient	BETA	0.0001
Apparent Mass Coefficient	CM	1.0001
Drag Coefficient	CD	0.5001
Form Drag for Collapsing Cloud	CDRAG	1.0001
Skin Friction for Collapsing Cloud	CFRIC	0.0101
Drag for an Ellipsoidal Wedge	CD3	0.1001
Drag for a Plate	CD4	1.0001
Friction Between Cloud and Bottom	FRICTN	0.0101

Parameter	Keyword	Value
4/3 Law Horizontal Diffusion Dissipation Factor	ALAMDA	0.00101
Unstratified Water Vertical Diffusion Coefficient	AKYO	Pritchard Expression
Cloud/Ambient Density Gradient Ratio	GAMA	0.2501
Turbulent Thermal Entrainment	ALPHAO	0.2351
Entrainment in Collapse	ALPHAC	0.1001
Stripping Factor	CSTRIP	0.0031

[1]Model Default Value

APPENDIX B

GENERIC SPECIAL CONDITIONS
FOR MPRSA SECTION 103 PERMITS
MOREHEAD CITY ODMDS

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APPENDIX B
GENERIC SPECIAL CONDITIONS
FOR MPRSA SECTION 103 PERMITS
MOREHEAD CITY ODMDS

I. DISPOSAL OPERATIONS

A. For this permit, the term disposal operations shall mean: navigation of any vessel used in disposal operations, transportation of dredged material from the dredging site to the Morehead City ODMDS, proper disposal of dredged material at the disposal area within the ODMDS, and transportation of the hopper dredge or disposal barge or scow back to the dredging site.

B. The boundary coordinates of the Morehead City ODMDS is defined as the rectangle delineated by the following latitude/longitude and State Plane Coordinate system NAD 83 coordinates:

Latitude	Longitude	Northing	Easting
34^0 38'30" N	76^0 45'00" W	N 332180	E 2676711
34^0 38'30" N	76^0 41'42" W	N 332560	E 2693251
34^0 38'09" N	76^0 41'00" W	N 330519	E 2696808
34^0 36'00" N	76^0 41'00" W	N 317482	E 2697112
34^0 36'00" N	76^0 45'00" W	N 317091	E 2677142

C. For this permit, the use of the Morehead City ODMDS must be in accordance with the approved Morehead City ODMDS Site Monitoring and Management Plan (SMMP).

D. Dredging and dredged material disposal and monitoring of dredging projects using the Silent Inspector (SI) system shall be implemented for this permit. The permittee's SI system must have been certified by the SI Support Center within one calendar year prior to the initiation of the dredging/disposal. Questions regarding certification should be addressed to the SI Support Center at 251-690-3011. Additional information about the SI System can be found at http://si.usace.army.mil. The permittee is responsible for insuring that the SI system is operational throughout the dredging and disposal project and that project data are submitted to the SI National Support Center in accordance with the specifications provided at the aforementioned website. The data collected by the SI system shall, upon request, be made available to the Regulatory Division/Branch of the U.S. Army Corps of Engineers, Wilmington District and to EPA Region 4. Uploading of raw project data to the SI Support Center is required. (REGULATORY GUIDANCE LETTER No. 08-01 Date: 05 February 2008, SUBJECT: Guidance for Implementing the Silent Inspector (SI) system for dredging projects requiring Department of the Army (DA) permits)

E. The permittee shall not allow water or dredged material placed in a hopper dredge or disposal barge or scow to flow over the sides or leak from such vessels during transportation to the ODMDS. Excessive leakage is any change in draft exceeding 1.5 feet from the point of departure from the dredging site to the disposal site.

F. A disposal operations inspector and/or captain of any tug boat, hopper dredge or other vessel used to transport dredged material to the Morehead City ODMDS shall insure compliance with disposal operation conditions defined in this permit.

1. If the disposal operations inspector or the captain detects a violation, he shall report in writing the violation to the permittee immediately.

2. The permittee shall contact the U.S. Army Corps of Engineers, Wilmington District and EPA Region 4 to report the violation within twenty-four (24) hours after the violation occurs. A complete

written explanation of any permit violation shall be included in the post-dredging report.

G. For disposal operations which total greater than 10,000 cubic yards, the permittee shall conduct a bathymetric survey of the Morehead City ODMDS within two months prior to project disposal and within 60 days following project completion.

1. The number and length of the survey transects shall be sufficient to encompass the disposal zone within the ODMDS and a 1500-foot wide area around that zone. The survey transects shall be spaced at 500-foot intervals or less.

2. Vertical accuracy of the survey shall be ±0.5 feet. Horizontal location of the survey lines and depth sounding points will be determined by an automated positioning system utilizing either microwave line of site system or differential global positioning system. The vertical datum shall be mean lower low water (mllw) and the horizontal datum shall use North Carolina State Plane or latitude and longitude coordinates (North American Datum 1983). State Plane coordinates shall be reported to the nearest 0.10- foot and latitude and longitude coordinates shall be reported as degrees and decimal minutes to the nearest 0.01 minutes.

II. REPORTING REQUIREMENTS

A. The permittee shall send the U.S. Army Corps of Engineers, Wilmington District's Environmental Branch and EPA Region 4's Wetlands, Oceans, and Coastal Branch (61 Forsyth Street, Atlanta, GA 30303) a notification of commencement of work at least thirty (30) days before initiation of any dredging operations authorized by this permit and referenced by the permit number. In addition, the permittee agrees to contact the U.S. Coast Guard (Marine Safety Office) prior to disposing of any material in the ocean disposal site.

B. The permittee shall submit to the U.S. Army Corps of Engineers weekly disposal monitoring reports. These reports shall contain the information described in Special Condition I.D.

C. The permittee shall send one (1) copy of the disposal summary report to the Wilmington District and one (1) copy of the disposal summary report to EPA Region 4 documenting compliance with all general and special conditions defined in this permit. The disposal summary report shall be sent within 30 days after completion of the disposal operations authorized by this permit. The disposal summary report shall include the following information:

1. The report shall indicate whether all general and special permit conditions were met. Any violations of the permit shall be explained in detail.

2. The disposal summary report shall include the following information: Corps permit number, actual start date and completion date of dredging and disposal operations, total cubic yards disposed at the Morehead City ODMDS, locations of disposal events, and pre and post disposal bathymetric survey results (in hard and electronic formats).

III. PERMIT LIABILITY

A. The permittee shall be responsible for ensuring compliance with all conditions of this permit.

B. The permittee and all contractors or other third parties who perform an activity authorized by this permit on behalf of the permittee shall be separately liable for a civil penalty of up to $50,000 for each violation of any term of this permit they commit alone or in concert with the permittee or other parties. This liability shall be individual, rather than joint and several, and shall not be reduced in any fashion to reflect the liability assigned to and civil penalty assessed against the permittee or any other third party as defined in

33 U.S.C. Section 1415(a).

C. If the permittee or any contractor or other third party knowingly violates any term of this permit (either alone or in concert), the permittee, contractor or other party shall be individually liable for the criminal penalties set forth in 33 U.S.C. Section 1415(b).

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APPENDIX C
SEDIMENT CHARACTERISTICS IN MOREHEAD CITY FEDERAL NAVIGATION CHANNEL

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APPENDIX C
SEDIMENT CHARACTERISTICS IN
MOREHEAD CITY FEDERAL NAVIGATION CHANNEL

Numerous borings have been performed in the Morehead City Harbor over the years. Many of those borings were for purposes other than to determine the suitability of disposal and therefore do not have the grain size testing that would be required to make a disposal decision. This analysis only uses the borings which have enough grain size data to make a determination of proper disposal. The analyses are summarized in Figures C1 and C2 and the following paragraphs.

For this analysis, four sets of borings with lab testing were used. Also, borings performed this year were used, but the lab testing is not complete.

Borings designated MIH-05-V-# are vibracore borings performed in 2005. These borings are located in Range C. Borings designated MOB-05-V-# are vibracore borings performed in 2005. These borings are located in Range A. Borings designated MHC-06- # are vibracore borings performed in 2006. These borings are located in Range C. Borings designated MHCOB-07-V-# are vibracore borings performed in 2007. These borings are located in Range A. All samples obtained from these borings within the channel were lab tested.

Borings designated MHC-08-V-# are vibracore borings performed in 2008. These borings are located throughout the Morehead City Harbor from range C to Range A. They represent the most comprehensive set of borings performed to date for the identification of material to be dredged. The samples from these borings have been visually classified and are to be tested in the near future.

Borings were performed from the Snell using a 3 7/8 inch diameter, 20 foot long, Alpine vibracore drill machine. The sampler consists of a metal barrel in which a plastic cylinder is inserted. After the plastic tube was inserted, a metal shoe was screwed onto the plastic tube and then the metal barrel. The shoe provided a cutting edge for the sampler and retained the plastic tube. An air-powered vibrator was mounted at the upper-most end of the vibracore barrel, and the vibrator and the vibracore barrel were mounted to a stand. This stand was lowered to the ocean floor by the Snell's crane; the vibrator was activated and vibrated the vibracore barrel into the ocean sediment. The sediment sample is retained in the plastic cylinder. All borings were drilled to a depth of 20 feet below the ocean floor, unless vibracore refusal was encountered. Vibracore refusal was defined as a penetration rate of less than 0.1 feet in 10 seconds.

All samples within the channel limits were tested in accordance with ASTM D 422. The sieves typically used in the testing were the 3/4", 3/8", #4, #7, #10, #14, #18, #25, #35, #45, #60, #80, #120, #170, #200, and #230 sieves.

The borings were broken into three categories, green, red (maroon) and orange (Figure C-2). The "green" borings contain 10% or less fine grained material. The "orange" borings contain less than 20% fine grained material but more than 10%. Finally the "red" borings contain greater than 20% fine grained material. The percentage of fine grained material was determined from the grain size testing and the percent passing the #200 sieve.

The harbor areas are grouped based on the amount of fine content contained in the material to be dredged and the appropriate location for the material disposal. There are a few isolated areas which may contain material which is not consistent with the predominate material, but it is believed that these areas are anomalies and do not change the overall material types. See the attached map with the boring locations, boring color designations, and the lines delineating the major disposal areas

Based on the information available at the present time, there are three distinct areas within the Morehead City Harbor (Figure C-1). The northern portion of Range C, the West Leg, the Northwest Leg, and the East Leg is the first area. This portion of the harbor consists predominantly of silt, silty sand, sandy silt and some clean sand. The material in this area contains too much fine grained material to meet the beach disposal requirements and should be placed in a disposal area that can accommodate fine grained material.

The second area is the southern portion of Range C, all of Range B, all of the Cutoff, and Range A out to station 110+00. This portion of the harbor consists of slightly silty sand, and clean sand. The material in this area meets the requirement for beach disposal and should be disposed of in an appropriate location to utilize the sand material.

The third area is the southern portion of Range A, from station 110+00 out to the end of Range A. This portion of the harbor consists predominantly of silt, silty sand, sandy silt and some clean sand. The material in this area contains too much fine grained material to meet the beach disposal requirements and should be placed in a disposal area that can accommodate fine grained material.

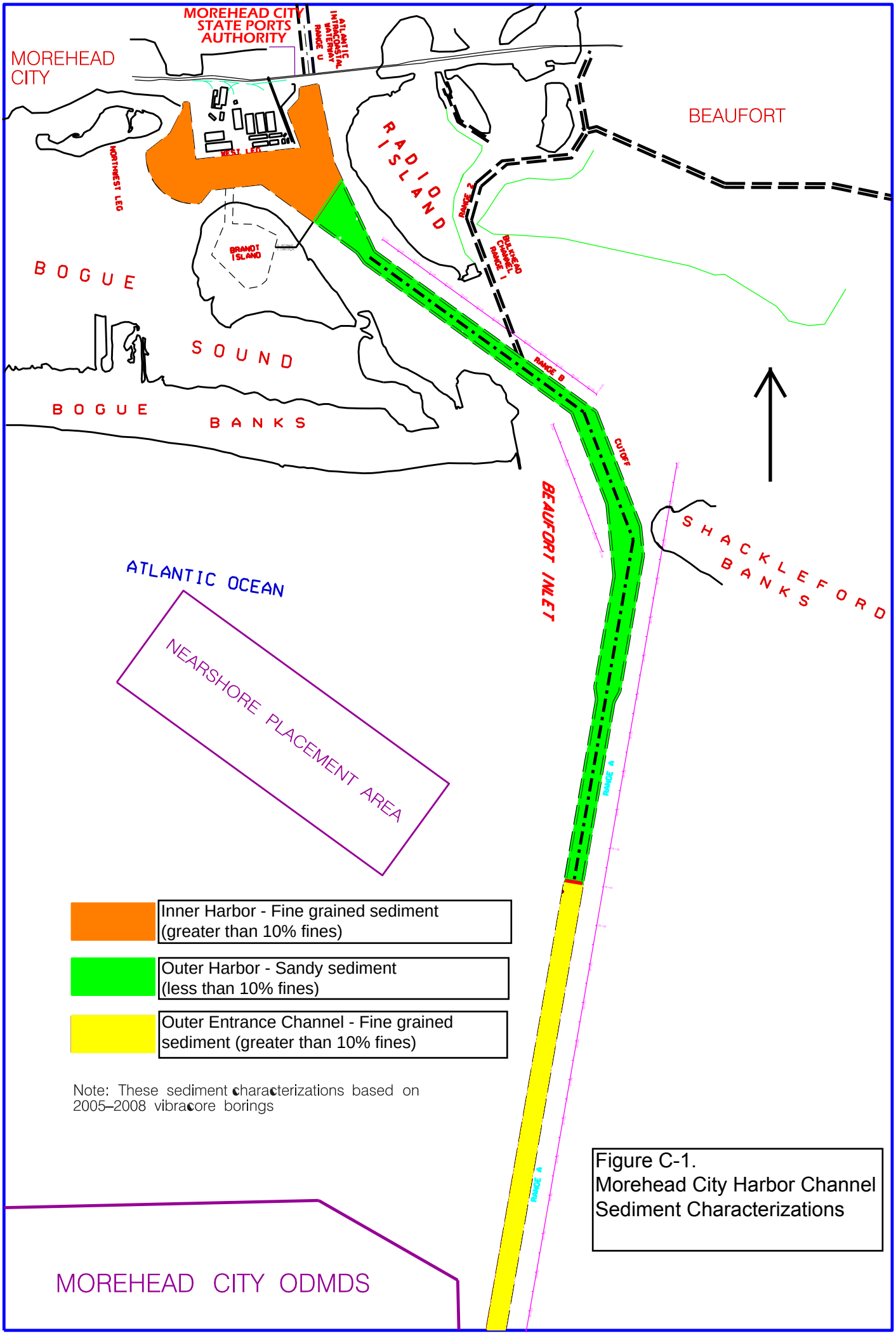

Figure C-1.
Morehead City Harbor Channel
Sediment Characterizations

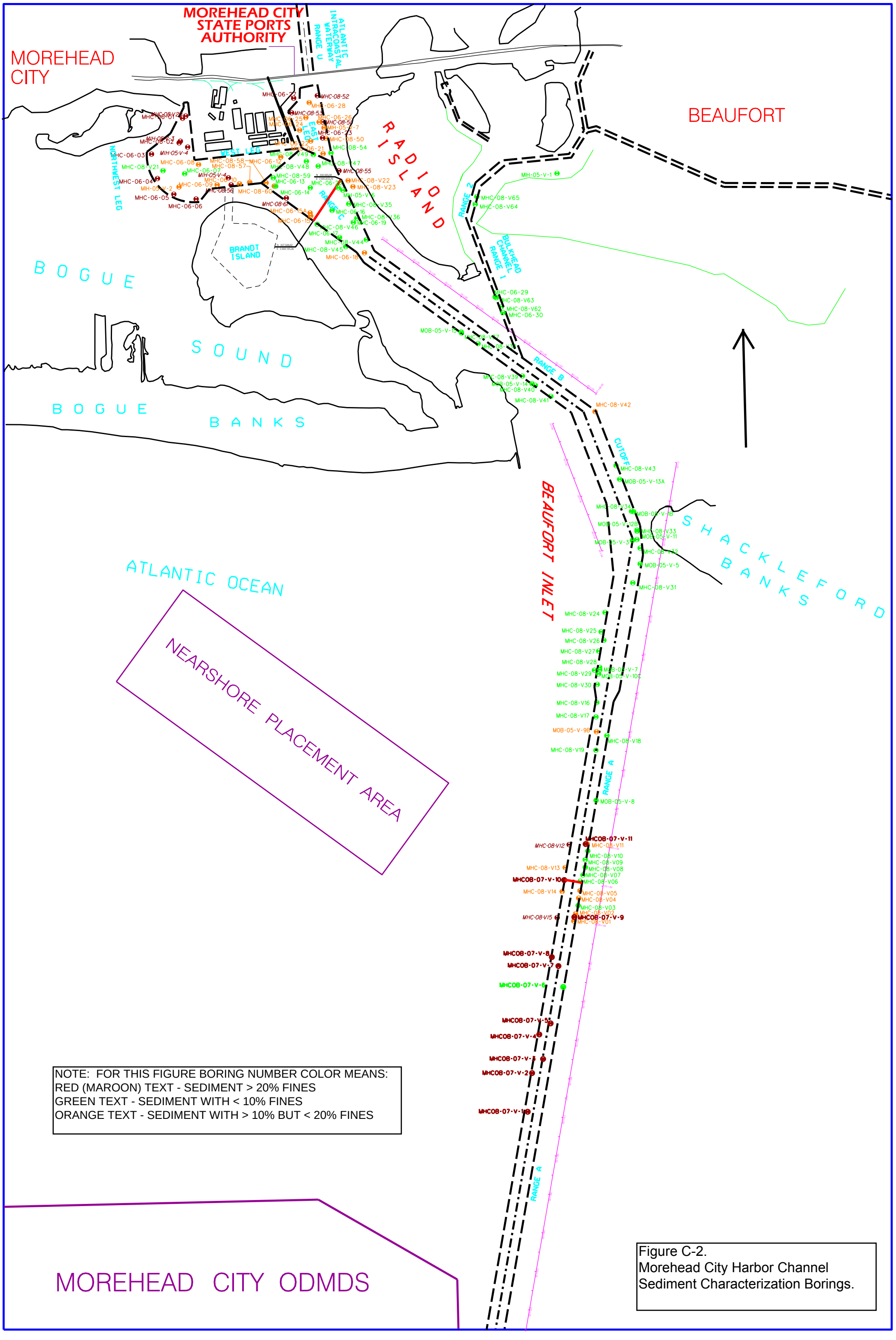

Figure C-2.
Morehead City Harbor Channel
Sediment Characterization Borings.

APPENDIX D
SEDIMENT CHARACTERISTICS IN MOREHEAD CITY ODMDS VICINITY

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Table D1. Morehead City/Beaufort Inlet - Offshore sediment characterizations. Vibracore borings performed April 2003 by Wilmington District USACE for Bogue Banks Study. See Figure D1 for locations. Elevations are feet below (-) msl. Only first (sediment surface) sample from boring is provided.

							sieve	0.75	3/8	#4	#7	#10	#14	#18	#25	#35	#45	#60	#80	#120	#170	#200	
		Elevation	Elevation	Sample		Median	mm	19	9.53	4.76	2.83	2	1.41	1	0.71	0.5	0.35	0.25	0.177	0.125	0.088	0.074	% Shell
Location Description	Boring No.	Top of Sample	Bottom of Sample	Thickness	classification	Grain Size (mm)	PHI	-4.25	-3.25	-2.25	-1.5	-1	-0.5	0	0.5	1	1.5	2	2.5	3	3.5	3.75	Visual
Within ODMDS	LB-02-V-18	-47.1	-49.5	2.4	SP	0.21		100.0	100.0	99.3	98.8	98.3	97.5	96.6	95.3	93.0	87.4	70.0	29.9	10.2	4.8	3.8	5
	LB-02-V-19	-37.7	-40	2.3	SP	0.21		100.0	100.0	99.6	99.3	98.9	98.3	97.6	96.4	93.8	87.4	68.9	30.7	7.2	2.4	1.9	3
	LB-02-V-22	-50.9	-53.9	3	SP-SM	0.19		100.0	100.0	99.6	98.7	98.2	97.3	96.4	95.2	93.3	90.0	81.4	47.0	13.8	6.7	5.8	6
	LB-02-V-23	-53.7	-55.7	2	SP	0.2		100.0	100.0	97.2	95.0	93.6	91.9	90.4	89.1	87.5	84.8	77.2	35.2	10.8	5.0	4.3	15
	LB-02-V-47	-52.9	-56	3.1	SP-SM	0.19		100.0	98.0	96.7	94.9	93.7	92.2	90.7	89.3	87.8	85.4	79.2	41.6	11.4	6.1	5.1	13
	LB-02-V-48	-49	-53.5	4.5	SP	0.19		100.0	96.8	95.5	94.3	93.5	92.3	91.5	90.7	89.8	88.2	83.4	41.3	8.8	3.4	2.7	11
Nearshore Placement Area	LB-02-V-9	-37.1	-39.5	2.4	SP	0.32		100	100.0	99.9	99.8	99.8	99.7	99.5	99.3	98.9	98.1	96.6	92.3	39.3	20.2	16.0	1
	LB-02-V-9A	-38.8	-41	2.2				100.0	100.0	99.9	99.8	99.8	99.7	99.5	99.3	98.9	98.1	96.6	92.3	39.3	20.2	16.0	1
	LB-02-V-24	-38	-42.5	4.5	SM	0.14		100.0	100.0	99.8	99.8	99.7	99.5	99.2	98.8	98.5	97.9	96.6	92.7	32.5	17.3	14.1	1
	LB-02-V-25	-35.4	-37	1.6	SP	0.21		100.0	100.0	99.8	99.2	98.7	98.0	96.9	95.3	92.3	86.1	67.7	25.5	8.1	3.4	2.9	4
	LB-02-V-26	-35.1	-37	1.9	SP	0.35		100.0	99.1	96.2	92.5	90.2	86.6	82.3	76.3	66.0	50.2	30.4	10.9	3.7	1.9	1.7	21
	LB-02-V-27	-34	-36	2	SP	0.25		100.0	100.0	99.9	99.3	98.9	97.5	95.7	92.6	86.4	74.1	52.4	26.6	9.8	2.9	2.2	6
	LB-02-V-28	-25.1	-27.6	2.5	SP	0.51		100.0	99.6	93.4	88.8	83.9	76.6	68.9	59.4	48.1	35.6	21.0	7.3	2.3	1.7	1.6	24
	LB-02-V-29A	-24	-26	2	SP	0.23		100.0	100.0	98.9	98.0	97.1	95.5	93.5	90.2	84.0	74.9	59.0	23.3	3.8	0.8	0.6	7
	LB-02-V-30	-25.2	-27	1.8	SP	0.24		100.0	100.0	99.4	98.3	97.2	95.3	92.9	89.4	84.0	76.0	55.2	18.3	3.4	0.9	0.7	8
	LB-02-V-31	-28.3	-31	2.7	SP	0.23		100.0	100.0	99.0	96.2	94.0	90.6	86.6	81.3	73.0	64.3	53.2	37.4	7.9	1.7	1.1	15
	LB-02-V-32	-20.6	-22.6	2	SP	0.21		100.0	100.0	99.8	99.5	98.9	97.7	96.2	93.7	89.8	83.6	69.2	35.6	6.3	2.0	1.7	5
	LB-02-V-71	-35.7	-39	3.3	SC	0.15		100.0	100.0	100.0	99.8	99.5	99.1	98.7	98.3	97.8	97.1	95.7	85.8	38.3	25.8	22.2	1
Shoreward from ODMDS	LB-02-V-8A	-47.2	-51	3.8	SC	0.17		100.0	100.0	100.0	99.5	98.8	97.5	95.7	93.1	89.3	84.4	77.6	61.5	34.7	27.7	26.5	4
(between Nearshore P.	LB-02-V-10	-42.6	-44.1	1.5	SP-SC	0.15		100.0	100.0	99.9	99.8	99.6	99.0	98.4	97.7	96.7	94.5	87.7	75.9	31.4	16.0	12.6	1
Area and ODMDS)	LB-02-V-11	-40.8	-43	2.2	SP	0.14		100.0	100.0	99.8	99.8	99.7	99.3	98.9	97.8	95.0	85.9	57.9	18.3	5.9	1.9	1.4	2
	LB-02-V-12	-35.9	-38	2.1				100.0	99.0	94.4	91.9	89.8	86.8	83.3	79.2	73.0	62.2	43.0	22.1	6.9	3.2	2.9	15
	LB-02-V-12A	-35.9	-38	2.1	SP	0.2		100.0	100.0	100.0	100.0	99.8	99.5	99.0	98.1	95.7	89.6	72.8	34.5	9.1	4.0	3.6	3
	LB-02-V-13	-34.4	-37	2.6	SP	0.27		100.0	100.0	99.4	98.5	97.5	95.7	93.4	90.0	83.3	69.6	44.9	18.8	5.1	2.8	2.6	7
	LB-02-V-14	-46.7	-50	3.3	SC	0.17		100.0	100.0	99.8	99.6	99.4	98.9	98.4	97.7	96.7	94.5	88.4	65.5	35.2	22.4	19.1	2
	LB-02-V-15	-51.3	-55	3.7	SC	0.2		100.0	100.0	99.4	96.5	93.3	88.7	84.5	80.1	75.2	70.1	63.5	45.4	21.2	16.6	15.5	25
	LB-02-V-16	-51.1	-52.3	1.2	SP-SM	0.25		100.0	99.8	99.1	97.0	95.0	91.6	87.4	82.1	75.6	66.5	51.7	22.3	9.4	6.6	6.2	31
	LB-02-V-17	-44.1	-46	1.9	SP	0.2		100.0	99.3	97.4	95.9	94.8	93.1	91.3	89.3	86.6	81.6	69.8	40.7	11.6	5.9	4.9	9
	LB-02-V-20	-46.5	-49.3	2.8	SP	0.22		100.0	100.0	99.6	99.2	98.8	97.9	96.8	95.0	91.3	82.9	61.1	22.4	10.8	6.0	5.0	4
	LB-02-V-49	-52	-56	4	SC	0.3		100.0	100.0	96.5	89.5	83.7	76.3	70.3	65.3	60.1	53.6	45.5	33.7	21.3	14.7	13.2	35
	LB-02-V-50	-52.8	-56	3.2	SM	0.5		100.0	92.2	90.8	87.9	85.1	81.7	78.0	74.3	70.0	64.6	56.1	40.3	21.3	15.1	14.0	27
	LB-02-V-67	-23.7	-26	2.3	SP	0.2		100.0	100.0	100.0	99.9	99.8	99.6	99.4	99.1	98.6	97.5	91.8	33.2	6.3	1.3	0.9	1
	LB-02-V-72	-51	-54	3	SP-SC	0.19		100.0	100.0	99.5	97.9	96.5	94.4	91.6	88.4	84.7	81.0	76.0	47.7	17.6	12.5	11.3	12
	LB-02-V-73	-44	-44.5	0.5	SC	0.17		100.0	100.0	98.1	96.1	94.1	91.2	87.9	83.9	78.5	72.1	66.3	56.1	40.9	36.5	35.3	14
	LB-02-V-74	-50	-53	3	SP-SC	0.21		100.0	100.0	98.7	97.0	95.6	93.8	91.6	88.9	85.0	80.1	71.6	34.7	14.4	10.1	9.4	9
East of ODMDS	LB-02-V-21	-52	-54.5	2.5	SC	0.18		100.0	100.0	99.9	99.3	98.7	98.0	97.2	96.3	95.4	94.1	90.4	54.1	25.8	18.5	17.1	4
	LB-02-V-65	-49.3	-52	2.7	SP-SM	0.21		100.0	100.0	98.9	97.5	96.4	95.2	94.0	93.0	91.9	90.0	79.6	22.7	7.5	5.4	5.1	8
	LB-02-V-66	-42.7	-45.2	2.5	CH	--		100.0	100.0	99.2	99.1	98.9	98.6	98.3	98.0	97.7	97.3	96.7	95.9	93.5	88.3	85.7	1
West of ODMDS	LB-02-V-51	-52	-53.5	1.5	SP	0.21		100.0	100.0	97.4	95.3	94.0	92.3	90.6	88.9	87.2	84.5	76.5	31.9	8.8	4.0	3.4	11
	LB-02-V-76	-40.5	-41	0.5	CH	--		100.0	100.0	100.0	99.7	99.4	98.8	98.3	97.8	97.2	96.7	96.1	94.9	92.8	91.7	90.9	2
	LB-02-V-77	-50.9	-54	3.1	SC	0.12		100.0	97.3	92.5	87.4	83.6	79.4	75.9	72.7	69.2	65.4	58.7	39.8	27.5	19.5	17.1	26
	LB-02-V-78	-51.3	-55	3.7	SP-SC	0.19		100.0	99.0	97.8	96.5	95.3	93.8	92.2	90.5	88.4	85.5	77.4	42.1	17.3	12.5	11.8	10
	LB-02-V-79	-51.6	-52.1	0.5	SC	0.21		100.0	93.5	90.2	86.9	84.5	81.9	79.3	76.1	71.8	66.7	57.8	43.1	31.7	24.8	22.1	22
	LB-02-V-80	-47.6	-48.1	0.5	SC	0.18		100.0	100.0	99.3	96.8	94.2	90.9	87.6	84.0	79.6	74.8	68.0	53.1	36.9	25.7	22.6	14
	LB-02-V-81	-34.1	-38	3.9	SP-SC	0.17		100.0	100.0	97.7	97.0	96.5	95.8	95.0	94.0	92.4	89.9	85.0	63.8	24.0	14.5	11.6	6
	LB-02-V-82	-35.6	-37.8	2.2	SP-SM	0.18		100.0	100.0	99.6	98.7	97.6	96.3	95.0	93.2	90.6	87.2	81.4	53.5	15.7	7.1	5.4	5
	LB-02-V-84	-47.7	-49.9	2.2	SM	0.23		100.0	99.2	97.3	92.7	88.7	83.8	79.0	72.8	65.3	59.4	53.8	41.5	25.8	22.1	21.6	19
	LB-02-V-85	-49.8	-51.3	1.5	SP-SM	0.19		100.0	100.0	100.0	99.7	99.3	98.5	97.4	95.7	93.0	89.5	83.0	49.9	11.3	6.6	6.1	3
	LB-02-V-86	-49.6	-52	2.4	SP	0.18		100.0	98.6	96.5	95.3	94.7	94.0	93.3	92.6	91.4	89.7	85.7	65.4	15.6	6.1	4.9	12
	LB-02-V-87	-50.9	-53	2.1	SP	0.18		100.0	100.0	97.9	96.2	95.2	94.3	93.4	92.5	91.1	88.9	84.1	62.0	15.2	5.7	4.5	9
	LB-02-V-109	-53.2	-53.7	0.5	SM	0.18		100.0	99.4	98.8	97.4	96.4	95.4	94.4	93.3	92.1	90.2	86.3	57.2	27.4	20.4	18.1	8

Sample Descriptions

1. SP	SAND, poorly-graded, mostly fine-grained quartz, few carbonate, gray (SP)
2. SP-SM	SAND, poorly-graded with silt, mostly fine-grained quartz, few carbonate, gray (SP-SM)
3. SP-SC	SAND, poorly-graded with clay, mostly fine-grained quartz, few carbonate, gray (SP-SC)
4. SM	SAND, silty, mostly fine-grained quartz, few carbonate, gray (SM)
5. SC	SAND, clayey, mostly fine-grained quartz, few carbonate, gray (SC)
6. CH	CLAY, inorganic-H, little fine-grained quartz sand, few carbonate, gray (CH)
7. MH	SILT, inorganic-H, little fine-grained quartz sand, few carbonate, gray (MH)

% Passing by weight

MEDIAN SIZE - mm (-- indicates that median size finer than finest sieve size)

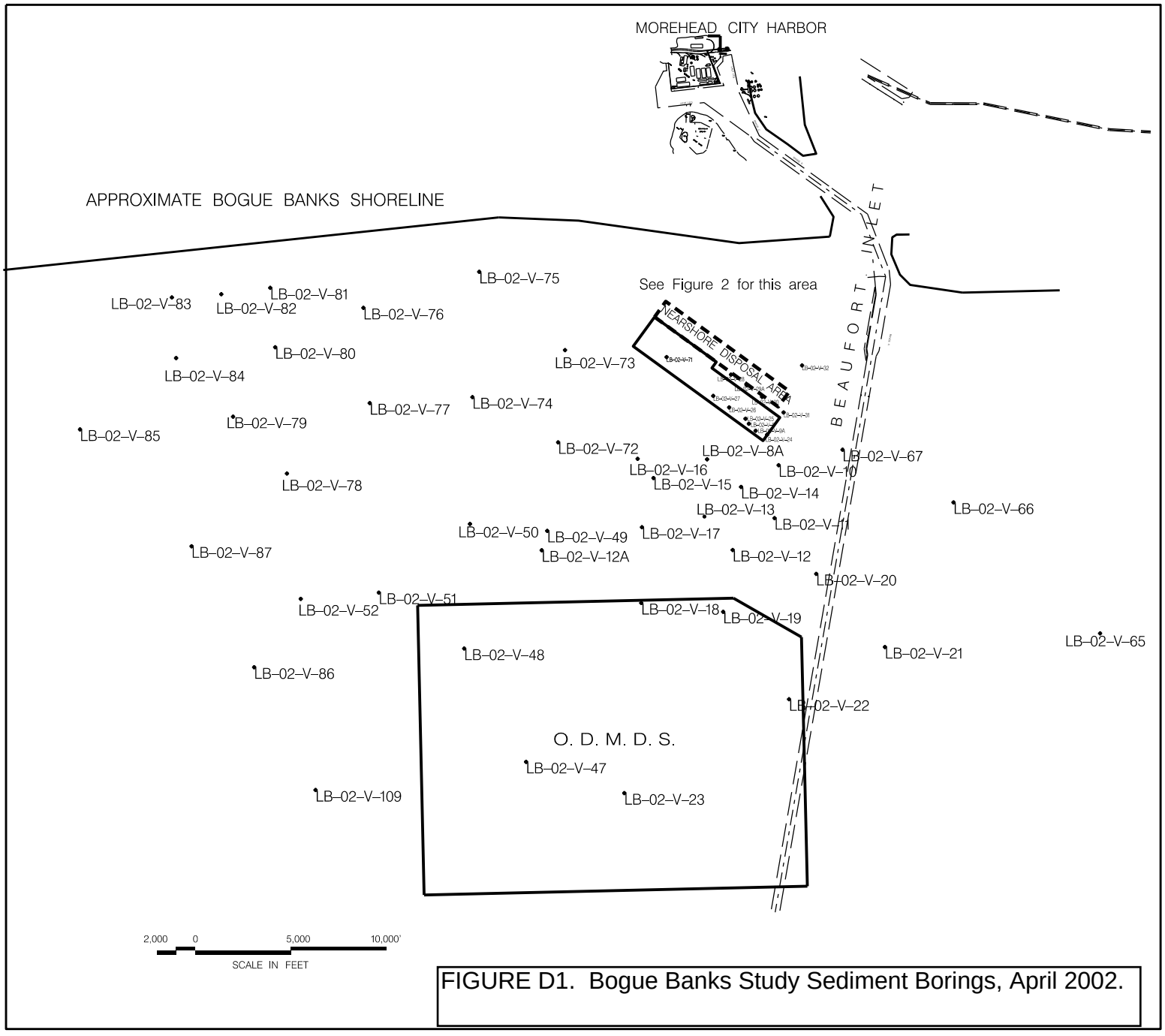

FIGURE D1. Bogue Banks Study Sediment Borings, April 2002.

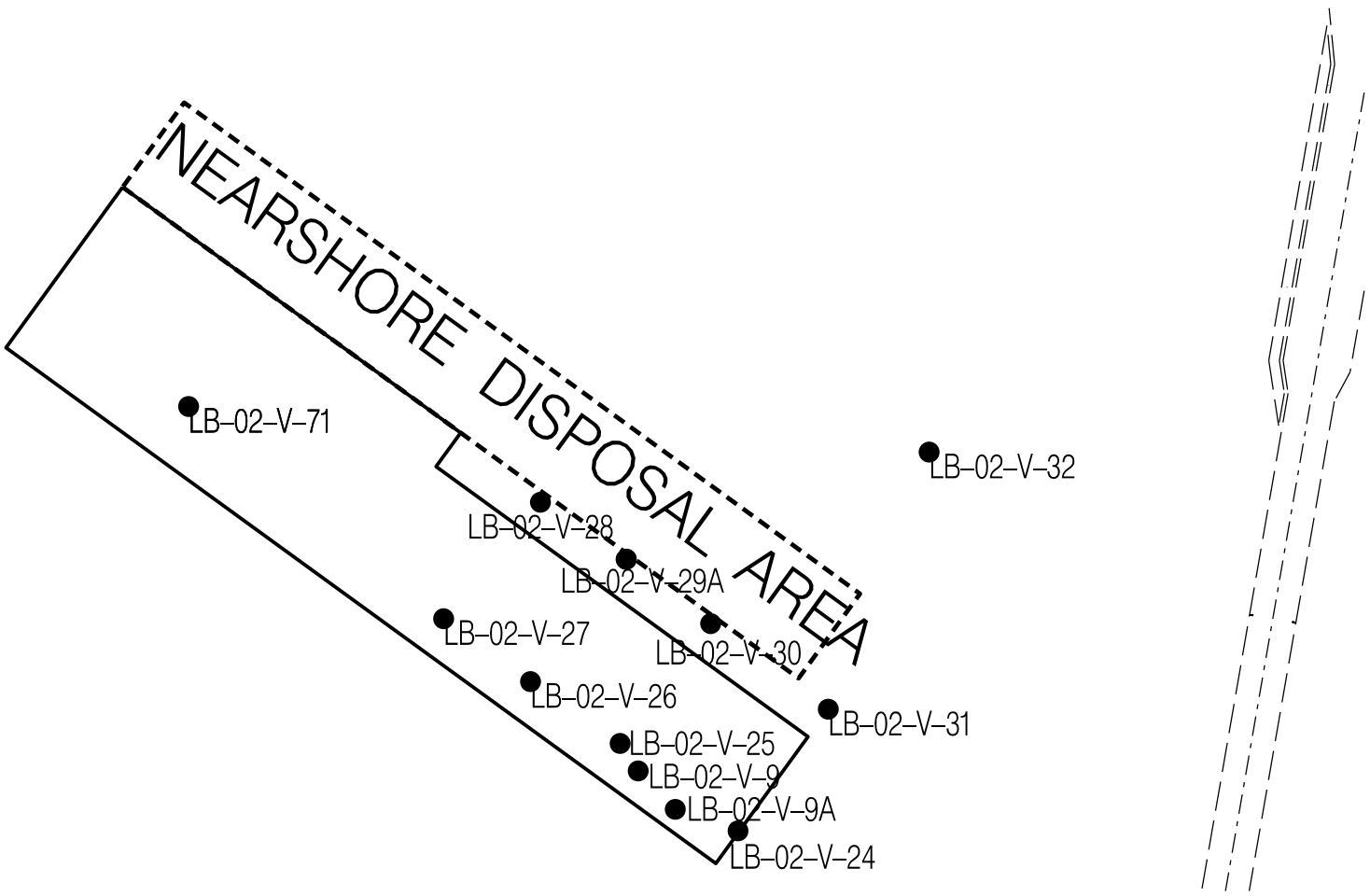

Figure D2. Sediment borings in the vicinity of the Nearshore placement area. April 2002.

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APPENDIX E

PUBLIC INVOLVEMENT
MOREHEAD CITY ODMDS
SITE MANAGEMENT AND MONITORING PLAN (SMMP)

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APPENDIX E

Public Involvement
Morehead City ODMDS
Site Monitoring and Management Plan (SMMP)
Draft dated July 2009

Public Involvement

US EPA Region 4 / USACE Wilmington District - Joint Public Notice (JPN) and Notice of Availability (NOA) for Draft Morehead City ODMDS SMMP published August 31, 2009. JPN/NOA was provided to a Wilmington District standard mailing list of Morehead City Harbor, NC stakeholders.

Copies of Morehead City ODMDS SMMP provided to NC Department of Administration, State Clearinghouse dated August 31, 2009.

Copies (CD or printed version) of Morehead City ODMDS SMMP provided to Federal stakeholder agencies on August 31, 2009.

Morehead City ODMDS SMMP made available on Wilmington District Website http://www.saw.usace.army.mil/

Index of Comments Received

E.1 NC Department of Administration – State Clearinghouse

Comment 1: The above referenced environmental impact information (Morehead City SMMP) has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. Attached to this letter for your consideration are the comments made by agencies in the course of this review.

Response: Noted. The review was requested pursuant to the Marine Protection, Research and Sanctuaries Act of 1972 and the Water Resources Development Act of 1992 and not the National Environmental Policy Act. However, the comments are appreciated and have been considered in the development of this SMMP.

E.2 NC Department of Environment and Natural Resources, Division of Coastal Management

Comment 1: Thank you for the opportunity to review the draft Site Management and Management Plan (Plan, July 2009) for the Morehead City Ocean Dredged Material Disposal Site (ODMDS), Morehead City, Carteret County, North Carolina. This plan is a cooperative effort between the US Environmental Protection Agency (EPA) and the US Anny Corps of Engineers (Corps). The goal of the Plan is to ensure that ocean dredged material disposal activities will not unreasonably degrade the marine environment or endanger human health or economic potential. Additionally the Plan also incorporates the beneficial use of dredged material whenever practical. To achieve this goal, the Plan describes how the disposal of dredged material at the ODMDS will be carried out and monitored. The purpose of this review is to assess the adequacy of the analysis contained in the Plan.
Response: Noted

Comment 2: Segregation of Beach Compatible from Non-Beach Compatible Material: The Plan correctly notes the need to segregate beach-compatible material from non-beach compatible material. To achieve this objective Brandt Island has two disposal cells. One for beach-quality material and one for non-beach quality material. Figure 5 of the Plan
displays the ODMDS disposal zones ones for beach quality material and non-beach quality material.
Response: Noted

Comment 3: Timing of Disposal: The Plan notes that there are "no seasonal restrictions to the placement of dredged material within the Morehead City ODMDS." While this may be an appropriate conclusion, this Plan is an update to an earlier plan. As such, we request that this conclusionary statement be revisited to document whether this conclusion remains appropriate.
Response: The dredging activities that mandate the need for dredged material disposal within the Morehead City ODMDS do have various seasonal restrictions that apply to them. This SMMP does not change those restrictions. The statement simply indicates

that there are no additional seasonal restrictions based on use of the Morehead City ODMDS.

Comment 4: Continued Use of the ODMDS for the Disposal of Beach Quality Material: According to the Public Notice, the ODMDS was designated in 1987. The original Plan was developed in October of 1997 and this draft Plan will be an update. This Plan is also closely associated with the Morehead City Harbor Dredged Material Management Plan (DMMP) which is scheduled to be completed in 2011. Nevertheless, has the suitability of the ODMDS for continued disposal of beach quality material been reassessed?

Response: A major portion of the draft SMMP revisions deal with recognition of the need for sand and the public demand for future replenishment of sand on Bogue Banks beaches will likely continue and increase. The SMMP indicates that beach-compatible dredged materials (sands) dredged from the navigation channel should be placed on nearby beaches or within the active littoral system when it is economically feasible and environmentally acceptable to do so. Site capacity and mounding factors are favorably affected by not placing beach compatible sands in the ODMDS. Other beneficial uses of dredged materials are also encouraged pending appropriate environmental review.

Dredged material placed in the Morehead City ODMDS has provided good quality sand material and facilitated access for the beach replenishment. The SMMP indicates that if beach-compatible sands are dredged during future maintenance of Morehead City Harbor navigation and disposed of in the Morehead City ODMDS, placement of those materials will be directed to a portion of the ODMDS or disposal zone where access and potential opportunities for recycling and beach nourishment are facilitated (see disposal zones). Accordingly, the northern half of the Morehead City ODMDS will be restricted for dredged material that is beach-compatible sand. Conversely, fine-grained materials may not be discharged there.

Comment 5: Of particular concern, does the material placed in the ODMDS remain in the littoral system or does it migrate out? If the material migrates out of the littoral system then new disposal options should be explored for the disposal of beach quality material, such as the direct placement of beach quality material onto the beach, onto the nearshore placement area Or even into Brandt Island.

Response: The SMMP specifically addresses management of the MHC ODMDS. The SMMP is not a Dredged Material Management Plan (DMMP) for MHC Harbor or a management plan for the nearshore placement area associated with the harbor. The discussions of other disposal areas are important to the SMMP only because dredged-material placed in those sites is not placed in the ODMDS.

The objective of the SMMP is to provide guidelines in making management decisions necessary to fulfill mandated responsibilities to protect the marine environment. The SMMP does not itself authorize use of the ODMDS. No revision of the SMMP in this area will be made.

Comment 6: Chemical and Biological Testing of Sediments: Sediment from the Morehead City Inner Harbor may contain toxins resulting from industrial activities related to the operation of the port. The draft Plan notes that the material has been tested and found acceptable.
Additionally the draft Plan notes the need for continued monitoring. However, the draft Plan does not appear to have identified when these materials were tested nor the frequency of when testing would occur. We suggest that the date of testing be disclosed and that a more definitive schedule of future testing be proposed.
Response: Only dredged materials which have been evaluated in accordance with EPA's Ocean Dumping Regulations and Criteria and found in compliance with those criteria has been or will be transported for disposal in the Morehead City ODMDS. The SMMP is intended as a management plan and not a compilation of historic testing data.

Guidance for evaluation of dredged materials under the MPRSA Section 103 program is provided in the Evaluation of Dredged Material Proposed for Ocean Disposal - Testing Manual, February 1991 and the Regional Implementation Manual, Requirements and Procedures for Evaluation of the Ocean Disposal of Dredged Materials in Southeastern Atlantic and Gulf Coastal Waters, May 1993. Additionally, the Southeast Regional Implementation Manual (SERIM) for Requirements and Procedures for Evaluation of the Ocean Disposal of Dredged Material in Southeastern U.S. Atlantic and Gulf Coast Waters dated May 2008 provides regional testing guidance. The determination of dredged material suitability for ocean disposal must be documented in a MPRSA Section 103 evaluation and approved by EPA Region 4 prior to disposal. Dredged materials will be reevaluated for suitability for ocean disposal in accordance with current USACE/EPA guidance at an interval not to exceed three years. Reevaluation and testing procedures will be coordinated with the Wilmington District USACE and EPA Region 4 before any sampling or testing.

Comment 7: Thresholds for Unacceptable Biological Impacts: The purpose of the Plan is to ensure that ocean dredged material disposal activities will not unreasonably degrade the marine environment. The plan notes: "To use site monitoring as an effective tool, site managers need to define in quantitative terms thresholds for unacceptable impacts and desired beneficial effects of dredged material disposal." Additionally, the draft plan appears to refer to a proposed monitoring plan that would be developed in the future. The Plan writes: "A monitoring program should be structured to address specific questions (hypotheses) and measure key indicators and endpoints, particularly those defined during site designation or specific project issues that arise."

Since the draft Plan is an update to the prior plan and based on need for effective monitoring, we suggest that the draft Plan put forward a monitoring plan that incorporates quantitative and qualitative standards that define the threshold levels for unacceptable biological impacts. Defining the threshold for an unacceptable biological impact would identify whether the proposed disposal activities would be having and adverse effect on the environment.
Response: The proposed monitoring strategies for the Morehead City ODMDS and thresholds for management action are presented in Table 2 of the SMMP. As indicated

in Table 2, information obtained during monitoring may indicate the need for additional monitoring at a higher, more complex level. The monitoring being conducted is designed to answer specific questions as indicated in the referenced text. It is not a continuous monitoring of all physical and biological parameters.

Comment 8: Mounding: The draft. Plan notes the necessity to ensure that material is not all placed in the same location. The draft Plan writes: "Such mounds may limit future use of specific areas of the ODMDS and may pose impairment to navigation including use by hopper dredges." All material going to the ODMDS must be in accordance with EPA's Ocean Dumping Regulations and Criteria. We suggest the inclusion into the draft Plan of additional criteria to minimize the potential for mounding. This entails (at a minimum of every three years) segregating beach compatible material that could be used as a future borrow site, the proper handling of debris, and limiting the quantity of material disposed such that the MLW elevation does not rise above -30 feet.
Response: All the measures suggested in the comment (with the exception of debris management which has not heretofore been identified as a problem for Morehead City Harbor) are included in the SMMP SPECIFIC REQUIREMENTS Section. The SMMP does not limit those requirements to a minimum of every three years - they are required for any use of the site.

Comment 9: Electronic Track Systems (ETS): The ETS appears to capture all information that needs to be recorded. The data is to be transported to the EPA and US Anny Corps of Engineers weekly, with a full summary report submitted within ninety days of project completion.
Response: We agree.

Comment 10: Nearshore Placement Area: The draft Plan notes the existence of the nearshore placement area. However, while the draft Plan's focus may be on the disposal of material within the ODMDS, the nearshore placement area may potentially be a better location that would meet the objective of beneficial use of dredged material. Again since the draft Plan is an update and will be closely associated with an updated DMMP we would encourage the Corps to reassess the relationship of ODMDS disposal to disposal within the nearshore placement area.
Response: The SMMP specifically addresses management of the MHC ODMDS. The SMMP is not a Dredged Material Management Plan for MHC Harbor or a management plan for the nearshore placement area associated with the harbor. The description of the nearshore placement area is important to the SMMP only because dredged material placed in the nearshore is not placed in the ODMDS. The descriptions of the nearshore placement area are considered adequate and appropriate for the SMMP. No revision of the SMMP in this area will be made.

The MHC ODMDS SMMP is expected to be an important part of the MHC DMMP since any use of the ODMDS must be in accordance with the SMMP.

Comment 11: Brandt Island: The draft Plan notes the existence of Brandt Island as a disposal facility for both beach-compatible and non·beach compatible material. However the future relationship of Branch Island to the updated Plan has apparently not been reassessed. We arc aware that the focus of draft Plan is on the disposal of material within the ODMDS and that an update to the DMMP is also underway. Nevertheless we would encourage the Corps to reassess the relationship of ODMDS disposal to disposal within Brandt Island.
Response: The SMMP specifically addresses management of the MHC ODMDS. The SMMP is not a Dredged Material Management Plan for MHC Harbor or a management plan for Brandt Island. The description of the Brandt Island is important to the SMMP only because dredged material placed in Brandt Island is not placed in the ODMDS. The descriptions of Brandt Island are considered adequate and appropriate for the SMMP. No revision of the SMMP in this area will be made.

The MHC ODMDS SMMP is expected to be an important part of the MHC DMMP since any use of the ODMDS must be in accordance with the SMMP.

E.3 NC Department of Cultural Resources, State Historic Preservation Office

Comment 1: No Comment.
Response: Noted.

E.4 NC Division of Emergency Management, Floodplain Management Program

Comment 1: No Comment.
Response: Noted.

E.5 NC Department of Transportation, Statewide Planning

Comment 1: No Comment.
Response: Noted.

E.6 NC Department of Agriculture

Comment 1: No Comment.
Response: Noted.

E.7 US Department of Agriculture, Natural Resources Conservation Service

Comment 1: No Comment.
Response: Noted.

E.8 US Department of Interior, Fish and Wildlife Service, Raleigh Field Office

Comment 1: The proposed SMMP is expected to have minimal adverse impacts to fish and wildlife resources under the jurisdiction of the Service. In accordance with the Endangered Species Act of 1973, as amended, (ESA) and based on the information provided and other available information, it appears the implementation of the proposed plan is not likely to adversely affect federally listed species under the jurisdiction of the Service or their critical habitat as defined by ESA. We believe that the requirements of Section 7(a)(2) of the ESA have been satisfied for this project. Please remember that obligations under ESA must be reconsidered if: (1) new information identifies impacts of this action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is modified in a manner that is not considered in this review; or, (3) a new species is listed or critical habitat determined that may be affected by the identified action. This finding of the Service addresses only the SMMP and does not consider dredging operations or other means of material disposal.
Response: Noted. The SMMP specifically addresses management of the MHC ODMDS. The SMMP is not a Dredged Material Management Plan for MHC Harbor.

E.9 Carteret County's Comments regarding Draft SMMP

September 29, 2009
KILPATRICK & STOCKTON LLP
Attorneys at Law

Comment 1: Comments are provided on behalf of Carteret County, North Carolina regarding the Draft Site Management and Monitoring Plan ("SMMP") for the Morehead City Harbor Project ("MCHP"). This letter presents Carteret County's comments concerning the SMMP.
Response: Noted.

Comment 2: The SMMP should establish specific disposal controls, conditions and requirements for the potential disposal of non-beach quality dredged material in the ODMDS to avoid or minimize potential impacts to beach-quality dredged material previously disposed in the ODMDS.

The SMMP recognizes that the ODMDS has been, and likely will be, used as a borrow area for beach replenishment at Bogue Banks. The SMMP, however, indicates that disposal of fine-grained Inner Harbor dredged material (or non-beach quality dredged material) in the ODMDS is anticipated. In fact, the Corps and EPA appear to have already determined that such material will be disposed in the ODMDS.
Response: The MHC ODMDS SMMP does not itself authorize placement of material within the ODMDS. Such authorization is made pursuant to Section 103 of MPRSA with concurrence from EPA.

The SMMP documents the presence of fine-grained materials within the MHC Harbor project and the potential need for the disposal of those materials in the ODMDS in a

manner that is consistent with MPRSA. The SMMP presents a plan for placement of both coarse and fine-grained material into the ODMDS. The Corps and EPA have not "already determined" that fine grained material from the Harbor will be disposed of in the ODMDS. The SMMP recognizes, however, that such a need may occur, and the SMMP presents a plan for disposal of fine-grained material consistent with the provisions of the MPRSA and the EPA Ocean Disposal Regulations and Criteria.

Comment 3: For the inner harbor areas shoal material will be removed by hopper dredge or by a dredge (hydraulic or mechanical) and placed in scows or barges moored next to the dredge. When full, the scow is pul1ed by tug to the ODMDS and the load discharged through the bottom of the scow. SMMP, p. 9.

The SMMP should be revised to reflect that disposal of non-beach quality dredged material in the ODMDS is one option currently being considered by the Corps. Other options include rehabilitation and expansion of Brandt Island.

Response: Brandt Island is discussed in the SMMP (page 6). The SMMP is not a dredged material management plan for Brandt Island or the MHC Harbor. The SMMP indicates that use of Brandt Island has changed since the previous SMMP and capacity in Brandt Island is finite unless material is removed. The SMMP appropriately documents the potential need and plan for placement of fine-grained material in the ODMDS. The SMMP will be revised to indicate that rehabilitation and potential expansion of the Brandt Island confined disposal area dikes would reduce the potential for ocean placement of inner-harbor dredged materials.

Comment 4: Carteret County is concerned that the SMMP does not adequately establish specific disposal controls, conditions and requirements to avoid or minimize potential impacts to beach-quality dredged material disposed in the ODMDS. The SMMP indicates that fine-grained dredged material will be placed in the far southwest comer of the ODMDS as shown in Figure 5. Not only is this disposal zone imprecise, the SMMP has appeared to expand the footprint of this area. The SMMP should establish specific coordinates where fine-grained dredged material may be disposed in the ODMDS. This designated disposal area should be as small as possible to accommodate the Corps' needs and to prevent movement of the fine-grained material into the remainder of the ODMDS.

Response: The SMMP will be revised to provide coordinates for the fine-grained cell of the ODMDS. As the previous SMMP had no specific fine-grained disposal zone designated, the comment regarding the zone being expanded is not valid. The designated fine-grained area is believed to be a size needed to accommodate use for the 10-year SMMP period.

Comment 5: The SMMP requires an electronic tracking system for all disposal activities and verification of the placement of dredged material. Although the SMMP prohibits the placement of fine-grained material in the beach-compatible zone of the ODMDS, the SMMP should also provide that such material shall only be placed in the designated fine-grained material zone.

Response: The SMMP indicates that the beach-compatible materials are to be placed in the disposal zone designated for those materials. Revision to say that beach-compatible materials may not be discharged into the fine-grained cell would be redundant.

Comment 6: Finally, the Site Monitoring section of the SMMP should be revised to specifically address how the Corps and EPA will monitor the fate and transport of fine-grained dredged material disposed in the ODMDS.
Response: The SMMP has been modified to explicitly say that sediment sampling within the ODMDS and monitoring grain-size distributions within those samples will be periodically conducted to monitor for fate and transport of fine-grained sediment disposed of in the ODMDS. This sampling may be augmented using modeling using LDFATE and MDFATE (USACE dredged material disposal numerical models).

Comment 7: **The SMMP should clarify the location and purpose of the existing nearshore berm.** Consistent with past descriptions, the SMMP describes the location of the existing nearshore berm as "along or near the -25 foot m.1.w. contour." In fact, the nearshore berm, as currently designated and used by the Corps, is located approximately between the -20 and -40 foot m.l.w. contours.

In addition, the SMMP indicates that "the goal of the nearshore placement area is to retain sand dredged from the channel within the Beaufort Inlet ebb tidal delta" and "[t]he intention is to keep material within the active littoral system without dramatically increasing the amount of annual maintenance dredging in the channel or cost of the maintenance dredging." These descriptions are not consistent with the original purpose of the nearshore berm as described by the U. S. Army Corps and relied upon by the North Carolina Division of Coastal Management.

In the Environmental Assessment and Finding of No Significant Impact prepared by the Corps in August and December 1994 for the nearshore berm project, the Corps indicated that the nearshore berm would be "transitory in nature" and "is designed to function as a stockpile of material that will disperse over the ebb tide delta and return to the littoral system through natural processes."

The SMMP should be revised to properly describe the location and purpose of the nearshore berm.
Response: The SMMP specifically addresses management of the MHC ODMDS. The SMMP is not a Dredged Material Management Plan for MHC Harbor or a management plan for the nearshore placement area associated with the harbor. The description of the nearshore placement area is important to the SMMP only because dredged-material placed in the nearshore is not placed in the ODMDS. The descriptions of the nearshore placement area are considered adequate and appropriate for the SMMP. No revision of the SMMP in this area will be made.

Comment 8: **The SMMP should define certain terms to avoid any ambiguity.**

The meaning of certain terms used in the SMMP is not clear. Such teems include, but are not limited to, "active littoral system" and "routine hopper operations." These terms should be defined in the SMMP to avoid any ambiguity.

Response: The SMMP uses terms and language that are in common use regarding dredged material management and ocean disposal of dredged material. Effort was made to write the SMMP to make it understandable to a wide audience and therefore a more useful document. Using this approach, some specificity may be unavoidably lost. We believe that the requirements of the SMMP are clearly and plainly stated.

Comment 9: **The SMMP inaccurately states that beneficial use of beach-quality dredged material is a new requirement.** The SMMP indicates that "[t]he anticipated ODMDS use will be less than historic use as requirements and regulations increasingly demand that beach-quality materials are returned to nearby active littoral systems." North Carolina regulations requiring the beneficial use of dredged material and prohibiting the removal of beach-quality dredged material from the active nearshore, beach or inlet shoal systems have been effective since October 1, 1992 and were approved by the National Oceanic and Atmospheric Administration on May 13, 1993. There is nothing new regarding these requirements.

Response: Considering that maintenance of MHC Harbor has taken place since about 1910, the changes imposed by the cited 1992 and 1993 requirements are relatively new. Additionally, North Carolina's Dredge and Fill Law, which applies to non-federal entities who may wish to dispose of material in the ODMDS, came into effect in 2005. We believe that the statement is true that dredged (sand) material is increasingly considered a significant resource and in the future less of it will be likely be placed in the MHC ODMDS than during previous years when ocean disposal has occurred at that site or other locations (pre-MPRSA).

Comment 10: **The SMMP's description of the Federal Standard is inaccurate.** The SMMP indicates that "[i]f placement of dredged material (beach-quality sand) on a beach is the least costly acceptable means for disposal, then such placement is considered integral to the navigation project and cost shared accordingly." SMMP, p. 11. The Federal Standard, however, provides that the Corps is required to manage dredged material "in the least costly manner, at the least costly and most practicable location, and consistent with engineering and environmental requirements," 33 C.F.R. § 335.4. The SMMP should be revised to accurately describe the Corps' obligations in managing dredged material.

Response: The SMMP text will be revised to more accurately describe the Federal Standard (33 C.F.R. § 335.4). "The Corps of Engineers undertakes operations and maintenance activities where appropriate and environmentally acceptable. All practicable and reasonable alternatives are fully considered on an equal basis. This includes the discharge of dredged or fill material into waters of the U.S. or ocean waters in the least costly manner, at the least costly and most practicable location, and consistent with engineering and environmental requirements."

Comment 11: **Miscellaneous comments.**

The following typographical errors and omission should be corrected.

- Table 1 should reflect that, in 2004, direct beach placement on Bogue Banks
  Beaches occurred as a result of the post-Isabel Section 933 project.

- On the top of page 5, Beaufort Inlet should be described as "between Bogue Banks and Shackleford Banks" rather than "Atlantic Beach and Shackleford Banks."

- On page 11, the word "The" should be deleted at the end of the second full paragraph.

Response:

- A Table 1 footnote and the text on page 11 will be modified to reflect the 2004 beach placement event.
- Beaufort Inlet will be correctly described as between Bogue Banks and Shackelford Banks.
- The indicated editorial change will be made.

North Carolina
Department of Administration

Beverly Eaves Perdue, Governor

Britt Cobb, Secretary

October 5, 2009

Mr. Phillip M. Payonk
US Army Corp of Engineers
Wilmington District
69 Darlington Avenue
Wilmington, NC 28403

Re: SCH File # 10-E-0000-0085; Proposed development of a Site Management and Monitoring plan for disposal of dredged material at Morehead City Ocean Dredged Material Disposal Site (ODMDS)

Dear Mr. Payonk:

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. Attached to this letter for your consideration are the comments made by agencies in the course of this review.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

Valerie McMillan

Valerie W. McMillan, Director
State Environmental Review Clearinghouse

Attachments

cc: Region P

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail valerie.w.mcmillan@doa.nc.gov

Location Address:
116 West Jones Street
Raleigh, North Carolina

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

TO: Valerie McMillan
State Clearinghouse

FROM: Melba McGee
Environmental Review Coordinator

RE: 10-0085 EA Draft Site Management and Monitoring Plan for the Morehead City Ocean Dredged Material Disposal Site Morehead City, Carteret County

DATE: October 5, 2009

The department has reviewed the proposed project. The applicant is asked to consider the attached comments prior to finalizing project plans. If additional information is needed, please notify the commenting agency.

Thank you for the opportunity to respond.

Attachments

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-733-4984 \ FAX: 919-715-3060 Internet: www.enr.state.nc.us

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Beverly Eaves Perdue
Governor

James H. Gregson
Director

Dee Freeman
Secretary

September 23, 2009

Melba McGee
Environmental Coordinator
Office of Legislative & Intergovernmental Affairs
Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-1601

Subject: Comments on the Draft Site Management and Monitoring Plan for the Morehead City Ocean Dredged Material Disposal Site (ODMDS), Morehead City, Carteret County, North Carolina (SCH#10-0085 and DCM#20090128)

Dear Ms. McGee:
Thank you for the opportunity to review the draft "*Site Management and Monitoring Plan*" (Plan, July 2009) for the Morehead City Ocean Dredged Material Disposal Site (ODMDS), Morehead City, Carteret County, North Carolina. This Plan is a cooperative effort between the US Environmental Protection Agency (EPA) and the US Army Corps of Engineers (Corps). The goal of the Plan is to ensure that ocean dredged material disposal activities will not unreasonably degrade the marine environment or endanger human health or economic potential. Additionally, the Plan also incorporates the beneficial use of dredged material whenever practical. To achieve this goal, the Plan describes how the disposal of dredged material at the ODMDS will be carried out and monitored. The purpose of this review is to assess the adequacy of the analysis contained in the Plan.

- **Segregation of Beach Compatible Material From Non-beach Compatible Material**: The Plan correctly notes the need to segregate beach compatible material from non-beach compatible material. To achieve this objective, Brandt Island has two disposal cells. One for beach quality material and one for non-beach quality material. Figure 5 of the Plan displays the ODMDS disposal zones for beach quality material and non-beach quality material.

- **Timing of Disposal**: The Plan notes that there are: "*... no seasonal restrictions to the placement of dredged material within the Morehead City ODMDS.*" While this may be an appropriate conclusion, this Plan is an update to an earlier plan. As such, we request that this conclusionary statement be revisited to document whether this conclusion remains appropriate.

- **Continued Use of the ODMDS for the Disposal of Beach Quality Material**: According to the Public Notice, the ODMDS was designated in 1987. The original Plan was developed in October of 1997 and this draft Plan will be an update. This Plan is also

400 Commerce Ave., Morehead City, NC 28557-3421
Phone: 252-808-2808 \ FAX: 252-247-3330 Internet: www.nccoastalmanagement.net

closely associated with the Morehead City Harbor Dredged Material Management Plan (DMMP) which is scheduled to be completed in 2011. Nevertheless, has the suitability of the ODMDS for continued disposal of beach quality material been reassessed?

Of particular concern, does the material placed in the ODMDS remain in the littoral system or does it migrate out? If the material migrates out of the littoral system then new disposal options should be explored for the disposal of beach quality material, such as the direct placement of beach quality material onto the beach, onto the nearshore placement area, or even into Brandt Island.

- **Chemical and Biological Testing of Sediments**: Sediment from the Morehead City Inner Harbor may contain toxins resulting from industrial activities related to the operation of the port. The draft Plan notes that the material has been tested and found acceptable. Additionally the draft Plan notes the need for continued monitoring. However, the draft Plan does not appear to have identified when these materials were tested nor the frequency of when testing would occur. We suggest that the date of testing be disclosed and that a more definitive schedule of future testing be proposed.

- **Thresholds for Unacceptable Biological Impacts**: The purpose of the Plan is to ensure that ocean dredged material disposal activities will not unreasonably degrade the marine environment. The plan notes: "*To use site monitoring as an effective tool, site managers need to define in quantitative terms thresholds for unacceptable impacts and desired beneficial effects of dredged material disposal.*" Additionally, the draft plan appears to refer to a proposed monitoring plan tha would be developed in the future. The Plan writes: "*A monitoring program should be structured to address specific questions (hypotheses) and measure key indicators and endpoints, particularly those defined during site designation or specific project issues that arise.*"

  Since the draft Plan is an update to the prior plan and based on need for effective monitoring, we suggest that the draft Plan put forward a monitoring plan that incorporates quantitative and qualitative standards that define the threshold levels for unacceptable biological impacts. Defining the threshold for an unacceptable biological impact would identify whether the proposed disposal activities would be having and adverse effect on the environment.

- **Mounding**: The draft Plan notes the necessity to ensure that material is not all placed in the same location. The draft Plan writes: "*Such mounds may limit future use of specific areas of the ODMDS and may pose an impairment to navigation including use by hopper dredges.*" All material going to the ODMDS must be in accordance with EPA's Ocean Dumping Regulations and Criteria. We suggest the inclusion into the draft Plan of additional criteria to minimize the potential for mounding. This entails (at a minimum of every three years) segregating beach compatible material that could be used as a future burrow site, the proper handling of debris, and limiting the quantity of material disposed such that the MLW elevation does not rise above -30 feet.

- **Electronic Track Systems (ETS)**: The ETS appears to capture all information that needs to be recorded. The data is to be transported to the EPA and US Army Corps of Engineers weekly, with a full summary report submitted within ninety days of project completion.

- **Nearshore Placement Area**: The draft Plan notes the existence of the nearshore placement area: "*Since 1995, beach-quality sediments dredged during the maintenance of*

the Morehead City navigation channels have been routinely placed in a nearshore placement disposal area off Bogue Banks (Figure 5). The intention is to keep material within the active littoral system without dramatically increasing the amount of annual maintenance dredging in the channel or the cost of the maintenance dredging." However, while the draft Plan's focus may be on the disposal of material within the ODMDS, the nearshore placement area my potentially be a better location that would meet the objective of "*beneficial use of dredged material*". Again, since the draft Plan is an update and will be closely associated with an updated DMMP, we would encourage the Corps to reassess the relationship of ODMDS disposal to disposal within the nearshore placement area.

- **Brandt Island**: The draft Plan notes the existence of Brandt Island as a disposal facility for both beach compatible material and non-beach compatible material. However, the future relationship of Brandt Island to the updated Plan has apparently not been reassessed. We are aware that the focus of draft Plan's is on the disposal of material within the ODMDS and that an update to the DMMP is also underway. Nevertheless, we would encourage the Corps to reassess the relationship of ODMDS disposal to disposal within Brandt Island.

Thank you for your consideration of the North Carolina Coastal Management Program.

Sincerely,

Stephen Rynas, AICP
Federal Consistency Coordinator
cc: Doug Huggett, Division of Coastal Management
Tere Barrett, Division of Coastal Management
Jeff Warren, Division of Coastal Management

rcvd

Department of Environment and Natural Resources
Project Review Form

Project Number: 10-0078 County: Brunswick and New Hanover Date Received: 08/2[illegible]/2009

Due Date: 9/23/2009

Project Description: Finding of No Significant Impact - Security Boat Dock and Wave Attenuation System, Military Ocean Terminal Sunny Point (MOTSU), Southport

This Project is being reviewed as indicated below:

Regional Office	Regional Office Area	In-House Review	
___ Asheville	___ Air	___ Soil & Water	✓ Marine Fisheries
___ Fayetteville	✓ Water	✓ Coastal Management	___ Water Resources
___ Mooresville	___ Aquifer Protection	___ Wildlife	___ Environmental Health
___ Raleigh	___ Land Quality Engineer	___ Wildlife - DOT	___ Solid Waste Mgmt
___ Washington		___ Forest Resources	___ Radiation Protection
✓ Wilmington		___ Land Resources	___ Other
___ Winston-Salem		___ Parks & Recreation	
		___ Water Quality	
		___ Water Quality - DOT	
		___ Air Quality	

Manager Sign-Off/Region:	Date:	In-House Reviewer/Agency:
	9·16·09	

Response (check all applicable) 9-16-09

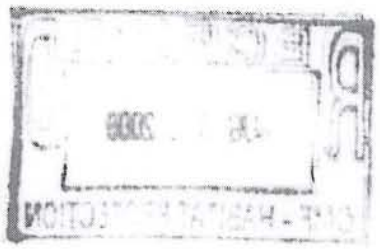
___ No objection to project as proposed. ___ No Comment

___ Insufficient information to complete review ✓ Other (specify or attach comments)

The Division has requested that a dredging moratorium from April 1 through September 30 be imposed.

If you have any questions, please contact:

Melba McGee, Environmental Coordinator at melba.mcgee@ncmail.net



NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: CARTERET

H06: IMPOUNDMENTS AND NAVIGATION DREDGING

STATE NUMBER: 10-E-0000-0085
DATE RECEIVED: 09/02/2009
AGENCY RESPONSE: 09/28/2009
REVIEW CLOSED: 10/02/2009

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SEP 3 2009
HISTORIC PRESERVATION OFFICE

MS RENEE GLEDHILL-EARLEY
CLEARINGHOUSE COORDINATOR
DEPT OF CULTURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
MSC 4617 - ARCHIVES BUILDING
RALEIGH NC

CH 09-2191

A- RD 12W4 left 9-16-09

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DEPT OF AGRICULTURE
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION
EASTERN CAROLINA COUNCIL

Due 9/23/09

PROJECT INFORMATION

APPLICANT: US Army Corp of Engineers
TYPE: National Environmental Policy Act Environmental Review

DESC: Proposed development of a Site Management and Monitoring plan that will the disposal of dredged material at Morehead City Ocean Dredged Material Disposal Site (ODMDS)

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: [X] NO COMMENT [ ] COMMENTS ATTACHED

SIGNED BY: Renee Gledhill-Earley DATE: 9.18.09

SEP 2009
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DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: CARTERET

H06: IMPOUNDMENTS AND NAVIGATION DREDGING

STATE NUMBER: 10-E-0000-0085
DATE RECEIVED: 09/02/2009
AGENCY RESPONSE: 09/28/2009
REVIEW CLOSED: 10/02/2009

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FLOODPLAIN MANAGEMENT PROGRAM
MSC # 4719
RALEIGH NC

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PROJECT INFORMATION

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AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: ☒ NO COMMENT ☐ COMMENTS ATTACHED

SIGNED BY: _____ DATE: _____

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NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

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COUNTY: CARTERET

H06: IMPOUNDMENTS AND NAVIGATION DREDGING

STATE NUMBER: 10-E-0000-0085
DATE RECEIVED: 09/02/2009
AGENCY RESPONSE: 09/28/2009
REVIEW CLOSED: 10/02/2009

MS SHIRLEY FOYE
CLEARINGHOUSE COORDINATOR
DEPT OF TRANSPORTATION
STATEWIDE PLANNING - MSC #1554
RALEIGH NC

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PROJECT INFORMATION

APPLICANT: US Army Corp of Engineers
TYPE: National Environmental Policy Act
Environmental Review

DESC: Proposed development of a Site Management and Monitoring plan that will the disposal of dredged material at Morehead City Ocean Dredged Material Disposal Site (ODMDS)

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If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: ☒ NO COMMENT ☐ COMMENTS ATTACHED

SIGNED BY: Cboy DATE: Sep. 18, 09

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: CARTERET

H06: IMPOUNDMENTS AND NAVIGATION DREDGING

STATE NUMBER: 10-E-0000-0085
DATE RECEIVED: 09/02/2009
AGENCY RESPONSE: 09/28/2009
REVIEW CLOSED: 10/02/2009

MS HOLLY GILROY
CLEARINGHOUSE COORDINATOR
DEPT OF AGRICULTURE
1001 MSC - AGRICULTURE BLDG
RALEIGH NC

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DEPT OF TRANSPORTATION
EASTERN CAROLINA COUNCIL

PROJECT INFORMATION

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DESC: Proposed development of a Site Management and Monitoring plan that will the disposal of dredged material at Morehead City Ocean Dredged Material Disposal Site (ODMDS)

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: [✓] NO COMMENT [ ] COMMENTS ATTACHED

SIGNED BY: Holly Gilroy DATE: 9/9/09

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

October 2, 2009

Mr. Philip Payonk
Environmental Resources Section
U.S. Army Corps of Engineers, Wilmington District
69 Darlington Ave.
Wilmington, NC 28403

Subject: Draft Site Management and Monitoring Plan (SMMP) for the Morehead City Ocean Dredged Material Disposal Site (ODMDS)

Dear Mr. Payonk:

The letter provides the comments of the U.S. Fish and Wildlife Service (Service) on the Joint Public Notice (JPN), dated August 31, 2009, for the subject SMMP, dated July 2009. These comments are submitted in accordance with the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661-667d) and the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

The proposed ODMDS site is located just beyond three nautical miles seaward of Bogue Banks and is just beyond the limits of the territorial sea off Morehead City, North Carolina. The site has an area of about eight square nautical miles. Depths within the ODMDS range from about -30 to -55 feet local mean low water (mlw). Disposal of dredged material at the Morehead City ODMDS occurs by hopper dredge and by tug and barge/scow. For the outer ocean bar reaches, shoal material is likely to be removed and transported to the ODMDS by a hopper dredge. Hopper dredges are designed to hydraulically dredge sediments, load and retain solids in the hoppers, and then haul them to the disposal site where disposal is accomplished by dumping through doors in the bottom of the hoppers or through the hull. For the inner harbor areas shoal material will be removed by hopper dredge or by a dredge (hydraulic or mechanical) and placed into scows or barges moored next to the dredge. When full, the scow is pulled by a tug to the ODMDS and the load discharged through the bottom of the scow.

The proposed SMMP, as described in the JPN, is expected to have minimal adverse impacts to fish and wildlife resources under the jurisdiction of the Service. In accordance with the Endangered Species Act of 1973, as amended, (ESA) and based on the information provided, and other available information, it appears the implementation of the proposed plan is not likely to adversely affect federally listed species under the jurisdiction of the Service or their critical habitat as defined by the ESA. We believe that the requirements of section 7 (a)(2) of the ESA have been satisfied for this project. Please remember that obligations under the ESA must be

reconsidered if: (1) new information identifies impacts of this action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is modified in a manner that was not considered in this review; or, (3) a new species is listed or critical habitat determined that may be affected by the identified action. This finding of the Service addresses only the SMMP and does not consider dredging operations or other means of material disposal.

The Service appreciates the opportunity to review and provide comments on the proposed plan. If you have any questions regarding the project, contact Howard Hall at (919) 856-4520, ext. 27.

Sincerely,

John Ellis for

Pete Benjamin
Field Supervisor

cc:

Ron Sechler, NOAA Fisheries, Beaufort, NC
David Cox, NC Wildlife Resources Commission, Creedmore, NC
Doug Huggett, NC Division of Coastal Management, Morehead City NC
Anne Deaton, NC Division of Marine Fisheries, Morehead City, NC
Gary Collins, USEPA, Atlanta, GA

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
4407 Bland Road, Suite 117
Raleigh, North Carolina 27609

Phone: (919) 873-2134
Fax: (919) 873-2154
Email: mike.hinton@nc.usda.gov

September 8, 2009

U. S. Army Corps of Engineers
Wilmington District
Attn: Mr. Philip Payonk, CESAW-TS-PE
69 Darlington Ave
Wilmington, NC 28403

Dear Mr. Payonk:

Thank you for the opportunity to provide comments on CESAW-TS-PE-09-16-0009, Joint Public Notice and Notice of Availability Draft Site Management and Monitoring Plan for the Morehead City Ocean Dredged Material Disposal Site (ODMDS) in Carteret County, North Carolina.

The Natural Resources Conservation Service does not have any comments at this time.

If you need additional information, please feel free to contact me at (919) 873-2134.

Sincerely,

Michael J. Hinton
Planning Specialist

KILPATRICK
STOCKTON LLP
Attorneys at Law

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Raleigh NC 27612
t 919 420 1700 f 919 420 1800
www.KilpatrickStockton.com

Steven J. Levitas
direct dial 919 420 1707
direct fax 919 510 6145
slevitas@kilpatrickstockton.com

September 29, 2009

Via First Class Mail and Electronic Mail

U.S. Army Corps of Engineers - Wilmington District
ATTN: Mr. Philip Payonk, CESAW-TS-PE
69 Darlington Avenue
Wilmington, North Carolina 28403

U.S. Environmental Protection Agency - Region 4
ATTN: Mr. Gary Collins, Wetlands, Oceans, and Coastal Branch
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303

Re: Comments Regarding Draft Site Management and Monitoring Plan, Morehead City Harbor, North Carolina

Dear Mr. Payonk and Mr. Collins:

I am writing on behalf of Carteret County, North Carolina to provide comments regarding the Draft Site Management and Monitoring Plan ("SMMP") for the Morehead City Harbor Project ("MCHP"). We appreciate the efforts of the United States Army Corps of Engineers (the "Corps") and the Environmental Protection Agency ("EPA") to update the SMMP to reflect current dredged material management practices associated with the MCHP. This letter presents Carteret County's comments concerning the SMMP.

1. The SMMP should establish specific disposal controls, conditions and requirements for the potential disposal of non-beach quality dredged material in the ODMDS to avoid or minimize potential impacts to beach-quality dredged material previously disposed in the ODMDS.

The SMMP recognizes that the ODMDS has been, and likely will be, used as a borrow area for beach replenishment at Bogue Banks. The SMMP, however, indicates that disposal of fine-grained, Inner Harbor dredged material (or non-beach quality dredged material) in the ODMDS is anticipated. In fact, the Corps and EPA appear to have already determined that such material will be disposed in the ODMDS.

> For the inner harbor areas shoal material will be removed by hopper dredge or by a dredge (hydraulic or mechanical) and placed in scows or barges moored next to the dredge. When full, the scow is pulled by tug to the ODMDS and the load discharged through the bottom of the scow. SMMP, p. 9.

The SMMP should be revised to reflect that disposal of non-beach quality dredged material in the ODMDS is one option currently being considered by the Corps. Other options include rehabilitation and expansion of Brandt Island.

Carteret County is concerned that the SMMP does not adequately establish specific disposal controls, conditions and requirements to avoid or minimize potential impacts to beach-quality dredged material disposed in the ODMDS. The SMMP indicates that fine-grained dredged material will be placed in the far southwest corner of the ODMDS as shown in Figure 5. Not only is this disposal zone imprecise, the SMMP has appeared to expand the footprint of this area. The SMMP should establish specific coordinates where fine-grained dredged material may be disposed in the ODMDS. This designated disposal area should be as small as possible to accommodate the Corps' needs and to prevent movement of the fine-grained material into the remainder of the ODMDS.

The SMMP requires an electronic tracking system for all disposal activities and verification of the placement of dredged material. Although the SMMP prohibits the placement of fine-grained material in the beach-compatible zone of the ODMDS, the SMMP should also provide that such material shall ***only*** be placed in the designated fine-grained material zone.

Finally, the Site Monitoring section of the SMMP should be revised to specifically address how the Corps and EPA will monitor the fate and transport of fine-grained dredged material disposed in the ODMDS.

2. The SMMP should clarify the location and purpose of the existing nearshore berm.

Consistent with past descriptions, the SMMP describes the location of the existing nearshore berm as "along or near the -25 foot m.l.w. contour." In fact, the nearshore berm, as currently designated and used by the Corps, is located approximately between the -20 and -40 foot m.l.w. contours.

In addition, the SMMP indicates that "the goal of the nearshore placement area is to retain sand dredged from the channel within the Beaufort Inlet ebb tidal delta" and "[t]he intention is to keep material within the active littoral system without dramatically increasing the amount of annual maintenance dredging in the channel or cost of the maintenance dredging." These descriptions are not consistent with the original purpose of the nearshore berm as described by the Corps and relied upon by the North Carolina Division of Coastal Management. In the Environmental Assessment and Finding of No Significant Impact prepared by the Corps in

August and December 1994 for the nearshore berm project, the Corps indicated that the nearshore berm would be "transitory in nature" and "is designed to function as a stockpile of material that will disperse over the ebb tide delta and return to the littoral system through natural processes."

The SMMP should be revised to properly describe the location and purpose of the nearshore berm.

3. The SMMP should define certain terms to avoid any ambiguity.

The meaning of certain terms used in the SMMP is not clear. Such terms include, but are not limited to, "active littoral system" and "routine hopper operations." These terms should be defined in the SMMP to avoid any ambiguity.

4. The SMMP inaccurately states that beneficial use of beach-quality dredged material is a new requirement.

The SMMP indicates that "[t]he anticipated ODMDS use will be less than historic use as requirements and regulations increasingly demand that beach-quality materials are returned to nearby active littoral systems." North Carolina regulations requiring the beneficial use of dredged material and prohibiting the removal of beach-quality dredged material from the active nearshore, beach or inlet shoal systems have been effective since October 1, 1992 and were approved by the National Oceanic and Atmospheric Administration on May 13, 1993. There is nothing new regarding these requirements.

5. The SMMP's description of the Federal Standard is inaccurate.

The SMMP indicates that "[i]f placement of dredged material (beach-quality sand) on a beach is the least costly acceptable means for disposal, then such placement is considered integral to the navigation project and cost shared accordingly." SMMP, p. 11. The Federal Standard, however, provides that the Corps is required to manage dredged material "in the least costly manner, at the least costly and most practicable location, and consistent with engineering and environmental requirements." 33 C.F.R. § 335.4. The SMMP should be revised to accurately describe the Corps' obligations in managing dredged material.

6. Miscellaneous comments.

The following typographical errors and omission should be corrected.

- Table 1 should reflect that, in 2004, direct beach placement on Bogue Banks beaches occurred as a result of the post-Isabel Section 933 project.

- On the top of page 5, Beaufort Inlet should be described as "between Bogue Banks and Shackleford Banks" rather than "Atlantic Beach and Shackleford Banks."

- On page 11, the word "The" should be deleted at the end of the second full paragraph.

Carteret County appreciates the opportunity to provide these comments and looks forward to working with the Corps and EPA to ensure that they have been appropriately addressed in the final SMMP.

With best wishes,

Sincerely yours,

KILPATRICK STOCKTON LLP

Steven J. Levitas

cc: Greg "Rudi" Rudolph
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