



**US Army Corps
of Engineers ®**
Wilmington District

**SANITARY SEWER AND FAIRWAY LANE, MOUNT AIRY, NC
INTEGRATED PLANNING AND DESIGN DOCUMENTATION
AND ENVIRONMENTAL ASSESSEMENT
CONTINUING AUTHORITIES PROGRAM
SECTION 14 EMERGENCY STREAM BANK EROSION CONTROL
PROJECT**

September 2004

FINDING OF NO SIGNIFICANT IMPACT

Use of Government Plant to Dredge In Federally Authorized Navigation Project in North Carolina

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Guidelines for Avoiding Impacts to West Indian Manatee

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FINDING OF NO SIGNIFICANT IMPACT

Use of Government Plant to Dredge In Federally Authorized Navigation Projects In North Carolina

September 2004

1.0 INTRODUCTION

The National Environmental Policy Act (NEPA) of 1969 requires consideration of the environmental impacts for major federal actions. The proposed action and the environmental impacts of the proposed action were addressed in the Environmental Assessment, Use Of Government Plant To Dredge In Federally Authorized Navigation Projects in North Carolina, (EA) dated March 2004. The EA was circulated federal, state, and local agencies and the public in March 2004.

As a result of comments made during the public comment period, the project plan has been changed from that presented in the EA. The areas where side-cast dredges may be used have been modified based on comments received from state and federal environmental agencies. Use of side-cast dredges in certain areas is no longer proposed. This FONSI documents the project changes and the U.S. Army Corps of Engineers position that the proposed project will not significantly affect the quality of the human environment. This FONSI has been prepared pursuant to NEPA in accordance with the Council on Environmental Quality (CEQ) regulations as contained in 40 CFR Parts 1500 to 1508, which directs federal agencies on how to implement the provisions of NEPA.

1.1 Proposed Project –Use Of Government Plant To Dredge In Federally Authorized Navigation Projects In North Carolina

The proposed action is the use of government dredge plant (the “Merritt” or “Fry” or similar side-cast dredge and the “Currituck” or similar special purpose dredge (shallow-draft small hopper dredge) to dredge small and/or isolated, regularly occurring shoals in federally authorized navigation projects within the U.S. Army Corps of Engineers, Wilmington District, (Corps) in North Carolina.

The proposed action is being considered for the purpose of proactively planning for the expeditious, routine dredging of small and/or isolated shoals for the rapid and efficient improvement of navigational safety, in addition to noticeably reducing the time and cost expenditures that result from emergency declaration. The ability of the Corps to remove these shoals before emergency conditions arise will reduce potential groundings and other navigational hazards and mishaps that commonly occur as a result of these type shoals. The shoals addressed by this project usually consist of less than 30,000 cubic yards of sandy material.

1.2 Description of Project Locations

The proposed dredging locations are depicted in Figure 1. The eleven locations (and their authorized project depths) proposed for periodic shoal dredging are described below. These locations include federally maintained inlets that connect the Atlantic Intracoastal Waterway (AIWW) to the Atlantic Ocean. The inlets are heavily used by recreational boaters and fishermen, and are subject to the accumulation of sand moved by currents, tides, winds, storms, and boat traffic. All locations described, including adjacent portions of the AIWW, routinely experience shoal development between regularly scheduled dredging contracts. The AIWW is authorized as a 12-foot deep by 90-foot wide project at all areas addressed by this proposal.

- An approximate 8,850-foot long portion of the Shallotte River (4-feet deep by 36-feet wide) and an approximate 3,500-foot long portion of the AIWW in Brunswick County (Shallotte Inlet itself is not a federally maintained waterway). The nearshore disposal site for material dredged by a hopper dredge is located on the west side of Shallotte Inlet, off the east end of Ocean Isle Beach (Figure 2),
- An approximate 12,350-foot long portion of the Lockwoods Folly River (6-feet deep by 100-feet wide), an approximate 3,150-foot long portion of Lockwoods Folly Inlet (8-feet deep by 150-feet wide) and an approximate 9,950-foot long portion of the AIWW in Brunswick County. The nearshore disposal site for material dredged by a hopper dredge is located on either side of Lockwoods Folly Inlet, off the east end of Holden Beach and off the west end of Oak Island (Figure 3),
- An approximate 4,300-foot long portion of Carolina Beach Inlet (8-feet deep by 150-feet wide) and an approximate 3,750-foot long portion of the AIWW in New Hanover County. The nearshore disposal site for material dredged by a hopper dredge is located on either side of Carolina Beach Inlet, off the north end of Carolina Beach and off the south end of Masonboro Island (Figure 4),
- An approximate 2,600-foot long portion of New Topsail Inlet (8-feet deep by 150-feet wide project), an approximate 18,000-foot long portion of Banks Channel (7-feet deep by 80-foot wide), and an approximate 7,500-foot long portion of the east end of Topsail Creek (7-feet deep by 80-foot wide) in Pender County. The nearshore disposal site for material dredged by a hopper dredge is located on the north side of New Topsail Inlet, off the south end of Topsail Beach (Figure 5),
- An approximate 10,300-foot long portion of New River Inlet, including the section known as Cedar Bush Cut (6-feet deep by 90-feet wide), an approximate 16,650-foot long portion of the New River (12-feet deep by 90-feet wide) and an approximate 16,000-foot long portion of the AIWW in Onslow County. The nearshore disposal site for material dredged by a hopper dredge is located on the south side of New River Inlet, off the north end of North Topsail Beach (Figure 6),

- An approximate 30,200-foot long portion of the AIWW between Bear Inlet and Browns Inlet in Onslow County (Figure 7). The nearshore disposal site for material dredged by a hopper dredge is located at the disposal sites described for New River Inlet and Bogue Inlet.
- An approximate 4,000-foot long portion of Bogue Inlet (8-feet deep by 150-feet wide), an approximate 12,200-foot long portion of the channel to Bogue Inlet (6-feet deep by 90-feet wide), and an approximate 5,500-foot long portion of the AIWW in Carteret County. The nearshore disposal site for material dredged by a hopper dredge is located on the east side of Bogue Inlet, off the west end of Emerald Isle (Figure 8),
- An approximate 8,400-foot long portion of Wainwright Slough (7-feet deep by 75-feet wide) in Carteret County (Figure 9). A nearshore disposal site for material dredged by a hopper dredge has not been identified for this particular location. The Corps hopes to work with the resource agencies to locate a suitable disposal area.
- An approximate 10,550-foot long portion of Ocracoke Inlet (18-feet deep by 400-feet wide), an approximate 6,400-foot long portion of the Teaches Hole Channel (12-feet deep by 150-feet wide) an approximate 2,750-foot long portion of the channel to Silver Lake Harbor (12-feet deep by 150-feet wide), and an approximate 7,650-foot long portion of the Big Foot Slough channel (12-feet deep by 150-feet wide) in Hyde County. The nearshore disposal site for material dredged by a hopper dredge is located on either side of Ocracoke Inlet, off the north end of Portsmouth Island or off the south end of Ocracoke Island, whichever is safer depending upon the weather conditions at the time (Figure 10),
- An approximate 18,200-foot long portion of the channel from Hatteras Inlet to Hatteras (10-feet deep by 100-feet wide) in Dare County, (Hatteras Inlet itself is not a federally maintained waterway). The nearshore disposal site for material dredged by a hopper dredge is located on either side of Hatteras Inlet, off the northeast end of Ocracoke Island or off the southwest end of Hatteras Island, whichever is safer depending upon the weather conditions at the time (Figure 11), and
- A 14-feet deep by 400-feet wide channel through Oregon Inlet and the ocean bar. An approximate 16,050-foot long portion of the channel from Oregon Inlet to Hell's Gate (12-feet deep by 100-feet wide) and an approximate 2,850-foot long portion of Old House Channel (12-feet deep by 100-feet wide) in Dare County. The nearshore disposal site for material dredged by a hopper dredge is located on the south side of Oregon Inlet, off the north end of Pea Island, and in deep scour holes beneath the Herbert C. Bonner Bridge (Figure 12).

The specific types of government plant equipment authorized to dredge in specific areas are summarized in the following table. This summary is a modification of that presented in the EA based on environmental agency comments received.

Table 1. Proposed dredging locations and methods

<u>Location</u>	<u>Dredging Method</u>	
	<i>Hopper</i>	<i>Side-cast</i>
The Shallotte River and the AIWW, Brunswick Co. (Figure 2)		
Shallotte River Above AIWW	YES	NO*
AIWW	YES	YES
The Lockwoods Folly River and AIWW, Brunswick Co. (Figure 3)		
Lockwoods Folly River	YES	NO*
AIWW	YES	YES
The AIWW at Carolina Beach Inlet, New Hanover Co. (Figure 4)	YES	YES
Banks Channel/Topsail Creek and AIWW, Pender Co. (Figure 5)		
New Topsail Inlet, Topsail Creek	YES	YES
Area North of New Topsail Inlet, Banks Channel	YES	NO*
Cedar Bush Cut, New River Inlet and AIWW, Onslow Co. (Figure 6)		
New River Inlet & Cedar Bush Cut	YES	YES
AIWW	YES	YES
New River Above AIWW	YES	NO*
Bear Inlet to Brown Inlet portion of the AIWW, Onslow Co. (Figure 7)	YES	NO*
Bogue Inlet, the connecting channel, and the AIWW, Carteret Co. (Figure 8)		
Bogue Inlet Channel	YES	YES
AIWW	YES	NO*
Wainright Slough (Figure 9)	YES**	NO*
Teaches Hole near Ocracoke Inlet, Hyde Co. (Figure 10)	YES	YES
The Big Foot Slough ferry channel near Ocracoke Inlet, Hyde Co. (Figure 10)	YES	YES
Hatteras Inlet and the area just behind Hatteras Island, Dare Co. (Figure 11)	YES	NO*
Old House Channel to Oregon Inlet (Figure 12)		
Hells Gate	YES	YES
Oregon Inlet Channel to Old House Channel	YES	YES***
Oregon Inlet	YES	YES

Notes:

NO* - These areas were included as side-cast areas in EA. However, due to agency comments, these areas have been deleted as potential side-cast areas addressed by this FONSI.

YES** - No disposal area(s) have been designated for this area. The Corps proposes working with the resource agencies to locate a suitable disposal area.

YES*** - Per agency comments received, the area south of Hells Gate in Old House Channel will not be dredged with a side-cast dredge.

Hopper Dredge – special purpose dredge –shallow-draft hopper dredge “Currituck” or similar

Side-Cast Dredge- “Merritt” or “Fry” or similar dredge

1.3 Alternatives Considered

The proposed action, routine dredging, using government owned dredge plant (special purpose (small hopper) or side-cast), of small and/or isolated shoals that pose a threat to safe navigation between scheduled contract maintenance dredging events. The following alternatives were considered.

No Action This alternative is the status quo of the existing conditions. The “No Action” alternative would result in no feasible method to dredge routine, rapidly forming small and/or isolated shoals other than through declaration of an emergency and subsequent dredging with government dredge plant or by waiting until routinely contracted commercial dredges include the shoaled locations in their overall dredging work. Shoals that develop in the subject locations during periods when a normal dredging event is not scheduled must be removed to maintain navigational safety. This removal would continue to be through requests pursuant to the emergency Memorandum of Agreement (MOA) authorization (Attachment A) and continued case-by-case handling of recurring problems.

Contracting with Commercial Dredging Companies This alternative would arise when shoals develop and must be removed during periods when a normal dredging event is not scheduled, and would entail contracting a commercial dredge company for the sole purpose of removing the shoal or shoals causing the navigation problems.

Use of Government Dredge Plant (Preferred Alternative) The preferred alternative consists of the proposed use of the Corps’ shallow-draft special purpose (small hopper dredge “Currituck” or similar Corps’ hopper dredge) and the side-cast dredge “Merritt” (or similar Corps’ side-cast dredge) to expeditiously perform routine dredging of small and/or isolated shoals that pose a threat to safe navigation during periods when a normal dredging event is not scheduled. In many instances, shoals would be dredged before emergency criteria exist, thereby lessening potential navigational hazards. The proposed dredging would not be intended to restore authorized project depths but would occur to a depth whereby safe navigation is restored.

The proposed dredging of shoals in the subject locations would significantly reduce work presently associated with the emergency procedures. Although dangerous shoaling requiring emergency dredging may develop in Corps’ federally maintained navigation projects other than the locations addressed in this EA, such occurrences are anticipated to be infrequent and likely the result of severe events such as hurricanes. In these situations, the emergency MOA (Attachment A) would be followed.

2.0 PUBLIC AND AGENCY COORDINATION

2.1 Scoping

A scoping letter describing the project, identifying the locations, and announcing a scoping meeting, was mailed to the agencies on April 14, 2003. The scoping meeting was held on May 7, 2003, and was attended by representatives from:

US Fish and Wildlife Service
National Marine Fisheries Service
US Marine Corps at Camp Lejeune
NC Division of Coastal Management
NC Division of Marine Fisheries
NC Wildlife Resources Commission
NC Division of Water Quality
NC State Ports.

The US Environmental Protection Agency was unable to attend but commented by telephone. Written scoping comments were received from:

US Fish and Wildlife Service
National Marine Fisheries Service
NC Division of Water Quality
NC Department of Cultural Resources.

Comments were also received by telephone from the US Marine Corps at Camp Lejeune. All scoping comments were addressed in the EA.

2.2 Distribution of the EA

The Environmental Assessment, Use of Government Plant to Dredge in Federally Authorized Navigation Projects in North Carolina, dated March 2004, was mailed to federal and state agencies and the interested public for a 30-day review and comment period in March 2004. Recipients of the EA are listed in Section 10.2 of the EA. Comments on the EA were received from the following:

Federal Agencies

United States Marine Corps Base, Camp Lejeune
National Marine Fisheries Service, SE Regional Office
National Marine Fisheries Service, Habitat Conservation Division
US Fish and Wildlife Services
National Parks Service
US Department of Agriculture's Natural Resources Conservation Service

State Agencies

N.C. Department of Administration's State Clearinghouse
N.C. Department of Environment and Natural Resources
N.C. Division of Coastal Management
N.C. Division of Water Quality
N.C. Division of Marine Fisheries
N.C. Division of Environmental Health, Shellfish Sanitation and Recreational Water Quality Section
NC Wildlife Resources Commission
NC Department of Cultural Resources

Local Governments

Town of Emerald Isle, NC

2.3 Public and Agency Comments on the EA

The following sections summarize the comments made and provide the U.S. Army Corps of Engineers, Wilmington District response. These comments were used in the preparation of this Finding of No Significant Impact (FONSI).

2.3.1 N.C. Department of Administration, State Clearinghouse letter dated May 5, 2004

The Clearinghouse letter includes comments from various State agencies.

2.3.2 N.C. Department of Environment and Natural Resources' (NCDENR) Project Review Coordinator memo dated May 5, 2004

Comment: NCDENR requests that the Corps incorporate recommendations and continue coordinating with NCWRC and NCDMF prior to finalizing project plans.

Response: NCWRC and NCDMF have been closely coordinated with during the project planning process. Each agency's concerns and comments are addressed below.

2.3.3 N.C. Division of Marine Fisheries (NCDMF), memorandum dated April 20, 2004

Comment: NCDMF much prefers the use of the small hopper dredge in all cases over the side-cast dredges because control of placement of dredged material is much better with the hopper dredge. Of special concern are potential impacts of dredged material on oysters and SAV, from both direct discharges as well as by drift from nearby discharges. Use of dredges under the proposed project must not negatively impact these habitats. To address these concerns, the Corps is requested to coordinate every dredging activity associated with the proposed project with NCDMF and other resource agencies at least two weeks prior to starting work.

Response: The intent of the proposed project is to remove shoals prior to their attaining emergency criteria, thus becoming hazards to navigational safety. Because Corps dredge plants operate up and down the east coast, the timing of the presence and type of available dredge plant is difficult to predict. However, as soon as a shoal is detected, scheduling for the first available plant can begin. This scheduling will still allow removal of the shoal before it meets emergency criteria. Due to sensitive aquatic habitats identified by NCDMF areas listed below will be dredged solely by special purpose dredge (Corps of Engineers terminology for government-owned shallow draft hopper dredge):

- Upstream of the AIWW at the Shallotte, Lockwoods Folly, and New River crossings,
- The area north of the New Topsail Inlet channel,
- The portion of the AIWW between Bear Inlet and Brown Inlet in Onslow County,
- The area north of the New Topsail Inlet channel,
- Proposed areas outside of the Bogue Inlet channel, including the AIWW

- Wainwright Slough,
- The Hatteras-to-Hatteras Inlet channel and,
- The area south of Old House channel.

As a means of informing the resource agencies and the public at large, the Corps will update, on a weekly basis, on its website the location of each government-owned dredge operating within the Wilmington District waterways. The website address is:
<http://www.saw.usace.army.mil/nav/nav.htm>.

Comment: Do not use a side-cast dredge upstream of the Atlantic Intracoastal Waterway (AIWW) crossings of the Shallotte, Lockwoods Folly, and New River. With regard to proposed dredging in the New River and New River Inlet, the Corps of Engineers is requested to consider placement of dredged material on the western portion of Onslow Beach in support of US Marine Corps training needs.

Response: For the purpose of activities addressed by the subject Environmental Assessment, the Corps will use only a special purpose dredge (government-owned shallow draft hopper dredge) in the following areas:

- Upstream of the AIWW at the Shallotte, Lockwoods Folly, and New River crossings,
- The area north of the New Topsail Inlet channel,
- The portion of the AIWW between Bear Inlet and Brown Inlet in Onslow County,
- The area north of the New Topsail Inlet channel,
- Areas outside of the Bogue Inlet channel, including the AIWW
- Wainwright Slough,
- The Hatteras-to-Hatteras Inlet channel and,
- The area south of Old House channel.

If situations arise that a shoal must be removed in any of the above listed areas and no special purpose dredge is available, the emergency dredging MOA protocol will be used.

Placement of sand in the nearshore off Onslow Beach would be placing material up-drift of the direction of predominant drift. This sand would likely quickly return to New River inlet and add to further inlet dredging requirements. Therefore, nearshore disposal in the vicinity of New River Inlet will occur adjacent to North Topsail Beach. While we support and understand important military training resources on Onslow Beach, the proposed use of Government plant dredges is not an effective means for both providing sand to protect those resources and improving navigational safety at New River Inlet.

Comment: The area north of the New Topsail Inlet channel has been reported to contain scattered SAV beds, so dredged material should not be placed here from side-cast dredging operations.

Response: Side cast dredges will not be used in the area north of the New Topsail Inlet.

Comment: Side-cast dredges may be used in the Bogue Inlet channel. Once inside the inlet, there are scattered beds of SAV, which contain bay scallops, extending to the AIWW. Side-cast dredges should not be used in these areas or in the nearby AIWW.

Response: Side-cast dredges will not be used in areas outside of the Bogue Inlet channel, including the AIWW.

Comment: The Wainwright Slough area contains important SAV beds, so side-cast dredges should not be used in this area. Colonial nesting waterbirds that use Wainwright Island would benefit from specific placement of dredged material on the island.

Response: Side-cast dredges will not be used in the Wainwright Slough area.

A suitable location for disposal of dredged material from the special purpose dredge (government-owned shallow draft hopper dredge) must be developed **through coordination** with the resource agencies. Direct placement from a special purpose dredge on a high ground disposal area is not possible unless expensive and time-consuming pump-out measures are used. The proposed project will not eliminate contracted maintenance dredging in the area. Dredged material from contracted dredging in this area is placed on the nearby bird island.

Comment: Some patches of SAV occur in the Hatteras to Hatteras Inlet channel, so side-cast dredging is not advised. There have been several cooperative attempts to support colonial nesting water birds on spoil islands in this area. Deposition of material on such islands would be a beneficial use of dredged material.

Response: Side-cast dredges will not be used in the Hatteras-to-Hatteras Inlet channel area. Direct placement from a special purpose dredge on a high ground disposal area is not possible unless expensive and time-consuming pump-out measures are used. The proposed project will not eliminate contracted maintenance dredging in the area. Dredged material from contracted dredging in this area could be placed on **nearby dredged material disposal** islands.

Comment: Side-cast dredges can be used east of the Bonner Bridge in the vicinity of the Oregon Inlet channels, including Old House Channel to Hell's Gate. There are SAV beds south of Old House Channel, so the hopper dredge is greatly preferred here. The best uses of dredged material in this area to support Bonner Bridge pilings and to maintain islands used by colonial nesting water birds, rather than open water discharge.

Response: Side-cast dredges will not be used in the area south of Old House channel.

The Corps proposes using the disposal area beneath the Bonner Bridge, to support its pilings, as a first option. If coordination with NC Department of Transportation results in the determination that dredged material is not required in this area, disposal will occur in the nearshore disposal area to the south of Oregon Inlet, adjacent to Pea Island.

2.3.4 NC Wildlife Resources Commission, letter dated April 20, 2004

Comment: Shoals would be dredged only to a depth allowing safe navigation, not to the authorized project depth.

Response: The intent of the proposed project is to expeditiously perform routine dredging of small and/or isolated shoals that pose a threat to safe navigation during periods when a normal dredging event is not scheduled. Dredging will be performed only to the degree that safe navigation would be restored for a reasonable duration. Dredging will only occur within federally authorized channels, and will be done to a depth at which navigational safety is established. Authorized project depths will not be exceeded.

Comment: Due to the small quantities of material to be removed at a given location and the year-round need to avoid a safety hazard, no biological moratoria are proposed. Less work is expected during the summer, since storms and high winds are less prevalent at that time.

Response: Noted

Comment: We share the North Carolina Division of Marine Fisheries (NCDMF) concern that side-cast dredging of the upper Shallotte, Lockwoods Folly, and New Rivers would likely elevate turbidity to the detriment of fisheries resources and recommend that only hopper dredges be used in these areas.

Response: Please see above responses to similar comments made by NCDMF.

Comment: It is our understanding that disposal of material from hopper dredges is to be done at previously used and authorized disposal sites. In the absence of biological moratoria, we have a heightened concern that dredged material will be deposited on active bird nesting sites. Consequently, we strongly recommend that no dredged material be deposited on disposal sites having active bird nesting.

Response: No material dredged by special purpose or side-cast dredges addressed by this Environmental Assessment (EA) would be placed on active bird nesting sites. Special purpose dredge disposal would occur in previously approved disposal areas. No disposal of material from special purpose dredges will occur landward of MLW. The disposal of dredged material from side-cast dredges is disposed of in waters adjacent to the dredged channel. The side of the channel to which dredged material is placed will be determined by the dredge Captain, based on prevailing winds, currents, and other sea conditions.

Comment: We have some concern that the project may result in an erosion of the Corps' acceptance of heretofore agreed upon and valid biological moratoria. The Corps should continue to make every effort to incorporate biological moratoria into all of its future projects.

Response: The intent of this project is to maintain navigational safety in frequently shoaled portions of the federally authorized waterways in North Carolina in a timely and efficient manner. In addition to the need to remove shoals as early as possible, adverse environmental impacts are anticipated to be minimal; therefore, no biological moratoria are

proposed. Regularly scheduled dredging projects will be designed in accordance with existing biological moratoria agreements.

2.3.5 NC Division of Water Quality (NCDWQ), memorandum dated April 14, 20

Comment: The Wilmington Regional Office has reviewed the EA and has no objections to the proposal provided that NCDMF and NMFS have no objections and all of their concerns are addressed.

Response: Please see responses to NCDMF and NMFS concerns in other parts of this document.

Comment: General 401 Water Quality Certification Number (GC) 3369 covers the proposed activities without written concurrence from NCDWQ if all conditions of this certification can be met. If the Corps does not think they can meet the conditions of GC 3369, they must apply for and secure a written 401 Water Quality Certification.

Response: The Corps has reviewed all condition of GC 3369 and has determined that all conditions will be met by any dredging activity conducted as part of this project. Therefore, no written Certification is necessary.

2.3.6 NC Division of Water Quality (NCDWQ), telephone conversation with Ms. Cyndi Karoly on April 13, 2004

Comment: Please make sure that dredging in Bogue Inlet is maintenance only.

Response: Dredging associated with the project is for maintenance purposes only, and will occur only when navigational safety is threatened or likely to be threatened in the near future. Dredging will only occur within federally authorized channels, and will be done to a depth at which navigational safety is established. Authorized project depths will not be exceeded.

2.3.7 NC Division of Environmental Health, Shellfish Sanitation and Recreational Water Quality Section, memorandum dated April 7, 2004

Comment: The Shellfish Sanitation and Recreational Water Quality Section concerns are centered upon the transfer of soils or waters from closed shellfishing areas to open shellfishing or recreational swimming areas during restoration, dredging, or restructuring projects. As such, consideration of the following are requested:

- 1) If discharges of dredged or fill materials from waters closed to the harvest of shellfish are placed in waters that are open to the harvest of shellfish, prior notification shall be given to the Shellfish Sanitation and Recreational Water Quality Section so that appropriate temporary closures to the harvest of shellfish may be put in place.

2) If discharges of dredged or fill materials from waters closed to the harvest of shellfish, or from waters where a swimming advisory is posted, are placed into coastal ocean waters between April 1 and October 31, inclusive, notification a minimum of 24-hours prior to the deposition shall be given to the Shellfish Sanitation and Recreational Water Quality Section so that swimming advisories may be posted.

Additionally, the Section requests that operators carefully observe the localized closings (i.e., marines, NPDES outfall) in respect to closure area boundaries. If removal from these areas is necessary, contact the Section as soon as possible so that swimming advisories may be posted.

Maps have been provided depicting subject areas:

- Lockwoods Folly River (Figure 3 in the EA);
- AIWW Carolina Beach Inlet Crossing (Figure 4 of the EA);
- Silver Lake harbor (Figure 10 of the EA), and;
- Hatteras to Hatteras Inlet Rollinson Channel (Figure 11 of the EA).

Response: The Shellfish Sanitation and Recreational Water Quality Section's request will be incorporated as an operating procedure for the dredging activities addressed by this EA.

2.3.8 NC Department of Cultural Resources (NCDRC), letter dated May 5, 2004

Comment: The need to develop a Programmatic Assessment (PA) between the Corps and NCDRC for "an inlet monitoring program to better avoid historical resources in shifting inlet" is stated in the EA. The need for such an agreement has been the topic of discussion for a number of years and it's implementation is an opportunity to protect significant historic resources while accommodating the Corps need to respond to changing channel alignments and unpredictable shoaling within the state's shifting inlets. Since the EA is for a project that deals with unscheduled and unpredicted dredging, it is imperative that the proposed PA be put into place as soon as possible. To that end, NCDRC asks that the Corps schedule a meeting with NCDRC's Environmental Review Coordinator and appropriate staff within the next 45 days to begin the process of developing and implementing the PA.

Response: The Corps will schedule a meeting with NCDRC's Environmental Review Coordinator and appropriate staff within 45 days of the publishing of the Finding of No Significant Impact, for the purpose of discussing the development and implementation of a PA .

2.3.9 United States Marine Corps Base, Camp Lejeune letter dated April 9, 2004

Comment: On page 38, paragraph 3.07, the EA currently states: "The Bear to Brown's Inlet portion of the AIWW is part of the U.S. Marine Corps (USMC) N1/BT-3 impact area and could contain unexploded ordnance. Prior to any proposed shoal removal dredging in this area, the appropriate detection personnel at USMC would be contacted to locate and remove unexploded ordnance."

Explosive ordnance has not been fired across the AIWW in a number of years. Recent dredging activities revealed no unexploded ordnance (UXO). This **does not preclude** the possibility of UXO being found although the probability is very small.

It is recommended that the paragraph be changed to: “**During any proposed** shoal removal dredging in this area, USMC Explosive Ordnance Disposal personnel will be available to dispose of any unexploded ordnance or questionable ordnance found during the dredging operations.”

Response: The change has been made.

2.3.10 National Marine Fisheries Service (NMFS), SE Regional Office, letter dated April 14, 2004

Comment: The described dredging activity, including proposed areas to be dredged, the dredge plant types to be used, and the potential adverse effects of the proposed activities, are entirely comparable to and fall within the scope of past activities and effects that have been previously extensively analyzed by NMFS. The March 9, 1999, Endangered Species Act (ESA) consultation included with the EA concluded that dredging of small North Carolina inlet channels and navigation channels with Corps dredge plant would be unlikely to adversely affect ESA-listed species under NMFS purview. NMFS has no new information that would change the basis of the March 9, 1999, conclusion regarding dredge plant use as described by the proposed project’s EA. In addition, no new species that are likely to occur in the action area have been listed or critical habitat designated that would alter NMFS’s previous conclusions.

Response: The Corps agrees with this finding.

2.3.11 National Marine Fisheries Service, Habitat Conservation Division, letter dated April 22, 2004

Comment: National Oceanic and Atmospheric Administration (NOAA) Fisheries is concerned that unrestricted use of a side-cast dredge would adversely affect NOAA trust fisheries resources. The EA adequately describes the potential short-term impacts associated with the use of the Corps’ side-cast and small hopper for emergency dredging of the listed federal navigation channels. However, the potential for long-term and cumulative impacts to certain Essential Fish Habitat (EFH) types, including submerged aquatic vegetation (SAV), have not been adequately addressed. In North Carolina’s central and northern estuaries, SAV is often located directly adjacent to federal navigation channels. Some maintenance dredging described in the EA is located directly adjacent to SAV habitat, yet the effects of side-cast dredging in these locations are poorly described. To address this, NOAA Fisheries recommends that the dredging plan and EA be revised to include measures to monitor the effects of proposed dredging on SAV.

Response: The proposed project has been modified so that only special purpose dredges (government-owned shallow draft hopper dredge) will be used in the locations identified above.

The sole use of special purpose dredges in these locations, associated with activities addressed by this EA will greatly reduce anticipated impacts to SAV or EFH. If situations arise that a shoal must be removed in any of the above listed areas and no special purpose dredge is available, the emergency dredging MOA protocol will be used.

Comment: NOAA Fisheries is concerned that the plans to eliminate seasonal restrictions on maintenance dredging, as addressed in the EA, could be problematic with regard to fisheries resource impacts. NOAA Fisheries understands the desire to develop a more efficient and predictable plan for the removal of small shoals and that seasonal dredging restrictions make this more difficult; however, NOAA Fisheries believes that some of the proposed dredging could be avoided through modification of the current dredging program. For example, advance maintenance dredging could be performed in connection with regular maintenance dredging. In most cases, advance maintenance within the currently established dredging period would be more environmentally acceptable than dredging the same location during a restricted period.

Response: The dredging addressed by the EA will not change or eliminate existing seasonal restrictions.

Regularly scheduled maintenance dredging contracts are designed to restore project depth to the targeted waterways and remove as much material out of adjacent stretches of waterway as economically possible during identified times of low biological activity. The Corps is not authorized to dredge outside federally authorized channels; therefore, there is little or no opportunity to conduct any advanced maintenance dredging in excess of that already included in the contract plans. Regularly scheduled maintenance dredging contracts are anticipated to be more infrequent as federal budgetary constraints continue. As a result, the use of government dredge plant will be more critical to maintaining navigational safety in the federally authorized waterways in North Carolina.

The ability to dredge shoals before emergency conditions exist will result in less material being dredged at any one time. In turn, this reduces the amount of actual dredging time. Impacts associated with the proposed project will be minimal considering the small amount of material to be dredged and the anticipated intermittent occurrences of dredging.

Comment: NOAA Fisheries is also concerned over plans to discontinue coordination with NOAA Fisheries prior to beginning work. In areas that support SAV and other EFH such as oyster reefs, harm to these resources may occur. Accordingly, in these locations pre-construction coordination with NOAA Fisheries should continue. Alternatively, the Corps could develop a strategy to monitor these sites to detect direct and cumulative impact and to initiate needed avoidance and corrective measures. High quality aerial photography in conjunction with geographical positioning systems (GPS) and geographical information systems (GIS) based habitat mapping could be used to monitor dredging related changes in the distribution and abundance of SAV and oyster reef EFH. Additionally, applicants seeking DA authorization for dredging and other activities routinely use remote sensing tools. NOAA's Beaufort Laboratory and Coastal Service Center (located in Charleston, South Carolina) can assist in the use of these methodologies for impact evaluation.

Response: The proposed project has been modified so that only special purpose dredges (government-owned shallow draft hopper dredge) will be used in the following locations (no side-cast in the following areas):

- Upstream of the AIWW at the Shallotte, Lockwoods Folly, and New River crossings,
- The area north of the New Topsail Inlet channel,
- The portion of the AIWW between Bear Inlet and Brown Inlet in Onslow County,
- The area north of the New Topsail Inlet channel,
- Proposed areas outside of the Bogue Inlet channel, including the AIWW
- Wainwright Slough,
- The Hatteras-to-Hatteras Inlet channel and,
- The area south of Old House channel.

Therefore, impacts to SAV and other EFH will be greatly reduced.

It is not our intention to discontinue coordination with NOAA Fisheries concerning aquatic resources. As a means of informing the resource agencies and the public at large, the Corps will update, on a weekly basis, on its website the location of each government-owned dredge operating in the Corps' Wilmington District waterways. The website address is: <http://www.saw.usace.army.mil/nav/nav.htm>.

The present emergency dredging protocol requires last minute coordination with agencies and case-by-case approvals for the emergency dredging of shoals that have become navigational hazards. In the past, when emergency situations arise, agency approvals are received for the vast majority of dredging. The intent of the project described in this EA is to avoid the last minute flurry of coordination and dredge the shoals before they threaten navigational safety. In this respect, the Corps believes the individual and cumulative environmental impact will be minimal due to the lessened amount of material to be dredged.

Comment: NOAA Fisheries recommends the following EFH conservation recommendations be addressed in the development of a revised project plan and in a revised EA for this dredging plan.

- 1). The dredging plan should include measures to identify the exact geographical location of sites to be dredged in relation to selected EFH types found in the area. This should be accomplished using aerial photography and GPS and GIS based mapping.
- 2). Further coordination regarding alternative approaches to routine maintenance dredging, such as advance maintenance, should be considered as a means to reduce the need for dredging during previously established no-dredging periods.
- 3). In areas where SAV, oyster reefs, and other EFH could be impacted, pre-construction consultation with NOAA Fisheries should be performed to assure avoidance and minimization of impacts to EFH.

Response:

1) The proposed dredging locations addressed in the EA are within existing federally maintained waterways. Aerial photography of the waterways is routinely taken and is available for review to determine the presence of EFH types.

The proposed areas where side-cast dredges may be used have been modified. The following locations have been deleted as potential side-cast areas:

- Upstream of the AIWW at the Shallotte, Lockwoods Folly, and New River crossings,
- The area north of the New Topsail Inlet channel,
- The portion of the AIWW between Bear Inlet and Brown Inlet in Onslow County,
- The area north of the New Topsail Inlet channel,
- Proposed areas outside of the Bogue Inlet channel, including the AIWW
- Wainwright Slough,
- The Hatteras-to-Hatteras Inlet channel and,
- The area south of Old House channel.

These project adjustments will further minimize potential impacts to SAV and other resources.

2) Current and future federal budgetary constraints will limit the number of regularly scheduled maintenance dredging contracts let in the next few fiscal years. The use of government dredge plant to remove shoals prior to the rise of emergency criteria will become more essential to maintaining navigational safety within federally maintained waterways in North Carolina. As discussed above, advance maintenance dredging will not reduce the presence of shoals because the Corps's dredging is limited to federally authorized channels.

3) In areas (listed above) identified by NCDPCM as adjacent to SAV habitat, only special purpose dredges (government-owned shallow draft hopper dredge) will be used for activities addressed by this EA. The location of all government owned dredges operating in the Wilmington District waterways will be updated weekly on the District's website (<http://www.saw.usace.army.mil/nav/nav.htm>). The intent of the proposed project is to dredge shoals before emergency criteria arise. The Corps will inform resource agencies prior to dredging. Any delay in actual dredging will increase the potential threats to navigational safety imposed by the shoal. The Corps believes that removal of the shoal before emergency criteria arise will result in less dredging time, less cubic yardage of material dredged, and potential avoidance of accidents on the waterways.

Comment: NOAA Fisheries would be pleased to work with the Corps to develop a plan to monitor impacts to, and alteration of, EFH in locations where the plan is implemented. If adverse impacts to EFH are documented, appropriate mitigation could be considered at that time.

Response: The areas to be dredged are within federally maintained waterways that have been routinely dredged in the past. EFH has been addressed in the EA. The impact summary for the proposed actions is that they would not cause any significant adverse impacts to EFH HPAC or EFH species. Impacts that do occur would be expected to be minor, temporary, and short lived on an individual and cumulative effects basis. With the understanding that only a special

purpose dredge (government-owned shallow draft hopper dredge) will be used in the locations (listed above) identified by NCDMF as being adjacent to SAV habitat, adverse impacts to EFH are not anticipated.

2.3.12 US Fish and Wildlife Services (USFWS), letter dated April 15, 2004

Comment: The Corps proposed dredging would be independent of normally scheduled maintenance dredging or emergency dredging.

Response: The proposed dredging will occur when shoals threatening navigational safety are identified within the 11 specific locations addressed in the EA. The proposed work would occur between normally scheduled dredging and will reduce the need for emergency dredging in the 11 identified locations. Emergency dredging may be required in the future (e.g., if dredge plant different from that appropriate for any specific location is to be used, if shoals develop outside of the 11 identified locations, etc.). If emergency dredging is required, the approved emergency dredging MOA protocol will be followed.

Comment: The environmental impacts of coastal dredging include increased suspended sediment, reduced concentrations of dissolved oxygen, and the release of potentially toxic chemical substances from resuspended sediment particles. Suspended sediments can elicit a variety of responses from aquatic biota and can result in egg abrasion, reduced bivalve pumping rates, and direct mortality.

Response: The water quality impacts will include minor and short-term resuspended material plumes and releases of soluble trace constituents. The plumes of suspended sediment associated, with dredging activities would result very localized short-term effects dissipated by natural dispersion and mixing. The dredging activities are small in comparison to the volume and dynamic nature of the waterbodies in which dredging occurs. Except for the burial immediately beneath the dredged material discharge, the suspended sediment concentrations will not be high enough for a sufficient period to produce the effects cited. The water quality impacts associated with resuspension of sediment into the water column during a dredging operation will be minor.

Comment: Nearshore ocean disposal may adversely impact hardbottoms that support a diverse community of algae, soft and encrusted coral, sea anemones, sea whips, and important recreational finfish. Flat hardbottoms can be buried temporarily or permanently by thin layers of sediment, “either modifying the benthic community structure or removing the hardbottom from the sediment-water interface and eliminating hardbottom bioproduction.”

USFWS’ July 2003 scoping letter noted that if nearshore ocean disposal is required, the Corps should determine that no nearshore hardbottoms would be directly or indirectly impacted. Limiting the amount of material that could be moved under the EA would also limit potential harm to hardbottoms

Response: The identified nearshore disposal areas are adjacent to existing coastal inlets and have been used in the past by government dredges. There are no hardbottoms present within these areas.

Comment: Because both coastal dredging and nearshore disposal have environmental consequences, USFWS is concerned that the EA does not provide an upper limit on the amount of material that could be moved. The EA notes (pp.1, 18, 42) that the shoals to be dredged would be “small and/or isolated,” but does not specify a maximum amount. The EA also notes (p. 19) that the shoals to be dredged “usually consist of less than 30,000 cubic yards (CY) of sandy material,” but again no upper limit on the amount of material that could be moved is provided. During the scoping meeting on May 7, 2003, USFWS notes indicate that each operation was expected to move approximately 3,000-5,000 CY and all operations would be less than 10,000 CY.

Response: We agree that coastal dredging and nearshore disposal have environmental consequences. However, the EA concludes that the impacts of the proposed dredging are minimal and temporary.

As discussed in the EA, Section 1.0 Purpose and Need, the proposed project is being considered for the purpose of proactively planning for the expeditious, routine dredging of small and/or isolated shoals for the rapid and efficient improvement of navigational safety. Within that context, it is difficult to predict a quantity of material associated with a shoaling event. However, to put the proposed dredging into a quantity perspective, the EA discusses that a single dredging occurrence would last between 5 to 15 days. Routinely, government plant can dredge approximately 2,000 cubic yards per day; thus, 10,000 to 30,000 cubic yards per occurrence. The intent of this information is to put the proposed dredging quantity into a perspective and provide a basis for assessment of environmental impacts. We believe that the description of the intended dredging and the estimates of quantities are adequate and that quantity upper limits are not required.

The scoping meeting estimates were provided using available project information. Analysis for the preparation of the EA resulted in a revision of that estimate.

Comment: Limiting the amount of material moved and the time of year for such movement are critical factors in determining whether the proposed work would have significant impacts that require an Environmental Impact Statement. The USFWS July 2003 scoping letter stated that the proposed operations should be conducted outside the moratorium periods established to benefit fish and wildlife resources. The least impact on fish and wildlife resources would occur if work were conducted from November 1 through February 14. This would avoid the period of greatest activity for sturgeon (*Acipenser* spp), other anadromous fish, and the period when larval and juvenile fish are closely associated with primary and secondary nursery areas. Since no seasonal restrictions are proposed for this work, moving small amounts of material becomes critical in avoiding significant adverse impacts to these resources.

Response: The intent of the project is to remove small and/or isolated shoals that pose a threat to safe navigation between normal scheduled dredging events. The intent is to perform

dredging only to the degree that safe navigation is restored. The dredging requirements and tight schedules under which the government dredge plants operate do not allow for a long stay at any one location; therefore, the quantities dredged at any one location will be limited by the same schedule restrictions. Shoals may form at any time of year and removal could be necessary at any time of year.

Comment: USFWS expressed concern that side-cast dredging should not occur in primary and secondary fish nursery areas, including areas with SAV, or oyster beds. If such areas must be dredged, a hopper dredge should be used. Sediment disposal should not occur near such areas. The EA notes (p. 29) that the proposed work would occur in the vicinity of known SAV habitat, and that SAV within the side-cast dredge's disposal area could be impacted. While the EA states that the quantity of material to be moved "is anticipated to be less than that occurring in past emergency dredging scenarios due to the proposed project's preemptive removal of shoals before they become too large," there is no stated maximum amount of material that could be moved. Such an open-ended standard for the quantity of material to be dredged places SAV and oyster beds at risk. With no limit on the amount of material that could be moved, there is no support for the EA's conclusion that "any impacts to SAV are anticipated to be minimal, temporary, and short-lived."

Response: The proposed areas where side-cast dredges will be used, in conjunction with the project addressed by the EA, have been modified. The following locations have been deleted as potential side-cast areas:

- Upstream of the AIWW at the Shallotte, Lockwoods Folly, and New River crossings,
- The area north of the New Topsail Inlet channel,
- The portion of the AIWW between Bear Inlet and Brown Inlet in Onslow County,
- The area north of the New Topsail Inlet channel,
- Proposed areas outside of the Bogue Inlet channel, including the AIWW
- Wainwright Slough,
- The Hatteras-to-Hatteras Inlet channel and,
- The area south of Old House channel.

This modification will further minimize potential impacts to SAV and other resources. In the case that a shoal meets emergency criteria and only a side-cast dredge is available, the approved emergency dredging MOA protocol will be followed.

Comment: USFWS is concerned that the EA contains no discussion of the depths that would be used for nearshore disposal. If the material is placed too far offshore, much of the material reaching the beaches would be the fine-grained material. As water depth increases, the energy of waves exerts less influence on bottom sediments until at a certain depth, the bottom depth, the bottom sediment is not influenced, or picked up, by passing waves. The reduced wave energy may be sufficient to carry the finer sand shoreward, but much of the larger sand remains in place.

Response: Nearshore disposal areas are located in approximately -10 ft MLW depths. This depth is well within the active littoral system and the depth of closure (the theoretical limit

of active sediment movement and transport). The special purpose dredge (government-owned shallow draft hopper dredge) is designed to place dredged material in the shallow nearshore area.

Comment: Last July, USFWS recommended that the Corps should coordinate with the NC Wildlife Resources Commission to determine whether the material removed could be used to benefit habitat for colonial waterbirds. The EA notes (p.20) that the Corps “hopes” to work with the resource agencies to arrive at a suitable location for disposal of material dredged from Wainwright Slough and that the material would be placed on or as near as possible to the existing Wainwright Island. USFWS encourages the corps to continue such coordination for the benefit of colonial nesting waterbirds.

Response: The dredge plant to be used to undertake the removal of small and/or isolated shoals is a small special purpose dredge (government-owned shallow draft hopper dredge). This type of dredge is not capable of placing dredged material on upland or bird island locations. A suitable disposal site for the special purpose dredge has not been designated. The Corps will pursue locating an acceptable disposal area with the resource agencies. The intent of the proposed project is to remove shoals that develop between scheduled maintenance dredging contracts.

Comment: Based on information provided in the EA, USFWS concurs that the project as described in the EA (including the incorporation of the USFWS “guidelines for Avoiding Impacts to the West Indian Manatee” and the placement of hopper dredged sediment waterward of MLW to avoid impacts to piping plovers) are not likely to adversely affect any federally-listed endangered or threatened species, their formally designated critical habitat, or species currently proposed for federal listing under the Endangered Species Act (ESA). However, the Corps must reconsider its obligations under Section 7 of the EAS if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner which 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.

Response: USFWS concurrence noted. The three reasons listed for reconsidering Section 7 compliance are understood.

2.3.13 National Parks Service, telephone conversation April 27 and 28, 2004

Comment: Mr. Jim Ebert (252-473-2111 x-132) of the Cape Hatteras National Seashore expressed concern that impacts to park property could occur if any dredging occurs within 150 feet of shoreline within national park property. Ms. Anita Jackson, (404-562-3124 x-705) of the National Park Service’s Southeast Regional office in Atlanta, expressed the same concerns adding that permits or authorizations from the Park Service would be required for dredging of sediments within 150 feet of the Park’s shoreline.

Both Service representatives stated that written comments would be submitted.

Response: Noted.

2.3.14 US Department of the Interior, National Parks Service (NPS), Outer Banks Group letter dated June 24, 2004

Comment: Your EA figures, and related narratives, of the three proposed channel dredging sites adjacent to Cape Hatteras National Seashore (CAHA) lands are unclear as to whether the dredging will take place within the CAHA boundary. The NPS has authority over the waters and submerged lands 150 feet out in the Pamlico and Roanoke Sounds and to mean low tide in the ocean.

Response: The Corps of Engineers has been mandated by Congress to maintain safe navigation within these federally authorized channels. The proposed work will only remove shoaled material within these channels. Dredging will not take place within the CAHA boundary. Widening or deepening of these channels beyond their authorized limits will not occur within, nor will dredged material be deposited on upland portions within CAHA boundary.

Comment: The three figures in question are:

1. On Figure 10, does, the Ocracoke Inlet Channel dredging go through the CAHA boundary at the tip of the Ocracoke Island spit?
2. On Figure 11, there are several points where the channel touches the park shoreline. In these areas please be more specific as to the location of the channels in relation to the park boundary.
3. On Figure 12, the dredging to be undertaken in the area of Oregon Inlet channel is noted but not fully described on page five of the EA. The NPS claims the submerged lands within Oregon Inlet and is working with the Corps on dredging this inlet under a separate NEPA document.

Response: As stated above, the intent of the project is to remove shoaled material within existing federally authorized channels. The referenced figures, as indicated on the bottom of each figure, are not drawn to scale and not for navigation purposes. They are intended to illustrate what portions of the various projects are being discussed as the proposed action under the EA. For the Ocracoke Inlet Channel (figure 10) the channel follows the existing channel/naturally deep water at the inlet and does not touch the spit. According to the most recent available survey performed in November 2003 the channel was about 680 feet away from the CAHA Ocracoke Island Spit. Similarly, according to surveys dated March 2004 and October 2003, the Hatteras to Hatteras Inlet Channel (figure 11) is not within 150 feet of Hatteras Island. With regard to Oregon Inlet, the description of Oregon Inlet work on EA page 5 was incorrect. It has been corrected to simply say dredging through the inlet and ocean bar. There are ongoing intra-agency and stakeholder discussions on dredging of this Oregon Inlet. However, the Corps of Engineers is presently mandated to maintain navigable conditions within Oregon Inlet and the described dredging is proposed until changes to this authorization are made.

Comment: For Figures 10 and 11, if location clarification places the channels beyond the NPW 150 foot boundary into Pamlico Sound, CAHA would have no NEPA compliance issues unless there are indirect or cumulative impacts to CAHA resources. If they are within the 150 foot boundary, CAHA would have a greater role to play in the EA process and a fundamental

interest in the outcome. In this instance, if the EA were determined to be the needed NEPA document and a Finding of No Significant Impact was to be written, the signature of the NPS Regional Director would be required.

Response: See the response to the previous comment. Dredging within 150 feet of CAHA boundary is not proposed. Significant indirect or cumulative impacts to CAHA resources are not expected to occur as a result of the proposed action. The intent of the project is to remove shoaled material within existing federally authorized channels.

Comment: We are concerned about possible noise from this operation that could disturb nesting shorebirds or sea turtles attempting to nest on CAHA ocean beaches when the project equipment is near shore. The potential sound disturbance along the shoreline may also impact the experience of CAHA visitors, depending, in part, on the season that the activity occurs. The EA should note that the corps will coordinate with CAHA on all EA work close to the park boundary to ensure protection of wildlife, habitat and park values.

Response: The proposed operation of the government plants is not expected to produce disturbing noise levels to CAHA properties or other areas near to the dredging locations. The sounds produced will be comparable to those of other marine vessels common to the areas and less than those of many common recreational vessels.

The responses to previous comments are intended to better define the location of the existing, federally authorized channels where government plant dredging is proposed for the expeditious, routine dredging of small and/or isolated shoals for the rapid and efficient improvement of navigational safety. The purpose of this EA is to proactively plan this dredging and reduce the time and cost expenditures that result from emergency declaration and respond in an environmentally acceptable manner. Declaration of an emergency requires contacting multiple agencies and requesting prompt agency responses. Several emergency declarations separated by short intervals of time can result in a real disruption of agencies' workloads. Accordingly, the EA does not commit to additional coordination of proposed government plant actions.

The use of Corps' hopper and side-cast dredges allows for prompt and economical responses to quickly developing shoaling situations. The proposed dredging would be performed when shoaling conditions in the subject locations have developed to the point that safe navigation is compromised. This is at or near the point at which the Corps would ordinarily declare the existence of a navigational emergency. In an effort to proactively maintain safe navigation conditions, the proposed action would allow the Corps to remove shoals before emergency conditions arise. Similar to emergency dredging, the tight schedules under which the government dredge plants operate do not allow for long stays at any one location; therefore, the proposed shoal removal would rarely if ever be performed to the authorized project depth. It would almost always be performed only to the degree that safe navigation could be resumed.

Comment: It is uncertain from the EA how close to shore the hopper dredges would be working with near shore disposal. CAHA is mandated to preserve the natural processes of this barrier island ecology. There is concern; depending on how close to shore the hopper dredges will be working, for the natural processes of the shoreline. CAHA must also take into

consideration the effect of the hopper dredge action on the many turtle nests found on shore in the park each year. CAHA hopes to work closely with the Corps to ensure natural processes are allowed to function. The EA should discuss these issues.

Response: The near shore disposal areas are located in approximately -10 feet MLW. This depth allows sand to remain in the littoral system (pursuant to NC Division of Coastal Management guidelines) without having any direct placement on the beach and its natural processes. As such, the near shore placement will not impact sea turtle nests.

2.3.15 US Department of Agriculture's Natural Resources Conservation Service (NRCS), letter dated March 29, 2004

Comment: NRCS does not have any comments at this time.

Response: Noted.

2.3.16 Town of Emerald Isle, NC, letter dated March 26, 2004

Comment: The Town of Emerald Isle recognizes that the Corps has maintained Bogue Inlet for many years with a side-cast dredge, and that dredging follows "existing channel/naturally deep water" as indicated on Figure 8 in the Public Notice. The Town is pursuing a locally funded project to relocate the existing Bogue Inlet navigation channel to a position approximately 3,500 feet west of its current location, hoping to begin dredging in November/December of 2004. The Town requests that future Corps maintenance dredging be accomplished in a manner that stabilizes the navigation channel in the relocated position.

Response: Mr. Frank Rush, Jr., Town manager of the Town of Emerald Isle, was contacted by telephone on April 6, 2004 in response to the Town's letter. He was informed that the Corps' mission is to maintain navigability in an efficient, cost-effective, and environmentally acceptable manner. Due to the dynamic nature of coastal inlets, the efficient, cost-effective, and environmentally acceptable manner that the Corps employs in maintaining the navigability of these inlets is by following the naturally deep water within the inlet complex. Attempting to maintain a constantly shifting channel in one location would involve almost continual dredging. In order to maintain/restore safe navigation, if the deeper portion of the relocated channel begins to move east towards Emerald Isle, the Corps must maintenance dredge the channel in the vicinity of this deepest water.

Comment: During the conversation, Mr. Rush stated that he hoped the Corps would modify its side-cast dredge policy such that material dredged by the side-cast dredge would be discharged to the east, thereby adding material on the Emerald Isle side, providing a small bit of protection or prolonging the eastern migration of the channel.

Response: The captain of the side-cast dredge is charged with appraising the situation at the beginning of, and during, each dredging job. His decision as to which side of the dredge to discharge is based on prevailing wind and sea conditions. If these conditions indicate that

material discharged to the east would drift right back into the channel, then the discharge will be directed to the west.

2.3.17 North Carolina Division of Coastal Management, letter dated May 27, 2004

Comment: Based upon the Division of Coastal Management's review of the project, and after reviewing other state resource agency comments, the State of North Carolina has determined that the actions detailed in the EA are consistent with the North Carolina Coastal Management Program, provided that the following conditions are adhered to:

- 1) The proposed actions must be done in accordance with the Division of Water Quality's (DWQ) 401 Water Quality Certification program. The DWQ has indicated that if the proposed development meets with the conditions of General Water Quality Certification No. 3369, no written concurrence from DWQ will be required. If the conditions of Certification No. 3369 cannot be met, a written 401 certification will be required.
- 2) If discharges of dredged or fill materials from waters closed to the harvest of shellfish are to be placed into waters that are open to the taking of shellfish, prior notification shall be given to the Division of Environmental Health's Shellfish Sanitation and Recreational Water Quality Section so that appropriate temporary closures to the harvest of shellfish may be put into place.
- 3) If discharges of dredged or fill materials from waters closed to the harvest of shellfish, or from waters where a swimming advisory is posted, are to be placed into coastal ocean waters between the months of April and October, prior notification shall be given to the Division of Environmental Health's Shellfish Sanitation and Recreational Water Quality Section so that appropriate swimming advisories may be posted.
- 4) The N.C. Division of Marine Fisheries (DMF) has indicated that due to the presence of various high-quality aquatic resources in certain locations, side-cast dredges should not be used in the following areas:
 - Upstream of the Atlantic Intracoastal Waterway (AIWW) at the Shallotte River, Lockwoods Folly River and New River Crossings;
 - The area north of the New Topsail Inlet channel;
 - Within Bogue Inlet or the nearby AIWW (does not apply to the inlet approach channel);
 - Wainwright Slough;
 - The Hatteras to Hatteras Inlet channel;
 - The area south of Old House Channel.
- 5) The Corps of Engineers should coordinate with the N.C. Wildlife Resources Commission to ensure that disposal material from hopper dredges is not deposited on active bird nesting sites.
- 6) The Corps of Engineers should schedule at its earliest convenience a meeting with the N.C. Department of Cultural Resources to begin the development of a programmatic agreement for an inlet monitoring program to better avoid historical resources in shifting inlets.

7) All other required permits or authorizations are obtained prior to the initiation of this dredge disposal program.

8) Should the dredge activities encounter any material that is suitable for beach nourishment, the Corps is encouraged to coordinate with local government(s) to determine if stockpiling the material for future nourishment activities is appropriate.

Should the project be modified, a new consistency certification may be necessary.

Response: The consistency concurrence is noted.

1) Concur. The proposed dredging will be done in accordance with NCDWQ's 401 Water Quality Certification program.

2) Concur. If discharges of dredged or fill materials from waters closed to the harvest of shellfish are to be placed into waters that are open to the taking of shellfish, prior notification shall be given to the Division of Environmental Health's Shellfish Sanitation and Recreational Water Quality Section so that appropriate temporary closures to the harvest of shellfish may be put into place.

3) Concur. If discharges of dredged or fill materials from waters closed to the harvest of shellfish, or from waters where a swimming advisory is posted, are to be placed into coastal ocean waters between the months of April and October, prior notification shall be given to the Division of Environmental Health's Shellfish Sanitation and Recreational Water Quality Section so that appropriate swimming advisories may be posted.

4) Concur. The proposed areas where side-cast dredges may be used have been modified. The following locations have been deleted as potential side-cast areas:

- Upstream of the AIWW at the Shallotte, Lockwoods Folly, and New River crossings,
- The area north of the New Topsail Inlet channel,
- The portion of the AIWW between Bear Inlet and Brown Inlet in Onslow County,
- The area north of the New Topsail Inlet channel,
- Proposed areas outside of the Bogue Inlet channel, including the AIWW
- Wainwright Slough,
- The Hatteras-to-Hatteras Inlet channel and,
- The area south of Old House channel.

These adjustments will further minimize potential impacts to SAV and other resources.

5) Concur. The special purpose dredge will discharge dredged material in nearshore shallow waters. This area is not used for bird nesting.

6) Concur. The Corps of Engineers will coordinate with the N.C. Department of Cultural Resources regarding the development of a programmatic agreement for the protection of historical resources in shifting inlets from dredging activities.

7) Concur. The Corps of Engineers will obtain all required authorizations prior to the initiation of dredging activities.

8) The intent of the proposed project is to expeditiously perform routine dredging of small and/or isolated shoals that pose a threat to safe navigation during periods when a normal dredging event is not scheduled. The proposed dredging is not intended to restore authorized project depths but is intended to restore a depth whereby safe navigation can occur. Accordingly, the quantities of material dredged and the short-term nature of the work mean that stockpiling of material for subsequent beach nourishment is likely not practical. For many areas where beach quality sand is encountered, either side-cast or special purpose dredges will discharge and retain the dredged sand in the active littoral system.

3.0 ENVIRONMENTAL REQUIREMENTS

3.1 NC Coastal Management Program

The Coastal Zone Management Act (CZMA) of 1972, as amended (PL 92-583) requires that Federal activities be consistent, to the maximum extent practicable, with the approved State coastal management programs. Based upon the Division of Coastal Management's review of the project, and after reviewing other State resource agency comments, the State of North Carolina has determined that the actions detailed in the EA are consistent with the North Carolina Coastal Management Program, provided that the specified conditions are adhered to. The Corps of Engineers concurs with the conditions.

3.2 Essential Fish Habitat

The 1996 Congressional amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) (PL 94-265) set forth new requirements for the National Marine Fisheries Service (NMFS), Regional Fishery Management Councils (FMCs), and other Federal agencies to identify and protect important marine and anadromous fish habitat. Potential project impacts on Essential Fish Habitat (EFH) species and their habitats have been evaluated (Appendix C). Compliance obligations related to the MSFCMA would be fulfilled prior to initiation of the proposed action. The impact summary for EFH is that the proposed action is not expected to cause any significant adverse impacts to EHF or EFH species.

3.3 Endangered and Threatened Species

The proposed work has been reviewed for compliance with the Endangered Species Act of 1973, as amended. The Corps prepared a Biological Assessment (BA) dated July 1, 1998, for the use of the side-cast and hopper dredges in Coastal US Waters. The BA concluded that the continued use of these dredges is not likely to adversely affect any listed species. The National Marine Fisheries Service provided a Biological Opinion dated March 9, 1999, that concurred with the BA conclusion. (The Biological Assessment and the Biological Opinion are provided in Attachment B)

The USFWS has recommended recently during similar dredging activities compliance with USFWS “GUIDELINES FOR AVOIDING IMPACTS TO THE WEST INDIAN MANATEE” (included in Attachment B). For all dredging that occurs between June and October, the dredges will comply with all precautions in the guidelines to avoid impacts to manatees. Due to its rare occurrence in the area, the nature of the proposed construction activities, and compliance with the guidelines, the project as currently proposed is not likely to adversely impact the manatee.

In summary, based on the above analysis and provided that all appropriate protocols are followed, the Corps has determined that the preferred alternative and the no action alternative are not likely to adversely affect any listed species.

3.4 Clean Water Act

A Section 404(b)(1) Evaluation has been prepared (Attachment C). General 401 Water Quality Certification Number (GC) 3369 covers the proposed activities without written concurrence from NCDWQ provided all conditions of this certification are met.

4.0 ENVIRONMENTAL COMMITMENTS

The environmental goal of this project is to avoid and minimize adverse impacts to the extent practicable. Construction and maintenance activities will be conducted as described in the March 2004 EA and this FONSI. This section describes environmental commitments that have been made to minimize environmental impacts.

1) Based on NC Division of Coastal Management’s consistency, side-cast dredges will not be used in the following areas as a part of this action:

- Upstream of the AIWW at the Shallotte, Lockwoods Folly, and **New River** crossings,
- North of the New Topsail Inlet channel,
- Portion of the AIWW between Bear Inlet and Brown Inlet in **Onslow County**,
- North of the New Topsail Inlet channel,
- Outside of the Bogue Inlet channel, including the AIWW,
- Wainwright Slough,
- Hatteras-to-Hatteras Inlet channel and,
- Old House channel south of Hells Gate.

2) Adherence to conditions for Water Quality Certification 3369.

3) Within 45 days of the publishing of the FONSI, arrange a meeting with NC Department of Cultural Resources to discuss development of a Programmatic Assessment between the Corps and NCDCR for “an inlet monitoring program to better avoid historical resources in shifting inlet”.

4) If discharges of dredged or fill materials from waters closed to the harvest of shellfish are to be placed into waters that are open to the taking of shellfish, prior notification shall be given to the Division of Environmental Health's Shellfish Sanitation and Recreational Water Quality Section so that appropriate temporary closures to the harvest of shellfish may be put into place.

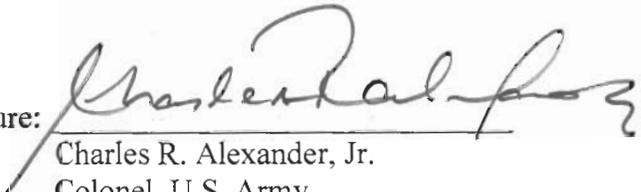
5) If discharges of dredged or fill materials from waters closed to the harvest of shellfish, or from waters where a swimming advisory is posted, are to be placed into coastal ocean waters between the months of April and October, prior notification shall be given to the Division of Environmental Health's Shellfish Sanitation and Recreational Water Quality Section so that appropriate swimming advisories may be posted.

6) For all dredging that occurs between June and October, the dredges would comply with all precautions in the USFWS "GUIDELINES FOR AVOIDING IMPACTS TO THE WEST INDIAN MANATEE" to avoid impacts to manatees.

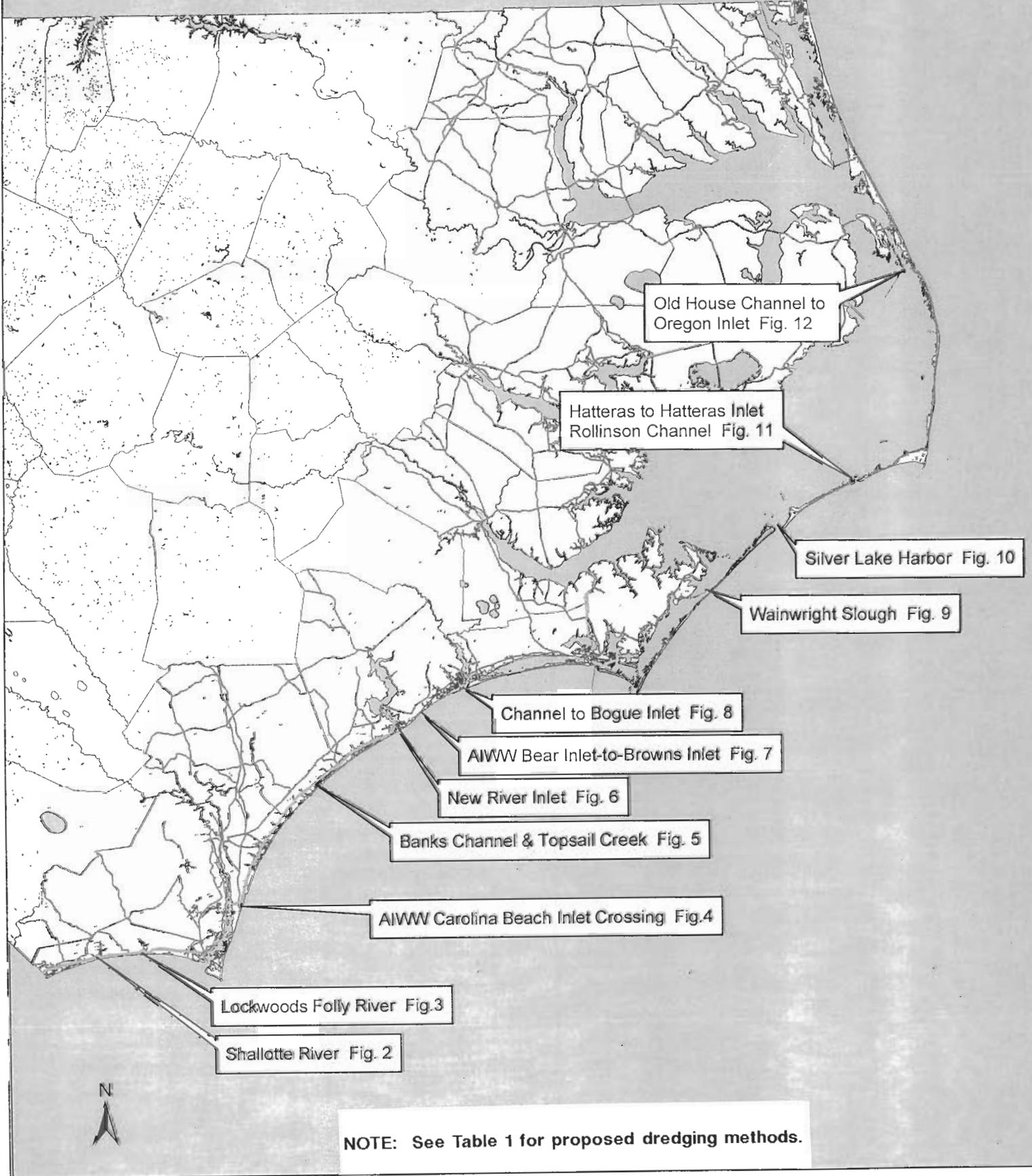
5.0 FINDING OF NO SIGNIFICANT IMPACT

All comments received on the EA have been resolved either through project modification or providing additional information. I conclude that the proposed action will not significantly affect the quality of the human environment; therefore, an environmental impact statement will not be prepared.

Date: 9/8/04

Signature: 
Charles R. Alexander, Jr.
Colonel, U.S. Army
District Engineer

Shoal Areas In Wilmington District Proposed to be Dredged by Corps' Special Purpose or Sidecast Dredges



Shalotte River

Brunswick County

Shalotte River

Holden Beach

Ocean Isle Beach

Shalotte Inlet

Atlantic Ocean

NOTE: See Table 1 for proposed dredging methods.

Not to Scale. Not intended for navigation use. For Reference Only.



-  Coastal Streets
-  Near Shore Disposal Area
-  Navigation Channel
-  Dredge Limits

Lockwoods Folly River

Brunswick County

Lockwoods Folly River

Sheep Island

Holden Beach

Oak Island

Lockwoods Folly Inlet

NOTE: See Table 1 for proposed dredging methods.

Dynamic Inlet. Dredging follows existing channel/naturally deep water.

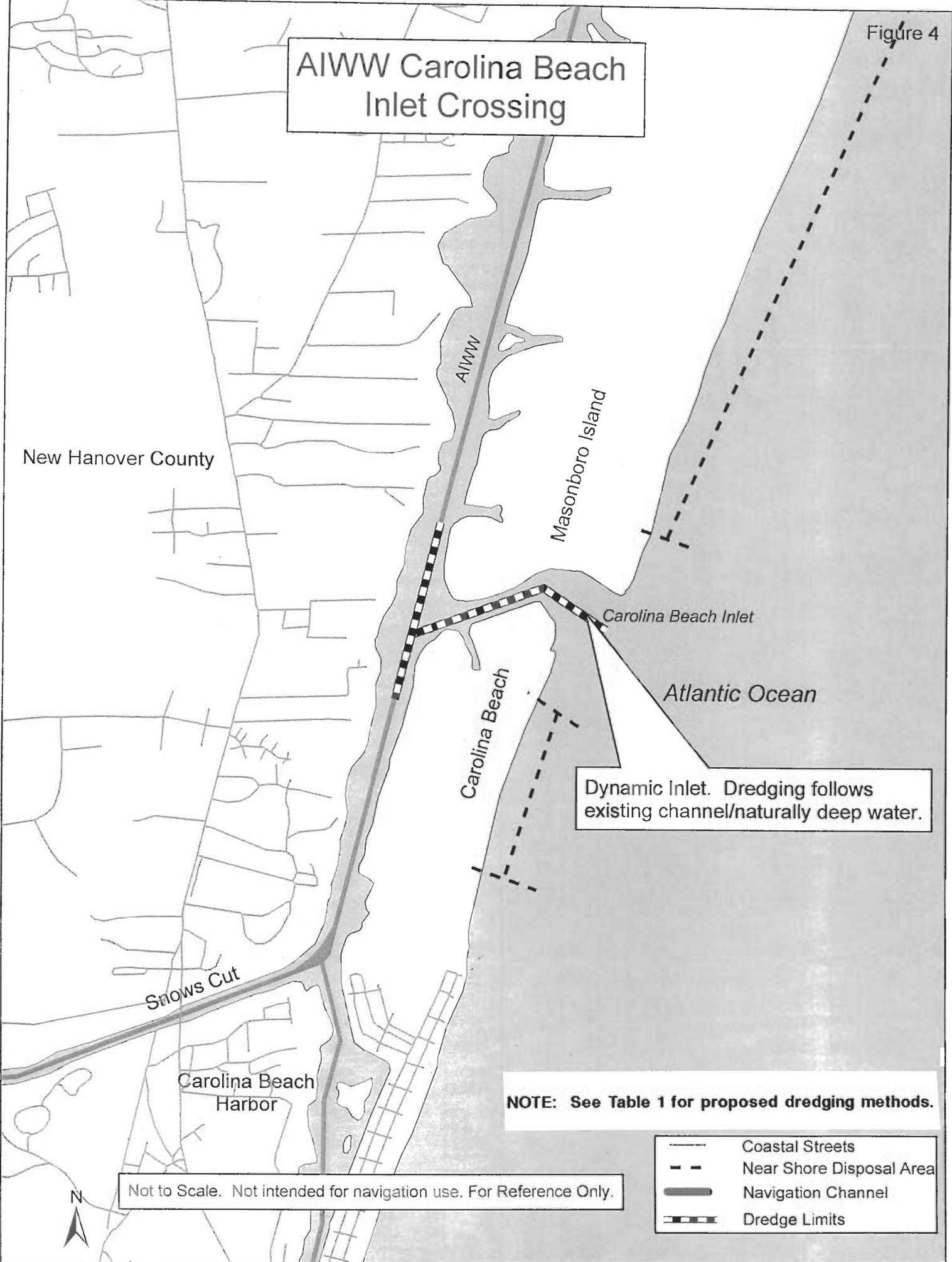
Atlantic Ocean

Not to Scale. Not intended for navigation use. For Reference Only.



-  Coastal Streets
-  Near Shore Disposal Area
-  Navigation Channel
-  Dredge Limits

AIWW Carolina Beach Inlet Crossing



New Hanover County

AIWW

Masonboro Island

Carolina Beach Inlet

Atlantic Ocean

Carolina Beach

Dynamic Inlet. Dredging follows existing channel/naturally deep water.

Snows Cut

Carolina Beach Harbor



Not to Scale. Not intended for navigation use. For Reference Only.

NOTE: See Table 1 for proposed dredging methods.

	Coastal Streets
	Near Shore Disposal Area
	Navigation Channel
	Dredge Limits

**Banks Channel
Topsail Creek**

Pender County

AJWW

Atlantic Ocean

Banks Channel

Topsail Beach

Dynamic Inlet. Dredging follows existing channel/naturally deep water.

NOTE: See Table 1 for proposed dredging methods.

Topsail Creek
Lear Huraff Island

New Topsail Inlet

Not to Scale. Not intended for navigation use. For Reference Only.

-  Coastal Streets
-  Near Shore Disposal Area
-  Navigation Channel
-  Dredge Limits



Figure 6

New River Inlet

Onslow County

New River

Stones Bay

USMC
Camp Lejeune

Dynamic Inlet. Dredging follows
existing channel/naturally deep water.

Onslow Beach

Cedar Bush Cut

New River Inlet

Atlantic Ocean

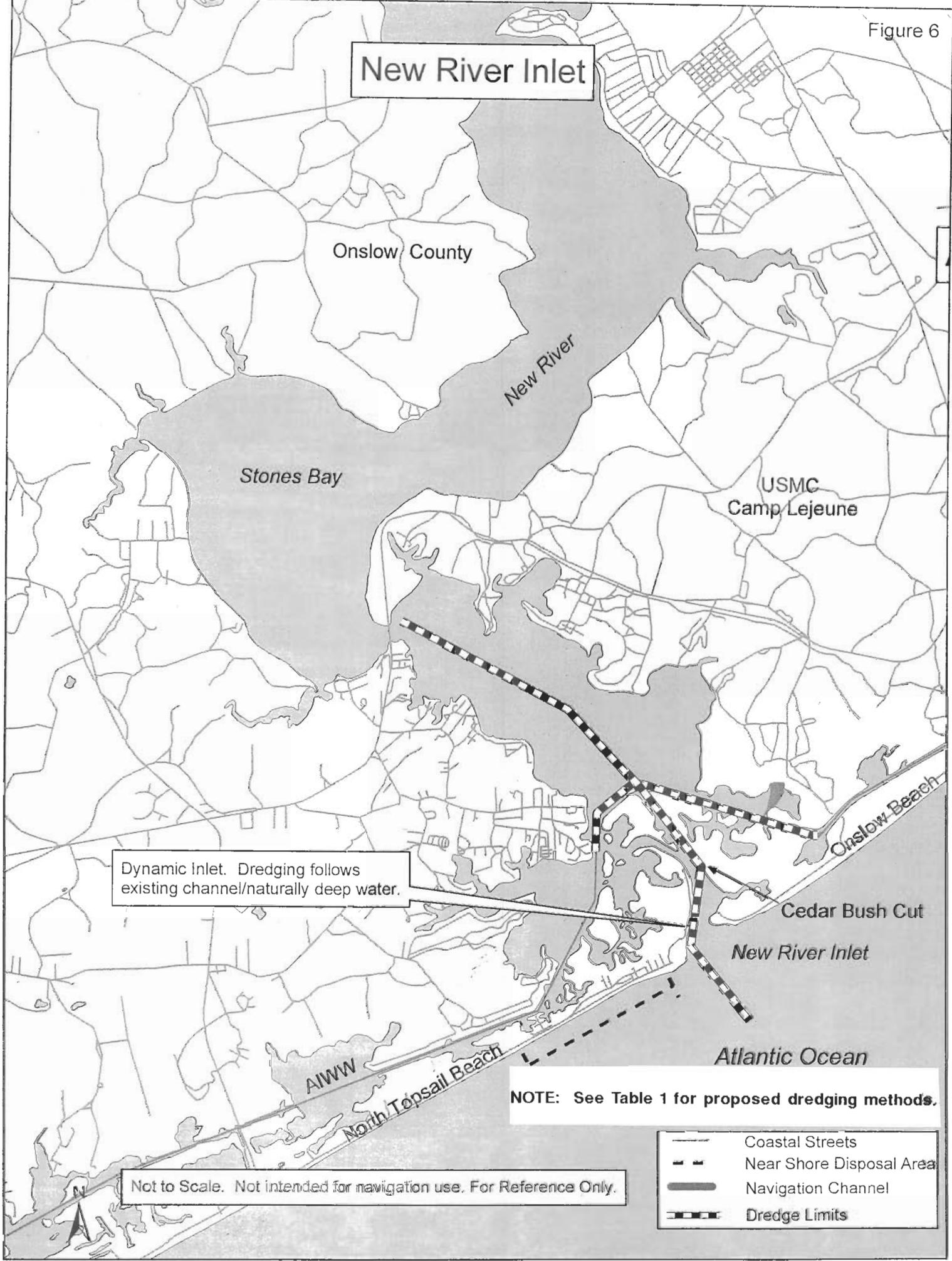
AIWW

North Topsail Beach

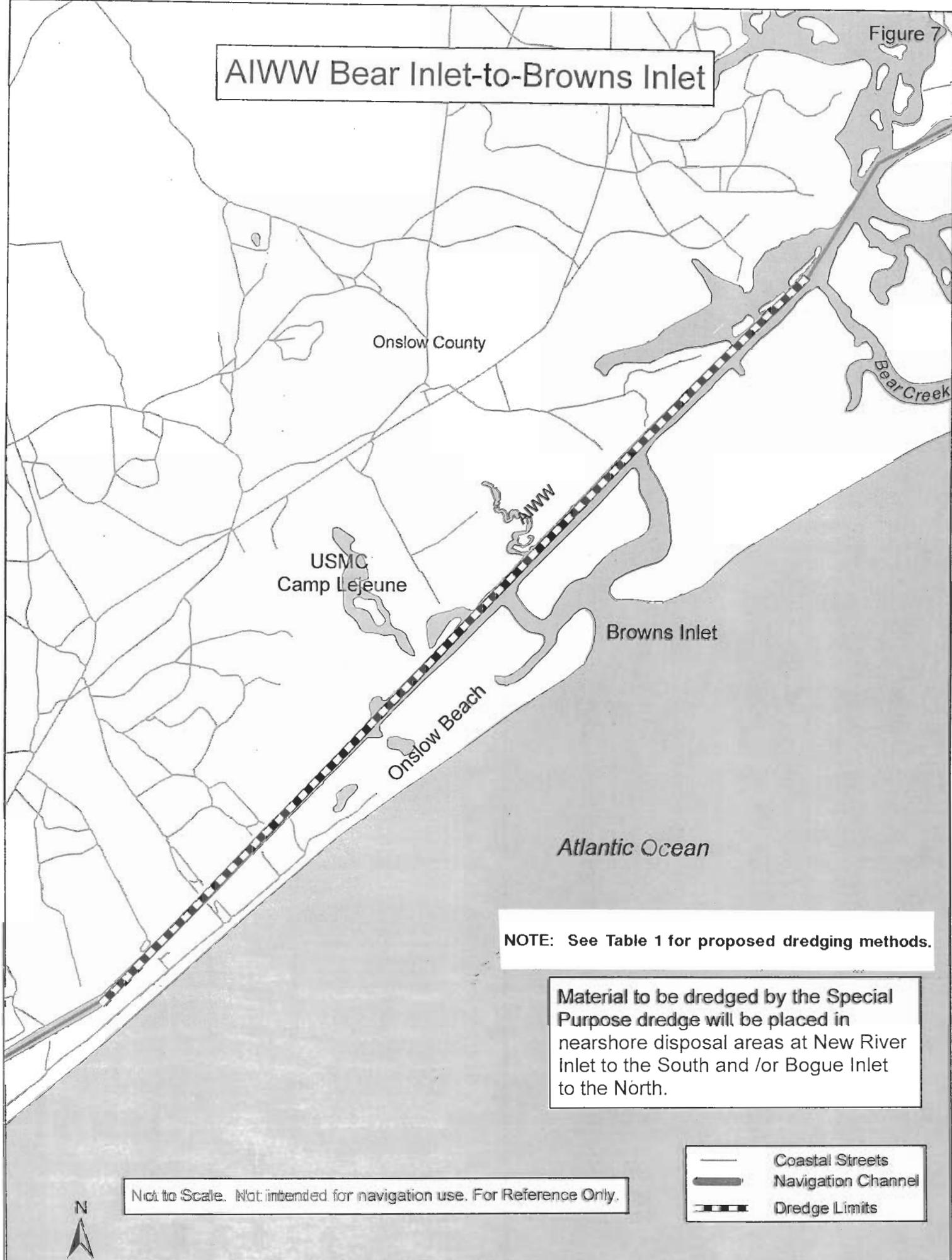
NOTE: See Table 1 for proposed dredging methods.

Not to Scale. Not intended for navigation use. For Reference Only.

-  Coastal Streets
-  Near Shore Disposal Area
-  Navigation Channel
-  Dredge Limits



AIWW Bear Inlet-to-Browns Inlet



NOTE: See Table 1 for proposed dredging methods.

Material to be dredged by the Special Purpose dredge will be placed in nearshore disposal areas at New River Inlet to the South and /or Bogue Inlet to the North.

Not to Scale. Not intended for navigation use. For Reference Only.

-  Coastal Streets
-  Navigation Channel
-  Dredge Limits



Wainwright Slough

Pamlico Sound

Cedar Island Bay

Carteret

No disposal area(s) have been designated for this area. The Corps proposes working w/ the resource agencies to locate a suitable disposal area.

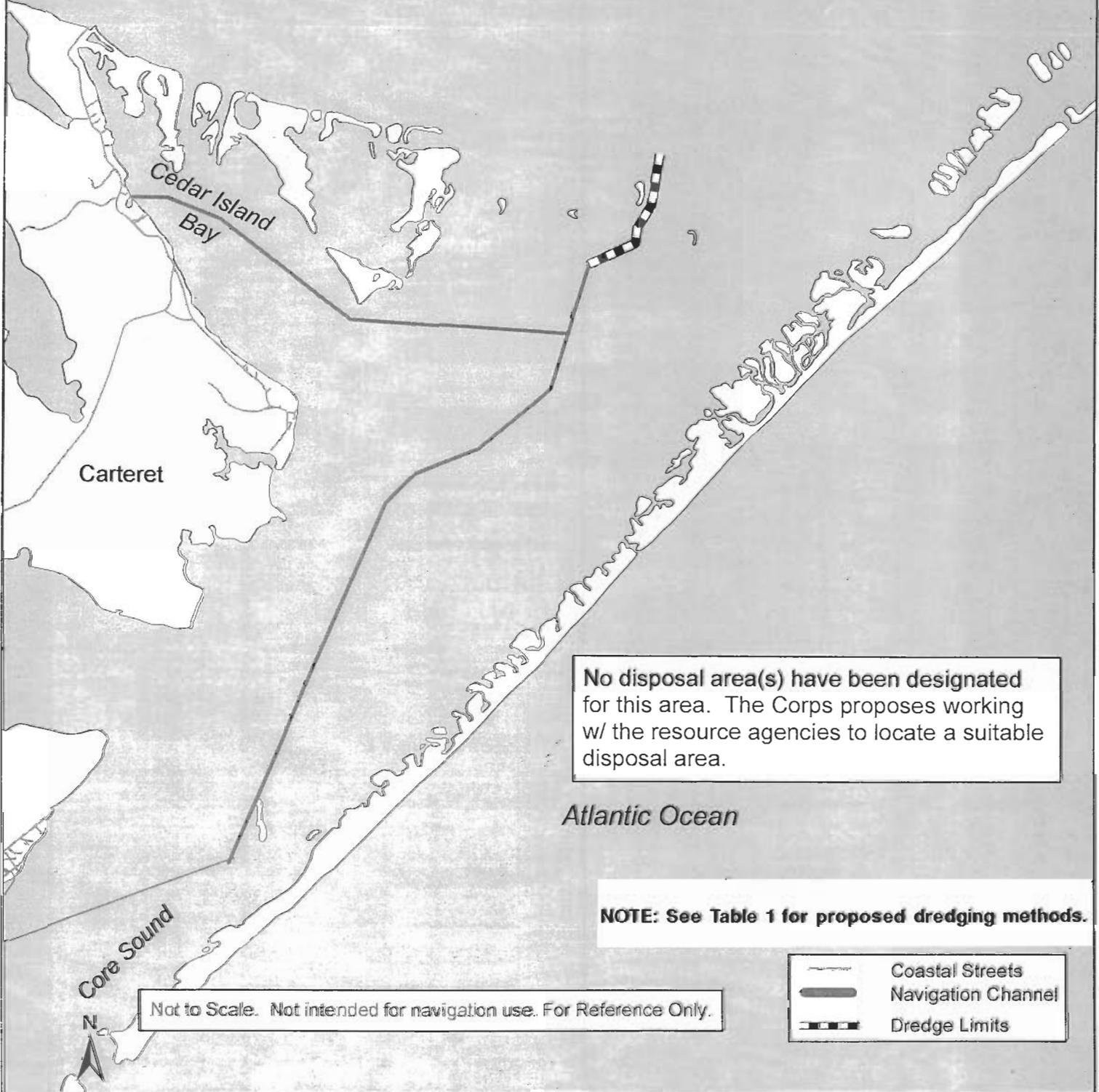
Atlantic Ocean

NOTE: See Table 1 for proposed dredging methods.

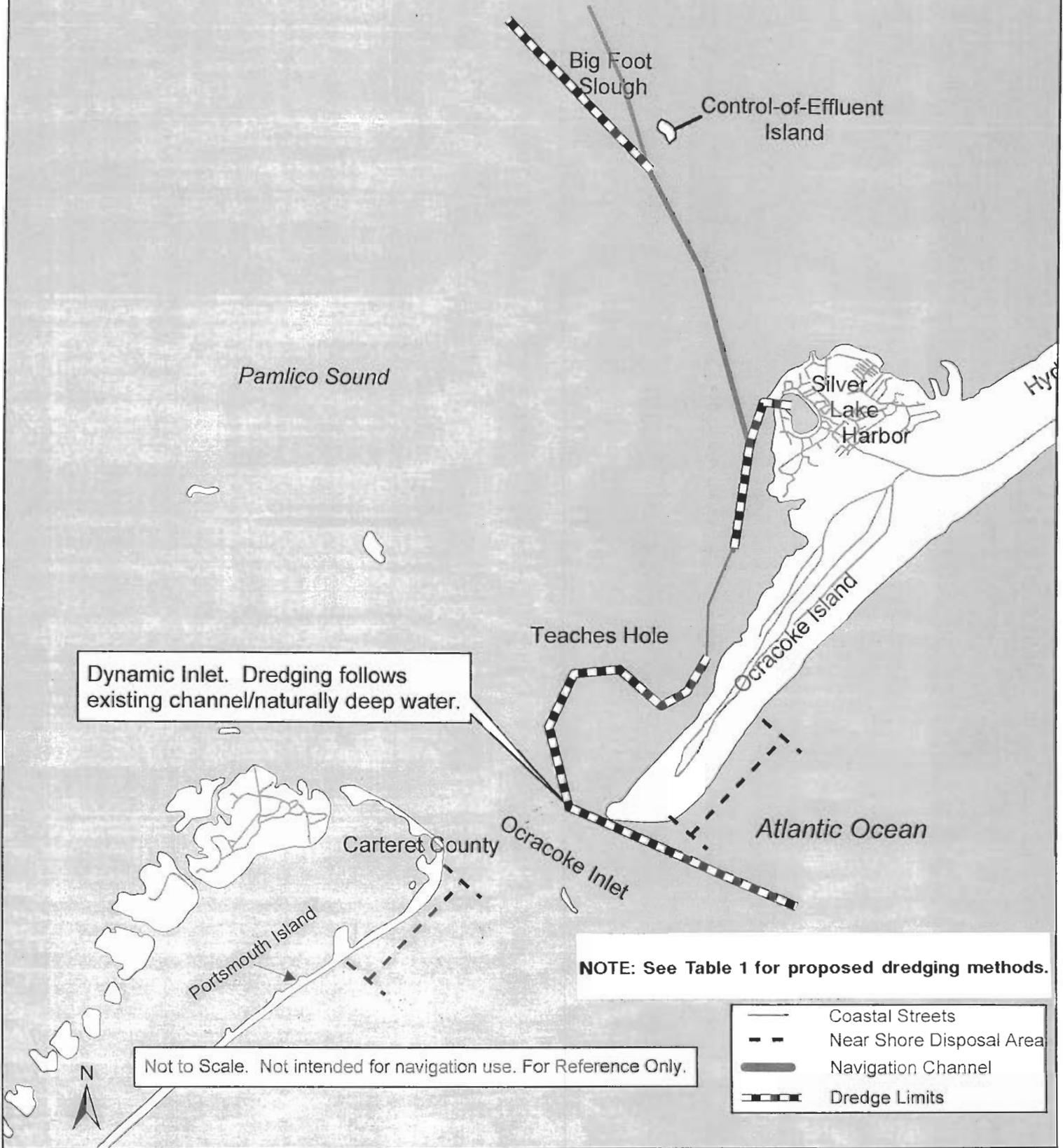
Core Sound

Not to Scale. Not intended for navigation use. For Reference Only.

-  Coastal Streets
-  Navigation Channel
-  Dredge Limits



Silver Lake Harbor



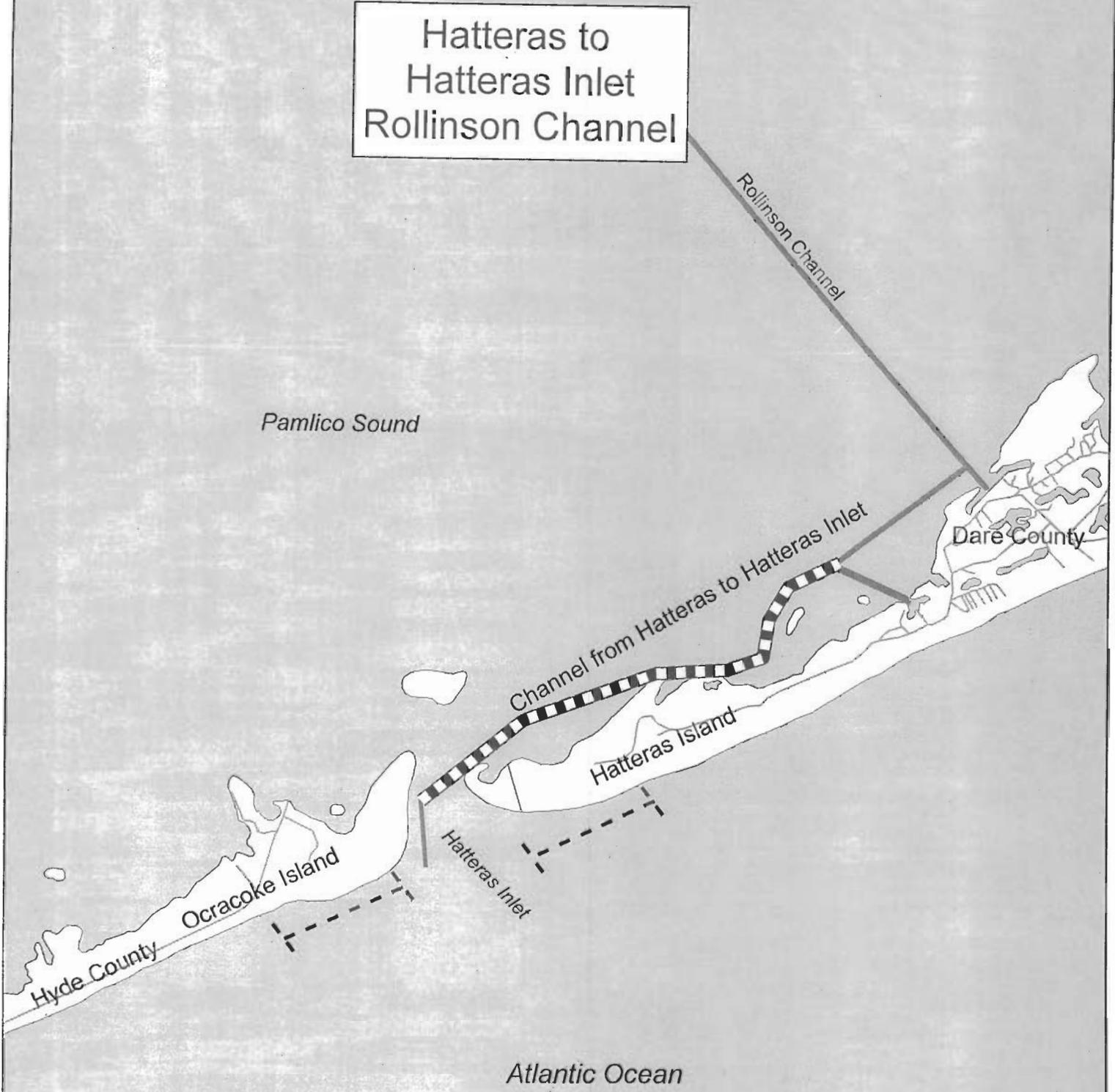
Dynamic Inlet. Dredging follows existing channel/naturally deep water.

NOTE: See Table 1 for proposed dredging methods.

- Coastal Streets
- - - Near Shore Disposal Area
- Navigation Channel
- - - Dredge Limits

Not to Scale. Not intended for navigation use. For Reference Only.

Hatteras to
Hatteras Inlet
Rollinson Channel



Pamlico Sound

Dare County

Channel from Hatteras to Hatteras Inlet

Hatteras Island

Hatteras Inlet

Ocracoke Island

Hyde County

Atlantic Ocean

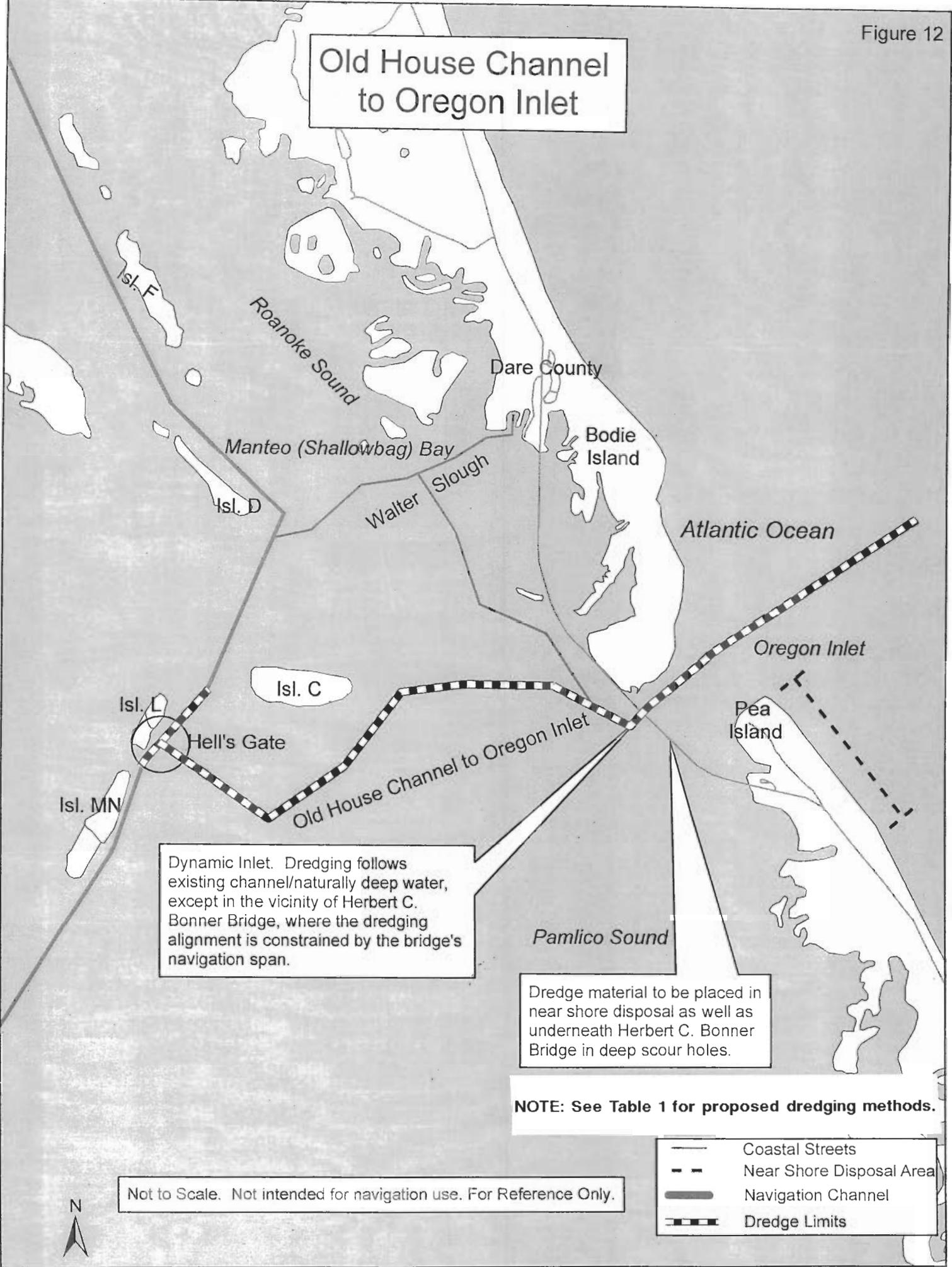
NOTE: See Table 1 for proposed dredging methods.

Not to Scale. Not intended for navigation use. For Reference Only.



- Coastal Streets
- - - Near Shore Disposal Area
- Navigation Channel
- - - Dredge Limits

Old House Channel to Oregon Inlet



Dynamic Inlet. Dredging follows existing channel/naturally deep water, except in the vicinity of Herbert C. Bonner Bridge, where the dredging alignment is constrained by the bridge's navigation span.

Dredge material to be placed in near shore disposal as well as underneath Herbert C. Bonner Bridge in deep scour holes.

NOTE: See Table 1 for proposed dredging methods.

Not to Scale. Not intended for navigation use. For Reference Only.

- Coastal Streets
- - - Near Shore Disposal Area
- Navigation Channel
- - - Dredge Limits



ATTACHMENT A

Emergency Dredging Memorandum Of Agreement



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

November 10, 1986

Planning Division

Mr. S. Thomas Rhodes, Secretary
North Carolina Department of Natural
Resources and Community Development
Post Office Box 27687
Raleigh, North Carolina 27611-7687

Dear Mr. Rhodes:

Attached is a signed copy of the Memorandum of Agreement (MOA) between the Wilmington District and the North Carolina Department of Natural Resources and Community Development outlining the procedure that will be followed when it becomes necessary for the District to perform emergency dredging in the coastal zone of North Carolina.

The MOA was discussed with staff members of the Division of Coastal Management, the Division of Environmental Management, and other State review agencies, during the annual maintenance dredging coordination meeting in Morehead City on October 1, 1986. The MOA identifies the Division of Coastal Management as the lead agency for coordination of State agencies during emergency work, since that Division is responsible for all matters relating to Federal Consistency under Section 307 of the Federal Coastal Zone Management Act of 1972, as amended. If the MOA meets with your approval, please return a countersigned copy of the agreement for our files.

If you have any questions or need additional information, please contact Mr. Daniel Small of my Environmental Resources Branch, Water Quality Section, at (919) 343-4730.

Sincerely,

Paul W. Woodbury
Colonel, Corps of Engineers
District Engineer

Enclosure

Copies Furnished (w/encl):

Mr. David Owens, Director
Division of Coastal Management
North Carolina Department of Natural
Resources and Community Development
Post Office Box 27687
Raleigh, North Carolina 27611-7687

Mr. R. Paul Wilms, Director
Division of Environmental Management
North Carolina Department of Natural
Resources and Community Development
Post Office Box 27687
Raleigh, North Carolina 27611-7687

BCF (w/encl):
SAWCO-N/Holliday

SAWPD-EW/Small/an/4730
SAWPD-E/Correale
SAWPD/Saunders
SAWDX/Burch
SAWDD/LTC Miniclier
SAWDE/COL Woodbury/s
Mail
SAWPD Files
3099pq pq dsma1

MEMORANDUM OF AGREEMENT
BETWEEN
NORTH CAROLINA DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
AND
U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT
FOR
EMERGENCY DREDGING AND DISPOSAL, FEDERAL NAVIGATION PROJECTS

1. PURPOSE. This Memorandum of Agreement (MOA) between the State of North Carolina, Department of Natural Resources and Community Development, and the U.S. Army Corps of Engineers, Wilmington District, will allow the Wilmington District to perform emergency dredging that meets identified criteria within the coastal zone of the State. The MOA will allow the State to expedite its review of a project that meets the criteria so as to allow the District to perform the emergency work with State approval.

2. APPLICABILITY. This procedure is applicable to any authorized Federal navigation project that has an individual Section 401 (P.L. 95-217) water quality certificate or that can meet the requirements of any general water quality certificate issued by the North Carolina Division of Environmental Management.

3. CRITERIA. The emergency procedure will be implemented in those cases where a rapid response is required because of unpredictable shoals forming in an authorized Federal navigation channel. The channel must be one in which commercial tonnage is moved. No recreational projects will be considered except those where the U.S. Coast Guard contemplates closure of a channel to all navigation because of critical shoaling.

The Corps of Engineers' decision to declare an emergency shall be made based on the following evaluation:

- a. the District has received complaints from users;
- b. the basis of the emergency which is defined as follows: a situation which would result in an unacceptable hazard to life or navigation, a significant loss of property, or an immediate and unforeseen significant economic hardship if corrective action is not taken within a time period less than the normal time needed under standard procedures;
- c. a District survey shows that the authorized navigation channel has shoaled as a result of a recent and unexpected event, and normal maintenance dredging is not scheduled within the next 3 months;

- d. the length of time the channel has been at the controlling depth shown by the most recent survey available;
- e. the quantity of material that needs to be dredged to resolve the emergency;
- f. the proposed disposal area;
- g. the reason(s) why normal dredging/disposal coordination and contracting procedures are inadequate;
- h. the administrative and contractual requirements that have to be met before the work can proceed; and
- i. the alternative(s) to declaring an emergency.

Based on the above evaluation, a determination will be made by the District Engineer that circumstances surrounding an authorized project require emergency action. The District Engineer will be responsible for requesting approval of the emergency action from the Division Engineer (33 CFR 209.145(f)(4)).

4. DISPOSAL METHODS. Dredged material disposal in emergency situations will be in accordance with an individual water quality certification or a general water quality certification. Disposal under general water quality certificate No. 1332 dated 18 June 1979 for sidecasting or other dredging with open water disposal adjacent to the channel will be considered:

- a. only if an upland disposal area is not available or within reasonable distance; or

- b. an upland area is available but a pipeline dredge cannot be obtained within a reasonable time because of availability, distance from the emergency site, or time required for contractual procedures.

5. PROCEDURES. The District staff will be responsible for informing the point of contact or the designated alternate in the Division of Coastal Management (via telephone) that the necessary approval has been received from the Division Engineer for work to proceed under emergency authority. The District staff will also be responsible for notifying and coordinating with Federal agencies.

The North Carolina Division of Coastal Management will be responsible for designating a single point of contact for coordination of emergency actions with the District and State agencies and the establishment of a single State position on each project.

Once an emergency action has been declared by the Corps of Engineers, the Division of Coastal Management will be responsible for coordinating State review (via telephone), resolving any conflicts, and obtaining a State position.

A formal consistency determination under Section 307(c)(1) and (2) of the Coastal Zone Management Act will be waived. All emergency work will be conducted in a manner consistent to the maximum extent practicable with policies and guidelines of the North Carolina Coastal Management Program for dredging and dredged material disposal. Waiver of the consistency determination will not relieve the District of obtaining or complying with other applicable State or Federal environmental permits or approvals.

On receipt of State verbal approval (via telephone) from the Division of Coastal Management, the District will issue a public notice required by 33 CFR 209.145(g), Section 404(a) of P.L. 95-217, and 33 CFR 209.145 (f)(4). State verbal approval will be confirmed in writing to the District. The emergency work will be performed concurrently with the issuance of the public notice.

6. State agencies to be contacted by the Division of Coastal Management are:

a. North Carolina Department of Natural Resources and Community Development

-Division of Marine Fisheries

-Division of Environmental Management

-Office of Environmental Planning and Assessment

-Division of Land Resources

b. North Carolina Department of Cultural Resources

-Division of Archives and History

c. North Carolina Wildlife Resources Commission

d. North Carolina Department of Administration

-State Property Office

e. North Carolina Department of Human Resources

-Shellfish Sanitation Branch

-Health Services Section

7. Federal agencies to be contacted by the District:

a. U.S. Environmental Protection Agency, Region IV, Environmental Impact Assessment Branch, NEPA review staff

b. U.S. Fish and Wildlife Service, Raleigh Field Office, Division of Ecological Services and Asheville Endangered Species Field Office

c. National Marine Fisheries Service, Habitat Conservation Division, Beaufort, N.C.

12/19/86

Date

J. Thomas Rhodes

Secretary, N.C. Department of Natural Resources and Community Development

15 Nov 86

Date

[Signature]

District Engineer, Wilmington District

ATTACHMENT B

July 1, 1998, Corps' Biological Assessment and March 9, 1999, National Marine Fisheries
Biological Opinion on Threatened and Endangered Species Section 7 Consultation
Guidelines for Avoiding Impacts to West Indian Manatee



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, FL 33702
(727) 570-5312; FAX 570-5517

MAR 9 1999

F/SER3:EGH:ts

Mr. C. E. Shuford, Jr., P.E.
Chief, Technical Services Division
Wilmington District Corps of Engineers
P.O. Box 1890
Wilmington, NC 28402-1890

Dear Mr. Shuford:

This letter responds to your letter to me dated July 1, 1998 and enclosed Biological Assessment (BA). Your BA, submitted pursuant to Endangered Species Act (ESA) section 7 consultation requirements, assesses the use of the U.S. Army Corps of Engineers (COE) sidecast dredges FRY, MERRITT and SCHWEIZER, and the split-hull hopper dredge CURRITUCK in United States coastal waters. Additional, revised information was submitted to this office on March 2, 1999.

Proposed Action

This consultation addresses the use of the sidecast dredges FRY, MERRITT and SCHWEIZER and the split-hull hopper dredge CURRITUCK, to maintain shallow, coastal inlet navigation channels along the eastern seaboard of the United States. These specialized dredge plants are currently used primarily by the Wilmington District Corps of Engineers at many locations in North Carolina but also occasionally elsewhere along the eastern seaboard. Normally, they are used in: 1) shallow coastal inlets which cannot be dredged safely or effectively with commercially available dredges, 2) during emergencies, or 3) when an urgent and compelling need exists for clearing out a navigation channel, such as periods when rapid shoaling has occurred, a navigation hazard may exist, and there is insufficient time to contract commercial dredges.

The sidecast dredges FRY and MERRITT each have two drag arms, one on each side, that vacuum the sediment through 10-inch intake pipes as the arms drag along the bottom. The sediment is pumped through a combined 12-inch discharge pipe that is above the water surface and perpendicular to the dredge. The SCHWEIZER is laid out similarly but its dredge suction pipes are 14 inches in diameter and combined discharge pipe is 16 inches in diameter. In all three dredges the discharge pipe extends about 60 feet beyond the side of the dredge. This pipe distance and force from the pumps generally results in the sediment being deposited 85 to 100 feet from the dredge. The sediment is discharged on the side of the channel where the predominant currents would tend to move the sediment away from the channel.



The split-hull hopper dredge CURRITUCK has drag arms similar to a sidecast dredge, but the sediment is pumped into the dredge's hopper. The water in the hopper is overflowed to provide an economic load of sand, since the dredged slurry entering the hopper contains about 20% sand and 80% water. Once the hopper is full of sand (about 300 cubic yards), the sediment is taken to nearshore ocean waters (normally 6 to 10 below feet mean low water) where the split-hull hopper is opened and the sediments are dumped.

These vessels operate year-round to dredge and maintain shallow navigation channels with depths between 4 feet and 14 feet below mean low water. Vessels operate without sea turtle deflectors on the dragheads, and have no screening or observers. Draghead suction is produced by use of dredge pumps averaging 350-horsepower, with a maximum horsepower of 400. The draghead sizes range from approximately 2 feet by 2 feet to 2 feet by 3 feet. The draghead openings are further subdivided on their undersides by gridded baffles, with openings ranging from about 5 inches by 5 inches to 5 inches by 8 inches. These baffles restrict the size of objects which can enter the dredge draghead.

Listed Species and Critical Habitat

Listed species under the jurisdiction of the NMFS that may occur in channels along the southeastern United States and which may be affected by dredging include:

THREATENED:

- (1) the loggerhead turtle - *Caretta caretta*

ENDANGERED:

- (1) the right whale - *Eubalaena glacialis*
- (2) the humpback whale - *Megaptera novaeangliae*
- (3) the green turtle - *Chelonia mydas*

Note: green turtles in U.S. waters are listed as threatened, except for the Florida breeding population which is listed as endangered.

- (4) the Kemp's ridley turtle - *Lepidochelys kempii*
- (5) the hawksbill turtle - *Eretmochelys imbricata*
- (6) the shortnose sturgeon - *Acipenser brevirostrum*

Additional endangered species which are known to occur along the Atlantic coast include the finback (*Balaenoptera physalus*), the sei (*Balaenoptera borealis*), and sperm (*Physeter macrocephalus*) whales and the leatherback sea turtle (*Dermochelys coriacea*). NMFS has determined that these species are unlikely to be adversely affected by the proposed dredge vessel activities because they are unlikely to be encountered in the shallow, coastal inlet waters that typify the project areas.

Right whale critical habitat overlaps portions of the project area. There are five well-known habitats used annually by right whales including: 1) coastal Florida and Georgia, 2) the Great South Channel, east of Cape Cod, 3) Cape Cod and Massachusetts bays, 4) the Bay of Fundy, and 5) Browns and Baccaro Banks, south of Nova Scotia. The first three areas occur in U.S. waters and have been designated by NMFS as critical habitat (59 FR, 28793, June 3, 1994).

Biological information on the right whale and humpback whale is included by reference to the August 25, 1995 Biological Opinion on hopper dredging in the southeastern United States, and the NMFS recovery plans for right whales and humpback whales (NMFS 1991a; 1991b). The following discussions focus primarily on vessel interactions with whales.

Right Whales:

New information has recently become available on the right whale population. A progression of discussions and analysis has occurred during ESA section 7 consultations conducted in 1995 and 1996 on vessel and aircraft operations of the U.S. Coast Guard, and the prosecution of northeast Atlantic fisheries for American lobster and multi-species, concerning the population trend for the northern right whale. The current conclusion is that it remains unknown whether or not the population is showing a decline, or whether the population growth **rate** has remained at a constant rate of 2.5% or at a constant, but lower rate. The 1996 NMFS draft stock assessment report indicates that the size of this population may have been as low as 50 at the turn of the century, which suggests that the species may be showing signs of a **slow** recovery to the current estimate of 295. However, a recent statistical analysis based on **current** trends in right whale mortality predicts that the northern right whale population is **doomed** to extinction and calculates their extinction date as 2189 (Caswell *et al.* 1999 in press). Other **right** whale researchers have expressed their doubts as to the efficacy of current conservation **measures** to prevent extinction of the northern right whale population (Slay 1999, personal communication). In any event, the current small population size combined with their low reproductive rate suggest that anthropogenic impacts may have a greater effect on this species than other endangered whales subject to the same impacts.

Anthropogenic causes of right whale mortality are discussed in detail in Kraus (1990) as well as in NMFS (1991a). Ship collisions and entanglements are the most common direct causes of mortality identified through right whale strandings. Twenty percent of all right whale mortalities observed between 1970 and 1989 were caused by vessel collisions/interactions with right whales. An additional 8% of these mortalities are suspected to have resulted from vessel collision.

As a result of the potential for interactions between vessels and right whales from December through March in the calving area off Georgia and northern Florida, aerial surveys funded by the COE, Navy and USCG have been implemented as the right whale early warning system. These surveys are conducted to identify the occurrence and distribution of **right** whales in the vicinity of ship channels in the winter breeding area, and to notify nearby vessel operators of whales in their path. Data collected during these surveys indicate that right whales are observed off Savannah,

Georgia, in December and March, and are relatively abundant between Brunswick, Georgia, south to Cape Canaveral from December through March. During early 1995, a right whale was also observed by shipboard observers off Morehead City, North Carolina.

Humpback Whales:

The Humpback Whale Recovery Plan (NMFS 1991b) identifies entanglement and ship collisions as potential sources of mortality, and disturbance, habitat degradation, and competition with commercial fisheries as potential factors delaying recovery of the species.

Until recently, humpback whales in the mid- and south Atlantic were considered transients. Few were seen during aerial surveys conducted over a decade ago (Shoop *et al.*, 1982). However, since 1989, sightings of feeding juvenile humpbacks have increased along the coasts of Virginia and North Carolina, peaking during the months of January through March in 1991 and 1992 (Swingle *et al.*, 1993). Shipboard observations conducted during daylight hours during dredging activities in the Morehead City Harbor entrance channel during January and February 1995 documented sightings of young humpback whales on at least six days near the channel and disposal area, through January 22, 1995. Three humpback strandings were documented in North Carolina in that year, one each in February, March, and April, suggesting that humpback whales remained within South Atlantic waters through April.

Swingle *et al.* (1993) identify a shift in distribution of juvenile humpback whales in the nearshore waters of Virginia, primarily in winter months. Those whales using this mid-Atlantic area that have been identified were found to be residents of the Gulf of Maine feeding group, suggesting a shift in distribution that may be related to winter prey availability. In concert with the increase in mid-Atlantic whale sightings, strandings of humpback whales have increased between New Jersey and Florida since 1985. Strandings were most frequent during the months of September through April in North Carolina and Virginia waters, and were composed primarily of juvenile humpback whales of no more than 11 meters in length (Wiley *et al.*, 1995). Six of 18 humpbacks (33 percent) for which the cause of mortality was determined were killed by vessel strikes. An additional humpback had scars and bone fractures indicative of a previous vessel strike that may have contributed to the whale's mortality. Sixty percent of those mortalities that were closely investigated showed signs of entanglement or vessel collision (Wiley *et al.*, 1993).

Sea Turtles:

Information on the biology and distribution of sea turtles can be found in the 1991 and 1995 Biological Opinions on hopper dredging in channels and borrow areas, which are incorporated by reference. Channel specific information has been collected by the COE for channels at Morehead City, Charleston, Savannah, Brunswick, Fernandina and Canaveral, and is presented in detail in COE summary report entitled "Assessment of Sea Turtle Abundance in Six South Atlantic U.S. Channels" (Dickerson *et al.* 1994) and in the COE's Biological Assessment. Information on the

biology and distribution of right whales and humpback whales can be found in the 1991 and 1995 Biological Opinions as well. There is no significant new information regarding the status of sea turtle species that has not been discussed in the Biological Opinions that have been incorporated by reference.

Sturgeons:

Shortnose sturgeon are found in rivers, estuaries, and the sea, but populations are confined mostly to natal rivers and estuaries. The species appears to be estuarine anadromous in the southern part of its range, but in some northern rivers it is "freshwater amphidromous," i.e., adults spawn in freshwater but regularly enter saltwater habitats during their life. Adults in southern rivers forage at the interface of fresh tidal water and saline estuaries and enter the upper reaches of rivers to spawn in early spring (NMFS 1998).

The use of saline habitat varies greatly among northern populations. In the Saint John and Hudson rivers, adults occur in both freshwater and upper tidal saline areas all year. This situation may also exist in the Kennebec River system where, during summer, some adults forage in the saline estuary while others forage in freshwater reaches. In the Delaware, Merrimack and Connecticut Rivers, adults remain in freshwater all year, but some adults briefly enter low salinity river reaches in May-June then return upriver. Some adults have been captured in nearshore marine habitat, but this is not well documented. Many tagging and telemetry studies in rivers throughout the species' range indicate that these fish remain in their natal river or the river's estuary (NMFS 1998).

The final recovery plan for the shortnose sturgeon (NMFS 1998b) gives the current, best available information on the distribution and abundance of shortnose sturgeon, and is incorporated herein by reference. However, in the project area, the Cape Fear River, North Carolina, shortnose sturgeon population would be the most likely to be affected by the proposed dredging activities. No other shortnose sturgeon populations are known from North Carolina, which is where most of the maintenance dredging by the vessels considered in this consultation has historically occurred and will continue.

Effects of the Proposed Action

Effects on Sea Turtles

The construction and maintenance of Federal navigation channels by hopper dredges have been identified as a source of turtle mortality. NMFS has previously consulted on the use of hopper dredges in southeastern United States channels and borrow areas, and Gulf of Mexico channels. The November 25, 1991 biological opinion issued to the COE's South Atlantic Division (SAD) found that continued hopper dredging activity was likely to jeopardize the continued existence of the Kemp's ridley sea turtle. The reasonable and prudent alternative issued with the 1991

biological opinion included the prohibition of hopper dredging in the Canaveral channel (Florida), seasonal restrictions which allowed hopper dredging from December through March in channels from North Carolina through Canaveral, or use of alternative dredges in all southeastern U.S. channels.

In addition to hopper dredges, clamshell, sidecast and pipeline dredges are all used to dredge and maintain navigation channels. Pipeline and clamshell dredges are relatively stationary, and therefore act on only small areas at any given time. Observer coverage was required at pipeline outflows during several dredging projects deploying pipeline dredges along the Atlantic coast. No turtles or turtle parts were observed. Additionally, the COE's SAD provided documentation of hundreds of hours of informal observation by COE inspectors during which no takes of listed species were observed. Additional monitoring by other agency personnel, conservation organizations, and the general public has never resulted in reports of a turtle take by pipeline dredges. In contrast, large capacity, oceangoing hopper dredges, which are frequently used in ocean bar channels and sometimes in harbor channels and offshore borrow areas, move relatively rapidly and can entrain and kill sea turtles, presumably as the drag arm of the moving dredge overtakes the slower moving turtle. Brumation by sea turtles in southeastern channels, when they bury themselves in the channel bottom mud and presumably slow their metabolic processes, is also suspected in deaths of some sea turtles by hopper dredge. The reasons for this are that: 1) the turtle deflector device on the leading edge of the draghead is probably less effective at deflecting buried sea turtles than deflecting turtles which are simply resting or foraging on the channel bottom, 2) the turtles' ability to move out of the way quickly may be compromised because they are partially buried in sediment, and 3) their flight response time may be lengthened due to their torpor or reduced metabolic rate during brumation.

The operation of sidecast dredges FRY, MERRITT and SCHWEIZER and the small capacity, coastal hopper dredge CURRITUCK is not expected to adversely affect listed species of sea turtles because of the slow speed of the vessels, the low suction levels inherent to these small dredges, and the small size of the dragheads. These species should be able to get out of the way of the slow moving dredges, which operate at speeds of 1 to 3 knots when working in inlet channels. From sea turtle tests performed by the Corps of Engineers in New River Inlet in 1998, it is known that the suction dragheads of these vessels exhibit very low suction forces. Further, the dragheads have very small openings--3 inches by 5 inches for the CURRITUCK and 5.5 inches by 8 inches for the sidecast dredges. The results of the tests conducted by the Corps of Engineers on a previously-dead, juvenile (13.5-inch carapace length) green turtle demonstrated that the low suction forces and small openings prevented the lifeless turtle from being entrained. Further, the suction force was low enough that the turtle was easily prodded and moved with a pole despite being held by the suction force against the draghead. If a small, live turtle did get impinged by the pump suction against the draghead, the turtle would very likely soon be broken free of the suction by the motion of the draghead along the irregular bottom and/or its own efforts to free itself. Even if a turtle small enough to pass through the draghead were encountered, it could pass through the dredge relatively unharmed due to the low pump pressures involved.

It is unlikely that turtles small enough to pass through the dragheads will be encountered in significant numbers in the proposed operating area of the dredges. The smallest of three sea turtles (all loggerheads) taken during hopper dredging operations in November-December 1998 at Beaufort Inlet Entrance Channel, North Carolina by the dredge SUGAR ISLAND measured 57 cm by 44 cm curved carapace length (CCL) by curved carapace width (CCW). During hopper dredging operations in February of 1999 in Kings Bay Entrance Channel, Fernandina, Florida, a total of 33 sea turtles (all juvenile loggerheads) were captured and relocated by a contract trawler sweeping the area in front of the large capacity hopper dredge R.N. WEEKS. (The R.N. WEEKS has a dredged material storage capacity approximately 10 times that of the CURRITUCK, and significantly larger dragheads, pumps and suction). The smallest captured and relocated loggerhead measured 54.5 cm CCL by 52.0 cm CCW. One Kemp's ridley that was lethally taken by the R.N. WEEKS measured approximately 30 cm in carapace diameter. Neither of these turtles would have been entrained by the smaller sized gridded dragheads of the vessels considered in this consultation because of their small openings.

Sea turtle strandings were compiled by R. Boettcher of North Carolina Marine Fisheries Commission for beaches within 3 miles (north, south, and inland) of Oregon Inlet, Drum Inlet, New Topsail Inlet, and Lockwood Folly Inlet, North Carolina for all periods when dredging operations occurred for 1994 - 1997 (ACOE, 1998) for the four vessels considered in this consultation. A total of 19 loggerheads, one green and one Kemp's ridley were reported stranded. The size of the stranded loggerheads would have precluded their entrainment by the vessels considered in this consultation (the smallest loggerhead which stranded measured 23.5 inches by 22.5 inches (CCL by CCW). The rarest and smallest of the turtles which stranded during the reporting period—the green and the Kemp's ridley – measured 12 inches by 10 inches (CCL by CCW), and 15 inches by 15 inches, respectively, and were also too large to have been entrained by the dragheads of the vessels considered in this consultation. Both of these turtles stranded within three miles of Lockwood Folly Inlet.

Additional data was compiled and analyzed by Boettcher on the measurements of sea turtle strandings and incidental captures in North Carolina from 1996-1998. Of 25 stranded green turtles for which straight-line carapace widths (SCWs) were measured in 1996, roughly 95% (mean plus or minus two standard deviations) ranged between 7.5-12.5 inches (mean SCW was 10.0 inches); in 1997, roughly 95% of 29 stranded green turtles had SCWs of 6.7-12.4 inches (mean SCW was 9.5 inches); in 1998, roughly 95% of 43 stranded green turtles had SCWs of 3.8-16.4 inches (mean SCW was 10.1 inches), while roughly 68% (mean plus or minus one standard deviation) had SCWs of 7.0-13.3 inches. In 1996 of 9 stranded Kemp's, roughly 95% had SCWs of 7.5-17.4 inches (mean SCW was 12.6 inches); in 1997 of 34 stranded Kemp's, roughly 95% had SCWs of 6.2-19.2 inches (mean SCW was 12.7 inches); in 1998 of 75 stranded Kemp's, roughly 95% had SCWs of 4.6-19.5 inches (mean SCW was 12.0 inches). The difference between the SCW and straight-line carapace length (SCL) measurements of the 212 stranded Kemp's and greens considered above ranged from 0.8 to 2.2 inches. It appears based on these measurements and the size of the openings on the dragheads (the largest opening is 5 by 8 inches), that the vast majority of both greens and Kemp's ridleys considered here could not and

would not be entrained by the dragheads. Both species are considerably smaller than the abundant loggerheads. While the possibility of entrainment of the smallest individuals of these two species cannot be ruled out, it is unlikely to occur.

Effects on Sturgeon

Aside from seasonal migrations to estuarine waters, shortnose sturgeon rarely occur in the marine environment. Shortnose sturgeon spawning habitat in the potential project areas should lie well upstream of the ocean inlet environments typically dredged by the small capacity, coastal hopper dredge CURRITUCK and the small sidecast dredges FRY, SCHWEIZER and MERRITT. Juvenile shortnose usually remain upstream of saline water until they reach about 45 cm (approximately 18 inches) in length.

Habitat conditions normally suitable for adults (shortnose greater than 45 cm in length) could occur in estuarine areas where these vessels might be required to work. Sturgeon habitat within the areas dredged would be temporarily disturbed during maintenance dredging. However, the dredges considered in this consultation restore navigation channels to their authorized dimensions to reestablish a previously existing condition (depth). Therefore, no new permanent modification of habitat will occur.

Maintenance dredging of Federal navigational channels can adversely affect sturgeon by entraining them in dredge dragarms and impeller pumps (NMFS 1998). Other dredging methods may also adversely affect sturgeon. Hastings (1983) reported anecdotal accounts of adult sturgeon being expelled from dredge spoil pipes while conducting a study on sturgeon on the Atlantic coast. Atlantic sturgeon were killed in both hydraulic pipeline and bucket-and-barge (clamshell dredge) operations in the Cape Fear River (M. Moser in NMFS 1998). NMFS observers documented the take of one Atlantic sturgeon in a hopper dredge operating in King's Bay, Georgia (C. Slay in NMFS 1998). Two shortnose sturgeon carcasses were discovered in a dredge spoil near Tullytown, Pennsylvania and apparently killed by a hydraulic pipeline dredge operating in the Delaware River in March 1996 (NMFS 1998). In early 1998, three shortnose sturgeon were killed by a hydraulic pipeline dredge operating in the Florence to Trenton section of the upper Delaware River (NMFS 1998).

Adult shortnose could occur in some of the areas that may be dredged by these vessels. Adults would be most likely to be encountered in the winter and spring, after spawning and their migrations to feeding areas in downstream and estuarine waters. However, because of their mobility, adult shortnose sturgeon should be able to avoid the slow moving dredge equipment if they move away when they detect the approaching draghead. Given their specialized sensory apparatus, they should be able to detect the vibrations of a slow moving, approaching draghead. Also, given the size of the shortnose sturgeon which would be expected to occupy the coastal inlets being dredged, i.e. greater than 45 cm, it is unlikely that they would be entrained by the slow moving, low suction dragheads. Entrained sturgeons passing through the suction pipelines could pass through unharmed, or they could be killed. Though the possibility of injury or death cannot be ruled out, as evidenced by the historic record, the likelihood is remote.

Effects on Whales

Right whales and humpback whales are vulnerable to small vessel and ship collisions when the whales make their annual migrations along the eastern seaboard. The sidecast dredges FRY, MERRITT and SCHWEIZER transit at approximately 7 to 10 knots from the inlet dredging sites to adjacent beach sites to dispose of dredged materials. The CURRITUCK travels at speeds of 5 to 8 knots to adjacent beaches or offshore disposal sites. Because of these slow speeds, these vessels should present a minimal threat to migrating whales – certainly less than that of normal, faster-moving commercial ship traffic and recreational boating. Adverse impacts to right whales and humpbacks from the dredges and dredging operations are not expected because 1) the dredges work in the throats and interior portions of inlets which are not used by whales, 2) the dredges travel at very low rates of speed during dredging operations, 3) the captains of the dredges will be provided daily information on the positions of the migrating right whales, and 4) the dredges will reduce their speed as necessary and maintain a proper lookout to avoid collisions with whales when transiting to disposal sites and right whales are in the area.

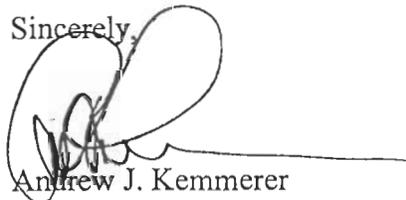
Conclusion

Based on our consideration of the best available information, we believe that the year-round operation of the hopper dredge CURRITUCK and the sidecast dredges FRY, MERRITT and SCHWEIZER to maintain coastal inlets on the eastern seaboard of the United States may affect, but is not likely to adversely affect the continued existence of listed species under NMFS purview. This consultation is valid as well for the operation by Wilmington District Corps of Engineers for channel maintenance dredging of up to 10 vessels of this or similar type and size class (under 500 gross tons), with similar dragheads (Brunswick, Brunswick County Type, Brunswick Adjustable, or equivalent), dredge pump horsepower (400 H.P. maximum), and suction and discharge pipe specifications (dredge suction pipes 10-14 inches in diameter, and combined discharge pipe 12-16 inches in diameter).

This concludes consultation responsibilities with NMFS under section 7 of the ESA. Consultation should also be reinitiated pursuant to 50 CFR 402.16 if there is new information that reveals effects of the action that may affect listed species or critical habitat (when designated) in a manner or to an extent not previously considered, if the identified action is subsequently modified in a manner that causes an effect to listed species or critical habitat that has not been considered, or if a new species is listed or critical habitat is designated that may be affected by the identified action.

Please call Mr. Eric Hawk, Fishery Biologist, at 727/570-5312 if you have any questions regarding this consultation or if further coordination is necessary.

Sincerely,



Andrew J. Kemmerer
Regional Administrator

cc: F/PR3

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DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS

P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890
July 1, 1998

IN REPLY REFER TO

Environmental Resources Section

Dr. Andy Kemmerer, Regional Director
National Marine Fisheries Service
9721 Executive Center Drive North
St. Petersburg, Florida 33702-2449

Dear Dr. Kemmerer:

Enclosed is our Biological Assessment, Use of the Sidecast Dredges Fry, Merritt, Schweizer, and the Split-Hull Hopper Dredge Currituck in Coastal United States Waters, dated July 1998. The assessment documents our finding that the use of these vessels to maintain navigation channels along the eastern seaboard of the United States is not likely to adversely affect any listed species under the jurisdiction of your agency.

As discussed with Ms. Colleen Coogan of your staff, we would like to have your office serve to coordinate your agency's review of this assessment since it discusses the operation of these vessels within the National Marine Fisheries Service's Southeast and Northeast Regions. A copy of this assessment is enclosed for Ms. Nancy Hanley of the Northeast Region.

If you have any questions regarding the operation of these vessels, the investigations performed, or any other part of this assessment, please contact Mr. William Adams at (910) 251-4748.

Sincerely,

C. E. Shuford, Jr., P.E.
Chief, Technical Services Division

Enclosure

BIOLOGICAL ASSESSMENT
USE OF THE SIDECAST DREDGES FRY, MERRITT, AND SCHWEIZER
AND THE SPLIT-HULL HOPPER DREDGE CURRITUCK
IN COASTAL UNITED STATES WATERS

1.00 Background

The sidecast dredges Fry, Merritt, and Schweizer, and the split-hull hopper dredge Currituck, are used throughout the east coast of the United States to maintain adequate depths in navigation channels through shallow coastal inlets. These dredges are Government-owned and are based in, and operate out of, Wilmington, North Carolina, and are administered by the Wilmington District, U.S. Army Corps of Engineers.

These dredges were once covered under the Regional Biological Opinion (RBO) for hopper dredging issued by the Southeastern Regional Office of the National Marine Fisheries Service. However, they were left out of the 1997 RBO because of concerns about their potential impacts to listed species since they operate without deflectors, have no screening or observers, and operate during all times of year, including warm weather seasons. In order to address these concerns, a separate Biological Assessment became necessary.

2.00 Description of Dredge Plants

These shallow draft dredges all use small California style dragheads to collect shoal material; however, their sizes and power are substantially less than that of the commercial hopper dredges which employ similar draghead technology in the southeast. Dredge pumps on these vessels average around 350 horsepower and draghead sizes range from approximately 2' X 2' to 2' X 3'. The draghead openings are further subdivided on their undersides by gridded baffles, with openings ranging from about 5" X 5" to 5" X 8". These baffles serve to restrict the size of objects which can enter the dredge and to even-out and direct the hydraulic forces during dredging, allowing for maximum production with each dredge cut.

When operating, the Fry, Merritt, and Schweizer cast dredged material to the side of the navigation channel whereas the Currituck fills a small hopper with the material and transports it to designated disposal areas. These vessels operate at working speeds ranging between 1 and 3 knots and travel at speeds between 7.0 and 10 knot. These dredges normally dredge shallow channels, with depths between 4 feet and 14 feet below mean low water.

Photographs and complete descriptions of each of these vessels are provided in Attachment A. Photographs of the draghead of the dredge Fry are also included in Attachment D.

5.00 Species Assessments

5.01 Finback whale, humpback whale, right whale, sei whale, and sperm whale

a. Status - all endangered

b. Occurrence in Immediate Project Vicinity - Whales occur infrequently in the ocean off the coast of North America. Of these, only the right whale routinely comes close enough inshore to encounter these dredges which would be operating in the immediate vicinity of ocean inlets. The right whale winter calving grounds occur in the nearshore ocean near the Florida/Georgia state line and their late summer feeding and breeding grounds are in the lower Bay of Fundy or the lower Scotian shelf. Their occurrence along much of the eastern seaboard is usually associated with migrations. Sighting data provided by the Right Whale Program of the New England Aquarium indicates that 93 percent of all North Carolina sightings between 1976 and 1992 occurred between mid-October and mid-April (Chris Slay, personal communication, 1993). Since these dredges operate year-round along the eastern seaboard, this species could easily be in the vicinity of the dredges during some of their operations.

c. Current Threats to Continued Use of the Project Area - None

d. Project Impacts -

(1) Habitat - These dredges restore navigation channels to their authorized dimensions, in essence, reestablishing a previously existing condition. No permanent modification of habitat will occur.

(2) Food Supply - Right whales feed on copepods and juvenile euphasiids. The productivity of these prey species will not be diminished by the maintenance dredging of inlet channels; therefore, the food supply of the right whale should be unaffected.

(3) Relationship to Critical Periods in Life Cycle - Over most of the eastern seaboard, these dredges operate year-round while right whales should only be present during migrations. Right whales are vulnerable to ship and small vessel collisions while migrating; however, sidecast dredges and the Currituck normally work in the throat and interior portions of inlets. When working in inlet channels, the vessels operate at speeds between 1 and 3 knots. The Currituck travels to an adjacent beach to dispose of dredged material at speeds between 5 and 8 knots. The vessels transit between sites at speeds of 7 to 10 knots. These speeds allow maximum dredging efficiency but maintain an adequate speed for steerage in inlet environments. Because of these slow speeds, these vessels should present less of a threat to migrating whales than normal commercial ship traffic and recreational boating. When operating near, or traveling through, the right whale calving grounds, the Captains of these vessels would be provided daily information on the locations of the whales from the right whale monitoring program and would operate their vessels accordingly.

Analysis of stranding data does not reveal any pattern which would indicate that either the sidecast dredges or the Currituck were responsible for any of the strandings in inlet areas. Of the eight inlet areas examined, four of them had no strandings during the multiple periods when dredging was occurring. Of the other four, almost half of the strandings (9 out of 21) could not be attributed to any known cause, i.e., no damage to the turtles was apparent. Of the remaining, boat propellers or human molestation appeared to be the probable cause of mortality in most cases (9 out of 12), in the remaining (3), injury was too non-specific or the specimen was too badly decomposed to assess any cause of death. The complete text of Boettcher's report is included as Attachment C.

On 26 February 1998, Ruth Boettcher, NC Wildlife Resources Commission, and Messers. Frank Yelverton and William Adams, Corps of Engineers, visited the sidecast dredge "Fry", located in New River Inlet, Onslow Co., N. C., to test whether or not this class of vessel could take sea turtles. A fresh dead 13.5" green sea turtle from Pamlico Sound (taken last year but kept frozen) was used in the tests (see photographs in Attachment D). Three tests were run: 1) in the water column, the turtle was impinged on the draghead and the pumps were run for 5 minutes (this test was performed twice), 2) the turtle was impinged on the draghead, then the draghead placed on the bottom and the pumps were run for 5 minutes (this test was also performed twice), and 3) the turtle was impinged on the draghead and the vessel performed routine dredging for 5 minutes. Results were as follows:

For test one, first run, no significant damage was visible to the turtle, only a few barely detectable nicks to the carapace. After the second run, the barnacles had been sucked off but, again, the shell and flippers had no detectable damage. For test two, both runs, no significant damage was done, a few nicks on the carapace were apparent but nothing else. For test three, significant abrasions occurred on the anterior portion of the carapace and one blister-like hematoma (dime-sized) was raised on the underside of the left front flipper. Significant quantities of sand had also been forced into the turtle's mouth. Several important observations were made during the tests.

The suction force coming through the draghead was not strong. In one case, the turtle was not properly impinged and it was easily prodded with a pole into proper position. This would not have been possible if it were tightly held by suction forces. A check with the Captain indicated that the vacuum gauge for the pump showed no change when the turtle was impinged. This further indicates minimal suction forces at the draghead.

The same turtle was used on all of the tests. At the end of all of this cumulative impingement abuse, the only damage observed was abrasion from being dragged along the bottom. No fractures, dislocations, or any other type of physical damage was detectable.

The last test was considered to be a worst case scenario - an impinged turtle unable to escape because it was tied to a draghead. Under normal circumstances, it is questionable whether these vessels could actually impinge a sea turtle with such low suction forces. If a sea turtle were to accidentally become impinged, at such low suction forces it would have ample opportunity for escape due to bottom irregularities.

would be expected to continue to support benthic populations similar to those existing prior to maintenance dredging.

(3) Relationship to Critical Periods in Life Cycle - Maintenance dredging with these vessels can be performed at any time of year. Compliance with seasonal restrictions is the responsibility of the host Corp District; if requested to dredge in a given area, it is assumed that the host Corps District has coordinated the activity and obtained the necessary environmental clearances.

Adults could occur in some of the areas that may be dredged by these vessels. Because of the mobility of adults, they should be able to avoid the slow moving dredging equipment if they exhibit flight behavior when approached. Whether or not this occurs is unknown. From the sea turtle tests performed in New River Inlet and described above, it is known that the suction dragheads of these vessels exhibit very low suction forces and have very small openings, ranging from 3" X 5" for the Currituck and 5.5"x 8" for the sidecast dredges. Given the size of shortnose sturgeon which would be expected to occupy the areas being dredged (>45cm = 17.7"), the low suction forces and small openings, and an expected flight response, it is unlikely that an adult sturgeon would be taken under normal circumstances.

(4) Affect Determination - Analysis of the life history and range of the shortnose sturgeon and the general physical characteristics of the areas likely to be dredged within that range indicate that these dredges may occasionally be working in the vicinity of the species. Project maintenance should not result in significant habitat modification and feeding areas will not be significantly affected. Spawning areas and nursery areas for juveniles would be expected to occur outside of the areas normally dredged, but adult shortnose sturgeon could be present in dredging areas. Since the shortnose sturgeon which occupy the project area are mobile, they should be able to avoid locations being disturbed by dredging. Assuming a worst case, based on the low suction forces of these vessels and the small size of the draghead openings, direct impingement is considered unlikely. For these reasons, it has been determined that continued operation of these vessels along the eastern seaboard is not likely to adversely affect the shortnose sturgeon.

6.00 SUMMARY AND CONCLUSION

6.01 Factors Considered

This biological assessment has analyzed the potential impacts associated with the maintenance of coastal inlets along the eastern seaboard with sidecast dredges and the splithull hopper dredge Currituck, on those listed species which the National Marine Fisheries Service believes may be in the project area. Factors which were considered in making effect determinations were as follows:

- * Project location in relation to distribution of listed species.
- * Types of environmental impacts created by the project, including secondary impacts.
- * Seasonality of occupation of the area by listed species.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
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GUIDELINES FOR AVOIDING IMPACTS TO THE WEST INDIAN MANATEE Precautionary Measures for Construction Activities in North Carolina Waters

The West Indian manatee (*Trichechus manatus*), also known as the Florida manatee, is a Federally-listed endangered aquatic mammal protected under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) and the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1461 *et seq.*). The manatee is also listed as endangered under the North Carolina Endangered Species Act of 1987 (Article 25 of Chapter 113 of the General Statutes). The U.S. Fish and Wildlife Service (Service) is the lead Federal agency responsible for the protection and recovery of the West Indian manatee under the provisions of the Endangered Species Act.

Adult manatees average 10 feet long and weigh about 2,200 pounds, although some individuals have been recorded at lengths greater than 13 feet and weighing as much as 3,500 pounds. Manatees are commonly found in fresh, brackish, or marine water habitats, including shallow coastal bays, lagoons, estuaries, and inland rivers of varying salinity extremes. Manatees spend much of their time underwater or partly submerged, making them difficult to detect even in shallow water. While the manatee's principal stronghold in the United States is Florida, the species is considered a seasonal inhabitant of North Carolina with most occurrences reported from June through October.

To protect manatees in North Carolina, the Service's Raleigh Field Office has prepared precautionary measures for general construction activities in waters used by the species. Implementation of these measures will allow in-water projects that do not require blasting to proceed without adverse impacts to manatees. In addition, inclusion of these guidelines as conservation measures in a Biological Assessment or Biological Evaluation, or as part of the determination of impacts on the manatee in an environmental document prepared pursuant to the National Environmental Policy Act, will expedite the Service's review of the document for the fulfillment of requirements under Section 7 of the Endangered Species Act. These measures include:

1. The project manager and/or contractor will inform all personnel associated with the project that manatees may be present in the project area, and the need to avoid any harm to these endangered mammals. The project manager will ensure that all construction personnel know the general appearance of the species and their habit of moving about completely or partially submerged in shallow water.

8. If siltation barriers must be placed in shallow water, these barriers will be: (a) made of material in which manatees cannot become entangled; (b) secured in a manner that they cannot break free and entangle manatees; and, (c) regularly monitored to ensure that manatees have not become entangled. Barriers will be placed in a manner to allow manatees entry to or exit from essential habitat.

Prepared by (rev. 06/2003):
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ATTACHMENT C

Evaluation of Section 404(b)(1) Guidelines 40 CFR 230.

Use of Government Plant to Dredge in Federally Authorized Navigation Project in North Carolina

Evaluation of Section 404 (b) (1) Guidelines 40 CFR 230

This evaluation covers the discharge of all dredged material into waters and wetlands of the United States required for the use of Government dredge plant to dredge shoals in Federally authorized waterways in North Carolina.

Section 404 Public Notice No. CESA-W-TS-PE-04-0010

	Preliminary <u>1/</u>	Final <u>2/</u>
1. <u>Review of Compliance (230.10(a)-(d))</u> A review of the NEPA Document indicates that:		
a. The discharge represents the least environmentally damaging practicable alternative and if in a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its basic purpose (if no, see section 2 and NEPA document);	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
b. The activity does not: 1) violate applicable State water quality standards or effluent standards prohibited under Section 307 of the CWA; 2) jeopardize the existence of federally listed endangered or threatened species or their habitat; and 3) violate requirements of any federally designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies);	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> *	YES <input type="checkbox"/> NO <input type="checkbox"/>
c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (if no, see section 2);	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see section 5).	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> *	YES <input type="checkbox"/> NO <input type="checkbox"/>

Proceed to Section 2

*, 1, 2/ See page 6.

2. Technical Evaluation Factors (Subparts C-F)

N/A

Not Significant

Significant

a. Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)

- (1) Substrate impacts.
- (2) Suspended particulates/turbidity impacts
- (3) Water column impacts.
- (4) Alteration of current patterns and water circulation.
- (5) Alteration of normal water fluctuations/hydroperiod.
- (6) Alteration of salinity gradients.

	X	
	X	
	X	
	X	
X		
X		

b. Biological Characteristics of the Aquatic Ecosystem (Subpart D)

- (1) Effect on threatened/endangered species and their habitat.
- (2) Effect on the aquatic food web.
- (3) Effect on other wildlife (mammals birds, reptiles, and amphibians).

	X	
	X	
	X	

c. Special Aquatic Sites (Subpart E)

- (1) Sanctuaries and refuges.
- (2) Wetlands.
- (3) Mud flats.
- (4) Vegetated shallows.
- (5) Coral reefs.
- (6) Riffle and pool complexes.

X		
	X	
X		
	X	
X		
X		

d. Human Use Characteristics (Subpart F)

- (1) Effects on municipal and private water supplies.
- (2) Recreational and commercial fisheries impacts
- (3) Effects on water-related recreation.
- (4) Aesthetic impacts.
- (5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites,, and similar preserves.

X		
	X	
	X	
	X	
	X	

Remarks: Where a check is placed under the significant category, preparer add explanation below.

Proceed to Section 3

*See page 6.

3. Evaluation of Dredged or Fill Material (Subpart G) 3/

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. (Check only those appropriate.)

- (1) Physical characteristics.
- (2) Hydrography in relation to known or anticipated sources of contaminants
- (3) Results from previous testing of the material or similar material in the vicinity of the project
- (4) Known, significant sources of persistent pesticides from land runoff or percolation
- (5) Spill records for petroleum products or designated (Section 311 of CWA) hazardous substances
- (6) Other public records of significant introduction of contaminants from industries, municipalities, or other sources.
- (7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities.
- (8) Other sources (specify).

b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and disposal sites and not likely to result in degradation of the disposal site.**

YES NO *

Proceed to Section 4

* , 3/, see page 6.

4. Disposal Site Determinations (230.11(f)).

a. The following factors as appropriate, have been considered in evaluating the disposal site.

- (1) Depth of water at disposal site. ✓
- (2) Current velocity, direction, and variability at disposal site ✓
- (3) Degree of turbulence. ✓
- (4) Water column stratification ✓
- (5) Discharge vessel speed and direction ✓
- (6) Rate of discharge ✓
- (7) Dredged material characteristics (constituents, amount and type of material, settling velocities). ✓
- (8) Number of discharges per unit of time. ✓
- (9) Other factors affecting rates and patterns of mixing (specify)

b. An evaluation of the appropriate factors in 4a above indicates that the disposal site and/or size of mixing zone are acceptable.

YES ✓ NO *

5. Actions to Minimize Adverse Effects (Subpart H).

All appropriate and practicable steps have been taken, through application of recommendations of 40 CFR Parts 230.70-230.77, to ensure minimal adverse effects of the proposed discharge. List actions taken.

YES ✓ NO *

See Section 4.03 of the EA for a description of the preferred alternative.
See Section 6.01 of the EA for wildlife and vegetation.
See Section 6.02 of the EA for fishes.

Return to section 1 for final stage of compliance review. See also note 3/ page 3.

*See page 6.

6. Factual Determinations (230.11).

A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short- or long-term environmental effects of the proposed discharge as related to:

- a. Physical substrate at the disposal site (review sections 2a, 3, 4, and 5). YES NO *
- b. Water circulation, fluctuation, and salinity (review sections 2a, 3, 4, and 5). YES NO *
- c. Suspended particulates/turbidity (review sections 2a, 3, 4, and 5). YES NO *
- d. Contaminant availability (review sections 2a, 3, and 4). YES NO *
- e. Aquatic ecosystem structure and function (review sections 2b and c, 3, and 5). YES NO *
- f. Disposal site (review sections 2, 4, and 5). YES NO *
- g. Cumulative impact on the aquatic ecosystem. YES NO *
- h. Secondary impacts on the aquatic ecosystem. YES NO *

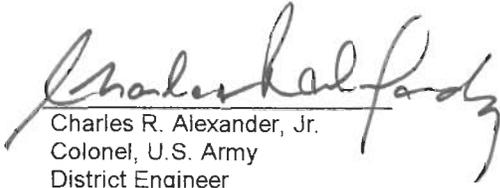
7. Findings.

- a. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines.
- b. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines with the inclusion of the following conditions:
- c. The proposed disposal site for discharge of dredged or fill material does not comply with the Section 404(b)(1) guidelines for the following reasons(s):
 - (1) There is a less damaging practicable alternative
 - (2) The proposed discharge will result in significant degradation of the aquatic ecosystem

*See page 6.

(3) The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem.

8.


Charles R. Alexander, Jr.
Colonel, U.S. Army
District Engineer

Date: 9/8/04

*A negative, significant, or unknown response indicates that the permit application may not be in compliance with the Section 404(b)(1) Guidelines.

1/ Negative responses to three or more of the compliance criteria at this stage indicate that the proposed projects may not be evaluated using this "short form procedure." Care should be used in assessing pertinent portions of the technical information of items 2 a-d, before completing the final review of compliance.

2/ Negative response to one of the compliance criteria at this stage indicates that the proposed project does not comply with the guidelines. If the economics of navigation and anchorage of Section 404(b)(2) are to be evaluated in the decision-making process, the "short form evaluation process is inappropriate."

3/ If the dredged or fill material cannot be excluded from individual testing, the "short-form" evaluation process is inappropriate.