# SECTION III

# PRE-AUTHORIZATION CORPS OF ENGINEERS PROJECTS/STUDIES

## GENERAL

This section of the Plan discusses navigation investigations that fall into three stages: (1) those that have recently been studied, (2) those currently under study, and (3) those that may potentially be studied in the foreseeable future. Pertinent information relating to those studies is provided although the availability of data varies significantly, depending on the stage of the investigation. The following paragraphs discuss Section 933 studies, the Dredging Master Plan for the City of Norfolk, the Elizabeth River Environmental Restoration Study, the Eastward Expansion of Craney Island Study, and the Lynnhaven River Environmental Restoration Study. Please reference Appendix E, Tables E-1 and E-2.

## SECTION 933 STUDIES

Section 145 of the WRDA 76, as modified by Section 933 of the WRDA 86 and Section 207 of the WRDA 92, provides the opportunity for beneficial uses of beach-quality dredged material through a cost-shared placement operation in conjunction with dredging operations at Federally-authorized navigation projects. Specifically, the additional cost of placing suitable dredged material on a public beach (over the least cost placement alternative that meets the Federal standard) can be cost shared on a 50/50 basis with the non-Federal sponsor including the state or locality (city, town, or county). Such a cost-sharing arrangement is subject to the added cost of placement being economically justified, based on hurricane and storm damage reduction benefits, and the environmental acceptability of the placement.

The Norfolk District has conducted Section 933 studies as part of the Norfolk Harbor and Channels Long-Term Disposal Study for the Outer Harbor area of Hampton Roads (the area west of the Hampton Roads Bridge-Tunnel) for the beaches shown on Plate 8. This effort produced individual reports to determine the Federal interest in the one-time placement of suitable dredged material from the proposed 55-foot outbound deepening project onto area beaches. Section 933 studies were also accomplished in 1987 to determine the Federal interest in cost sharing in the placement of sand dredged as part of the Baltimore Harbor and Channels project (Cape Henry Channel) onto beaches at East Ocean View and the Virginia Beach resort strip. The findings of these studies are summarized as follows:

| Study | Findings |
|---|---|
| Sandbridge Beach, Virginia Beach | Economically justified |
| Virginia Beach Resort Strip, Virginia Beach | Economically justified |
| Ocean Park Beach, Virginia Beach | Economically justified |
| East Ocean View, Norfolk | Not economically justified |
| Central Ocean View Beach, Norfolk | Economically justified |
| Willoughby Spit Area, Norfolk | Economically justified |
| Buckroe Beach, Hampton | Not economically justified |
| Salt Ponds Beach, Hampton | Not economically justified |
| White Marsh Beach, Hampton | Not economically justified |
| Grandview Beach, Hampton | Not economically justified |
| Yorktown Beach, Yorktown | Not economically justified |

The favorable studies listed above are awaiting construction of the 55-foot outbound element of the authorized Norfolk Harbor and Channels project. The following discussion summarizes the findings of these studies. Prior to construction of the 55-foot outbound element, the beaches resulting in favorable 933 studies would need to be reevaluated, if placement of sand were still supported by non-Federal interests.

**SANDBRIDGE BEACH, VIRGINIA BEACH**

This report, dated August 1990, concluded that the added cost of dredging, approximately 1,097,000 cubic yards of sand from the Thimble Shoal Channel or approximately 1,226,000 cubic yards of sand from the Atlantic Ocean Channel, for placement on the beach at Sandbridge between the Naval Fleet Anti-Air Warfare Training Center at Dam Neck and Back Bay National Wildlife Refuge to construct a berm approximately 5 miles long and 100 feet wide at elevation 6 feet National Geodetic Vertical Datum (NGVD) is justified by the benefits associated with the placement of sand. The costs were estimated in 1990 to be $5,378,000 for the Thimble Shoal Channel and $5,144,000 for the Atlantic Ocean Channel, which would be cost shared on a 50/50 basis with the Commonwealth of Virginia acting as local cost-sharing sponsor.

**VIRGINIA BEACH RESORT STRIP, VIRGINIA BEACH**

The Section 933 report, dated August 1989, concluded that the added cost of the placement of 1.1 million cubic yards of sand from the Atlantic Ocean Channel, or 1.0 million cubic yards of sand from the Thimble Shoal Channel, on the resort beach between Rudee Inlet and 49$^{th}$ Street is economically justified. The added costs for these placements were estimated in 1989 to be $7.4 million from the Atlantic Ocean Channel and $5.4 million from the Thimble Shoal Channel. Again, these added costs would be cost shared on a 50/50 basis with the Commonwealth of Virginia as local cost-sharing sponsor. It should also be noted that 1,174,000 cubic yards of sand from the dredging of the Cape Henry Channel were actually placed on the resort strip in the summer of 1989 as a result of the "Reevaluation Report, Virginia Beach Nourishment, Virginia Beach, Virginia, Sections 933 and 934 (PL 99-662) Study," dated December 1987. Section 933 allowed cost sharing for the added cost, and Section 934 allowed extension of the existing beach nourishment project from 25 years to 50 years.

**OCEAN PARK BEACH, VIRGINIA BEACH**

This report, dated July 1990, concluded that the added cost of placing 408,000 cubic yards of sand dredged from the Thimble Shoal Channel on the beach at Ocean Park between the Chesapeake Bay Bridge-Tunnel and Lynnhaven Inlet to

construct a berm approximately 11,000 feet long and 125 feet wide at elevation 5 feet NGVD is justified by the benefits associated with the placement. The estimated cost of this placement in 1990 was $1,253,000, which would be cost shared on a 50/50 basis with the Commonwealth of Virginia acting as local cost-sharing sponsor.

**CENTRAL OCEAN VIEW BEACH, NORFOLK**

This report, dated March 1991, concluded that the added cost of placing 60,000 cubic yards of sand dredged from the Thimble Shoal Channel on the beach at Central Ocean View between Warwick Street and the eastern boundary of Community Beach to construct a berm approximately 2,340 feet long and 125 feet wide at elevation 5 feet m.l.w. is economically justified. The estimated cost of this placement was estimated in 1991 to be $249,000, which would be cost shared on a 50/50 basis with the Commonwealth of Virginia acting as local cost-sharing sponsor.

**WILLOUGHBY SPIT AREA, NORFOLK**

The report, dated August 1990, concluded that the added cost of placing 386,000 cubic yards of sand dredged from the Thimble Shoal Channel on the beach at Willoughby Spit between Mason Creek Road and the terminal groin at the end of Lea View Avenue to construct a berm approximately 13,500 feet long and 125 feet wide at elevation 5 feet m.l.w. is justified by the benefits. The added cost of this placement was estimated in 1990 to be $1,675,000, which would be cost shared on a 50/50 basis with the Commonwealth of Virginia acting as local cost-sharing sponsor.

## DREDGING MASTER PLAN FOR THE CITY OF NORFOLK

The Norfolk District developed a Dredging Master Plan for the City of Norfolk in Fiscal Year 1998 under authority of Section 22 of the WRDA 74 (Public Law 93-251, Planning Assistance to States), as amended. The effort was cost shared with the City of Norfolk on a 50/50 basis and is being accomplished in two phases. The Dredging Master Plan addresses three areas of dredging, including navigation, storm drainage, and in-town reservoir maintenance.

Phase 1 investigations included four principal tasks: (1) identification and description of the existing and potential dredging areas within the City of Norfolk; (2) identification and description of the criteria, methods, and locations used for disposal of dredged material; (3) definition and examination of partnering opportunities such as combining dredging jobs (piggybacking) in the interest of reducing mobilization and demobilization costs and, thus, reducing the total costs to the City; and (4) identification and description of the major factors used in determining dredging costs.

Phase 2 investigations included the following tasks: (1) identification of criteria for the prioritization of dredging projects by the City; (2) development of a 5-year prioritized dredging schedule of the City; (3) identification and discussion of potential Federal and state programs/funding sources for "new work" and/or periodic maintenance; and (4) preparation of a report formally documenting the Dredging Master Plan.

## ELIZABETH RIVER ENVIRONMENTAL RESTORATION STUDY

The Norfolk District conducted a Federally-funded reconnaissance study during Fiscal Years 1997 and 1998 that determined the need for environmental and other interrelated activities required to restore the Elizabeth River. The reconnaissance study identified a Federal interest in proceeding to a more detailed feasibility study that would be cost shared on a 50/50 basis with the non-Federal sponsors. In this connection, the Commonwealth of Virginia and the Cities of Chesapeake, Norfolk, Portsmouth, and Virginia Beach signed a Feasibility Cost-Sharing Agreement in July 1998 with the Norfolk District to proceed to the feasibility study phase. The feasibility phase is estimated to cost $2.4 million and extend over a 3-year period.

The study area encompasses the entire Elizabeth River Basin, which is located in the Cities of Chesapeake, Portsmouth, Norfolk, and Virginia Beach, within the southside Hampton Roads area of southeastern Virginia. The Elizabeth River is approximately 20 miles in length and has a drainage area of about 165 square miles. Urban, rural, industrial, and residential areas blend together along the Elizabeth River and its branches.

More than 13,000 vessels, with a mix ranging from freighters and cargo ships to fishing boats and cabin cruisers, use the Elizabeth River annually. Three hundred years of industry and commerce have made the river one of the nation's most contaminated waterways. Only limited wetlands remain to support wildlife and filter stormwater run-off, the river's leading source of pollution. In 1993, the Chesapeake Bay Program identified the Elizabeth River as a "Region of Concern," targeting it as one of three sites in the Bay watershed where contaminants pose the greatest threat to natural resources. This sub-estuary of the Chesapeake Bay provides spawning grounds for fish; habitat for rare terns, peregrine falcons, and great egrets; and mud flats for shellfish.

The feasibility study, which was initiated in July 1998, will evaluate several environmental restoration projects in the Elizabeth River with primary focus on wetland restoration and sediment clean up. Specifically, 14 candidate wetland restoration sites throughout the watershed have been identified and will be evaluated. In the feasibility phase, field studies will be accomplished to evaluate the environmental, economic, and engineering suitability of these sites for restoration. These candidate sites primarily afford the opportunity for tidal saltmarsh wetland restoration. Various size and configuration alternatives will be developed at the various sites. With regard to sediment clean up, five sites have been identified for evaluation during the feasibility study. The first step in evaluating sediments at any given site is to specifically characterize the type and spatial extent of the sediment contamination. The second step is the identification of treatment technologies and methods. One of the five sites will be evaluated intensively during the feasibility study. The study is scheduled to be completed in 2001, and it will be the basis for construction authorization for the recommended environmental restoration projects.

## EASTWARD EXPANSION OF CRANEY ISLAND STUDY

Pursuant to the Congressional authority contained in a September 24, 1997, resolution of the U.S. House Committee on Transportation and Infrastructure, the Norfolk

District completed a reconnaissance study in March 1999 that determined a Federal interest in an eastward expansion of the Craney Island Dredged Material Area.

The Commonwealth of Virginia, acting through the VPA, strongly supports the next phase of study, the feasibility phase, and is an equal cost-sharing partner for this effort. The 3-year feasibility phase began in May 1999 and will be completed in 2002. The feasibility report, including NEPA documentation, will be the basis for Congress to authorize construction of an expansion of the Craney Island facility.

An eastward expansion of Craney Island would serve three purposes. First, it would provide a fourth cell that would extend the useful life of Craney Island as a dredged material containment area. Second, once filled, it could provide additional acreage for the development of projected long-term berthing and landside port facilities adjacent to the Norfolk Harbor Channel expressed by the VPA. Third, it could serve as a logistical and tactical area supporting deployment of national defense forces.

The port facilities currently owned by the Commonwealth of Virginia include three separate marine terminals: (1) the Newport News Marine Terminal, (2) Norfolk International Terminal, and (3) Portsmouth Marine Terminal. These terminals are managed by the VPA and are operated by Virginia International Terminals. Newport News Marine Terminal contains 150 acres, Norfolk International Terminal includes approximately 811 acres, and Portsmouth Marine Terminal totals 320 acres, including Sea-Land and CSX sites and 41 acres of undeveloped area. These terminals handle containers, breakbulk, and roll on-roll off (ro-ro) cargoes. All facilities have excellent highway access and are served by either the CSX or Norfolk Southern rail systems.

In order to meet projected future demands, major capital improvements have been recommended for all three of these marine terminals. However, even capital improvements to existing terminals will not fully accommodate the expected growth in and needs of the container shipping industry. Therefore, the VPA projects the need for a fourth marine terminal. They need an additional marine terminal to accommodate the

projected rapid increase in container traffic. Also, according to a study conducted by the U.S. Department of Transportation, Office of Intermodalism, entitled “The Impacts of Changes in Ship Design on Transportation Infrastructure and Operations," dated February 1998, mega ships or supercontainer ships are being constructed requiring channel depths of 50 feet or greater to more efficiently transport containers.

The above developments have prompted the Commonwealth of Virginia to explore ways to place the Port of Hampton Roads in a position to effectively capture and be responsive to the projected increases in container movements and the vessels that will move these containers. Hampton Roads has an advantage in terms of channel depths, because it already has a 50-foot outbound channel and has authorized depths to 55 feet. The need for the development of a mega ship port has already prompted support from the VPA to pursue the 50-foot inbound element of the Norfolk Harbor and Channels project.

With regard to the need for an additional container port terminal, the Virginia General Assembly has also authorized a study to evaluate the potential expansion of Craney Island as a site for a fourth marine terminal. The Virginia Secretary of Transportation is responsible for the study and has formed the Craney Island Study Committee to carryout the study.

The study by the Commonwealth is being carefully coordinated with this concurrent Federally-authorized study. The Corps study will address the Federal interest in expanding Craney Island to provide additional capacity for dredged material placement. The study will address a number of issues, including the projected dredged material placement needs in Hampton Roads; engineering and design techniques for the construction of an expansion to Craney Island; environmental, cultural, and social concerns; cost-sharing issues; and the future disposition of the expanded area of Craney Island to the Commonwealth of Virginia.

## LYNNHAVEN RIVER ENVIRONMENTAL RESTORATION STUDY

The Lynnhaven River Basin is located in Virginia Beach on the south shore of the Chesapeake Bay, just west of Cape Henry and 10 miles east of Norfolk. The river, which is a tributary of the Chesapeake Bay, is a rather shallow body of water from which extends two main branches--the Western Branch and the Eastern Branch. In addition, immediately inside Lynnhaven Inlet, there is a narrow channel running easterly known as Long Creek. This ends in a large body of water known as Broad Bay. Broad Bay, in turn, joins a second body of water named Linkhorn Bay. Also, Little Neck Creek, Great Neck Creek, and Crystal Lake all join Linkhorn Bay. All waters within the basin are brackish and are subject to the action of tides. The entire drainage area is 50 square miles. The total water surface area is approximately 10 square miles, and there are 100 miles of shoreline within the basin. There is a Federal navigation project that is maintained within the basin. It consists of channel depths varying from 10 feet deep at the entrance to Chesapeake Bay at Lynnhaven Inlet to 6 feet deep at the Narrows between Broad Bay and Linkhorn Bay.

The basin was once a highly productive ecosystem known worldwide for the famous Lynnhaven oyster. However, widespread residential and commercial development has gradually degraded the environmental resources within the basin. Loss of wetlands and forested buffers have resulted in increased sedimentation and degraded water quality. This, in turn, has caused loss of habitat for submerged aquatic vegetation, shellfisheries (oysters), and finfish/crab spawning and juvenile rearing areas.

The City of Virginia Beach has expressed the need for an environmental restoration study of the Lynnhaven River Basin. In this connection, a study has been authorized by a resolution adopted on May 6, 1998, by the Committee on Transportation and Infrastructure, U.S. House of Representatives. As indicated by a letter dated November 25, 1998, the City strongly supports the reconnaissance study and has expressed its willingness to cost share in a feasibility study.

The reconnaissance study, which is proposed for initiation in Fiscal Year 2000, will evaluate alternatives to improve the environmental quality of the Lynnhaven River Basin by restoring wetlands, submerged aquatic vegetation, and fisheries. Stabilizing eroding shorelines with wetland fringes, using wetlands for stormwater treatment, and improving submerged bottom by dredging or other methods of decontamination will be evaluated. It is important to note that the Chesapeake Bay, including the Lynnhaven River as a tributary, is one of the most important ecosystems in the nation, and environmental restoration is a high priority within the Administration.