REPORT OF THE SENATE COMMITTEE ON FINANCE
AND THE HOUSE COMMITTEE ON APPROPRIATIONS

A STUDY OF THE DREDGING OF RUDEE INLET

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

SENATE DOCUMENT NO. 18

COMMONWEALTH OF VIRGINIA
RICHMOND
1999

Senate Joint Resolution 187
Study of Rudee Inlet Dredging

Senate Joint Resolution 187 tasked the Senate Finance and House Appropriations Committees to study the dredging of Rudee Inlet in the City of Virginia Beach. The General Assembly requested the study to include the methods other states use to fund dredging and to examine the potential funding options for the continued dredging of Rudee Inlet.

Rudee Inlet is located at the south end of the Virginia Beach Resort Area Oceanfront. The inlet serves as a major tourist attraction for deep-water fishing and other water sports. It also serves as a valuable ocean outlet for several miles of waterfront property, U.S. Navy military training, and for the Virginia Marine Science Museum.

Existing use of the inlet is estimated in excess of 148,000 round trips annually and consists primarily of recreational trips (charter boats, recreational fishing, dive boats, parasail, etc.). Currently, 23 commercial fishing boats operate out of Rudee Inlet, representing about 10 percent of trip activity. The total trips represents an annual increase of about 9 percent from the 44,000 round trips estimated in 1983. A recent study by the Army Corps of Engineers estimated that the annual direct benefits of the inlet to these users to be about $3.2 million.

History of Rudee Inlet

Prior to 1950, the inlet was a small ditch or swale, draining a small tidal estuary. In the early 1950's, the Virginia Beach Erosion Commission was created by the General Assembly to restore and maintain the Resort Beach. They mined over 2,000,000 cubic yards of sand from the estuary to rebuild the resort beach between the inlet and 49th Street. This change to the estuary increased the flow through the inlet, causing it to meander north and south, damaging adjacent properties.

In the late 1950's, small jetties were installed to "train" the inlet and prohibit its meandering. Development pressures at the resort and along the shores of the now larger estuary presented increased navigational demands on the inlet.

In 1968, the jetty system as it currently exists was completed to provide navigation and facilitate maintenance dredging.

Natural Setting

Erosion of the Virginia Beach oceanfront is a natural phenomenon. Without any help from man, large volumes of sand move both southerly and northerly throughout the year; however, about 200,000 more cubic yards move south to north across the man-made inlet than in the opposite direction.

The net volume of sand must be artificially bypassed across Rudee Inlet. If the sand is not bypassed, then naturally moving sand from the updrift beach, Croatan to the south, will block the channel, and the downdrift beach, the Resort Beach, will rapidly erode for lack of sand that naturally would have been delivered to it.

Maintenance Dredging

Navigational maintenance dredging at Rudee Inlet began in the 1950's under the authority and control of the Erosion Commission. Three dredges were purchased during the nearly forty year history of the Erosion Commission for this purpose. First an 8-inch, then a 10-inch, and finally the Rudee Inlet II, a 14-inch hydraulic cutter head dredge.

Between 1953 and 1979, the inlet was maintained solely by the Erosion Commission, with as many as 23 full-time employees operating Commission owned dredges. At various, and frequent, times during this period the inlet was unserviceable as the dredge and her crews were unable to keep up with shoaling from storm events and 'background' transport of sand to the inlet.

In 1979, in response to a significant shoaling event the City of Virginia Beach contracted with a dredging company to clear the channel and reopen the inlet. This occurred again in 1980, 1985, 1986 and 1997.

In 1989, the Erosion Commission was dissolved as a state chartered organization, its duties, equipment and personnel transferred to the City of Virginia Beach.

In 1993, the Corps of Engineers began an annual maintenance-dredging project at Rudee Inlet in partnership with the City of Virginia Beach. The authorized project consists of the construction and maintenance of an entrance channel 10 feet deep, 110 to 72 feet wide, and 1,065 feet long; an inner channel 7 feet deep, 72 to 53 feet wide, and 2,495 feet long. Included in the project is a maintained safety area, turning basin and sand trap.

The current maintenance-dredging program at Rudee Inlet is comprised of three components: City forces, Corps contracting, and emergency supplemental contracting by the City. The former Erosion Commission staff and dredge perform maintenance dredging year round at Rudee Inlet, by passing approximately 150,000 cubic yards a year.

The Corps of Engineers contracts for maintenance dredging once annually, typically scheduled for the April/May time frame (in advance of the boating season), moving an average of 100,000 cubic yards. It is difficult to schedule additional Corps dredging because of the disruption caused to the nearby beach and inlet traffic. However, the Corps does provide hopper dredging several times a year to help remove the sand bar beyond the jetty system. Still, shoaling in the wintertime can be so severe as to block or impede safe navigation. In these instances, the City contracts for emergency dredging.

Financing

The operational dredging forces of the City, including maintenance of the dredge plant and attendant equipment, is budgeted for the City's FY 1999 budget year at $1,442,383. FY 1998 expenditures were $1,399,735; FY 1997 totals were $1,092,523.

The City's contribution for the Army Corps of Engineers' maintenance dredging for FY 1999 is budgeted at $300,000. FY 1998 costs were just over $260,000. The majority of this funding is derived from the City's operational budget, the balance from Charter Bonds and revenue sharing.

Federal funds expended through the Army Corps of Engineers for the Rudee Inlet Navigation Project are listed below.

Fiscal Year	Federal Funds Expended ($)
1991	$647,291
1992	733,367
1993	526,828
1994	515,951
1995	499,731
1996	445,613
1997	145,018
1998	518,461

The last emergency dredging contracted by the City was in FY 1997. The contract cost was $485,000, funded from the Capital Improvement Project for Rudee Inlet, with the operational budget as a source.

The Commonwealth provided $325,000 in FY 1999 funding to advance a study of alternatives for Rudee Inlet. The City of Virginia Beach has dedicated an additional $125,000 of operational budget funding toward this study. The primary focus of the study will be potential physical modifications of the inlet with the emphasis toward reducing the maintenance dredging requirement and enhancing year round safe navigation. A recommendation for a wider, deeper channel with a larger sand trap and an improved jetty system is anticipated to result. The costs and benefits of such a proposal will be thoroughly evaluated, as well as, all potential environmental affects.

The study will be coordinated with the Army Corps of Engineers for potential adoption and participation. Preliminary estimates for significant jetty modifications are in excess of $10,000,000.

Dredge Financing in Other States

As in Virginia, sand management projects in other states are generally a collaborative effort between the Army Corps of Engineers, the respective state, and the affected local government. The Army Corps must conduct a feasibility study and approve a project for funding before participating. Corps participating projects are generally supported with 65 percent federal funds matched by 35 percent state and local funds. In most states, local matching funds do not come from a dedicated source, but are appropriated from their respective general fund.

One state that has a unique method for coastal inlet management is Florida. Florida has 56 recognized coastal inlets, 19 on the east coast and 37 on the west coast. Florida statutes allow these inlets to be managed by "Ship Canal Navigation Districts" with separate taxing power. There are 17 such districts in Florida. Each district encompasses the entire county, or in the case of an inlet that straddles two localities, both localities.

The state legislature is responsible for creating the ship navigation district and sets the maximum property tax rate that can be charged. For example, the Sebastian Inlet District encompassing both Brevard and Indian River Counties is allowed a property tax rate of up to 1.5 mills (1.5 cents per $1,000 assessed value) by the Florida legislature. However, the Sebastian Inlet District Commission has set the rate much lower at 0.17 mills. This tax generated $900,000 in tax year 1997 for the Sebastian Inlet District.

The Florida legislature has also recently provided funds to support beach sand management efforts. Beginning in 1998, $30,000,000 per year from real estate document stamp fees has been set aside for beach management capital projects.

Another state that has provided statewide funds for sand management projects is New Jersey. This state provides $15 million per year, also from state real estate transaction fees. Texas is currently examining whether to provide a dedicated funding source for beach re-nourishment projects.

Sources

1. "Reconnaissance Report on Operation and Maintenance Feasibility, Rudee Inlet, Virginia Beach, Virginia", U.S. Army Corps of Engineers, Norfolk District, March 1997.
2. Phone interview with Mr. Stephen J. Powell, P.E., Army Corps of Engineers, Norfolk, Va.
3. Mr. Phillip Roehrs, Report to the Senate Finance Subcommittee on Transportation, 8/3/98.
4. Phone interview with Dr. Robert Dean, Civil Engineering, U. of Florida, Gainsville, Fl.
5. Phone interview with Dr. David Basco, Old Dominion U. Coastal Engineering Dept., Norfolk, Va.
6. Phone interview with Mr. Ray Leroux, Sebastian Inlet District Headquarters, Melbourne Beach, FL.

summary

SENATE JOINT RESOLUTION NO. 187

Directing the Senate Committee on Finance and the House Committee on Appropriations to study the dredging of Rudee Inlet.

Agreed to by the Senate, February 13, 1998
Agreed to by the House of Delegates, March 12, 1998

WHEREAS, Rudee Inlet, in the City of Virginia Beach, leads to Lake Rudee, Lake Wesley, and Owls Creek, and serves as a major draw for the city, attracting tourists for deep-water fishing charters and dolphin-watching and whale-watching excursions; and

WHEREAS, Rudee Inlet, which is the only inlet available to mariners between Cape Henry and Oregon Inlet, also opens up several miles of valuable waterfront property, creates important wetlands, and leads to the Virginia Marine Science Museum's Owls Creek Pavilion; and

WHEREAS, over 200,000 cubic yards of sand drift into the inlet from the south every year; and

WHEREAS, the city now spends hundreds of thousands of dollars per year in dredging expenses to deal with the inlet's severe shoaling and its tendency to close after major storms; and

WHEREAS, it is in the interests of both the City of Virginia Beach and the Commonwealth that this important inlet remain safe for boaters; now, therefore, be it

RESOLVED by the Senate, the House of Delegates concurring, That the Senate Committee on Finance and the House Committee on Appropriations be directed to study the dredging of Rudee Inlet.

The Committees shall study the methods of funding such dredging operations in other states and examine the potential funding options for the continued dredging of Rudee Inlet.

All agencies of the Commonwealth shall provide assistance to the Committees, upon request.

The Senate Committee on Finance and the House Committee on Appropriations shall complete their work in time to submit their findings and recommendations to the Governor and the 1999 Session of the General Assembly as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents.

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