

LYNNHAVEN RIVER WATERSHED
Virginia Beach, Virginia

**APPLICATION FOR FEDERAL
NO DISCHARGE ZONE
DESIGNATION**



Submitted to U.S. Environmental Protection Agency Region III
By the Commonwealth of Virginia

Prepared by the City of Virginia Beach, Virginia and the Virginia Department of Environmental Quality
For the Virginia State Water Control Board

INTRODUCTION

Lynnhaven Watershed No Discharge Zone Location and Boundaries

The Lynnhaven River is located in the northern part of the city of Virginia Beach, Virginia. It discharges to the Chesapeake Bay through the Lynnhaven Inlet, just east of the Chesapeake Bay Bridge-Tunnel. The Lynnhaven River watershed, including the Eastern Branch, the Western Branch, and Broad Bay/Linkhorn Bay encompasses an area of land and water of approximately 64 square miles with nearly 150 miles of shoreline. The upstream portions of the Lynnhaven River system flow either north to the Chesapeake Bay or south to the North Carolina sounds depending on wind and tidal patterns. The Lynnhaven River is oligohaline and subject to the action of tides. The majority of the waters outside the bays are shallow with maintained channel depths of six (6) to ten (10) feet.

For the purpose of this application, the Lynnhaven River Watershed No Discharge Zone is defined as all contiguous waters south of the Lesner Bridge at Lynnhaven Inlet (Latitude 36°54'27.90"N and Longitude 76°05'30.90"W) and north of the watershed break point defined as the intersection of West Neck Creek at Dam Neck Road (Latitude 36°47'17.60"N and Longitude 76°04'14.62"W). A location map is provided as Figure 1.

Certification of Need

As indicated in "Resources and Environmental Issues" below, greater protection of the waters of the Lynnhaven River Watershed are required than provided by the currently applicable Federal regulations in order to protect this resource and to prevent water quality degradation with loss of beneficial uses. In accordance with 40 CFR §140.4(a), this application requests a determination by the U.S. Environmental Protection Agency (EPA) that adequate facilities for the safe and sanitary removal and treatment of sewage from vessels in the Lynnhaven River Watershed are reasonably available, and approval of a No Discharge Zone for the above defined boundaries. The following pages describe the environmental status of the watershed, document that adequate sewage removal facilities are available, and provide information as required by 40 CFR §140. Given approval from EPA, the Commonwealth of Virginia intends to prohibit all sewage discharges from vessels, whether treated or untreated, into the No Discharge Zone designated for the Lynnhaven River Watershed.



- Legend**
- Watershed Break Point
 - Water Bodies
 - Lynnhaven Watershed
 - Stream Centerlines

Figure 1
Lynnhaven River Watershed

1 inch equals 8,000 feet

Data Provided By:
City of Virginia Beach

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RESOURCES AND ENVIRONMENTAL ISSUES

The Lynnhaven River is a minor tributary to Chesapeake Bay, one of the largest estuarine systems and most important natural resources in the United States. Multitudes of people enjoy the Lynnhaven River for a variety of activities, including boating, fishing, crabbing, water skiing, and swimming. The shoreline surrounding the Lynnhaven River includes 4,478 private waterfront homes, public access areas, marinas, boat launch facilities, waterside restaurants, and a State park. Those who live on the river and those who visit enjoy the scenery, wildlife and water. Large and small boats, personal watercraft, canoes, kayaks, water skiers, and swimmers enjoy the river for its recreational benefits. There are several waterfront access areas within First Landing State Park for swimming during summer months. The Lynnhaven River was also once a prime oyster harvesting area known throughout the world for the famous "Lynnhaven Oyster".

Oyster habitat restoration projects are presently being implemented in the Lynnhaven River. Lynnhaven River 2007, an advocacy group, in partnership with the city of Virginia Beach, the Chesapeake Bay Foundation, and the U.S. Army Corps of Engineers initiated an oyster-growing program in the summer of 2004 to assist in repopulating the river with this valuable living resource. Two hundred (200) volunteers have been solicited to grow oyster spat for subsequent transfer and seeding of oyster reefs in the river.

Wildlife

The Lynnhaven River is home to threatened, endangered, and rare species of plants and animals. Most of the species are located in First Landing State Park, which lies in the northeast portion of the watershed. First Landing State Park has historically shown the highest concentration of rare species in the Commonwealth of Virginia, including two (2) rare vertebrates, twenty (20) rare invertebrates, and twenty-one (21) rare plants listed on the Division of Natural Heritage June 1998 Heritage Species list for the park. An additional vertebrate has since been added to the 1998 list. The three vertebrates located within the First Landing State Park are: the Bald Eagle, listed as threatened; the Chicken Turtle, listed as extremely rare and endangered; and the Big-Eared Bat, listed as endangered.

State Park

First Landing State Park is included in the National Register of Natural Landmarks because of its distinction as the northernmost location on the East Coast where subtropical and temperate plants grow and thrive together. First Landing State Park is home to the maritime forest, a globally rare and important habitat for wildlife, which also stores groundwater and stabilizes the native soils. It is a significant natural resource that possesses scientific, cultural and aesthetic value to the all that visit the area.

Water Quality Issues

Since the 1970s, the city of Virginia Beach Departments of Public Works and Public Utilities have spent enormous sums of money to improve water quality within the watershed. The water quality improvement projects include control of storm water pollutant load contributions through construction of wetlands, regional wet ponds, extended detention ponds, and solar powered aeration/circulation to reduce fecal contaminants and nutrients. Proposed projects include

construction of instream wetlands and use of antibacterial fabric covered booms to electrostatically kill bacteria in storm water.

In spite of these efforts, monitoring data have resulted in the Lynnhaven River being listed as impaired for bacterial contamination based on state water quality standards. These water quality impairments are as listed in Virginia's 1998 Section 303(d) list. Figure 2 illustrates the impaired waters within the Lynnhaven River watershed. The Virginia Water Quality Assessment Integrated Report lists Crystal Lake, Dey Cove, Milldam Creek, Linkhorn Bay, Little Neck Creek, and other parts of the Lynnhaven River as requiring Total Maximum Daily Load (TMDL) development due to bacteriological impairments from fecal coliform and enterococci bacteria.

In 2004, EPA Region III and the Virginia State Water Control Board approved a TMDL for the shellfish harvest use impairments on Lynnhaven, Broad, and Linkhorn Bays prepared by the Virginia Department of Environmental Quality. The TMDL was submitted in accordance with Sections 303(d)(1)(c) and (2) of the Clean Water Act. The establishment of a No Discharge Zone has been listed as one of the TMDL Implementation Plan items in the plan that is currently under review.

The Department of Environmental Quality maintains a long-standing monitoring program in the Lynnhaven River. Numerous parameters, chemical and bacteriological, are analyzed at fixed stations. The Department's monitoring has revealed that Thalia Creek, Lower Linkhorn Bay, Crystal Lake, Eastern Branch Lynnhaven River, and Western Branch Lynnhaven River routinely fail to meet the primary contact (swimming) designated use water quality standard for bacteriological parameters.

The "1975 305b Report on Water Quality Inventory" prepared by the Virginia State Water Control Board stated that the high bacteria counts in the Lynnhaven area were due to heavy boating/marina activity and inadequate or failing septic systems. The city has taken great strides in addressing the majority of land-based activities potentially contributing to bacteriological contamination of the Lynnhaven River. At the present time, nearly all of the waterfront homes in the Lynnhaven River watershed are connected to the city's sanitary sewer collection system and individual septic system use throughout the watershed is being reduced as the city extends utility services to previously unsewered areas.

Although many sources potentially contribute to declining water quality in the Lynnhaven River, it can be assumed that discharges from vessels operating in the river contribute to the overall bacterial load. Even treated sanitary wastewater discharged from boats is relatively concentrated, having fecal coliform counts ranging from 200 to more than 1,000 per 100 milliliters of water. The primary contact recreation standard for fecal coliform bacteria is a maximum of 200 per 100 milliliters of water. The current shellfish standard for fecal coliform bacteria allows for a maximum of 14 per 100 milliliters of water. Marine vessel wastewater discharges also contain other pollutants that are potentially harmful to humans, wildlife, and the environment and can lead to a variety of environmental ills.

Shellfish

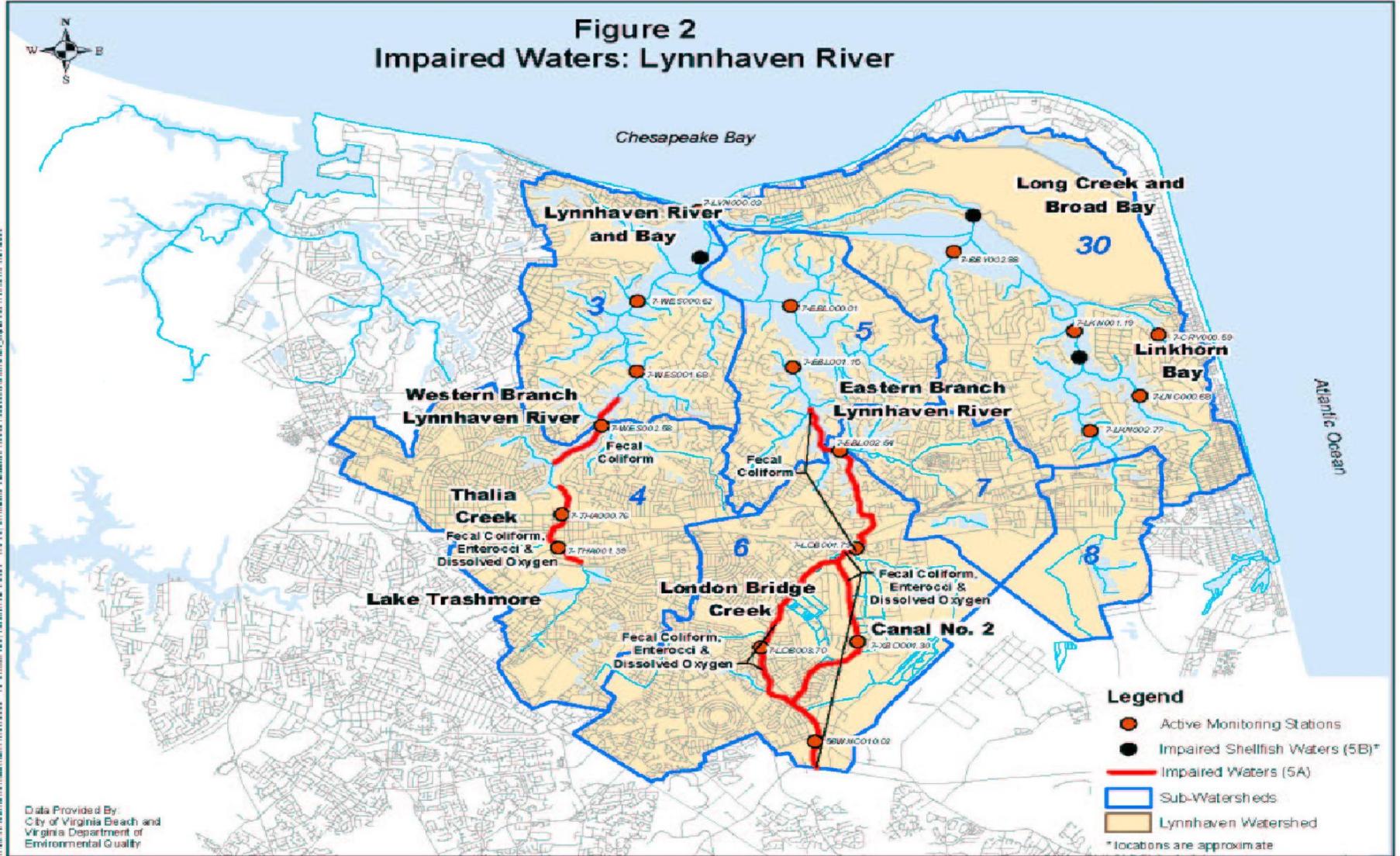
Data obtained from the Virginia Department of Health Division of Shellfish Sanitation (DSS), indicates that 45 out of 53 stations sampled in the Lynnhaven River failed to meet the National Shellfish Sanitation Standard for fecal coliform bacteria. The referenced bacteriological data was collected from May 22, 2002 through November 23, 2004. The Lynnhaven River, including

Broad and Linkhorn Bays, has been under a “Shellfish Area Condemnation” for quite some time, meaning it is “unlawful for any person, firm, or corporation to take shellfish from these sections for any purpose, except by permit granted by the Marine Resources Commission, as provided in Section 28.2-810 of the Code of Virginia”. The condemnation was put into effect based on the potential threat to human health resulting from contaminated shellfish consumption. The first shellfish closure to a portion of the Lynnhaven River began in 1930 with a full closure in 1971. Since the 1970’s, some portions have been conditionally opened at various times. As of February 10, 2006, DSS has condemned the entire Lynnhaven watershed for shell fishing as illustrated below.



Shellfish Condemnations

Figure 2
Impaired Waters: Lynnhaven River



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Data Provided By
 City of Virginia Beach and
 Virginia Department of
 Environmental Quality

SEWAGE PUMP-OUT FACILITY INFORMATION

Available Facilities

The Virginia Department of Health (VDH) ensures that proper sanitary facilities are present at marinas. Standards are set forth in the Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings, and marina facilities are inspected annually by VDH for compliance with the regulations.

Maps of sanitary waste reception facilities are provided in figures 3 through 6. There are currently six (6) waterfront marinas operating sanitary pump-outs in the Lynnhaven River. Each of these facilities also provides dump stations, restrooms, and informational signage.

There are currently six (6) additional waterfront marinas in the city of Virginia Beach and eighteen (18) in the city of Norfolk that operate sanitary pump-outs in areas adjacent to the Lynnhaven River. Five (5) of the six (6) marinas in Virginia Beach also provide dump stations and restrooms. Eleven (11) of the eighteen (18) marinas in Norfolk provide dump stations. Eighteen (18) of the twenty-four (24) total additional marinas provide informational signage.

The Hampton Roads Sanitation District and the VDH provide pump-outs on a limited first-come first-served basis during summer months in the Tidewater area.

The following list provides a brief overview of the marina facilities located in the Lynnhaven River:

- **Long Bay Pointe.** This marina is located on the north side of Long Creek, west of the West Great Neck Road Bridge over the creek. The marina currently operates a Chesapeake Bay Marine pump-out system on the fuel dock accessible to all boaters. There is a sign on the pump station. The marina also has a dump station adjacent to the dock for portable toilets.
- **Lynnhaven Dry Storage.** This marina is located on the north side of Long Creek between the West Great Neck Road and North Great Neck Road bridges over the creek. The marina currently operates a SaniSailor pump-out system on the fuel dock accessible to all boaters. A sign for the pump-out is posted on the side of the building adjacent to the dock. The marina has a dump station adjacent to the dock for portable toilets.
- **Lynnhaven Municipal Marina.** This marina is located along the north side of Long Creek between the West Great Neck Road Bridge and the Lesner Bridge. The marina currently operates a Chesapeake Bay Marine pump-out system at the building face with a hose that reaches the dock accessible to all boaters. There is a sign for the pump-out posted on the dock and on the building face. The marina also has a dump station at the building face adjacent to the dock for portable toilets.
- **Lynnhaven Seafood Marina.** This marina is located along the north side of Long Creek between the West Great Neck Road Bridge and the Lesner Bridge. The marina currently operates a SaniSailor pump-out system on the fuel dock accessible to all boaters. There is a sign on the pump station. The marina also has a dump

station adjacent to the dock for portable toilets.

- **Marina Shores.** This marina is located on the north side of Long Creek just east of the North Great Neck Road Bridge over the creek. The marina currently operates an Edson pump-out system on the fuel dock accessible to all boaters. There is a sign posted on the pump station. The marina also has a dump station adjacent to the dock for portable toilets
- **Cavalier Golf & Yacht Club.** This marina is located at the north end of the Bird Neck Point Neighborhood at Bird Neck Point where Little Neck Creek meets Linkhorn Bay. The marina currently operates a KECO diaphragm pump-out system on the dock accessible to club members only. They also have a dump station adjacent to the dock for portable toilets. The club currently serves approximately one hundred-fifty (150) vessels at this facility.

Facility Accessibility & Restrictions

Tables 1 and 2 summarize information on marinas, including: location, schedule of operating hours, fees for pump-out facilities, water depth at pump-out dock, whether the pump-out was grant funded using Clean Vessel Act (CVA) funds, and the number of available slips. Table 1 summarizes this information for marinas in the Lynnhaven River. Table 2 summarizes this information for marinas adjacent to the Lynnhaven River in Rudee Inlet, along the North Landing River, and in the city of Norfolk.

There are no draught limitations for vessels at pump-out facilities and dump stations in the Lynnhaven River. All vessels using the facilities have sufficient water to dock at the marinas.

Each of the marinas in Table 1 is open to the public except for the Cavalier Yacht & Country Club. This private club currently serves approximately one hundred-fifty (150) vessels owned by its members.

There are two (2) bridges within the Lynnhaven River as well as the Lesner Bridge located at Lynnhaven Inlet. Pump-out facility locations as well as the bridge heights (listed as thirty-five (35) feet) do not restrict accessibility to marinas or pump-out facilities.

The facilities are somewhat concentrated near Lynnhaven Inlet because the watershed becomes dominated by private residences as one travels further away from the inlet. However, transient boats enter the watershed at the inlet and most local boats travel to the inlet facilities for fuel, so the grouping of facility locations does not appear to be an inconvenience.

Facility Maintenance

The Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings specifies requirements for facility design and operation. Routine health department inspections and performance tests are performed to ensure that facilities are available and functioning properly. Broken pump-out stations can be reported by calling 1-800-ASK-FISH.

Facility Waste Treatment Method

The Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings address treatment of collected vessel sewage from pump-outs and dump stations. In compliance with these regulations, all wastes from marinas within the Lynnhaven River are collected in and transported through the city's sanitary sewer collection system to the Hampton Roads Sanitation District for ultimate treatment and disposal.

Table 1: Marina Facilities, Lynnhaven River

MARINA INFORMATION	HOURS OF OPERATION	FACILITY FEE	WATER DEPTH AT PUMPOUT	GRANT FUNDED PUMPOUT	NUMBER OF VESSEL SLIPS
1. Long Bay Point 2101 West Great Neck Rd. Virginia Beach, VA 23451 (757) 321-4550 longbaypoint@yahoo.com Latitude 36 54.29101 Longitude 76 4.29301	10am-6pm 7 days a week 12 months a year	\$25	7 ft.	No	226
2. Lynnhaven Dry Storage 2150 West Great Neck Rd. Virginia Beach, VA 23451 (757) 481-0700 Latitude 36 54.39301 Longitude 76 4.15901	8am-5pm 7 days a week 12 months a year	\$5	6 ft.	Yes	0 wet 600 dry
3. Lynnhaven Municipal Marina 3211 Lynnhaven Drive Virginia Beach, VA 23451 (757) 496-6845 gllhill@vbgov.com Latitude 36 54.33101 Longitude 76 5.03901	8am-4pm 7 days a week 12 months a year	\$5	14 ft.	Yes	50
4. Lynnhaven Seafood Marina 3311 Shore Drive Virginia Beach, VA 23451 (757) 484-4545 Latitude 36 54.39101 Longitude 76 5.22001	6:30am-11pm 7 days a week 12 months a year	\$5	6 ft.	Yes	12
5. Marina Shores 2100 Marina Shores Drive Virginia Beach, VA 23451 (757) 496-7000 Latitude 36 54.335 Longitude 76 3.967	May –Sept.: 7am-8pm weekends 8am-7pm weekdays October – June: 8am- 5pm	\$5	10 ft.	Yes	169 wet 300 – 450 dry
6. Cavalier Golf & Yacht Club 1052 Cardinal Road Virginia Beach, VA 23451 (757) 422-8226 jandrew@cavalieryc.com Latitude 36 52.06 Longitude 76 0.302	8am-6pm 7 days a week 12 months a year	\$10 Pump out to be used by club Members Only	10 ft.	No	85

Sources: Virginia Department of Health Division of Wastewater Engineering/ Marina Program (www.vamarinas.net)

Virginia Department of Health Office of Environmental Health Services. Marina Inspection Forms for 2004.

Table 2. Marina Facilities, Adjacent Areas

MARINA INFORMATION	HOURS OF OPERATION	FACILITY FEE	LOW WATER DEPTH	GRANT FUNDED PUMPOUT	NUMBER OF VESSEL SLIPS
1. Fisherman's Wharf Marina 524 Winston Salem Avenue Virginia Beach, VA 23451 (757) 428-2111 Latitude 36 49.919 Longitude 75 58.635	24 hours a day 7 days a week March- December	\$5	10 ft.	Yes	92
2. Harbour Point Condominium 407-103 Harbour Point Virginia Beach, VA 23451 (757) 422-6116 Latitude 36 49.734 Longitude 75 58.462	8am-5pm 7 days a week 12 months a year	No fee	6 ft.	No	67
3. Inlet Station Marina 227 Mediterranean Avenue Virginia Beach, VA 23451 (757) 422-2999 Latitude 36 49.942 Longitude 75 58.648	8am-4pm 7 days a week 12 months a year	\$10	6 ft.	No	61
4. Virginia Beach Marlin Club 308 Mediterranean Avenue Virginia Beach, VA 23451 (757) 428-0981 Latitude 36 49.875 Longitude 75 58.632	8am-5pm Mon. – Sat. 12 months a year	\$20	7 ft.	No	24 wet 1 dry
5. Virginia Beach Fishing Center 200 Winston Salem Avenue Virginia Beach, VA 23451 (757) 491-8000 Latitude 36 49.935 Longitude 75 58.41	13 hours a day 7 days a week 12 months a year	\$5	6 ft.	Yes	45
6. Pungo Ferry Marina 2272 Old Pungo Ferry Road Virginia Beach, VA 23457 (757) 721-3299 Latitude 36 37.047 Longitude 76 2.821	8am-5pm 7 days a week 12 months a year	\$5	7 ft.	Yes	47 wet 20 dry
7. Naval Amphibious Base 1516 Okinawa Road Norfolk, VA 23521 (757) 462-7140 Latitude 36 54.8 Longitude 76 11.174	24 hours per day 7 days a week 12 months per year	No fee	8 ft.	No	179 wet 370 dry
8. Knitting Mill Creek Yacht Club 765 West 48 th Street Norfolk, VA 23508 Latitude 36 53.206 Longitude 78 17.59	8am-4pm 7 days a week 12 months per year	No fee	5 ft.	No	14

Table 2. Marina Facilities, Adjacent Areas

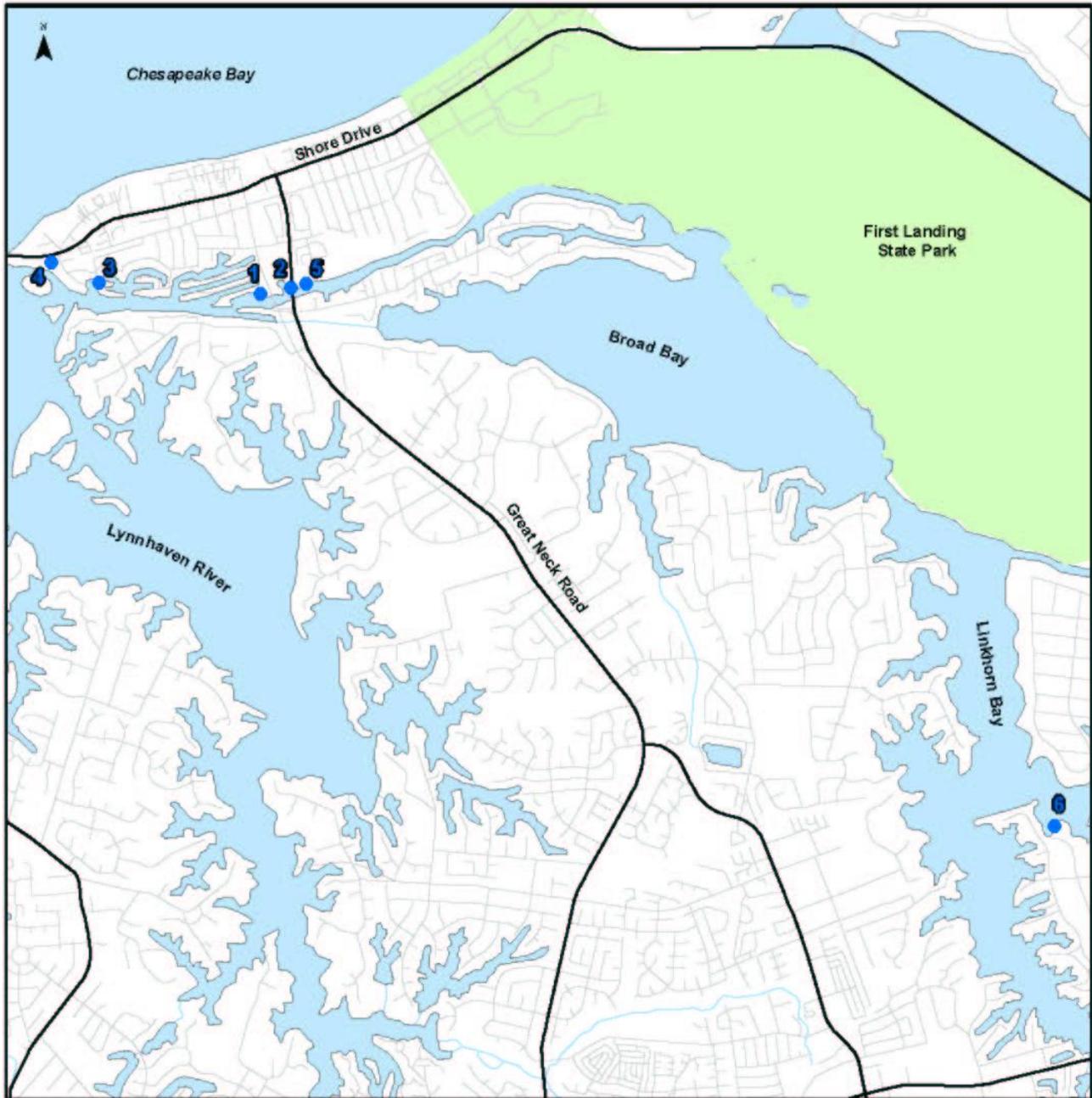
MARINA INFORMATION	HOURS OF OPERATION	FACILITY FEE	LOW WATER DEPTH	GRANT FUNDED PUMPOUT	NUMBER OF VESSEL SLIPS
9. Bay Point Marina 9500 30 th Bay Street Norfolk, VA 23518 (757) 362-8432 Latitude 36 55.444 Longitude 76 10.947	9am-3pm 7 days a week 12 months per year	\$5	7 ft.	Yes	314
10. Cobbs Marina 4524 Dunning Road Norfolk, VA 23518 (757) 588-5401 Latitude 36 55.307 Longitude 76 11.292	8am-4:30pm 5 days a week 12 months per year	\$5	6 ft.	Yes	115 wet 16 dry
11. Cutty Sark Marina, Inc. 4707 Pretty Lake Avenue Norfolk, VA 23518 (757) 362-2942 Latitude 36 55.438 Longitude 76 11.202	8am-5pm 7 days a week 12 months per year	\$5	7 ft.	Yes	98
12. Little Bay Harbour Marina 787 W. Ocean View Ave. Norfolk, VA 23505 Latitude 36 57.867 Longitude 76 16.34	7am-6pm 7 days a week 12 months per year	Not listed	2 ft.	No	10
13. Rebel Marine 1553 Bayville Street Norfolk, VA 23503 (757) 588-6022 Latitude 36 57.977 Longitude 76 17.78	9am-3pm 7 days a week 12 months per year	\$5	9 ft.	Yes	82
14. Freemason Harbor Condominiums Assoc. 401 College Place Norfolk, VA 23510 (757) 623-9119 Latitude 36 50.05 Longitude 76 17.759	8am-5pm 7 days a week 12 months per year	\$5	10 ft.	Yes	34
15. Little Creek Marina 4801 Pretty Lake Avenue Norfolk, VA 23518 (757) 362-3600 Latitude 36 55.41201 Longitude 76 11.06901	8am-5pm 7 days a week 12 months per year	\$5	15 ft.	Yes	130 wet 225 dry
16. M. & V.W. Bay Marina, Inc. 4621 Pretty Lake Avenue Norfolk, VA 23518 (757) 362-5000 Latitude 36 55.485 Longitude 76 11.24	8am-5pm 7 days a week 12 months per year	\$5	5 ft.	Yes	87 wet 35 dry

Table 2. Marina Facilities, Adjacent Areas

MARINA INFORMATION	HOURS OF OPERATION	FACILITY FEE	LOW WATER DEPTH	GRANT FUNDED PUMPOUT	NUMBER OF VESSEL SLIPS
17. Municipal Pier West 44 th Street Norfolk, VA 23508 (757) 441-5156 Latitude 36 53.067 Longitude 76 17.658	9am-5pm 7 days a week 12 months per year	\$15	4 ft	No	11
18. Norfolk Yacht & Country Club 7200 Hampton Blvd Norfolk, VA 23505 (757) 423-4500 Latitude 36 54.457 Longitude 76 18.351	On request 7 days a week 8 months per year	No fee	17 ft.	No	161 wet 44 dry
19. Otter Berth Waterside 333 Waterside Drive Norfolk, VA 23510 (757) 625-2000 Latitude 36 50.661 Longitude 76 17.585	8am-12pm 7 days a week 12 months per year	\$5	20 ft.	Yes	57
20. Pier Condominium 40 Rader Street Norfolk, VA 23510 (757) 622-6510 Latitude 36 51.25201 Longitude 76 17.96001	8am-5pm 7 days a week 12 months per year	No fee	22 ft.	No	35
21. Pilot House Condominium 421 West Bute Street Norfolk, VA 23510 (757) 622-6510 Latitude 36 51.157 Longitude 76 17.832	8am-6pm 7 days a week 12 months per year	No fee	22 ft.	No	29
22. Taylor's Landing 8180 Shore Drive Norfolk, VA 23518 (757) 587-8000 Latitude 36 55.466 Longitude 76 11.462	8am-6pm 7 days a week 12 months per year	\$5	10 ft.	Yes	243
23. Willoughby Harbor, Ltd. 1525 Bayville Street Norfolk, VA 23503 (757) 583-4150 Latitude 36 57.926 Longitude 76 17.72	8:30am-6pm 7 days a week 12 months per year	No fee	9 ft.	Yes	277
24. U.S. Naval Station (Rec) 1682 Piersey Street Norfolk, VA 23511 (757) 444-2918 Latitude 36 57.222 Longitude 76 18.666	On request 7 days a week 12 months per year	No fee Available to military and families		No	164

Sources: Virginia Department of Health Division of Wastewater Engineering/ Marina Program (www.vamarinas.net)

Virginia Department of Health Office of Environmental Health Services. Marina Inspection Forms for 2004.



- Facilities:**
- 1- Long Bay Point
 - 2- Lynnhaven Dry Storage
 - 3- Lynnhaven Municipal Marina
 - 4- Lynnhaven Seafood Marina
 - 5- Marina Shores
 - 6- Cavalier Golf & Yacht Club

Legend

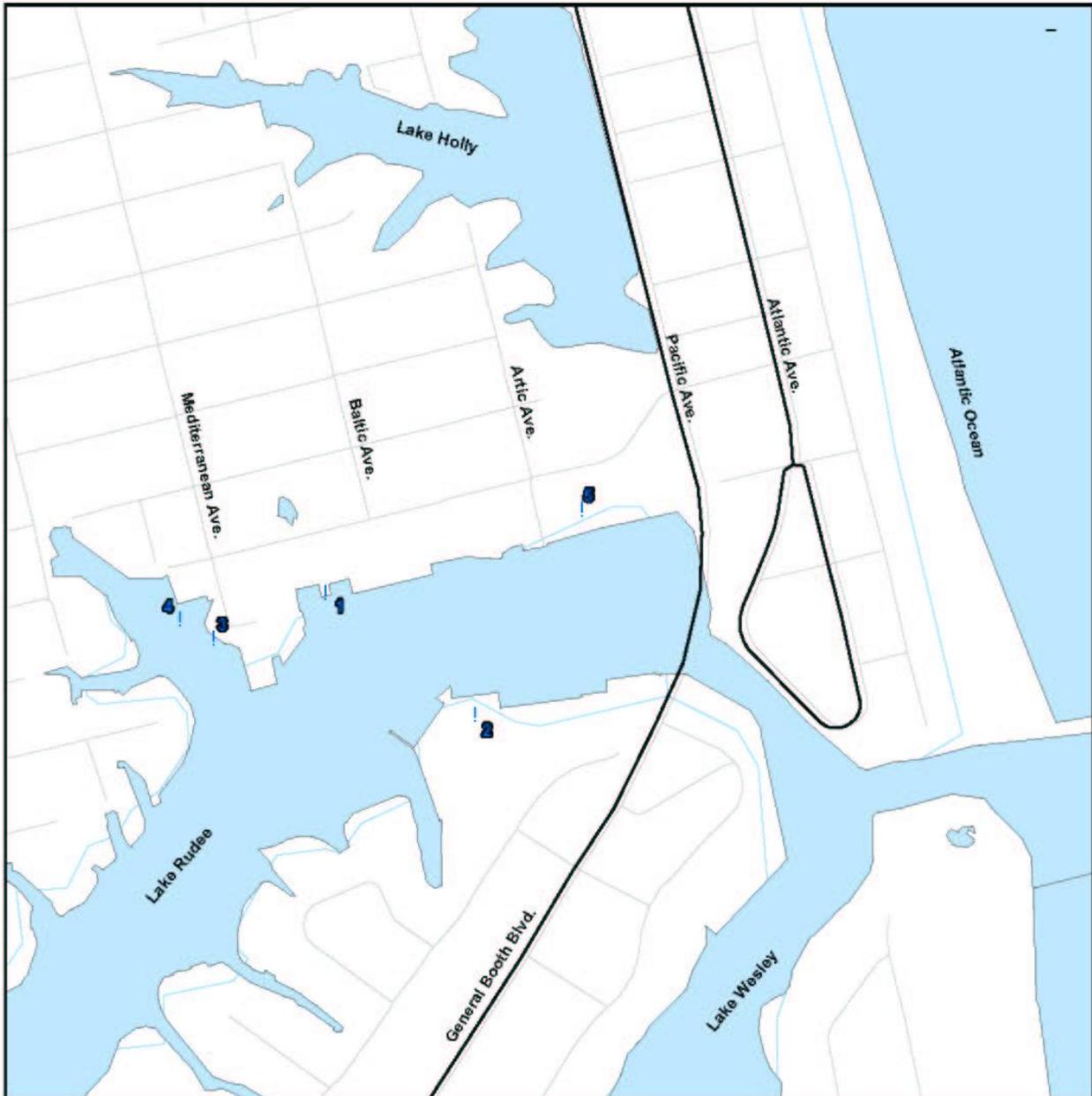
- Marinas
- Stream Centerlines
- Water Bodies



Figure 3
Pump-out Facilities: Lynnhaven River

1 inch equals 3,500 feet

Data Provided By:
City of Virginia Beach



- Facilities:**
- 1- Fisherman's Wharf Marina
 - 2- Harbour Point Condominium
 - 3- Inlet Station Marina
 - 4- Virginia Beach Marlin Club
 - 5- Virginia Beach Fishing Center

Legend

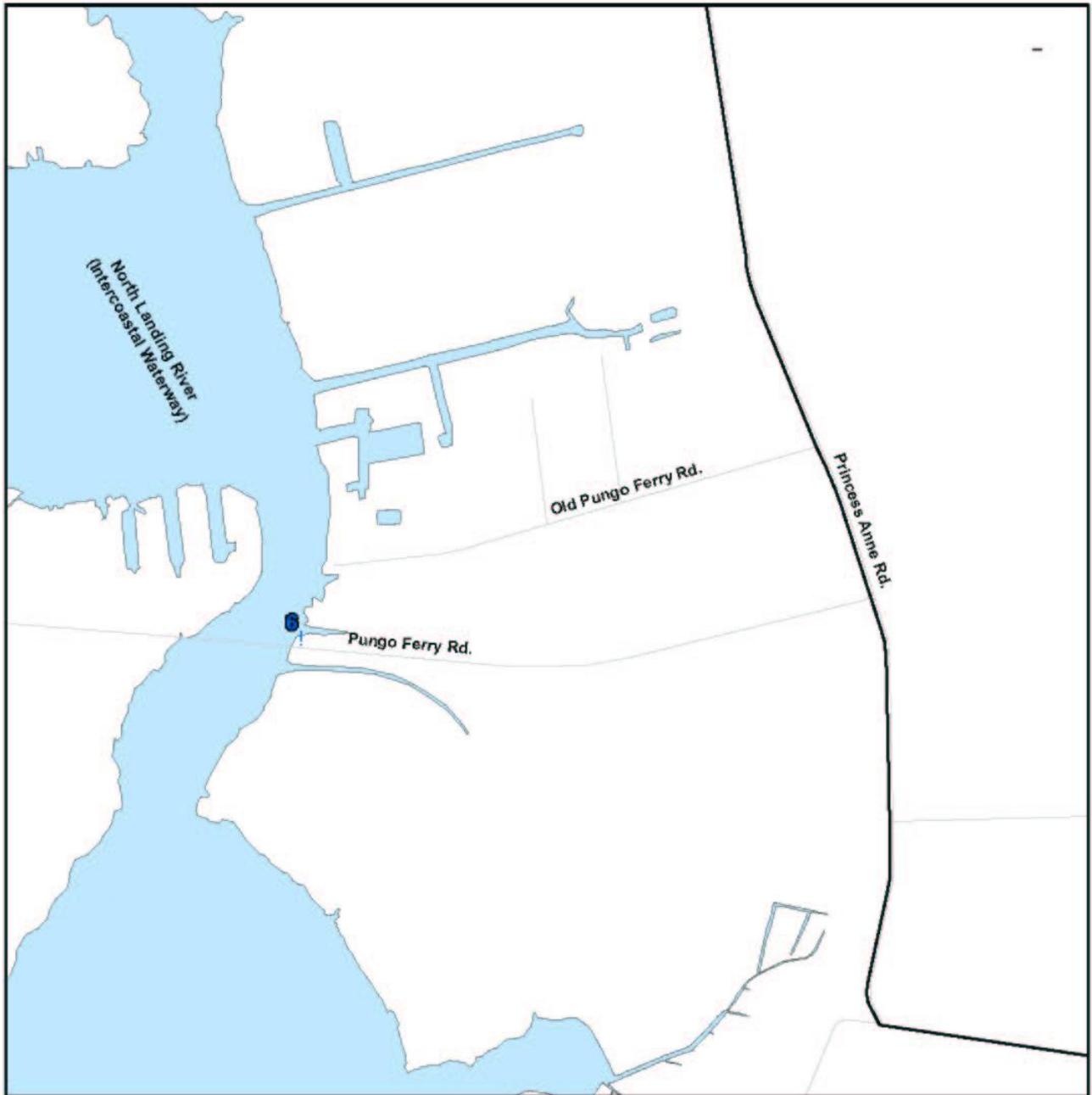
- Marinas
- Stream Centerlines
- Water Bodies

Figure 4
Pump-out Facilities: Rudee Inlet

1 inch equals 500 feet



Data Provided By:
 City of Virginia Beach



Facilities:
6- Pungo Ferry Marina

Legend

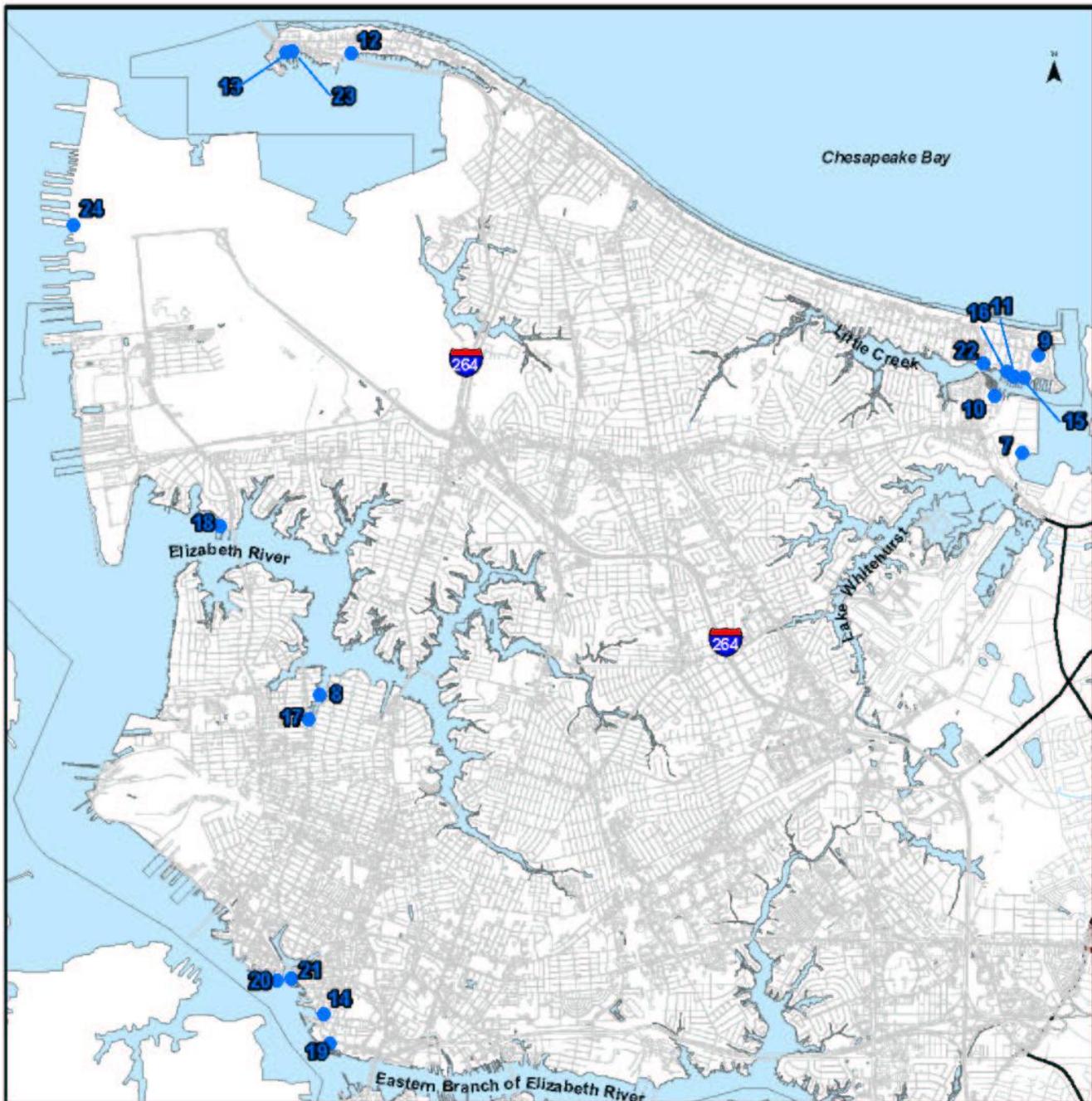
- Marinas
- Stream Centerlines
- Water Bodies



Figure 5
Pump-out Facilities: North Landing River

1 inch equals 1,000 feet

Data Provided By:
City of Virginia Beach



Facilities:

- 7- Naval Amphibious Base
- 8- Knitting Mill Creek Yacht Club
- 9- Bay Point Marina
- 10- Cobbs Marina
- 11- Cutty Sark Marina, Inc.
- 12- Little Bay Harbour Marina

- 13- Rebel Marine
- 14- Freemason Harbor Condominiums Assoc.
- 15- Little Creek Marina
- 16- M. & V.W. Bay Marina, Inc.
- 17- Municipal Pier
- 18- Norfolk Yacht & Country Club

- 19- Otter Berth Waterside
- 20- Pier Condominium
- 21- Pilot House Condominium
- 22- Taylor's Landing
- 23- Willoughby Harbor, Ltd.
- 24- U.S. Naval Station (Rec)

Legend

- Marinas
- Stream Centerlines
- Water Bodies

**Figure 6
Pump-out Facilities: Norfolk**

1 inch equals 6,500 feet

Data Provided By:
City of Norfolk & Virginia Beach

VESSEL INFORMATION AND REQUIRED FACILITIES

The Lynnhaven River is primarily a recreational boating area with limited commercial vessel traffic (charter fishing boats, U.S. Coast Guard vessels, Virginia Beach Police Department Marine Patrol vessels, and Harbor Pilot vessels). Ninety (90) percent of the boats in the area are less than twenty-seven (27) feet in length. Table 3 summarizes, by size, all boats registered in Virginia Beach or with a documented homeport of Virginia Beach.

Table 3. Vessel Population in Virginia Beach

VESSEL LENGTH	TOTAL NUMBER OF REGISTERED VESSELS		
	Registered	Documented	Total
Less than 16 feet	2911	0	2911
16 to 26 feet	7319	5	7324
27 to 40 feet	368	665	1033
Over 40 feet	17	212	229
TOTAL	10,615	882	11,497

Sources: Va. Dept. of Game and Inland Fisheries Boater Registration Database,
Date 2004. U.S. Coast Guard Administration Division.

Table 4 indicates the number of vessels, as determined by VDH, that are kept at marinas or private waterfront homes with piers. Transient boats registered in other states and other cities in Virginia are not included in Table 3 or Table 4.

Table 4. Vessel Population in Rudee Inlet/Pungo and Lynnhaven River

VESSEL LENGTH	NUMBER OF VESSELS AT MARINAS AND PIERS		
	Rudee/Pungo	Lynnhaven	Total
Less than 26 feet	80	917	997
Over 26 feet	164	485	649
Private Piers	63	1646	1709
TOTAL	307	3048	3355

Sources: Virginia Department of Health Marina Inspection Forms.
Virginia Beach city Assessor's Pier List.

The VDH marina inspection slip counts indicate only four (4) out of five hundred thirty-five (535) wet slips at commercial marinas with pump-outs in the Lynnhaven River are designated as transient vessel slips. Based on this information, it is assumed that most transient boats are brought in by trailer. Most of these boats would not be of a size expected to have a holding tank. Transient boat counts have been estimated based on boat information given by the operators of the three (3) public boat ramps in the Lynnhaven River. The ramps are located at the Lynnhaven Boat Ramp & Beach Facility, Bubba's Marina, and First Landing State Park. It is estimated that, on a daily basis during the peak season, the three ramps combined are used by a total of 20 boats less than sixteen (16) feet long, 90 boats between sixteen (16) and twenty-six (26) feet long, and 10 boats between twenty-seven (27) and forty (40) feet long.

Table 5. Estimated Vessel Population in the Lynnhaven River

VESSEL LENGTH	TOTAL NUMBER OF VESSELS			
	VA Beach	Rudee/Pungo	Lynnhaven	Transient
Less than 16 feet	2911	-28	2883	20
16 to 26 feet	7324	-52	7272	90
27 to 40 feet	1033	-134	899	10
Over 40 feet	229	-30	199	0
TOTAL	11,497	-244	11,253	120

Sources: Va. Dept. of Game and Inland Fisheries Boater Registration Database, Date 2004.
 U.S. Coast Guard Administration Division. Virginia Department of Health Marina Inspection
 Forms. Virginia Beach city Assessor's Pier List. Virginia Beach ramp operator transient boat estimates

Table 5 shows the number of vessels estimated to be operating in the Lynnhaven River watershed based on Virginia Beach registrations (Table 3) minus the estimated number of boats operating in other Virginia Beach watersheds based on marina and private slip counts (Table 4). Table 5 also shows the number of transient boats expected to be operating in the watershed on a given day.

The Lynnhaven and transient vessel information shown in Table 5 was used to estimate the number of pump-outs and dump stations required for the Lynnhaven River based on the worksheet found in section 4.1.7 of the document "Protecting Coastal Waters from Vessel and Marina Discharges: A Guide for State and Local Officials. Volume I. Establishing No Discharge Areas under section 312 of the Clean Water Act" (USEPA, 1994). The numbers of transient boats are added after the peak occupancy rate since these are direct numbers launched at ramps daily.

Estimate of Required Pump-out Facilities

Number of local vessels 27-40 feet in length	= 899
Percent with holding tanks	= 25% for Virginia.
Local vessels 27-40 feet with holding tanks: (.25) x (899)	= 225
Number of local vessels over 40 feet in length	= 199
Total number of local vessels with holding tanks	= 424
Suggested default peak occupancy rate	= 40%.
Number of local vessels requiring pump-outs: (.40) x (424)	= 170
Number of transient vessels 27-40 feet in length	= 10
Transient vessels 27-40 feet with holding tanks: (.25) x (10)	= 3
Number of transient vessels over 40 feet in length	= 0
Total number of transient vessels with holding tanks	= 3
Total number of transient vessels requiring pump-outs	= 3
Total vessels requiring pump-outs: = (170) + (3)	= 173

Using the recommended four (4) vessels served per hour and using an average of twenty-one (21) hours of operation per marina per weekend, the number of vessels served per pump-out facility: $(21) \times (4) = 84$.

Pump-out facilities required in the Lynnhaven River: $(173) / (84) = 2.1$ **pump-out facilities required.**

Estimation of Required Dump Stations:

Number of local vessels 16-26 feet in length	= 7272
Percent with portable toilets	= 37% for Virginia.
Local vessels 16-26 feet with portable toilets: (.37) x (7272)	= 2691
Suggested default peak occupancy rate	= 40%
Local vessels requiring dump stations: (.40) x (2691)	= 1077
Number of transient vessels 16-26 feet in length	= 90
Transient vessels 16-26 feet with portable toilets: (.37) x (90)	= 34
Total vessels requiring dump stations: (1077) + (34)	= 1111

Using the recommended twelve (12) vessels served per hour and using an average of twenty-one (21) hours of operation per marina per weekend, the number of vessels served per dump station: $(12) \times (21) = 252$.

Dump stations required in the Lynnhaven River: $(1111) / (252) = 4.4$ **dump stations required.**

There are currently six (6) pump-out facilities and six (6) dump stations in the Lynnhaven River. Based on the above calculations, there are a sufficient number of pump-out facilities and dump stations at the marinas in the Lynnhaven River to adequately service all marine sanitation needs. These facilities are easily accessible to all vessels in the Lynnhaven River and provide safe sanitary wastewater removal and treatment. In addition to these stationary pump-out facilities, the Hampton Roads Sanitation District supplies free mobile pump-outs during the summer months.

ENFORCEMENT, SUPPORT, AND OUTREACH ACTIVITIES

State Regulations

Virginia State Water Control Law §62.1-44.33 addresses boating discharges and provides authority for the State Water Control Board to adopt regulations controlling discharges from boats. This section of the law also provides that “Violation of such rules and regulations and violations of the prohibitions created by this section on the discharge of treated and untreated sewage from documented and undocumented boats and vessels shall, upon conviction, be a Class 1 misdemeanor. Every law-enforcement officer of this Commonwealth and its subdivisions shall have the authority to enforce the rules and regulations adopted and promulgated under the provisions of this section and to enforce the prohibitions on the discharge of treated and untreated sewage created by this section.”

The current boating regulation that results from this authority is entitled “Regulations Governing the Discharge of Sewage and Other Wastes from Boats” (9 VAC 25-71). This regulation contains a section that addresses No Discharge Zones as such:

9 VAC 25-71-60. *No Discharge Zones.*

The following requirements apply in designated No Discharge Zones:

A. All discharge of sewage, whether treated or not, and other wastes from all vessels into designated No Discharge Zones is prohibited. A listing of designated No Discharge Zones within the state appears at 9 VAC 25-71-70.

B. Vessels without installed toilets shall dispose of any collected sewage from portable toilets or other containment devices at facilities approved by the Virginia Department of Health for collection of sewage wastes, or otherwise dispose of sewage in a manner that complies with state law.

C. Vessels with installed toilets shall have a marine sanitation device to allow sewage holding capacity unless the toilets are rendered inoperable.

D. Houseboats having installed toilets shall have a holding tank with the capability of collecting and holding sewage and disposing of collected sewage at a pump-out facility or other facility approved by the Virginia Department of Health for collection of sewage wastes; if a houseboat lacks such capability, the installed toilet shall be removed.

E. Y-valves, macerator pump valves, or any other through-hull fitting valves capable of allowing a discharge of sewage from marine sanitation devices shall be secured in the closed position by a device that is not readily removable, including, but not limited to, a numbered container seal, such that through-hull sewage discharge capability is rendered inoperable.

F. Every owner or operator of a marina within a designated No Discharge Zone shall notify boat patrons leasing slips of the sewage discharge restriction in the No Discharge Zone. As a minimum, notification shall consist of No Discharge Zone information in the slip rental contract and a sign indicating the area is a designated No Discharge Zone.

9 VAC 25-71-70. *Listing of Designated No Discharge Zones in the Commonwealth of Virginia.*

The following are designated No Discharge Zones:

A. A No Discharge Zone is hereby established for Smith Mountain Lake in the counties of Bedford, Franklin and Pittsylvania, Virginia, from Smith Mountain Dam (Gap of Smith Mountain) upstream to the 795.0 foot contour (normal pool elevation) in all tributaries, including waters to above the confluence with Back Creek in the Roanoke River arm,

and to the Brooks Mill Bridge (Route 834) on the Blackwater River arm.

Upon EPA approval of a No Discharge Zone for the Lynnhaven Watershed, this area will be added to the list in section 70 of the regulation, and any law-officer of the Commonwealth will have the authority to enforce the requirements.

Local Enforcement Capability

The Virginia Beach Police Department Marine Patrol will be the enforcing authority should the Lynnhaven River be deemed a NDZ. The police currently have three (3) fifty (50)-knot vessels with another vessel to be procured in the near future. Various enforcement methods are under review including the use of NSF 60 fluorescent yellow/green dye tablets added to vessel holding tanks to detect illegal discharges, and the purchase of numbered plastic padlocks (container seals) for use in locking Y-valves. The dye tablets will be installed in holding tanks on a voluntary basis by marina operators and boaters as well as by those using pump out stations. The city will supply the dye tablets at no cost to users. The city will also supply numbered container seals at no cost to users for securing Y valves and other valves so that through hull sewage discharge capability of boats is rendered inoperable.

Local Public Support and Outreach

Local citizens, advocacy groups, and marina personnel are concerned about impacts from vessel sanitary discharges into the Lynnhaven River. Lynnhaven River 2007, the city of Virginia Beach, the Chesapeake Bay Foundation, the Hampton Roads Sanitation District, and the U.S. Army Corps of Engineers are all actively pursuing ways of improving the water quality of the Lynnhaven River.

The City of Virginia Beach provides funding for a summer boating education program and limited pump-out services to promote the proper disposal of wastewater from vessel holding tanks as a means of eliminating sanitary discharges to local waterways. Literature and promotional items are distributed to stress the importance of disposing of vessel waste properly on shore. Additionally, trained college students provide pump-outs on a limited first-come first-served basis. These students attend local festivals, visit marinas, and even “dock” at homes or boat slips to provide this service. Each summer, approximately 6,000 gallons of wastewater are collected from boats by the students and transported to an HRSD plant for treatment. VDH is currently looking into providing a pump-out boat for the Lynnhaven River using Clean Vessel Act funds. The city of Virginia Beach and Lynnhaven River 2007 also conduct public outreach and public boater education in the Lynnhaven watershed, while HRSD and BoatUS make educational information available to the public.

Existing Point Source Pollution

The majority of land-based activities potentially contributing to bacteriological contamination of the Lynnhaven River have been addressed by the city. Nearly all of the waterfront homes in the Lynnhaven River watershed are connected to the city’s sanitary sewer collection system and individual septic system use throughout the watershed is being reduced as the city extends utility services to previously unsewered areas.

No VPDES permits are issued for point source discharges directly into the Lynnhaven River.

There are permits issued for storm water or other minor discharges into various tributaries within the watershed, but none for point source discharges from sewage treatment plants.

Summary

The Lynnhaven River is an exceptional state resource that is in need of greater water quality protection than the current applicable Federal standard affords. There are an adequate number of pump-out facilities and dump stations in the Lynnhaven River to serve the boating vessel population and provide for the proper disposal and treatment of collected wastes, and enforcement and public outreach can be provided by the City of Virginia Beach. The Commonwealth of Virginia believes the Lynnhaven River Watershed is an excellent candidate for designation as a Boating No Discharge Zone.

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