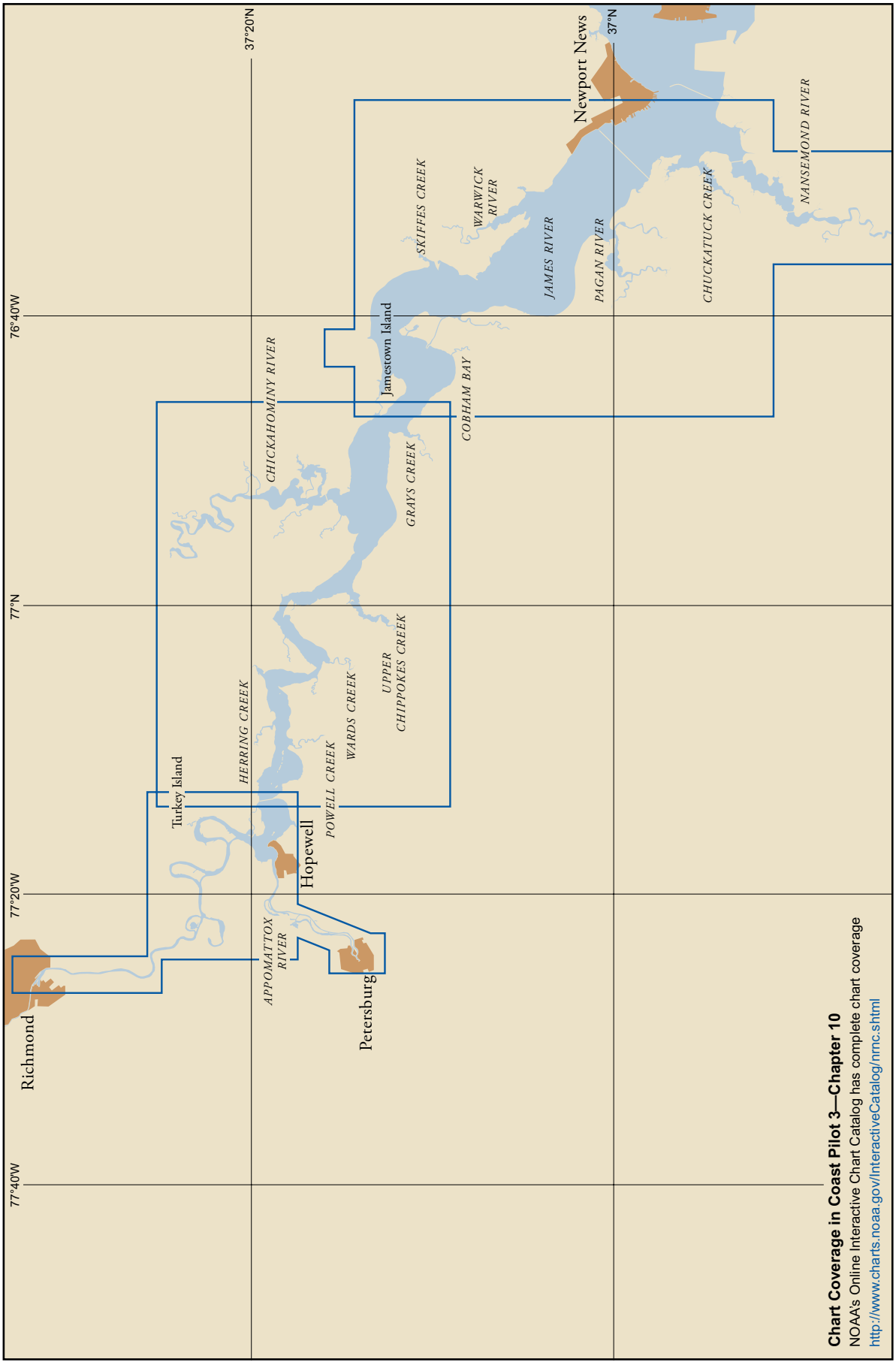
37°20'N
37°N
76°40'W
77°N
77°20'W
77°40'W
Newport News
Jamestown Island
Turkey Island
Hopewell
Petersburg
Richmond
SKIFFES CREEK
WARWICK RIVER
JAMES RIVER
PAGAN RIVER
CHUCKATUCK CREEK
NANSEMOND RIVER
CHICKAHOMINY RIVER
COBHAM BAY
GRAYS CREEK
HERRING CREEK
WARDS CREEK
POWELL CREEK
UPPER CHIPPOKES CREEK
APPOMATTOX RIVER
Chart Coverage in Coast Pilot 3—Chapter 10
NOAA's Online Interactive Chart Catalog has complete chart coverage
http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml

Chesapeake Bay, James River

(1) This chapter describes the James River and several of its tributaries of which the Nansemond, Chickahominy and Appomattox Rivers are the more important. Also discussed are the ports of Richmond and Hopewell, as well as several of the minor ports and landings on these waterways.

(2)

COLREGS Demarcation Lines

(3) The lines established for Chesapeake Bay are described in **33 CFR 80.510**, chapter 2.

(4)

James River

(5) **James River** rises in the Allegheny Mountains near Clifton Forge, VA, and flows 295 miles southeastward to Hampton Roads at Newport News, 21.5 miles by main channel from the Virginia Capes. The head of commercial navigation is at Richmond, 78 miles above the mouth. The river varies in width from 1,000 feet at Richmond to 4.3 miles at the mouth. Traffic consists chiefly of general cargo, chemicals, livestock, tobacco and paper products. Drafts of vessels using the river above Newport News generally do not exceed 15 feet, but vessels drawing 24 feet or more navigate it occasionally.

(6) **Mileages** shown in this chapter as Mile 0.9N, Mile 12W, etc., are the nautical miles above the mouth of James River; the letters N, S, E, and W denote by compass points the side of the river where each feature is located. Mile 0.0 is a point in the main channel on a line between Pig Point and Newport News Point; the midchannel point is 21.5 miles from the Virginia Capes.

(7) It is to be understood that the mileages given are approximations. The values are not intended to be finite. The intended degree of accuracy is only supposed to be enough to put the user of the chart into the general vicinity of the cited object.

(8)

Channels

(9) The Federal project for James River provides for depths from the Richmond Deepwater Terminal and in the Richmond Deepwater Terminal Turning Basin, 74 miles above the mouth, thence to the Richmond Harbor Turning Basin, 77 miles above the mouth, and thence to the Richmond Lock at Richmond, 78 miles above the mouth. The river is well marked. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through a USACE hydrographic survey website listed in Appendix A.

(10)

Anchorages

(11) **General anchorages** are just inside the mouth of the James River, south of Newport News Point. (See **33 CFR 110.1** and **110.168**, chapter 2, for limits and regulations.)

(12)

Dangers

(13) Numerous stakes, piling, wrecks and other obstructions are on both sides of the main channel in James River.

(14)

Current

(15) The currents in James River follow the general direction of the channel, except between Hog Island and Jamestown Island, 25 miles above the mouth, where they set across Goose Hill Flats. In the lower reaches, the velocity of flood is about equal to that of ebb. Near Richmond, the drainage flow predominates and the current seldom, if ever, sets upstream. These normal conditions are subject to change by wind and freshets.

(16) During severe winters some drift ice appears, and at times the river freezes over, but navigation to Richmond hardly ever is suspended because the ice is broken up by a tug.

(17) **Freshets** occur irregularly in the fall, winter and spring; their height at Richmond ranges from 6 to 32 feet, though the latter is exceptional. The maximum freshet heights usually occur between the middle of March and the middle of April; the freshets occurring at other times usually reach heights not greater than about 6 feet above the normal high water. The number of freshets that cause the water to rise above the level of the wharves along the main channel at Richmond averages about one per year; the water seldom rises above the level of the city wharf. The flood heights diminish rapidly below Richmond; the extreme is about 11 feet less at Dutch Gap, and the rise is not felt at Hopewell. The cutoffs have reduced the freshet height at Richmond about 1 foot.

(18)

Pilotage, James River

(19) Pilotage on the James River is compulsory for all foreign vessels and for U.S. vessels under register in the foreign trade. Pilotage is optional for U.S. vessels in the coastwise trade that have on board a pilot licensed by the Federal Government to operate in these waters.

(20) The Virginia Pilots Association offers pilotage to all vessels. Pilot service for the upper 38 miles of the river is available only during daylight. (See Pilotage, chapters 3 and 9.)

(21)

Supplies and Repairs

(22) The principal places for supplies above Newport News are Hopewell and Richmond. Repair facilities are limited; small marine railways operate in Chuckatuck Creek, Pagan River and Appomattox River and at Falling Creek.

(23) The entrance to James River is between Pig Point (36°54.3'N., 76°26.5'W.) and **Newport News Point**, 3.6 miles to the north-northeastward; the midchannel point is 21.5 miles from the Virginia Capes and is close to the Newport News Wharves, listed in the table in chapter 9.

(24) The **Monitor-Merrimac Memorial Bridge Tunnel** crosses Hampton Roads and connects Newport News with Suffolk. The fixed bridge crosses a small boat channel in the south section of the complex and has a clearance of 30 feet.

(25) **Nansemond River** empties into the mouth of James River between Pig Point and **Barrel Point**, 2 miles to the west-northwest. Traffic on Nansemond River consists chiefly of pleasure craft. The river is used considerably by vessels with drafts of 9 feet and has been navigated with drafts of as much as 11 feet.

(26) A narrow channel leads to Suffolk, 15 miles above the mouth of Nansemond River. The channel is well marked to Western Branch, 10 miles above the mouth. Local knowledge is necessary to navigate the narrow unmarked channel above Western Branch. A dam is 0.5 mile above the bridge in Suffolk.

(27)

Current

(28) In Nansemond River, the current velocity is about 0.9 knot and follows the general direction of the channel.

(29) **Pig Point** is on the south side of the entrance to James River and the east side of the entrance to Nansemond River. The submerged pilings of an old pier, 0.4 mile east of Pig Point, extend 0.7 mile into the river and are marked at the outer end by a daybeacon.

(30) About 2.2 miles southwestward of Pig Point, a narrow, dredged channel marked by a light, buoy and daybeacons leads southward from Nansemond River channel into **Bennett Creek**. Gasoline, diesel fuel and pump-out are available at a small-boat basin near the bridge across the creek.

(31) From Pig Point to Hollidays Point, 6.5 miles upstream, Nansemond River is wide, but the channel is crooked and leads between extensive shoals that are almost bare at low water in some places. There are many fish stakes on the shoals near the mouth. Above Hollidays Point, the river is narrow and crooked, but the midchannel is clear to Suffolk.

(32) The highway bridge over Nansemond River at **Town Point**, on the south side 2.4 miles above the mouth, has a fixed span with a clearance of 65 feet. An overhead power cable with a clearance of 96 feet over the main channel crosses the river about 0.8 mile above the bridge.

(33) **Great Shoal**, just southwest of the overhead power cable and on the northwest side of the channel, is an oyster bar with a least depth of 2 feet; it is marked by bush stakes.

(34) An overhead power cable with a clearance of 40 feet crosses the river about 2.5 miles south of **Hollidays Point**.

(35) **Western Branch** empties into the west side of Nansemond River, about 10 miles above the mouth. The channel entrance is marked by daybeacons for about 700 feet above the junction with the Nansemond River. A seasonal marina, 0.7 mile from the main Nansemond channel, has a pier with a depth of about 10 feet at the face. Gasoline, diesel fuel, a 45-foot marine railway and a 4-ton lift are available; minor repairs can be made.

(36) Twin fixed highway bridges, both with a clearance of 35 feet, cross the Nansemond River about 12.5 miles above its mouth.

(37) **Suffolk** is an important rail center on the south side of Nansemond River, 15 miles above the mouth. The highway bridge at Suffolk has a 45-foot fixed span and a clearance of 3 feet. The overhead power and telephone cables at the bridge have a clearance of 40 feet.

(38) **Batten Bay**, on the west side of James River just north of Nansemond River, has general depths of 2 to 6 feet. **Ragged Island Creek**, at the north side of the bay, is shallow and little used.

(39) **Chuckatuck Creek**, which empties into Batten Bay from southwestward, has depths of about 4 feet in the approach through the bay and deeper water inside for about 1.7 miles. The channel over the bar and through the bay is marked by lights and daybeacons; the channel edges usually are marked by bush stakes.

(40) The highway bridge over Chuckatuck Creek, 0.8 mile above the mouth, has a fixed span with a clearance of 35 feet. A small shipyard is at **Crittenden**, on the south side of the creek just eastward of the bridge; berths, gasoline, diesel fuel, ice and some marine supplies are available. All types of repairs can be made; a marine railway there can handle craft up to 75 feet long.

(41) **James River Bridge**, Mile 4, extends 4 miles from shore to shore in a northeast-southwest direction. The main channel vertical-lift span, 1 mile from the northeast shore, has a clearance of 60 feet down and 145 feet up. The bridgetender monitors VHF-FM channel 13; call sign KQ-7169. (See **33 CFR 117.1** through **117.59**, chapter 2, for drawbridge regulations.) A fixed span midway between the two shores has a clearance of 25 feet. The overhead power cable crossing the river close northward of the bridge has a clearance of 172 feet at the lift span and 100 feet at the fixed span. Both of the piers that protect the two cable suspension towers just north of the lift span are marked by three fixed red lights.

(42) **White Shoal**, on the southwest side of the main channel at Mile 7, is marked near its southeast end by the

tower of an abandoned lighthouse. A secondary channel on the opposite side of the shoal also is marked.

(43) **Pagan River** empties into James River at Mile 7W. Traffic on this river consists chiefly of shellfish, sand and gravel. The approach to Pagan River through the dredged channel southeast of White Shoal is well marked; the river inside is also marked to within 1 mile of Smithfield.

(44) **Jones Creek**, on the south side of Pagan River 0.7 mile above the mouth is marked by a light and daybeacons at the entrance. A fixed highway bridge 0.5 mile above the mouth has a clearance of 17 feet. An overhead power cable close southward of the bridge has a clearance of 32 feet. A marina and fish pier are at **Rescue**, just below the bridge; some supplies, repairs, fuel and a 30-ton mobile hoist are available. A 45-foot marine railway is 100 yards above the bridge. The fixed highway bridge, 2.5 miles above the mouth, has a width of 40 feet and a clearance of 7 feet.

(45) **Battery Park** is on the south side of Pagan River 1 mile above the mouth. Hull and engine repairs can be made at the town, in a boatyard 150 yards above the oyster plant.

(46) **Cypress Creek**, on the south side of Pagan River 4 miles above the mouth, has depths of 4 feet or more for 2 miles. The fixed highway bridge over the entrance has a clearance of 12 feet. An overhead power cable with a clearance of 36 feet crosses the creek about 0.8 mile above the bridge. A fixed highway bridge, with a clearance of 16 feet for a width of 46 feet, crosses the river about 1.1 miles above the mouth.

(47) **Smithfield**, on the southwest side of Pagan River 4.5 miles above the mouth, is famous for its hams. The fixed highway bridge just above the town has a width of 30 feet and a clearance of 15 feet. An overhead power cable at the bridge and one 0.4 mile west of the bridge have clearances of 30 feet. A fixed highway bridge, with a clearance of 16 feet for a width of 48 feet, crosses the river about 0.6 mile above the fixed highway at Smithfield.

(48) **Deep Creek**, Mile 8E, is used as an overnight anchorage by many oyster boats. A dredged marked channel leads from James River to a turning basin opposite Menchville. Traffic consists of some shellfish, sand and gravel.

(49) **Menchville** is on the northwest side of the entrance to Deep Creek. The landings at the town have depths of about 5 feet alongside; gasoline and diesel fuel are available. Numerous pleasure craft use Deep Creek during the summer. Gasoline, supplies and a 12-ton lift are available on the west side about 0.5 mile above the mouth.

(50) **Warwick River**, marked by daybeacons to a point about 3 miles above the mouth, is entered just north of Deep Creek; depths of 4 feet or more can be carried to **Fort Eustis**, 7 miles above the mouth. The mouth of the river is sometimes used as an anchorage by small oyster boats.

(51) **Point of Shoals**, Mile 12W, is an extensive shallow area in **Burwell Bay**. There are also wide areas of unmarked shoals between the channel and the northeastern shore. The main channel formerly circled around Point of Shoals but is now through the dredged cut known as **Rocklanding Shoal Channel**. The old channel has shoaled but is still marked by daybeacons; the current velocity is 0.9 knot. The several small landings along the shore of Burwell Bay have depths of about 4 feet at their outer ends.

(52) A small-craft harbor of refuge is on the west side of Burwell Bay at **Tylers Beach** (37°04.9'N., 76°40.0'W.). A dredged channel, marked by daybeacons and a light, leads from James River to the harbor basin.

(53) Along the west side of the river between Burwell Bay and **Lawnes Creek** is an anchorage for the **Maritime Administration Reserve Fleet**. (See **33 CFR 162.270**, chapter 2, for regulations restricting navigation in the vicinity of the decommissioned ships.)

(54) At Mile 16.2E, a dredged channel marked by lights, daybeacons and a lighted range, leads from James River to a boat basin of the U.S. Maritime Administration reservation at **Fort Eustis**. The ruins of an army pier are visible close northward of the channel. Decommissioned ships are moored on either side of the channel.

(55) **Deep Water Shoals Warning Light** (37°08'55"N., 76°38'13"W.), Mile 16.9E, 15 feet above the water, is shown from a pile with a white and orange diamond-shaped daymark worded DANGER, in depths of 2 feet.

(56) **Skiffes Creek**, Mile 17.8E, has a private channel at the entrance leading to an army pier, turning basin and to a small-boat basin proceeding northwards. The channel is marked by lights, daybeacons and lighted and unlighted buoys.

(57) North of Skiffles Creek is an overhead power cable crossing the river on towers to Gravel Neck. The authorized clearance is 60 feet with 201 feet over the main channel and 188 feet over the secondary channel.

(58) A **restricted area** is just south of the entrance to the Skiffes Creek. (See **33 CFR 334.280**, chapter 2, for limits and regulations.)

(59) **College Creek**, Mile 22.5N, has depths of 1 foot across the flats at the mouth. The creek is difficult to navigate without local knowledge. Fixed bridges across the creek at the mouth and about 4 miles above the mouth have clearances of 10 and 12 feet, respectively. Private aids mark the creek.

(60) **Cobham Bay**, a wide bight at Mile 25.6S, has general depths of 5 to 7 feet.

(61) **Jamestown Island**, at Mile 26N, is the site of historic **Jamestown**, which was settled by Capt. John Smith and his 105 cavaliers in 1607. The town is on **Church Point**, Mile 28N, the northwest end of the island. The Jamestown white monument is prominent; the ruins of the old church are hidden by trees.

(62) **The Thorofare**, **Back River** and **Sandy Bay** separate Jamestown Island from the mainland and forms a small-craft passage that connects at each end with James River. The Thorofare is a shallow bay on the northeast side of the island. Back River is a narrow, winding channel that

extends from the head of The Thorofare along the north side of the island to Sandy Bay, which opens into the James River. A narrow channel marked by daybeacons leads through the extensive mudflats in the upper part of The Thorofare. The highway bridge across the mouth of Sandy Bay has a 48-foot fixed span with a clearance of 12 feet.

(63) **Mill Creek**, which empties into The Thorofare from the northward, has a depth of 1 foot at the entrance and 2 or more feet to a landing 1.5 miles above the mouth. Above the landing, the creek is foul with snags and obstructions. The fixed highway bridge across the mouth of the creek has a clearance of 10 feet.

(64) **Powhatan Creek**, used by fishermen and small pleasure craft during the summer, empties from the northward into Sandy Bay. A fixed bridge, 0.4 mile above the mouth, has a width of 25 feet and a clearance of 12 feet. A noticeable current is reported at the bridge. A marina near the bridge can provide gasoline, water, some marine supplies and a 17-ton lift; minor hull and engine repairs can be made. The numerous snags along the banks of the creek can be avoided by staying in midstream.

(65) The approach to Powhatan Creek through Sandy Bay is marked with uncharted stakes—local knowledge is required to carry the best water. In 1984, severe shoaling was reported in the channel through the basin.

(66)

Scotland to Jordan Point

(67) **Scotland** (37°11.0'N., 76°47.2'W.), Mile 27.5S, is the mainland terminus of the Jamestown Ferry, which operates to **Glass House Point**, 1 mile northwest of the monument at Jamestown, across the river. Ferry slip depths are about 18 feet on the Scotland side and about 20 feet on the Jamestown side. The piers at Scotland and Glass House Point extend channelward over 700 feet and about 1,600 feet, respectively; the slips are marked by lights and a sound signal. The partly submerged remains of the old Scotland wharf are about 100 yards southeast of the slips.

(68) **Grays Creek**, Mile 28.2S, is entered through a shallow bay. A 3-foot channel leads to deeper water inside. There are many snags and obstructions in the creek. A marina is 1 mile above the mouth.

(69) **Chickahominy River**, Mile 33N, is navigable to Walkers Dam, 19 miles above the mouth. The lock in the dam has a length of 60 feet, a width of 15 feet and a depth of 4 feet over the sill. The lock gates are hand operated; there is no tender. It is recommended that at least two strong persons be on board before attempting to use the lock. Obstruction lights mark the dam spillway.

(70) The channel through the broad flats at the entrance to Chickahominy River is entered 0.7 mile westward of Glass House Point. The channel is marked consistently by buoys and daybeacons to the bridge near the mouth, thence buoys sporadically mark critical points inside. The river is used by fishermen and pleasure boatmen.

(71) Wharf ruins extend out about 200 yards from shore 0.5 mile above **Barrets Point**, on the east side of the entrance. A sunken barge lies on the eastern edge of the channel 0.8 mile above the point.

(72) **Judith Stewart Dresser Memorial Bridge**, 1.3 miles above the mouth, has a fixed span with a clearance of 52 feet. A pier with a depth of 7 feet at the face extends 100 yards into the river from the east bank just north of the bridge.

(73) The Thorofare is an unmarked cut leading through the bend of the river 10 miles above the mouth; the controlling depth is 5 feet. Small boats able to pass through the cut can save 1.2 miles.

(74) A marina on the west side 11 miles above the mouth, just north of **Mt. Airy**, can provide gasoline, diesel fuel, transient berths, electricity, water, pumpout facility, marine supplies and surfaced ramp.

(75) **Lanexa**, on the east side 15 miles above the mouth, has a marina with reported depths of 10 feet alongside. Gasoline and supplies are available. Hull and engine repairs can be made; a 70-foot marine railway and a 10-ton mobile lift are at the marina.

(76) The former ferry slip and piers at **Claremont**, Mile 37.5S, are in ruins, and the bottom area to the southeastward near **Sloop Point** (37°13.8'N., 76°57.0'W.) is foul. The former ferry slip across the river at **Sandy Point** is also in ruins.

(77) **Upper Chippokes Creek**, Mile 38.5S, has depths of about 5 feet for 3 miles, thence 2 feet for 1 mile to the head of navigation. The channel into the creek is close along the south bank. An overhead power cable about 3.5 miles above the mouth has a clearance of 56 feet. A wreck, marked by a lighted buoy, is off the creek entrance close to the southwest side of James River main channel; the wreck extends about 2 feet above high water.

(78) **Wards Creek** empties into James River at Mile 46S. A depth of 2 feet can be carried across the mudflats at the entrance by following the east bank at a distance of about 75 yards. Above the mouth, depths are 4 to 10 feet for 1.7 miles. The creek is an excellent storm anchorage for any boat able to enter.

(79) An overhead power cable, with a clearance of 180 feet at the main channel, crosses the river at **Windmill Point**, Mile 49.9S.

(80) **Powell Creek**, Mile 53S, has depths of 7 feet through a narrow channel across the mudflats at the entrance and for 2 miles upstream. The creek is a good storm anchorage.

(81) A highway lift bridge with a clearance of 50 feet down and 145 feet up crosses the James River at **Jordan Point**, Mile 56.4S. The bridgetender monitors VHF-FM channel 13; call sign KQ-7167. (See **33 CFR 117.1** through **117.49**, chapter 2, for drawbridge regulations.)

(82) **Jordan Point Marina**, on the east side of Jordan Point at the south end of the bridge, may be reached through a channel marked by private piles. Berths, gasoline, diesel fuel, water, electricity and some marine supplies are available.

(83)

Hopewell to Richmond

(84) **Hopewell**, Mile 59W, is the site of several industries and the terminus of a branch railroad to Petersburg. Allied-Signal, Hopewell Plant Pier (37°18'28"N., 77°15'55"W.), about 0.8 mile southeastward of **City Point**, is 622 feet long with berthing on both north and south sides and has 25 feet reported alongside. The pier is used for receipt of phenol, sulphur, oleum and fuel oil for plant consumption and shipment of dry bulk ammonium sulfate.

(85) **Regional Enterprises, Hopewell Wharf** (37°18'46"N., 77°16'11"W.) has a 90-foot face with 300 feet of berthing space and 23 feet alongside. The wharf receives crude oil, petroleum products and fertilizer.

(86) **Tidewater Materials, Hopewell Concrete Plant Wharf** (37°18'49"N., 77°16'16"W.) has a 400-foot face with 400 feet of berthing space and 10–18 feet alongside. The wharf receives sand and gravel.

(87) The **Appomattox River** has its entrance at Mile 59.5W. The channel through the flats at the mouth is marked by lights, daybeacons and a buoy. A dredged channel in the river starts about 3 miles above the entrance, and continues upstream to just below **Petersburg**.

(88)

Structures across Appomattox River

Name	Type	Location	Clearances (feet)	
			Horizontal	Vertical*
Route 10 bridges	fixed	37°18'43"N., 77°17'48"W.	102	40
CSX Railroad bridge **See Note 1**	swing	37°18'28"N., 77°19'18"W.	80	10
I-295 bridges	fixed	37°18'50"N., 77°20'07"W.	80	40
Overhead cables	power	37°18'50"N., 77°20'14"W.		113
Overhead cable	power	37°15'20"N., 77°22'40"W.		45
Overhead cables	power	37°15'10"N., 77°22'42"W.		46
Temple Avenue bridges	fixed	37°15'09"N., 77°22'42"W.	97	40

* Clearances are referenced to Mean High Water
Note 1 – See **33 CFR 117.1** through **117.59** and **117.995**, chapter 2, for drawbridge regulations.

(89) The Hopewell City Marina, on the south side of the river just above the Route 10 bridges, can provide transient berths, open and covered slips, launching ramp, ice and some marine supplies. There are depths of about 6 feet off the T-pier. On the same side of the river, farther upstream just past the CSX Railroad bridge, another marina can provide gasoline, diesel fuel, pump-out station, marine supplies and marine repairs. A small-boat harbor, on the east side of the river, about 7 miles above the mouth has a launching ramp, transient slips, water, electricity, some marine supplies, a 100-foot marine railway and covered storage and repairs can be made; gasoline and diesel fuel can be obtained by truck.

(90) Above its junction with Appomattox River, James River becomes narrow and winding. The bends are often referred to as the Curles of the River, and the 14-mile section from Hopewell to Warwick/Richmond Deepwater Terminal is known as The Corkscrew. There is no contemporary hydrography for the Curles of the James River. Several shoal spots have been reported within the Curles; mariners are advised to use extreme caution and local knowledge.

(91) **Turkey Island Bend**, 2 miles north of Hopewell, has depths of 5 to 45 feet around its 6-mile length but is seldom used except by pleasure boats because the main channel now leads northwestward through Turkey Island Cutoff; most of the landings along the bend are in ruins. In 2009, severe shoaling was reported throughout the bend; extreme caution is advised. The north and west sections of the bend afford excellent anchorages, because the river current has been greatly diminished by the cutoff and winds from any direction have little effect; the bottom is mostly soft mud.

(92) **Turkey Island Cutoff**, Mile 61, is 1 mile long and well marked by lights.

(93)

Cable ferry

(94) A cable ferry crosses the lower part of Turkey Island Cutoff at Mile 61.1, providing vehicular access to Turkey Island, which is a National Wildlife Refuge. The single cable is moored ashore at both sides; when the self-propelled barge is underway, the cable is picked up to the deck level of the barge, which is about 3 feet above the water, and then dropped astern. **DO NOT ATTEMPT TO PASS A MOVING CABLE FERRY**.

(95) An overhead power cable with a reported clearance of 171 feet crosses the river at Mile 62.3.

(96) **Jones Neck Cutoff**, Mile 64, extends about 1 mile northward and westward; the cutoff is well marked by lights. The old river bend around **Jones Neck** has depths of 13 to 44 feet along its 4.5-mile length but is now little used; most of the landings are in ruins. Shoaling has been reported throughout the river bend; caution is advised.

(97) A fixed highway bridge with a clearance of 145 feet crosses the James River about 0.6 mile below Dutch Gap.

(98) **Dutch Gap**, Mile 66.5, the first canal dug in the United States, was cut through in 1611. The main channel extends west-northwestward through **Dutch Gap Cutoff (Aiken Swamp-Dutch Gap Cutoff)**, which is about a mile long and is marked by lights at both ends. There is a gravel basin in **Hatcher Island**, on the north side of the cutoff.

(99) The old river bend around Hatcher Island has depths of 7 to 25 feet along its 2-mile length. **Richmond Yacht Basin**, north of Hatcher Island, has piers with depths of about 12 feet at their outer ends; gasoline is available. The preferred passage is east of Hatcher Island. In 2009, it was reported that the passage around Hatcher Island had significant shoaling—extreme caution and local knowledge are advised. A small marine railway at the

yacht club can handle boats up to 40 feet for repairs. A fixed highway bridge over the western entrance to the bend has a width of 40 feet and a clearance of 21 feet.

(100) The old channel southward from Dutch Gap has depths of 9 feet or more for over 1 mile to the gravel basin in **Farrar Island**.

(101) A concrete-and-steel wharf of the Virginia Electric and Power Co. (37°22'57"N., 77°22'44"W.), at Mile 67.5S, has main channel depths at the face. A privately maintained light is shown from the end of the wharf. The overhead cable just above the wharf has a clearance of 165 feet. About 300 yards westward is another cable with a clearance of 166 feet.

(102) The oil wharf at **Drewrys Bluff**, Mile 71.7W, has 350 feet of berthing space with dolphins and main channel depths at the face. Vessels are requested to reduce speed when passing the wharf.

(103) **Falling Creek** (37°26'31"N., 77°25'22"W.) enters James River at Mile 72.4W. A fixed highway bridge with a clearance of 146 feet spans the river about 0.35 mile northeast of Falling Creek.

(104) **Richmond**, the capital of Virginia, is at Mile 78E. Traffic to and from the city consists chiefly of petroleum products, sand and gravel, general cargo and tobacco. Commercial navigation in the river proper ends at the city wharves, but small boats can go 1 mile farther. The turnpike fixed highway bridge just below **Mayos Island** has a clearance of 40 feet.

(105)

Weather

(106) Richmond's climate might be classified as modified continental. Summers are warm and humid and winters generally mild. The mountains to the west act as a partial barrier to outbreaks of cold, continental air in winter, the coldest air being delayed long enough to be modified, then further warmed as it subsides in its approach to Richmond. The open waters of the Chesapeake Bay and Atlantic Ocean contribute to the humid summers and mild winters. The coldest weather normally occurs in late December and in January, when low temperatures usually average in the upper twenties (-2.7° to 1.5°C) and the high temperatures in the upper forties (8.3° to 9.5°C). Temperatures seldom lower to zero (-17.8°C). The average annual temperature for Richmond is 58.5°F (14.7°C), with an average high of 68.8°F (20.4°C) and an average low of 47.6°F (8.7°C). July is the warmest month, with an average temperature of 78.4°F (25.8°C) and January is the coolest month with an average temperature of 38°F (3.3°C). The warmest temperature on record at Richmond is 105°F (40.6°C), recorded last in July 1977, while the coldest temperature is -8°F (-22.2°C), recorded in February 1979. Each month, June through September, has recorded temperatures in excess of 100°F (37.8°C), while each month, October through May, has seen temperatures below freezing (0°C).

(107) Precipitation is rather uniformly distributed throughout the year with a slight maximum during July and August. However, dry periods lasting several weeks do occur, especially in autumn when long periods of pleasant, mild weather are most common. There is considerable variability in total monthly amounts from year to year so that no one month can be depended upon to be normal. The average annual precipitation totals 42.8 inches (1087 mm). July is the wettest month, averaging 5.16 inches (131.1 mm), and February the driest, averaging just under 3 inches (76.2 mm). Snow has been recorded during 7 of the 12 months, October through April. Snowfalls of 4 inches (101.6 mm) or more occur on an average of once a year. Snow usually remains on the ground only 1 or 2 days at a time. Average annual snowfall is 13 inches (330.2 mm). The greatest 24-hour snowfall, 13.3 inches (337.8 mm), occurred on two occasions; January 1980 and February 1983. Ice storms (freezing rain or glaze) are not uncommon in winter, but they are seldom severe enough to do any considerable damage. The James River reaches tidewater at Richmond where flooding has occurred in every month of the year, most frequently in March and only twice in July. Hurricanes and less severe storms of tropical origin have been responsible for most of the flooding during the summer and early fall. Damaging storms occur mainly from snow and freezing rain in winter and from hurricanes, tornadoes and severe thunderstorms at other seasons. Damage may be from wind, flooding, or rain, or from any combination of these.

(108) Since 1950, nine tropical storms have directly influenced the Richmond area. The most noteworthy was the remnants of hurricane Hazel in 1954. Hazel quickly became a destructive cold-core low after coming ashore north of Myrtle Beach, South Carolina, and was still packing winds of greater than 70 miles per hour (61 knots) by the time it approached Richmond. At this time it was moving northward at speeds greater than 50 miles per hour (43 knots).

(109) The National Weather Service maintains sensors at Byrd Field; **barometers** can be checked by telephone.

(110)

Towage

(111) Tug service is available at Richmond to assist in docking and undocking, if desired.

(112)

Quarantine, customs, immigration and agricultural quarantine

(113) (See chapter 3, Vessel Arrival Inspections, and appendix for addresses.)

(114) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(115) Richmond-Petersburg is a **customs port of entry**.

(116) The Port of Richmond's **harbormaster** maintains an office at the Department of Public Works, City of Richmond, 800 E. Broad Street, Richmond, VA 23219. He is responsible within the port for the assignment of berths and anchorages.

(117)

Wharves

(118) City-owned facilities at the Port of Richmond have turning basins and are served by railway tracks and highways; water is available. The alongside depths given are reported. (For the latest controlling depths, contact the operator.)

(119) **Port of Richmond, Deepwater Terminal** (37°27'22"N., 77°25'14"W.): 1,584-foot face, 19 feet alongside; deck height, 24.5 feet; livestock loading facility; 300,000 square feet covered storage; 39 acres open storage; three crawler cranes to 350-ton capacity; receipt and shipment of conventional and containerized general cargo including tobacco, forest, paper products, chemicals and cocoa; shipment of scrap iron and livestock; operated by Federal Marine Terminals, Inc. In 1996, a submerged obstruction was reported close to James River Light 168 in about 37°29.4'N., 77°25.3'W., just below the bend in the river at Goode Creek.

(120) There are eight oil barge wharves and two barge wharves that handle gravel and construction material at Richmond. Most are on the west bank between Falling Creek and across from Richmond Upper Marine Terminal.

(121)

Supplies

(122) Gasoline and diesel fuel are available by tank truck. Some marine supplies may be obtained in Richmond, but major supplies must be obtained in the Hampton Roads area.

(123)

Repairs

(124) There are no drydocking or major repair facilities in the Port of Richmond; the nearest such facilities are in the Hampton Roads area.