



# New York Harbor and Approaches

(1) This chapter describes New York Harbor, its approaches and the areas adjacent to it, bounded by and including Jamaica Bay to the eastward and Sandy Hook Bay to the southward. Included in the text, in addition to the facilities at New York City and Staten Island, are the New Jersey ports of Perth Amboy, Port Elizabeth, Port Newark, Bayonne and others that are accessible through tributaries that empty into New York Harbor, such as Arthur Kill, Kill Van Kull, Passaic River and Hackensack River. The Hudson River above New York City is discussed in chapter 12, and the East River, the approach to New York Harbor from Long Island Sound, is discussed in chapter 9.

(2) **COLREGS Demarcation Lines**

(3) The lines established for New York Harbor are described in **33 CFR 80.165**, chapter 2.

(4) **New York Harbor**

(5) The approach to **New York Harbor** from seaward is generally along the south coast of Long Island or the east coast of New Jersey, although the harbor is easily approached from any direction between east and south. During the approach, the south shore of Long Island will be seen to northward and the low sandy beaches of the New Jersey shore will be observed to westward. The Long Island shore is readily identified by sand hillocks and densely populated beach communities, whereas the New Jersey shore is characterized by long sandy stretches and many summer resort settlements.

(6) **Prominent features**

(7) The four most prominent landmarks, which can be seen for a long distance at sea, are the Fire Island Light, a tower at Jones Beach on the Long Island shore, the Highlands of Navesink and the microwave tower at Atlantic Highlands on the north end of the New Jersey coast. When nearing the Lower Bay of New York Harbor, Ambrose Channel Lighted Whistle Buoy A, will be seen; it marks the entrance to Ambrose Channel, which is the principal deepwater passage through the Lower Bay.

(8) The south coast of Long Island from Fire Island Inlet to Rockaway Inlet has a general 263° trend for 30 miles. It is a clean shore and may be approached as close as 1 mile, with not less than 30 feet except off the inlets where the shore should be given a berth of at least 1.5 miles. This coast is characterized by sandy beaches and

summer resorts at the eastern end and amusement parks and densely settled communities at the western end.

(9) The shoreline is broken by three prominent and navigable inlets that lead to the inland waterway along the south shore of Long Island. Fire Island Inlet is at the eastern extremity, and its entrance is marked by lights and buoys. Jones Inlet is about 12 miles to the west of Fire Island Inlet. The entrance is prominently indicated by the 202-foot lighted tower at Jones Beach on the eastern side and by an elevated tank at Point Lookout on the west side of the inlet. Jones Beach State Park is on the east side of the inlet; a lighted tower in the park is a conspicuous landmark.

(10) East Rockaway Inlet, about 8 miles westward of Jones Inlet, is the extreme western entrance to the inland waterway. The inlet entrance is marked by a breakwater with a light on its seaward end. The shoreline between the two inlets is closely built up with large communities. Elevated tanks, towers and other tall structures are prominent in this area.

(11) A **fish haven** is about 2 miles offshore midway between East Rockaway Inlet and Rockaway Point.

(12) **Rockaway Point**, 17 miles westward of Jones Inlet, is the southwestern extremity of Long Island and the eastern entrance to New York Lower Bay. A breakwater, marked at its seaward end by a light, extends southward from the point. Rockaway Inlet forms a large deep entrance to Jamaica Bay.

(13) **Sandy Hook**, the southern entrance point to New York Harbor, is low and sandy. A Coast Guard station and two radio towers are near the northern extremity of Sandy Hook. The towers and a large green standpipe to the southeast are the most prominent objects on the northern end of Sandy Hook. Southward of the standpipe are several houses and **Sandy Hook Light** (40°27'42"N., 74°00'07"W.), 88 feet above the water and shown from a white stone tower, 85 feet high. This light, established in 1764, is the oldest in continuous use in the United States.

(14) The most prominent landmark southward of the entrance to New York Harbor is the high wooded ridge forming the **Highlands of Navesink**. A tall condominium on the ridge and a microwave tower at Atlantic Highlands to the west are also prominent. The brownstone towers of the abandoned Navesink Lighthouse on the easternmost spur of the highlands are 73 feet above the ground and about 246 feet above the water. The northerly tower is octagonal, and the southerly tower is square. A private seasonal light is shown from the northerly tower.

(15)

**COLREGS Demarcation Lines**

(16) The lines established for New York Harbor are described in **33 CFR 80.165**, chapter 2.

(17) Soundings will be found most useful to warn vessels of too close an approach to the shore in approaching New York Harbor. Many vessels have been wrecked on the coast of New Jersey and Long Island through failure to take frequent soundings when the position was uncertain. Depth is a better indication of position off this part of the coast than the character of the bottom, as the same characteristics may be found in widely different positions. A frequent use of soundings and close study of the charts will always give sufficient warning of danger. If a vessel is not certain of her position, the depth should not be shoaled to less than 15 fathoms on the south coast of Long Island eastward of Fire Island Light, or 11 fathoms between Fire Island Light and Barnegat Lighted Buoy B (39°45'48"N., 73°46'04"W.) or 9 fathoms southward of Barnegat Lighted Buoy B.

(18) From the position of the two shores relative to each other and to the entrance to New York Harbor it follows that a course of 215° will deepen the water if the vessel is on the Long Island side of the approach and will shoal if she is off the New Jersey coast. A course of 035° will deepen the water if the vessel is off the New Jersey side of the approach and will shoal if she is off the Long Island coast.

(19) Eastward of Fire Island Light the water shoals quite rapidly toward the Long Island shore, but inside a line drawn from 12 miles south of Fire Island Light to Barnegat Lighted Buoy B, there is no marked difference in the soundings as either shore is approached except in Mud Gorge.

(20) Modern surveys show the existence of a canyon, evidently cut by the Hudson River in prehistoric days, across the Continental Shelf, extending about 120 miles southeastward from off Sandy Hook. The inshore section is called the **Mud Gorge** and the offshore section the **Hudson Canyon**. In some sections of this cut the depths are considerably greater than those adjacent to it and the walls are very steep. The use of soundings permits a very accurate determination of a ship's position by the comparison of the soundings with the depth curves on the charts. The bottom of the Mud Gorge is usually of mud; on both sides of it sand predominates.

(21) **Cholera Bank**, about 11 miles southeastward of Ambrose Channel Lighted Whistle Buoy A, is about 2 miles long in an east-west direction and has a least depth of 10 fathoms. The bank is raised very little above the general level of the bottom; however, because the bottom is rocky in character, soundings will give useful indications in thick or foggy weather. During the summer numerous vessels may be seen on this bank.

(22)

**Caution**

(23) Telegraphic companies report serious interruptions of international telegraphic communications resulting from repeated breaking of their cables by vessels anchoring southeastward and eastward of the Pilot Cruising Area for Ambrose and Sandy Hook channels. The companies state that they will be glad to compensate any vessel, which, having fouled the cable, cuts away its anchor and chain in order to save the cable from interruption. Vessels making New York in thick weather and finding it necessary to anchor before entering Ambrose Channel should anchor in the area southward of Scotland Lighted Whistle Buoy S (40°26'33"N., 73°55'01"W.) and westward of 73°48'00"W.

(24)

**Current**

(25) The important currents affecting navigation in the approach to New York Harbor are those due to winds. The largest velocity likely to occur under storm conditions is about 1.5 knots. A sudden reversal in the direction of the wind produces a corresponding change in the current, either diminishing or augmenting the velocity. Sustained winds do not maintain the currents at the maximum velocities. The velocity is about 0.2 knots near the Ambrose Channel entrance. The largest velocity likely to occur is 2 knots.

(26) Between Nantucket and Cape May away from the immediate vicinity of the shore, the tidal currents are generally rotary. They shift direction, usually clockwise, at an average rate of about 30° an hour and have velocities generally less than 0.3 knot except in the vicinities of the entrances to the larger inland waterways where the velocities increase as the entrances are approached. For a considerable distance from the inlets, strengths of flood and ebb set respectively toward and away from those entrances, and minimums of velocity, corresponding to the slacks of reversing currents, set at right angles to the direction of flood and ebb strengths.

(27) Offshore and away from the influence of the tidal flow into and out of the larger bays, the tidal current maintains an approximately uniform velocity. Shifting its direction continuously to the right, it sets all directions of the compass during each tidal cycle of 12.4 hours. See the Tidal Current prediction service at [tidesandcurrents.noaa.gov](https://tidesandcurrents.noaa.gov) for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(28) Between Nantucket Island and Sandy Hook there is a general drift of the sea south-southwestward. The average velocity of this movement is about 0.1 knot.

(29) Approaching New York Harbor from the vicinity of Nantucket Shoals, a slight allowance should be made for a southwesterly set of the current. With an easterly wind it is customary to allow, in order to make the course good, a set of the current with it of at least 0.5 knot.

(30) The effect of the wind on the current should always be considered. The largest velocities likely to occur during storms are 2.5 knots southward of Nantucket Shoals and 1.5 knots 9 miles south of Fire Island Light. The tidal currents from the latter location have a mean velocity at strength of about 0.2 knot in a westward direction on the flood and an eastward direction on the ebb.

(31) Between Gay Head and Montauk Point the tidal currents set northward on the flood and southward on the ebb. The estimated velocity at strength where the depth is about 25 fathoms is 0.5 knot; closer inshore and near the entrance this velocity increases.

### (32) **Weather, New York Harbor and approaches**

(33) Winds play an important role by affecting currents in the harbor. During the winter west and northwest winds prevail with northerlies and southwesterlies in secondary roles. The strongest winds are out of the west through northwest at 13 to 15 knots, from January through April. The sheltering effect of the land is apparent when looking at frequencies of winds of 28 knots or more. They blow near the Ambrose Channel entrance about 8 to 9 percent of the time compared to 1 percent at Kennedy Airport and Floyd Bennett Field. Summer winds are often out of the south and southwest with a 10 to 12 knot afternoon peak. Fog in the harbor area is more closely related to land type fogs. In winter it is common on clear, calm mornings and more frequent than in the approaches. Southerlies can also bring winter fogs of the advection type. During the spring and early summer the harbor as well as its approaches are susceptible to advection fog, riding in on east through south winds. A morning peak still exists in the harbor, while the approaches exhibit an afternoon maximum.

### (34) **North Atlantic right whales**

(35) Endangered North Atlantic right whales may occur within 30 miles of the New York and New Jersey coasts in the approaches to New York Harbor (peak season: November through April). (See North Atlantic Right Whales, indexed as such, in chapter 3 for more information on right whales and recommended measures to avoid collisions.)

(36) All vessels 65 feet or greater in length overall (LOA) and subject to the jurisdiction of the United States are restricted to speeds of 10 knots or less in a Seasonal Management Area existing around the Ports of New York/New Jersey between November 1 and April 30. The area is defined as the waters within a 20-nm radius of 40°29'42.2"N., 73°55'57.6"W. (See **50 CFR 224.105**, chapter 2, for regulations, limitations, and exceptions.)

(37) **Gateway National Recreation Area** and harbor porpoise protection Marine Protected Areas (MPAs) extend from the waters off Long Island along the New Jersey shoreline.

(38) **Information about the coast south of Sandy Hook is contained in United States Coast Pilot 3, Atlantic Coast, Sandy Hook to Cape Henry.**

## (39) **New York Harbor**

(40) **New York Harbor** is the principal entrance by water to New York City and the surrounding ports. The harbor is divided by The Narrows into Lower Bay and Upper Bay. **The Battery**, the southern tip of Manhattan, is at the junction of East River and Hudson River. The main channel from the sea to the deepwater terminals in Hudson River has a project depth of 45 feet.

(41) **Traffic Separation Scheme Off New York** has been established in the approaches to New York Harbor from the sea. (See **33 CFR 167.1** through **167.155**, chapter 2, for limits and regulations.)

(42) (See Traffic Separation Schemes, chapter 1, for additional information, and chapter 3 for a discussion of North Atlantic Lane Routes.)

### (43) **Pilot boat cruising area, New York Harbor**

(44) The pilot boat maintains station approximately 1.5 miles southeast of the Ambrose Channel Lighted Whistle Buoy A. See Pilotage, New York Harbor and Approaches (indexed as such), this chapter.

### (45) **Caution**

(46) Numerous fishing floats have been reported in the approach to New York Harbor in the Traffic Separation Scheme precautionary area.

(47) **Shipping safety fairways** have been established connecting the eastern approach off Ambrose of Traffic Separation Scheme Off New York and the eastern approach off Nantucket of Traffic Separation Scheme Off New York. (See **33 CFR 166.100** through **166.500**, chapter 2, for limits and regulations.)

### (48) **Vessel traffic service, New York**

(49) A mandatory vessel traffic service has been established in the navigable waters of Lower New York Harbor. (See **33 CFR 161.1** through **161.25**, chapter 2, for limits and regulations.)

(50) In order to prevent groundings and to promote the safety and environmental security of the waterway resources of the Port of New York and New Jersey, the **Harbor Operations Committee of the Port of New York and New Jersey** recommends that all entities responsible for the safe movement of vessels in and through the waters of the Port of New York and New Jersey operate vessels in such a manner as to maintain a minimum clearance of two feet between the deepest draft of their vessel and channel bottom in the following named channels:

(51)

| Recommended Minimum Under-keel Clearance for the Ports of New York and New Jersey  |  |
|--|--|
| <b>Lower Bay</b><br>Ambrose Channel*<br>Sandy Hook<br>Chapel Hill Channel  | <b>Hackensack River</b><br>Droyers Point to the turning basin at Marion  |
| <b>North River (Hudson River)</b><br>The Battery to 79 <sup>th</sup> Street  | <b>Passaic River</b><br>Kearney Point  |
| <b>Upper Bay</b><br>Anchorage Channel<br>(The Narrows to The Battery)<br>Bay Ridge Channel<br>Red Hook Channel<br>Buttermilk Channel | <b>Arthur Kill</b><br>Gulfport Reach<br>Pralls Island Reach<br>Tremley Point Reach<br>Fresh Kills Reach<br>Port Reading Reach<br>Port Socony Reach<br>Outer Bridge Reach |
| <b>Kill Van Kull</b><br>Constable Hook Reach<br>Bergen Point Reach<br>North of Shooters Island Reach<br>Elizabethport Reach          | <b>Raritan Bay</b><br>Raritan Bay West Reach<br>Raritan Bay East Reach<br>Sequine Point Bend<br>Red Bank Reach<br>Ward Point Reach                                       |
| <b>East River</b><br>The Battery to Throgs Neck Bridge   | <b>Newark Bay</b><br>Newark Bay Reach<br>(Bergen Point to Droyers Point)   |

\*(3 feet minimum under-keel clearance due to wave action)

- (52) A recommended standard of *always afloat* will apply to all other areas, including berths, in the Port District that about the above listed channels. Ship related factors such as squat, turning heel and other dynamic motions should be considered and, if expected, added to this figure to ensure a minimum clearance of two feet will be maintained throughout a given transit.

(53)

### Conformance

- (54) The owner, master or person in charge of each vessel has the ultimate responsibility for maintaining this minimum recommended under-keel clearance. Additionally, persons directing the movement of vessels share this responsibility and are expected to advise owners, operators and persons in charge of vessels if, in their judgement, a vessel is not in conformance with these standards.

- (55) If at any time a vessel's under-keel clearance is not in conformance with this recommendation and owners, masters or others in charge of the vessel desire to proceed against the pilot's recommendation, pilots are urged to report this to the USCG Captain of the Port (COTP) via VTS New York. Through VTS New York, the COTP will foster communications between the concerned parties in effort to arrive at agreed-upon conditions for safe vessel passage.

- (56) It should be recognized that there may be instances when the master, pilot and COTP evaluate a situation and agree that a vessel movement can be made safely even though inconsistent with this recommendation. Such movements may be allowed and should be coordinated through VTS NY so as to ensure the transit of the vessel in question can be assisted as appropriate.

- (57) If at any time VTS NY believes a proposed vessel transit may not conform to this recommendation, they will request an assessment be conducted prior to granting

a vessel permission to transit within the VTS NY Area. This assessment process will include a review of real-time water level information from the **PORTS®**.

- (58) **Physical Oceanographic Real-Time System (PORTS)** is an information acquisition and dissemination technology developed by NOAA. The Port of New York and New Jersey PORTS can be contacted at 866-217-6787 or *co-ops.nos.noaa.gov*.

- (59) Also to be considered are the vessel's intended track, including particular areas of inadequate water depth with the pilot's plan for their avoidance, and any other local conditions that might further restrict vessel movement as well as special traffic routing measures that might be required. If VTS NY deems this assessment to be necessary, the VTS Watch Officer will request on VHF-FM that the pilot contact VTS via landline or cellular telephone. Discussion on under-keel clearance plans shall not be conducted on VHF-FM. It is in the best interest of all parties to ensure situations of marginal under-keel clearance are identified and thoroughly discussed well prior to a vessel's under way time. These guidelines became effective in 1996.

(60)

### Traffic in New York Harbor

- (61) In the East River between the Brooklyn Bridge and Poorhouse Flats Range, shallow-draft vessels customarily keep to the west (Manhattan) side of the channel whether northbound or southbound, thereby reserving the east (Brooklyn) side of the channel for deep-draft vessels. Vessels transiting East River should be aware of this practice and anticipate northbound shallow-draft vessels crossing from east to west in the vicinity of **Corlears Hook**, and from west to east in the vicinity of Newtown Creek.

- (62) The New York City Department of Transportation ferries generally follow a prescribed route between The Battery and **St. George** on Staten Island, placing them to the extreme right-hand side of the channel. All mariners are strongly encouraged not to transit close aboard of the ferry slips at The Battery and St. George due to ferries maneuvering.

(63)

### Channels

- (64) **Ambrose Channel**, the principal entrance, extends from the sea to deep water in Lower Bay. Thence, **Anchorage Channel**, an extension of Ambrose Channel, leads through Upper Bay to The Battery. **Hudson River Channel** continues northward from The Battery for about 5 miles to West 59th Street, Manhattan. Project depth for these channels is 45 feet.

- (65) In addition to the usual aids, Ambrose Channel in its outer portion is also marked by **West Bank Light**, shown from a brown conical tower on a black cylindrical pier, in range with **Staten Island Light**, which is shown from a light-colored octagonal brick tower on a gray limestone base on the high ground of Staten Island at Richmond.

(66) **Lower Bay** is that part of New York Harbor extending from Sandy Hook westward to Raritan River and northward to The Narrows.

(67)

#### **Recommended vessel tracks, Ambrose Channel**

(68) Recommended vessel tracks for coastwise tug and barge vessels approaching from or leaving toward the south and transiting to New York Harbor via Ambrose Channel, while not mandatory, are recommended by the Harbor Safety, Navigation and Operations Committee of the Port of New York as follows:

(69) Tugs Inbound:

(70) 40°25'20.5"N., 73°52'57.0"W.;

(71) 40°25'48.6"N., 73°52'48.7"W.;

(72) 40°26'31.2"N., 73°52'40.2"W.;

(73) 40°27'09.2"N., 73°52'38.9"W.;

(74) 40°28'05.2"N., 73°52'54.9"W.

(75) Tugs Outbound:

(76) 40°28'26.4"N., 73°53'54.2"W.;

(77) 40°27'52.4"N., 73°53'42.4"W.;

(78) 40°27'32.7"N., 73°53'37.8"W.;

(79) 40°27'05.5"N., 73°53'36.0"W.;

(80) 40°25'42.2"N., 73°53'34.4"W.;

(81) 40°25'22.6"N., 73°53'35.6"W.

(82)

#### **Area to be avoided**

(83) To avoid the risk of pollution and damage to the environment, all vessels carrying petroleum or dangerous or toxic cargoes or any other vessel exceeding 1,000 tons should avoid the area enclosed by the following points:

(84) 40°25'44.1"N., 73°52'40.6"W.;

(85) 40°25'51.2"N., 73°50'51.9"W.;

(86) 40°25'28.4"N., 73°50'51.9"W.;

(87) 40°24'43.0"N., 73°51'48.2"W.;

(88) 40°25'13.9"N., 73°52'40.7"W.

(89)

#### **Local magnetic disturbance**

(90) Differences of as much as 5° from the normal variation have been reported in Lower Bay in the vicinity of 40°29.6"N., 74°04.2"W.

(91) **Sandy Hook Channel**, project depth 35 feet, provides a secondary route from the sea to deep water in Lower Bay; it connects with **Raritan Bay Channel** to the westward, **Chapel Hill Channel** to the north and **Terminal Channel** to the south. Chapel Hill Channel has a project depth of 30 feet; numerous obstructions with lesser depths are in the channel. The entrance to Sandy Hook Channel is marked by Scotland Lighted Whistle Buoy S, equipped with a racon. The channels are well marked with navigational aids. 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.

(92) **Swash Channel** is a natural buoyed passage between Ambrose Channel and Sandy Hook Channel. Numerous

rocks and obstructions are in the entrance to and within the channel; mariners are advised to use the chart as a guide. A lighted range, the rear marker of which is Staten Island Light, leads on a bearing of **305°** to the junction with Chapel Hill Channel.

(93) **False Hook Channel**, along and close to the eastern shore of Sandy Hook, joins Sandy Hook Channel eastward of the north end of Sandy Hook. Strangers should not use the channel.

(94) **Fourteen Foot Channel** enters Lower Bay just north of Ambrose Channel. The channel has a depth of about 16 feet and is unmarked. A shoal area with a least depth of 6 feet is north of the channel in 40°31'55"N., 73°59'00"W.

(95)

#### **Anchorage**

(96) General, explosives, naval, and special anchorages have been prescribed for the Port of New York by federal regulations. (See **33 CFR 110.1**, **110.60**, and **110.155**, chapter 2, for limits and regulations.)

(97) Vessels are especially cautioned against anchoring in the vicinity of the pipeline and cable areas as shown on the charts. The pipeline area across The Narrows supplies the water for Staten Island. Extensive cable areas are in the vicinity of Governors Island, The Battery and Ellis Island.

(98) The Harbor Safety, Operations and Navigation Committee of the Port of New York and New Jersey has issued the following recommendations to address the inadequate number of inshore anchorages within the harbor:

(99) Ships awaiting berths will use the offshore anchorages at Ambrose;

(100) All vessels will limit use of Stapleton, Bay Ridge and Gravesend Bay anchorages to the following operations: lightering or loading, bunkering, receiving stores or parts, repairs, Coast Guard inspections, crew changes or emergencies;

(101) Ships will return to the offshore anchorage upon completion of these operations to await berth;

(102) Tugs and barges not engaged in operations described above will refrain from using the deep water anchorages at Stapleton, Bay Ridge (south of Buoy 26) and Gravesend Bay (west of Buoys "A", "B" and "C") when there is suitable room east of the Gravesend Bay buoys, north of Buoy 26 in Bay Ridge or in the North River Anchorage or suitable anchorage in Raritan Bay or Perth Amboy.

(103) These recommendations are intended to minimize vessel delays and allow efficient use of current anchorage areas. All vessels are requested to observe these recommendations.

(104)

#### **Dangers**

(105) There are five shoal areas in the entrance to New York Harbor that are subject to change in depths and should be avoided by strangers. **False Hook** is off the northeastern side of Sandy Hook. **Flynns Knoll** is between Swash,

Sandy Hook and Chapel Hill Channels. **Romer Shoal**, between Ambrose and Swash Channels, is marked by Romer Shoal Light; a sound signal is sounded from the light station. **East Bank** is northward and eastward of Ambrose Channel. **West Bank** is westward of Ambrose Channel between West Bank (Range Front) Light and Fort Wadsworth. Numerous rocks and obstructions lie between West Bank and the western limit of Ambrose Channel. The chart is the best guide.

(106) The tip of Sandy Hook is changeable, and the area around it is subject to severe shoaling; caution should be exercised in the area.

(107) Mariners are cautioned to maintain a sharp lookout for floating debris in the harbor and channels.

(108)

### Current

(109) The flood current entering Lower Bay from the sea attains a velocity of about 2 knots in Ambrose Channel entrance, near the outer extremities of Sandy Hook, Coney Island and The Narrows. It sets generally parallel to the lower straight section of Ambrose Channel and tends to continue to that direction where the channel bends toward The Narrows, setting more or less diagonally across the upper straight section of Ambrose Channel. At the beginning of the flood, the current sets in at the bottom and near the shores while it is still ebbing at the surface in Ambrose Channel.

(110) The ebb in Lower Bay is generally stronger than the flood by 10 percent or more. At its strength it sets from The Narrows approximately parallel to the upper straight end of the lower straight section.

(111) In the channel northward of Governors Island, crosscurrents may be encountered. During the first 2 hours of flood in this channel (eastward), the current in Hudson River is still ebbing (southward). In the first 1.5 hours of ebb (westward) in the channel north of Governors Island, the current in Hudson River is still flooding (northward). At such times large vessels must take special care in navigating the channel. It is reported that the most dangerous time is about 2 hours after high water at The Battery. At this time the current is setting north in the Hudson River and westward from the East River. The effect on a large vessel coming from southward and turning into the East River is to throw her stern to port and her bow to starboard, thus causing a sheer to starboard toward the shoals off the north end of Governors Island. When coming from northward in the Hudson River the same effect tends to prevent the vessel from turning and to cause her to overrun her course. These crosscurrents are known locally as **The Spider**.

(112) At the seaward end of Ambrose Channel the velocity of the flood current is 1.7 knots and of the ebb current 2.3 knots.

(113) When the ebb is strong the currents in both Ambrose and Swash Channels tend to set toward Romer Shoal. Caution should be maintained to prevent being set onto Romer Shoal when using either channel. On the flood

and especially with a westerly wind, caution should be exercised to prevent being set onto Romer Shoal when using Swash Channel.

(114) In The Narrows the velocity of the flood current is about 1.7 knots and of the ebb current 2 knots. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for daily predictions of slack water and strength of current. Links to a user guide for this service can be found in chapter 1 of this book.

(115) In the entrance to Hudson River the velocity of the flood and ebb currents is 1.4 knots. Off Grants Tomb, the flood and ebb strengths are 1.6 and 1.9 knots, respectively.

(116) In 1991, tidal currents in The Narrows, Arthur Kill, Kill Van Kull and Hell Gate were reported to deviate significantly from official predictions published by NOAA. Mariners should exercise caution and discretion in the use of published tidal current predictions for these locations.

(117)

### Ice

(118) Navigation of the channels in the Port of New York and New Jersey is not restricted by ice. The main channels do not freeze over, and any ice in the smaller waterways is well broken up by tugs and general traffic. Freshwater ice is brought down the Hudson River in large floes during periods of thaws or winter freshets. Occasionally there are large accumulations of ice at Spuyten Duyvil where Harlem River joins the Hudson, and at such times it is difficult for low-powered vessels or tows to make much headway. Under conditions of strong winds the slips on the exposed side of the channel become packed with drift ice, causing difficulty when maneuvering in the slip or when berthing. During extremely severe winters navigation is interfered with seriously for only short periods of time.

(119)

### Weather, New York and vicinity

(120) New York City, an area exceeding 300 square statute miles (777 square km), is located on the Atlantic coastal plain at the mouth of the Hudson River. The terrain is flat and diversified by numerous waterways; all but one of the city's five boroughs are situated on islands. Elevations range from less than 50 feet (15.2 m) over most of Manhattan, Brooklyn and Queens to almost 300 feet (91.4 m) in the northern part of Manhattan and the Bronx and over 400 feet (122 m) in Richmond (Staten Island).

(121) Despite its nearness to the ocean and the numerous bays and rivers nearby, New York City has a climate that more closely resembles the continental type of climate than it does the maritime type. Its modified continental climate follows from the fact that weather conditions affecting the city usually approach from a westerly direction and not from the ocean on the east. Some important exceptions to this must be noted, since the oceanic influence is by no means entirely absent. During the summer, local "sea breezes," winds blowing onshore from the cool water surface often moderate the



afternoon heat, and most often in winter, coastal storms, accompanied by easterly winds, produce, on occasion, considerable amounts of precipitation.

(122) From November through April the prevailing winds are from the northwest; for the remainder of the year the prevailing winds are southwesterly. Gales with velocities of 35 knots or more are predominately from the northwest.

(123) At New York/Kennedy the average annual temperature is 54°F (12.2°C). The average high is 61°F (16.1°C) and the average low is 47°F (8.3°C). July is the warmest month, with an average high of 83°F (28°C) and an average low of 69°F (20.6°C). January is the coolest month, with an average high of 39°F (3.9°C) and an average low of 26°F (-3.3°C). The warmest temperature on record for New York/Kennedy is 104°F (40°C), recorded in July 1966, and the coldest temperature on record is -2°F (-18.9°C), recorded in January 1985. On average, ten days each year record high temperatures in excess of 90°F (32.2°C) and 78 days record minimum temperatures below 32°F (0°C). An average of only one day each year has an extreme minimum below 5°F (-15°C).

(124) Precipitation is both moderate and distributed evenly throughout the year with a spread of only 1.06 inches (28 mm) between the wettest and driest months. May is the wettest month with an average precipitation total of 3.92 inches (991 mm) and February the driest with 2.86 inches (74 mm). Average annual precipitation is about 41 inches (1041 mm). Most of the rainfall from June through September comes from thunderstorms; therefore, it is usually of brief duration but relatively intense. Thunderstorm days average 24 each year. From October to April, however, precipitation is generally associated with widespread storm areas, so that day-long rain or snow is common.

(125) Snow falls an average 30 days each year and averages 22 inches (559 mm) in any given year. The snowiest month is February with an average of eight inches (203 mm). Snow has fallen in each month October through April. The greatest 24-hour total snowfall was 20 inches (508 mm), which fell in February 1969.

(126) Many tropical storms have influenced the area. Hurricane Gloria passed within 20 nautical miles east of the Kennedy airport in September 1985. Gloria had winds approaching 75 knots at time of landfall, about halfway between Kennedy airport and Islip. Only two days earlier, Gloria was a more respectable 125-knot hurricane.

(127) The National Weather Service maintains several offices in New York where barometers can be compared.

#### (128) **Pilotage, New York Harbor and approaches**

(129) Foreign vessels and U.S. vessels under register entering or departing from the Port of New York and New Jersey must employ a pilot licensed by the State of New York or New Jersey. Enrolled vessels must have on board or employ a pilot licensed by the federal government.

(130) State and federal pilotage service for vessels entering the Port of New York and New Jersey through Lower Bay and intra-harbor movements is available from the United New York New Jersey Sandy Hook Pilot Association, 201 Edgewater Street, Staten Island, NY 10305, telephone 718-448-3900, FAX 718-876-8055, e-mail: [pilotoffice@sandyhookpilots.com](mailto:pilotoffice@sandyhookpilots.com).

(131) The Sandy Hook pilot vessel maintains station approximately 1.5 miles southeast of the Ambrose Channel Lighted Whistle Buoy A. All traffic passes through a precautionary area transiting to the pilot station. Most vessels choose to approach the pilot station directly since Ambrose Light was disestablished. Traffic within the precautionary area may consist of vessels making the transition between operating in Ambrose or Sandy Hook Channel and one of the traffic lanes. Mariners are advised to exercise extreme care in navigating within this area. The pilot vessels have a black hull and white superstructure, with the name PILOT NO. 1 or PILOT NO. 2 in yellow on each side and are equipped with AIS and transmit either "PILOT NO.1" or "PILOT NO.2" A pilot vessel is always on station; boarding is made from smaller boats that are also AIS equipped and broadcast "P/B (name)." The pilot vessel monitors VHF-FM channels 16, 13 and 73 and works on 73.

(132) Pilot services are arranged in advance through ships' agents. A 24-hour advance notice of ETA, with a 3-hour update is requested.

(133) Masters of vessels entering the Port of New York and New Jersey are requested, prior to the time of boarding, to contact the pilot boat to ascertain a proper boarding speed, make a lee for the pilot boat and have a pilot ladder over the side about 1 meter above the water.

#### (134) **Pilot Ladder Requirements:**

(135) 1. Arrangements shall be provided to enable the pilot to embark and disembark safely on either side of the ship.

(136) 2. The rigging of the pilot transfer arrangements and the embarkation of a pilot shall be supervised by a responsible licensed deck officer having means of communication with the navigation bridge. The officer shall also arrange for the escort of the pilot by a safe route to and from the navigation bridge.

(137) 3. The ladder must be made in one length and not consist of two lengths shackled or lashed together and should be equipped with spreaders about 10 feet (3m) apart.

(138) 4. Whenever the distance from the surface of the water to the access point of the ship is more than 9 meters, an accommodation ladder in conjunction with a pilot ladder must be used. The accommodation ladder shall be sited leading aft and shall be secured to the hull. When in use, means shall be provided to secure the lower platform of the accommodation ladder to the ship's side, so as to ensure that the lower end of the accommodation ladder and the lower platform are held firmly against the ship's side and the pilot ladder remains against the ship's side.

(139) 5. In the case of a combination arrangement where the accommodation ladder is fitted with a trap door in



the bottom platform, the pilot ladder shall be rigged up through the trap door and extend above the platform to the height of the handrail.

(140) 6. Adequate lighting shall be provided to illuminate the transfer arrangements alongside and the position on the deck where a pilot embarks and disembarks.

(141) 7. Trailing lines or retrieving lines must not be attached to the lower ends of the ladder.

(142) 8. Ladders must be rigged well clear of the water, clear of any discharge outlets, and at a place near midships.

(143) 9. Means shall be provided to ensure safe and unobstructed passage for any person embarking or disembarking the ship between the head of the pilot ladder and the ship's deck. Adequate handholds or two rigidly secured handhold stanchions shall be fitted.

(144) 10. Vessels must comply with SOLAS Chapter V Regulation 23 – Pilot Transfer Arrangements.

(145) 11. The pilot ladder shall be rigged 1.5 meters above the water's edge. A heaving line must be available.

(146) Pilotage for these waters for U.S. vessels enrolled in coastwise trade is also available from the Interport Pilots Agency, Inc., *interportpilots.com*, 906 Port Monmouth Road, Port Monmouth, NJ 07758-0236, telephone 732-787-5554 (24 hours), email *interport@verizon.net*. The Interport Pilots office monitors VHF-FM channels 16 and 65A during business hours. Pilot boats are KEN JOHNSON, 47-foot, blue hull and white superstructure with the word PILOT displayed on both sides, and INTERPORT PILOT, 50-foot with the same colors. Boats monitor VHF-FM channels 16 and 13 one and a half hours prior to the vessel's scheduled ETA, work on channel 65A and are equipped with AIS and transmit 'PILOTBOAT (NAME).'

(147) Vessels are generally boarded in the charted, designated pilot boarding area, located southeast of the Ambrose Channel Lighted Whistle Buoy A at 40°26'47"N., 73°48'27"W. Arrangements for pilot services are made in advance through ship's agents or directly to Interport Pilots Agency, Inc.

#### (148) **Pilotage, New York Harbor from Long Island Sound**

(149) Foreign vessels and U.S. vessels under register entering or departing from the Port of New York and New Jersey from Long Island Sound must employ a pilot licensed by the State of New York. Enrolled vessels must have on board or employ a pilot licensed by the Federal Government. Pilotage service for vessels entering the Port of New York and New Jersey from Long Island Sound is available from the United New York New Jersey Sandy Hook Pilot Association (see above). The pilot boat boarding area is off Execution Rocks. The pilot boat ties up at a pier on the east side of City Island about 0.4 mile northward of Belden Point. The pilot station, on the pier, and the pilot boat monitor VHF-FM channel 13 when vessels are scheduled to arrive. The 48-foot pilot boat has a black hull with the word PILOT in red letters on each side of the house. Arrangements for pilots are made

in advance either directly by the vessel or through ships' agents. Notification is mandatory 24 hours prior to arrival and ETA updates are required 12 and 6 hours prior to arrival.

(150) Pilotage for U.S. enrolled vessels in the coastwise trade is available from the United New York New Jersey Sandy Hook Pilot Association (see above) and Interport Pilots Agency, Inc. (see above). Pilot boats are KEN JOHNSON, 47-foot with blue hull and white superstructure with the word PILOT displayed on both sides, and INTERPORT PILOT, 50-foot with the same colors. Boats monitor VHF-FM channels 16 and 13 two hours prior to the vessel's scheduled ETA, work on channel 65A, and are equipped with AIS. Interport Pilots board vessels bound from Long Island Sound into New York Harbor via the East River at any Long Island Sound port, Montauk Point or Point Judith Pilot Station or in the vicinity of Execution Rocks.

(151)

#### **Pilotage, Hudson River**

(152) See Pilotage, Hudson River (indexed as such), chapter 12.

(153)

#### **Towage**

(154) The Port of New York and New Jersey has several towing companies with radio-equipped tugs with over 4,000 hp. Arrangements for tugs are usually made in advance by ships' agents. Fireboats are stationed throughout the harbor.

(155) New York is a **customs port of entry** and the headquarters of the **Regional Commissioner**.

(156)

#### **Quarantine, customs, immigration and agricultural quarantine**

(157) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

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

(159)

#### **Coast Guard**

(160) A Coast Guard station is at Rosebank on Staten Island. A Coast Guard Command Center including a **Captain of the Port** office and **Marine Inspection Office** are at **Fort Wadsworth**, Staten Island.

(161)

#### **Harbor regulations**

(162) The administration of the Port of New York and New Jersey and the enforcement of its laws are vested in no single body but are divided among various departments of the federal, state and municipal Governments.

(163)

#### **Speed**

(164) The Coast Guard desires to warn masters and pilots of all types of vessels that possible action may result against their licenses and criminal procedures may be exercised,

when the wash of a vessel proceeding at excessive speed in confined waters endangers life, limb or property. Damage to vessels moored at docks and terminals has been reported. The parting of a mooring line may cause a serious oil fire or damage to pipelines or barges that are being loaded or discharged at chemical and petroleum company terminals. Damage caused by excessive speed may also lead to a possible suit by the injured party against owners, masters or pilots for monetary recovery.

(165) The **New York Economic Development Corporation** administers the piers along the New York City waterfront. The office is at 110 William Street. Additional information can be found at *nycedc.com*.

(166) The **Port Authority of New York and New Jersey** is an executive body appointed by the Governors of New York and New Jersey. The Authority's Port Department serves as a bistate port development, operations, maintenance and promotion organization. The Port Authority administers piers in Manhattan, Brooklyn, Hoboken, Port Newark and Port Elizabeth. The office of the Authority is at the 233 Park Avenue South, New York, NY 10003.

(167)

### Wharves

(168) The Port of New York and New Jersey has over 1,100 waterfront facilities. Most of these facilities are privately owned and operated, and the rest are owned or operated by either the railroads serving the port, the Port Authority of New York and New Jersey, the City of New York, the States of New York and New Jersey, the federal government or other municipalities.

(169) The major steamship passenger terminal, the New York City Passenger Ship Terminal, is along the east side of the Hudson River (North River) above The Battery. Containership terminals are throughout the port, but principally at Elizabeth, Newark, Jersey City and Weehawken, NJ. Other containership facilities are at Howland Hook, Staten Island and Brooklyn. Break-bulk general cargo terminals are throughout the port but principally along the east side of Upper New York Bay, on the East River and at Port Newark. Petroleum and other liquid cargo facilities are along Arthur Kill, on the Passaic and Hackensack Rivers and along Newtown Creek, Brooklyn.

(170) General cargo in the port is usually handled to and from vessels by ship's tackle. Heavy lifts up to 500 tons, floating cranes up to 500 tons, and derricks are available in port. Most of the waterfront facilities throughout the port have highway and railroad connections.

(171) The wharves and piers of New York City along the waterfronts of the Hudson and East Rivers are numbered beginning at The Battery and follow in sequence eastward along the East River and northward along the Hudson River.

(172)

### Supplies

(173) Provisions and supplies of all kinds are available in the Port of New York and New Jersey. All grades of heavy marine bunker fuel, lubricants and diesel fuel can be obtained. Large vessels are usually bunkered at their berths by tank barges or self-propelled tankers. Water is available at most of the piers and wharves.

(174)

### Repairs

(175) The Port of New York and New Jersey has extensive facilities for making all types of repairs to vessels of all sizes. The shipyards at Brooklyn, Hoboken, Staten Island and Queens can drydock some of the largest ocean-going vessels and can make major repairs to hull, electronic equipment, machinery and propulsion plants. Also within the port area, a number of firms without waterfront facilities are engaged in various types of marine repair work. These firms maintain ships and portable equipment for making above-waterline repairs and for installation of equipment, gear and machinery on all types of craft at berth. Several salvage companies also perform all types of salvage work.

(176)

The largest floating drydock, east of Red Hook Channel and on the east side of Erie Basin, has a lifting capacity of 16,000 tons, an overall length of 580 feet, a maximum clear inside width of 100 feet, and a depth of 28 feet over the keel blocks. The largest graving dock is on the east side of Wallabout Bay at the site of the former New York Naval Shipyard. The dock has a clear length of 1,092 feet, clear gate width of 143 feet, top and bottom inside widths of 150 feet, and 34 feet over the keel blocks; cranes to 200 tons are available. The largest marine railway, on the east side of East Mill Basin in Jamaica Bay, can handle vessels up to 300 tons of 120 feet long.

(177)

### Communications

(178) The Port of New York and New Jersey is served by three trunkline and one short-line railroad, numerous trucking firms engaged in long- and short-haul freight service and several bus companies. Over 100 shipping companies connect the port with the principal U.S. and foreign ports.

(179)

Three major airports, John F. Kennedy (New York) International, La Guardia and Newark, provide frequent scheduled service between New York and domestic and overseas points.

(180)

## Rockaway Inlet to Bergen Basin

(181)

**Rockaway Inlet**, the entrance to Jamaica Bay, is between **Rockaway Point** on the southeast side and **Manhattan Beach** and **Barren Island** on the north side. A breakwater, marked near the outer end by a light, extends south from Rockaway Point. The entrance channel extends westward of the breakwater and is marked by

(185)



lighted and unlighted buoys. A shifting sandbar is located about 0.6 mile southeast of the breakwater light. A shoal with depths of less than 1 foot and marked by breakers is west of the entrance channel. Numerous obstructions lie from southeast to southwest of the breakwater light and numerous wrecks are farther inside the inlet; the chart is the best guide.

(182) In 1980, shoaling to about 3 feet was reported in the inlet about 1.75 miles west of the Gil Hodges Memorial Bridge in about 40°34'21"N., 73°55'29.5"W.

(183)

### Current

(184) The tidal current in the entrance channel near Rockaway Point has a velocity of about 2.2 knots. In 1975, a strong east-to-west current, believed to have been the result of tidal flow, was observed at the entrance to Rockaway Inlet near the seaward end of the jetty. This current is of sufficient strength to cause a vessel to veer suddenly off course when entering or exiting the channel. East of Barren Island the velocity is about 1.5 knots. See the Tidal Current prediction service at [tidesandcurrents.noaa.gov](https://tidesandcurrents.noaa.gov) for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(186) **Jamaica Bay** is on the south shore of Long Island about 15 miles southeastward of The Battery, New York City. The bay is characterized by numerous meadows,

hassocks and marshes. The north and east shores are bordered by marshlands that extend inland for a short distance. Several small tidal creeks enter the bay from the north. Channels and basins have been dredged to project depths of 12 to 20 feet for use of craft operating in the bay. Rockaway Beach forms the south shore. The bay is about 7 miles long and 3.5 miles wide and covers an area of about 22.5 square miles. The greater portion of the bay is in the Boroughs of Brooklyn and Queens, New York City; and a small section of the eastern extremity, consisting of parts of Motts Basin and Head of Bay, is in Nassau County.

(188)

### Anchorage

(189) Special anchorages are in Jamaica Bay at Canarsie Beach and adjacent East Broad Channel. (See **33 CFR 110.1** and **110.60**, chapter 2, for limits and regulations.)

(190)

### No-Discharge Zone

(191) The State of New York, with the approval of the Environmental Protection Agency, has established a No-Discharge Zone (NDZ) in the open waters and tributaries of Jamaica Bay.

(192)

Within the NDZ, discharge of sewage, whether treated or untreated, from all vessels is prohibited. Outside the NDZ, discharge of sewage is regulated by **40 CFR 140**, (see chapter 2).

(187)

| Structures across Jamaica Bay and its Tributaries   |                          |  |   |                                    |
|---|--------------------------|--|---|------------------------------------|
| Name•Description•Type   | Location                 | Clear Width of Draw or Span Opening (feet) | Clear Height above Mean High Water (feet) | Information                        |
| <b>Jamaica Bay</b>  |                          |  |   |                                    |
| Gil Hodges Memorial Bridge (vertical lift)  | 40°44'21"N., 73°57'09"W. | 475  | 55 (down), 152 (up)                       | Notes 1 and 2<br>Call sign KIL-819 |
| Cross Bay Memorial Bridge (fixed)   | 40°35'33"N., 73°49'13"W. | 200  | 52  | Beach Channel crossing             |
| Railroad Bridge (swing)   | 40°35'45"N., 73°48'39"W. | 101  | 26  | Beach Channel crossing<br>Note 3   |
| Railroad Bridge (fixed)   | 40°38'40"N., 73°49'31"W. | 100  | 26  | North Channel crossing<br>Note 3   |
| Cross Bay Boulevard Bridge (fixed)  | 40°38'40"N., 73°50'10"W. | 102  | 26  | North Channel crossing             |
| Pedestrian bridge (fixed)   | 40°34'57"N., 73°56'58"W. | 39   | 8   | Sheepshead Bay crossing            |
| Shore Parkway Bridge (fixed)  | 40°35'10"N., 73°54'45"W. | 177  | 35  | Gerritsen Inlet crossing           |
| Shore Parkway Bridge (fixed)  | 40°36'18"N., 73°53'57"W. | 131  | 60  | Mill Basin crossing                |
| Shore Parkway Bridge (fixed)  | 40°37'19"N., 73°53'48"W. | 98   | 29  | Paerdegat Basin crossing           |
| Shore Parkway Bridge (fixed)  | 40°38'18"N., 73°52'43"W. | 63   | 21  | Fresh Creek crossing               |
| Shore Parkway Bridge (fixed)  | 40°38'47"N., 73°52'25"W. | 46   | 20  | Hendrix Creek crossing             |
| Pedestrian Bridge (fixed)   | 40°39'12"N., 73°49'54"W. | 63   | 17  | Hawtree Basin crossing             |
| <b>Hook Creek</b>   |                          |  |   |                                    |
| Meyer Avenue Bridge (fixed)   | 40°38'11"N., 73°44'29"W. | 24   | 8   |                                    |
| Rockaway Turnpike Bridge (fixed)  | 40°38'07"N., 73°44'24"W. | 29   | 4   |                                    |
| Rockaway Turnpike Bridge (fixed)  | 40°37'55"N., 73°44'22"W. | 33   | 12  |                                    |
| East Avenue Bridge (fixed)  | 40°38'04"N., 73°44'26"W. | 30   | 3   |                                    |
| <b>Motts Basin</b>  |                          |  |   |                                    |
| Overhead power cable  | 40°37'01"N., 73°45'40"W. |  | 70  | Across north arm                   |
| Overhead power cable  | 40°36'42"N., 73°45'39"W. |  | 95  | Across south arm                   |
| Overhead power cable  | 40°36'42"N., 73°45'35"W. |  | 92  | Across south arm                   |
| Note 1 – See <b>33 CFR 117.1</b> through 117.59 and <b>117.795</b> , chapter 2, for drawbridge regulations. |                          |  |   |                                    |
| Note 2 – Bridgetender monitors VHF-FM channel 13.   |                          |  |   |                                    |
| Note 3 – The trestle crossing East Broad Channel of this railroad is closed to navigation.                  |                          |  |   |                                    |

(193) The commercial vessel traffic in Jamaica Bay consists of motor tankers, barges, and tugs. The bay is used extensively by pleasure craft.

(194) Jamaica Bay has excellent transportation facilities. Highways connect with all of Long Island and New York City, and a branch of the New York City subway system crosses the central part of the bay and extends eastward and westward along the Rockaway peninsula with stations at Far Rockaway and Inwood serving the Motts Basin area.

(195) **Ice** is a problem in Jamaica Bay, mainly in the tributaries and basins, from early January to about mid-March.

(196) **Sheepshead Bay**, on the northern side of the eastern extremity of Coney Island and northward of **Manhattan Beach**, is well protected and is used by numerous pleasure and party fishing craft. Use caution when navigating and anchoring; approaches are subject to continual change due to shoaling. Buoys may frequently be relocated to mark best water. Numerous wrecks and obstructions

are charted from a 2014 hydrographic survey. A private light marks the outer limit of a sewer outfall that extends southward from the bay.

### (197) Anchorages

(198) Special anchorages are in Sheepshead Bay. (See **33 CFR 110.1** and **110.60**, chapter 2, for limits and regulations.)

### (199) Small-craft facility

(200) A small-craft facility in the bay can handle craft to 1½ tons. Mooring, electricity, diesel fuel, water, ice, marine supplies and storage are available.

(201) **Plumb Beach Channel**, northward of Rockaway Inlet, is the common approach to **Gerritsen Inlet**, **Shell Bank Creek**, **Gerritsen Creek** and **Mill Creek**. The channel is marked by buoys; mariners are advised to follow the buoys through the inlet closely. Two shoal areas are near Plumb Beach Channel Buoy 7. The first is

north-northeast of the buoy with a least depth of 2 feet; it extends to midchannel where the least depth is 4 feet. The other is about 0.1 mile southeast of the buoy with a least depth of 2 feet.

- (202) From the highway bridge over Gerritsen Inlet, Shell Bank Creek leads westerly and **Gerritsen Creek** and **Mill Creek** lead northwesterly. There are dangerous pilings and remains of old barges along the south side of Shell Bank Creek and several submerged wrecks in Gerritsen and Mill Creeks. The fixed highway bridge over Mill Creek is in ruins; mariners are advised to exercise caution in this area as some parts of the bridge structure have fallen into the water and are an obstruction to navigation.

(203)

#### **Small-craft facilities**

- (204) Small-craft facilities on Shell Bank Creek can provide berths with electricity, gasoline, diesel fuel, water, ice, marine supplies, a pumpout facility, lifts to 60 tons and a 90-foot marine railway; complete hull and engine repairs are available.

- (205) **Dead Horse Bay** makes into the southwest side of Barren Island eastward of the highway bridge across Gerritsen Inlet. A marina, on the north side of the bay, has berths and moorings. Numerous wrecks and obstructions are in the entrance to the bay and in the southwest corner of the marina. The chart is the best guide.

- (206) **Island Channel** leads northerly from just eastward of Barren Island to Bergen Beach, thence northeasterly in **North Channel** to Howard Beach. In 1998, depths of about 12 feet can be carried to Howard Beach. The channels are marked by lighted and unlighted buoys.

- (207) **Big Fishkill Channel** and **Pumpkin Patch Channel** lead in a northeasterly direction from Runway Channel just west of **Ruffle Bar** and join North Channel 0.3 mile west of the North Channel Bridge at Howard Beach.

- (208) **Mill Basin** is northward of Barren Island on the west side of Jamaica Bay. Commercial traffic in the basin consists of occasional barge shipments of petroleum.

(209)

#### **Small-craft facilities**

- (210) Small-craft facilities in the basin can provide berths with electricity, gasoline, water, ice, marine supplies and complete hull and engine repairs; a 50-ton marine railway and lifts to 20 tons are available.

- (211) **East Mill Basin** is about 0.4 mile northeastward of Mill Basin. Small-craft facilities in the basin can provide berths with electricity, water, marine supplies, a 15-ton forklift, a 100-ton travel lift and marine railways to 300 tons; complete hull and engine repairs are available.

- (212) **Bergen Beach** is a community about 2 miles north of Barren Island. **Paerdegat Basin** is just north of Bergen Beach. A marina at the head of the basin can haul out craft up to 15 tons; gasoline, marine supplies and water are available, however, no repairs are available for the public. In 1981, a reported depth of 8 feet could be taken to the marina. Several yacht clubs are also in the basin.

- (213) **Canarsie**, a town on the northwestern shore of Jamaica Bay, is a part of New York City. Canarsie Pier, on the northwest shore of Jamaica Bay between Paerdegat Basin and Fresh Creek, has two prominent flagpoles near its center. The pier is structurally unsafe, and landing is not permitted. The pier is a part of Gateway National Recreation Area.

- (214) **Fresh Creek**, 0.6 mile northeastward of the pier at Canarsie, has a midchannel depth of about 8 feet. **Hendrix Creek**, 0.4 mile northeastward of Fresh Creek, is the site of a water pollution control plant. Sludge vessels operate from the pier at the southwestern entrance to the creek. **Old Mill Creek**, 1.1 miles northeastward of Fresh Creek, bares at low water just above the entrance. Fresh, Hendrix and Old Mill Creeks were little used in 1971.

- (215) **Howard Beach**, about 2.5 miles eastward of Canarsie, on the north side of Jamaica Bay, has several basins for boats.

- (216) **Shellbank Basin**, just west of Howard Beach, extends northward about 1 mile from North Channel. There is shoaling upon entering the channel with a 4-foot obstruction at 40°38'57.5"N., 073°50'10.7"W. The basin has numerous small piers, float landings and other small-craft facilities along the west side. Berths with electricity, water, a 15-ton lift and complete hull and engine repairs are available.

- (217) **Hawtree Basin**, about 0.25 mile eastward of Shellbank Basin, has depths ranging from 5 to 24 feet and an obstruction covered 6 feet at 40°39'03.9"N., 073°49'52.0"W.

- (218) **Rockaway Beach** is a popular summer resort on the barrier beach forming the southern extremity of Jamaica Bay. Train and bus transportation is available to New York City. Excursion boats operate between New York and Rockaway Beach during the summer only.

- (219) **Beach Channel** is on the north side of Rockaway Beach. A federal project provides for a channel 18 feet deep from Rockaway Inlet to about 700 yards above Gil Hodges Memorial Bridge, thence 15 feet deep to the junction with Grass Haddock Channel.

- (220) **Barbadoes Basin** is adjacent to the Beach Channel railroad bridge. A facility in the southeast corner of the basin receives broken concrete by barge for recycling.

- (221) **Vernam Basin** is northeast of Barbadoes Basin. A facility in the southwest corner of the basin receives petroleum products by barge. In 2007, the controlling depth at the facility was reported to be 15 feet. A facility in the southeast corner of the basin receives sand, gravel and stone by barge. A small-craft facility in the basin has berths, electricity, water, open storage and lifts to 72 tons. Repairs for fishing boats can be made.

- (222) **Winhole Channel**, a natural channel marked by buoys, seasonal lights and a daybeacon, extends 1 mile northward to Grassy Bay from the junction of Beach Channel with Grass Haddock Channel. Winhole Channel has a least depth of about 11 feet, except for reported shoaling to 4 feet extending into the channel northeast from Winhole Channel Light 3 in about 40°36.8"N.,



73°48.4'W. Winhole Channel Shoal Daybeacon marks the center of a shoal near the north end of the channel. The daybeacon should not be passed close aboard. A lighted buoy marks the junction of Beach, Grass Hassock and Winhole Channels.

- (223) **Grass Hassock Channel** joins Beach Channel off **Brant Point** and continues in a northeasterly direction to Head of Bay. The shallowest water is abeam Brant Point between Buoy 14 and Buoy 16 and at the junction with Negro Bar Channel in the vicinity of Lighted Buoy 23.

- (224) **Sommerville Basin**, about 1.2 miles eastward of the railroad bridge at Rockaway Beach, has depths of 27 to 40 feet inside. In 1981, depths of about 15 feet were reported in the approach. Several charted sunken wrecks are in the basin. A boatyard at the head of the basin has berths, electricity, gasoline, water, ice, limited marine supplies, storage facilities, a launching ramp, a 45-foot marine railway and a 7-ton mobile hoist; engine and hull repairs can be made.

- (225) **Motts Basin**, a tidal inlet in the eastern part of Jamaica Bay, entered through **Joseph Sanford Jr. Channel**, partially separates the communities of **Inwood** and **Far Rockaway**. Two branch channels lead from inside the entrance to the northeasterly and southeasterly ends of the basin. **Ice** may obstruct vessel movement in the basin during severe winters.

- (226) Overhead power cables across Motts Basin have the following clearances: one over the northerly arm, 70 feet; two over the southerly arm, least clearance 92 feet; and one over the cut on the south side of the southerly arm, 60 feet. A retractable boom is on the south shore of the basin about 90 yards northwest of the overhead cable tower. A light is shown from the boom when it is extended into the water.

- (227) Depths alongside the wharves in Motts Basin range from 10 to 20 feet. Waterborne commerce in the basin is chiefly in petroleum products.

- (228) **Head of Bay** joins Grass Hassock Channel near **Northwest Point** and extends in a northeasterly direction on the south side of **John F. Kennedy (New York) International Airport**. Depths of about 15 feet are in the entrance channel and channel in the bay; aids mark the channels. In 2007, it was reported that a draft of 16 feet could be taken to the facilities at **Uncle Daniels Point**, 14 feet could be taken to facilities on **Motts Creek**, and 14 feet could be taken to facilities at **Norton Point**. Several small marinas in the bay can provide berths, electricity, water, ice, marine supplies, storage facilities and a launching ramp; minor engine and hull repairs can be made.

- (229) **Thurston Basin**, at the northeastern extremity of Head of Bay, has reported depths of 10 feet at the entrance decreasing to 2 feet at the head.

- (230) **Grassy Bay**, along the southwestern side of John F. Kennedy (New York) International Airport in the northeastern part of Jamaica Bay, is blocked at the southeastern end by an airport runway. The runway

continues into the marshlands on the southerly side of the bay.

- (231) **Bergen Basin**, at the northern extremity of Grassy Bay, has depths of about 15 feet with lesser depths in the eastern arm of the basin. The entrance is marked by buoys. Conspicuous are a yellow brick circular tank about 40 feet high on the southwestern side of the entrance and the numerous oil storage tanks at the head of the basin on the eastern shore. Coastal tankers and sand-and-gravel barge tows account for most of the commerce in the basin. In 1988, a sunken wreck was reported in the eastern arm of the basin in about 40°39.7'N., 73°49.1'W.

- (232) **Safety and security zones** are in the vicinity of John F. Kennedy International Airport, Bergen Basin and Thurston Basin. (See **33 CFR 165.1** through **165.7**, **165.20** through **165.33**, and **165.169**, chapter 2, for limits and regulations.) Within the safety and security zone, a boom 1,500 feet in length is approximately 60 feet offshore on the east side of the Bergen basin.

### (233) **Coney Island to Pierhead Channel**

- (234) **Coney Island**, on the northern side of the entrance to New York Harbor, is a large summer amusement resort. Numerous stacks, towers and amusement rides, including a red steel parachute tower 303 feet high, are prominent on the island. **Coney Island Light** (40°34'36"N., 74°00'42"W.), 75 feet above the water, is shown from a white square skeleton tower on **Norton Point**, the westernmost extremity of the island.

- (235) **Coney Island Channel** is a buoyed passage along the south side of Coney Island that leads from deep water in Lower Bay to Rockaway Inlet. It is used principally by vessels going to Jamaica Bay and Coney Island. A shoal area with a least depth of 6 feet is about 0.1 mile west of Buoy 3.

- (236) **Gravesend Bay**, northward of Coney Island, affords good anchorage; a **general anchorage** is in the bay. (See **33 CFR 110.1** and **110.155(e)**, chapter 2, for limits and regulations.)

- (237) **Coney Island Creek** is at the southeastern end of Gravesend Bay and on the north side of Coney Island. Commercial traffic on the creek consists mainly of occasional barge shipments of sand and gravel. The area northward of the entrance to the creek is being filled, and piling is along the northern side of the creek at the filling site. Numerous obstructions and wrecks are in the creek; mariners are advised to seek local knowledge before entering. The creek is crossed by three fixed bridges having a least clearance of 3 feet. The ruins of a fourth bridge exist about 0.17 mile above the third bridge in about 40°34'49"N., 73°58'42"W. A boatyard about 0.8 mile above the creek entrance provides berths, electricity, gasoline, water, ice, storage, marine supplies, and hull and engine repairs. Lifts to 14 tons are available. In 1981, a reported depth of 4 feet could be carried to the boatyard.

(242)



(238) A buoyed channel with a least depth of 10 feet leads from deep water northward of Coney Island to off the docks in the eastern part of Gravesend Bay.

(239)

#### Small-craft facility

(240) A small-craft facility on Gravesend Bay can provide berths, electricity, gasoline, diesel fuel, water, ice, storage and marine supplies and hull and engine repairs. Lifts up to 30 tons are available. In 1981, a reported depth of 15 feet could be carried to the marina.

(241) **The Narrows**, connecting Lower Bay and Upper Bay of New York Harbor, has a clear width of over 0.6 mile at its narrowest point between Fort Wadsworth and Fort Hamilton. The **Verrazano Narrows Bridge**, a fixed suspension span, crosses The Narrows at these two points linking Staten Island with Brooklyn. The bridge has a vertical clearance of 215 feet for a midchannel width of 2,000 feet. **Note:** A traveling maintenance platform, when in operation, reduces the vertical clearances by 15 feet. A sound signal is sounded from the eastern end of the bridge. A **safety zone** is near the eastern end of the bridge. (See **33 CFR 165.1** through **165.9**, **165.20** through **165.23**, and **165.172**, chapter 2, for limits and regulations.)

(243)

#### Coast Guard Station

(244) Coast Guard Station New York is on the east side of Staten Island about 0.6 mile northwest of the Verrazano Narrows Bridge.

(245)

**Upper Bay** is that portion of New York Harbor between The Narrows and The Battery. **Anchorage Channel**, marked by lighted buoys, is the main passage through the middle of the bay. **Bay Ridge Flats** is a shoal area with depths of 8 to 20 feet east of Anchorage Channel. **Gowanus Flats** is at the north end of Bay Ridge Flats. **Jersey Flats**, the area on the New Jersey side west of Anchorage Channel, is much shoaler with a least depth of 5 feet. Channels have been dredged through these shoal areas to provide access to the piers on both sides of the bay.

(246)

#### Channels

(247)

**Bay Ridge Channel**, **Red Hook Channel** and **Buttermilk Channel** follow the Brooklyn piers from The Narrows to East River. Midchannel depths in these channels are generally 25 to 40 feet with lesser depths on the sides; the area is subject to shoaling. 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.



(260)



Caution should be exercised when docking and undocking vessels along the southeasterly side of Bay Ridge Channel because the current may flow in a direction opposite to the normal channel flow, especially between the piers. The Brooklyn Cruise Terminal is at Pier 12 on Atlantic Basin. Commuter ferry services operate extensively in Buttermilk Channel.

(248) **Gowanus Bay**, at the junction of Bay Ridge and Red Hook Channels, is a bight in the Brooklyn shore at the mouth of **Gowanus Canal**. A dredged channel leads from Gowanus Bay to the Hamilton Avenue Bridge, about 1 mile above the mouth of the bay.

(249) The improved section of Gowanus Canal above Hamilton Avenue has depths of about 8 to 12 feet. The Third Street, Carroll Street, and Union Street bridges across the canal have the following minimum clearances: drawbridges, 3 feet; fixed bridges, 90 feet. The fixed bridge across that part of the canal that extends southward along Fifth Street has a clearance of 20 feet. (See **33 CFR 117.1** through **117.59** and **117.787**, chapter 2, for drawbridge regulations.)

(250) The Hamilton Avenue and Ninth Street drawbridges, 1 and 1.2 miles above the entrance of Gowanus Bay, respectively, are equipped with radiotelephones. The bridgetenders monitor VHF-FM channel 13; call signs KX-8183 and KX-8186, respectively.

(251) **Erie Basin**, just north of Gowanus Bay, is entered from Red Hook Channel. The entrance is marked by

a light and the basin is marked by private lighted and unlighted buoys.

(252) **East River** is a 14-mile-long tidal strait that connects Upper Bay with Long Island Sound. For description of East River and the route to New York Harbor from Long Island Sound, see East River (indexed as such), chapter 9.

(253) **Governors Island** is at the Upper Bay entrance to East River. The hexagonal-shaped **Fort Jay** is prominent on the northeast side of the island, and the circular **Castle William** is on the northwest side. The main channel is westward of the island. Lighted buoys and sound signals are near the southern tip, and a light is on the northwest side of the island, on top of Castle William.

(254) **Liberty Island**, on the eastern part of Jersey Flats across the main channel from Governors Island, is marked by the **Statue of Liberty**, a colossal structure more than 305 feet high; the figure faces southeastward. In 2000, depths of 15 to 21 feet were available in the dredged area near the pier on the west side of the island. The U.S. Park Police marine unit operates from a floating platform on the northwest end of Ellis Island.

(255) **Robbins Reef Light** (40°39'27"N., 74°03'55"W.) 56 feet above the water, is shown from a conical tower, with the lower half brown and the upper half white, on the southeastern part of Jersey Flats.

(256) **Pierhead Channel** leads from the main channel about 0.7 mile southward of Liberty Island, thence

along the New Jersey pierhead line to Kill Van Kull. The channel connects several channels that lead to various facilities along the New Jersey waterfront, including the Army Corps of Engineers Caven Point Terminal, New York Waterway Ferry Landing, Claremont Terminal, New York Cross Island Railroad Terminal, Port Jersey Imported Automobile Terminal and Global Terminal and Container Services. A federal project provides for a depth of 20 feet in the channel. 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. The channels are well marked with lighted and unlighted buoys.

(257)

### Sandy Hook Bay

(258)

**Sandy Hook Bay** is the southern part of Lower Bay, westward of Sandy Hook and eastward of Point Comfort. The bay is an excellent anchorage, the depths of water ranging from 30 feet just inside Sandy Hook to 15 feet near its southern part; the shoaling is gradual and the bottom is good holding ground. The best anchorage during easterly and southeasterly winds is in the eastern part of the bay. Vessels of more than 24-foot draft will not find good anchorage out of the channel until above Fort Wadsworth. Extensive shoals make off northward and eastward from Point Comfort, but as the depths of water decrease gradually, soundings will give sufficient warning of too close an approach to the shore. Shallow-draft vessels can reportedly find satisfactory anchorage in **Horseshoe Cove**, on the east side of the bay. In 1999, the spit of land that forms Horseshoe Cove was reported visible only at extreme low water. Shoals extend an additional 200 yards southeastward from the end of the charted spit to about 40°26.7'N., 73°59.9'W. Mariners are cautioned not to navigate over this finger of land. Heavy fish traps extend out to a depth of 20 feet in places on the shoals on the southwest side of Sandy Hook Bay between Atlantic Highlands and Point Comfort.

(259)

**Sandy Hook**, the southern point at the entrance to New York Harbor and the northern point of the New Jersey coast, is low and sandy. The hook, including Plum Island at the mouth of the Shrewsbury River, is part of Gateway National Recreation Area. Large areas of the park are bird nesting areas, and landing is not permitted. A light, **Sandy Hook Coast Guard Station**, standpipe and a radio tower on the north end of Sandy Hook are prominent. The area around Sandy Hook is changeable and subject to severe shoaling; extreme caution is advised.

(261)

### Shrewsbury River and Navesink River

(262)

**Shrewsbury River** and **Navesink River** empty through a common entrance into the southern extremity of Sandy Hook Bay eastward of the Highlands of Navesink.

(263)

A federal project provides depths of 12 feet from Sandy Hook Bay to a point just above the fixed bridge at Highlands, thence 9 feet in Shrewsbury River to the Branchport Avenue Bridge at Long Branch, about 7.4 miles above the mouth. The Navesink River has a project depth of 6 feet from where it connects with the Shrewsbury River to the head of the project at Red Bank, about 4.9 miles above the mouth. 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.

(264)

#### Caution

(265)

All submarine cables within the area in about 40°24'12"N., 73°59'00"W., in Shrewsbury River have been abandoned. Mariners are cautioned that the cables remain in place.

(266)

#### No-Discharge Zone

(267)

The State of New Jersey, with the approval of the Environmental Protection Agency, has established a No-Discharge Zone (NDZ) in the waters of the Shrewsbury and Navesink Rivers. The NDZ extends south from the Highlands/Route 36 Bridge and covers all waters of the Shrewsbury and Navesink Rivers (see chart for limits).

(268)

Within the NDZ, discharge of sewage, whether treated or untreated, from all vessels is prohibited. Outside the NDZ, discharge of sewage is regulated by **40 CFR 140** (see chapter 2).

(269)

#### Current

(270)

At Highlands bridge, the currents have a velocity of about 2.6 knots. At Sea Bright bridge the velocity is about 1.6 knots.

(271)

#### Ice

(272)

Navigation in Shrewsbury and Navesink Rivers is generally suspended because of ice from December to March, inclusive.

(273)

#### Supplies

(274)

Gasoline, lubricants, marine supplies and provisions can be obtained at most of the towns along the shores of the Shrewsbury and Navesink Rivers.

(275)

#### Communications

(276)

Railroad, ferry or bus connects with New York to points on the New Jersey coast.

(277) **Highlands** is a summer resort on the west side of Shrewsbury River 1.5 miles inside the entrance.

(278) The State Route 36 highway bridge (Highlands Bridge) across Shrewsbury River at Highlands has a fixed span with a clearance of 61 feet. The east side of the river northward of the bridge and the west side 0.3 mile southward of the bridge are used as anchorages for small craft.

(279) **Caution**

(280) Caution should be exercised at the junction of the Shrewsbury and Navesink Rivers, about 0.6 mile southward of the State Route 36 highway bridge at Highlands, to avoid the submerged stone jetty. Craft entering Navesink River should pass westward of the lighted junction buoy. The submerged jetty is marked by three seasonal buoys.

(281) The State Route 520 highway bridge (Sea Bright Bridge) over Shrewsbury River between **Rumson** and **Sea Bright** has a bascule span (under construction 2022).

(282) **Pleasure Bay**, at the southeast end of Shrewsbury River, is crossed by a fixed highway bridge with a clearance of 25 feet. **Branchport** is a small town on the east side of Pleasure Bay at the head of navigation.

(283) The privately dredged and marked channels in **Little Silver Creek**, **Town Neck Creek**, **Oceanport Creek** and **Blackberry Bay** had controlling depths of about 5 feet in 1965-67. **Parkers Creek** was reported to have a controlling depth of 6 feet in 1999.

(284) A fixed highway bridge with a clearance of 24 feet crosses the westerly part of Shrewsbury River, just eastward of its junction with Parkers and Oceanport Creeks.

(285) The tributaries that empty into the southeasterly and southwesterly sides of Shrewsbury River are crossed by bridges with the following clearances: **Manahassett Creek**, fixed highway, 6 feet; **Troutmans Creek**, fixed highway, 4 feet; Oceanport Creek (Oceanport Bridge) swing railroad, 4 feet; Parkers Creek, fixed railroad, 4 feet.

(286) The channel in Navesink River is crooked but well marked by seasonal buoys. The Oceanic highway bridge across the river between Rumson and **Locust Point** has a bascule span with a clearance of 22 feet. (See **33 CFR 117.1** through **117.59** and **117.734**, chapter 2, for drawbridge regulations.)

(287) **Rumson** is a town on the south side about 1.7 miles above the entrance to Navesink River. Small-craft facilities just west of the bridge at Rumson can provide berths, electricity, gasoline, water, ice and storage. Hull and engine repairs can be made, and a 7-ton mobile hoist is available. In 1981, a reported depth of 5 feet could be carried to the boatyards.

(288) **Fair Haven** is on the south side of Navesink River about 1 mile above the bridge at Rumson. A boatyard and two yacht clubs are at Fair Haven. The boatyard can provide berths, electricity, gasoline, water, ice, storage

and marine supplies and hull, engine and radio repairs; lifts to 15 tons are available. In 1987, a reported depth of about 7 feet could be taken to the boatyard.

(289) **Red Bank**, a town near the head of navigation on the Navesink River, has railroad connections with New York.

(290) The dredged channel that extends for 1.5 miles above the landings at Red Bank had a reported midchannel controlling depth of 2 feet to the second highway bridge, and thence less than 1 foot for the rest of the dredged section in 1985. The channel is privately marked by buoys and stakes. Three bridges cross the river near Red Bank: a fixed highway bridge, 4.8 miles above the mouth, with a clearance of 12 feet; a fixed railroad bridge, 450 yards above the fixed bridge, with a clearance of 19 feet; and a fixed highway bridge, connecting Red Bank and River Plaza, with a clearance of 8 feet.

(291) **Atlantic Highlands to Staten Island Flats**

(292) **Atlantic Highlands** is a town on the south side of Sandy Hook Bay about 2 miles west of Sandy Hook. A breakwater, marked by a light at its eastern end, forms an anchorage basin.

(293) The basin is used by numerous pleasure and party fishing craft. Numerous piles and ruins of former wharves are westward of the basin.

(294) **Small-craft facilities**

(295) Small-craft facilities in the basin can provide berths, electricity, gasoline, diesel fuel, water, ice, storage, marine supplies, launching ramps, pump-out station and hull and engine repair; mobile lifts up to 50 tons are available.

(296) **Terminal Channel**, entered from Sandy Hook Channel about 1 mile west-southwestward of Sandy Hook, leads south-southwestward to a turning basin and to the deepwater ammunition handling piers of the U.S. Naval Ammunition Depot. (See Notice to Mariners and latest editions of the charts for controlling depths.) The channel is marked by lighted and unlighted buoys and by a private **207.5°** lighted range. A side channel leads southward from the southeastern end of the turning basin to an ammunition barge-loading pier. The deepwater piers and barge pier are connected to the shore by a trestle that extends 1.6 miles across the flats from Leonardo.

(297) A **restricted area** surrounds Terminal Channel, turning basin, and piers of the U.S. Naval Ammunition Depot. (See **33 CFR 334.1** through **334.6** and **334.102**, chapter 2, for limits and regulations.)

(298) A dredged channel, about 0.4 mile eastward of the trestle at **Leonardo**, leads southward from Sandy Hook Bay to the entrance and basin of a state marina. The channel is marked by private aids to navigation. Transient berths, electricity and water are available in the basin. A boatyard with a 45-foot marine railway is about 0.5 mile eastward of the boat basin; complete hull and engine repairs can be made.

(299) **Compton Creek**, 4 miles westward of Sandy Hook, is used extensively as a harbor of refuge by small fishing craft. The creek is entered through a dredged channel that leads from Sandy Hook Bay, thence through **Belford Harbor (Shoal Harbor)** to about 0.4 mile above the mouth. (See Notice to Mariners and latest editions of the charts for controlling depths.) The entrance channel is marked by lighted and unlighted buoys. A passenger ferry terminal is located on the east side of the channel with service to Manhattan. The creek is navigable by small boats for about 1 mile. A seasonal auxiliary marine police station is on the east side of the creek.

(300) A boatyard is on the south side of Compton Creek about 0.45 mile above the mouth. Marine supplies, hull and engine repair facilities and a 90-foot marine railway are available. A town dock, supervised by a dockmaster, is just downriver of the boatyard.

(301) **Port Monmouth**, a village at the head of Compton Creek, is a shipping point for fresh fish, shellfish and inedible animal products. Several private landings and a town landing are available.

(302) **Pews Creek**, about 1 mile northwest of Compton Creek, is marked at the entrance by a private light. In 1981, it was reported that 3½ feet could be carried to a marina in the creek. Berths with electricity, gasoline, water, ice, marine supplies, a pump-out station, storage, a 15-ton lift, a 40-foot marine railway and hull and engine repairs are available. A highway bridge crosses the creek about 0.2 mile above the mouth and has a 31-foot fixed span with a clearance of 12 feet.

(303) **Staten Island** forms the northwest side of Lower Bay. The high wooded ridge of the island has elevations of 100 to over 400 feet. **South Beach** and **Midland Beach** are summer resorts and amusement areas on the southeast side of the island. A public pier for small-craft is located between the resorts.

(304) **Staten Island Flats** are extensive shoals making off from the southeast side of Staten Island. Parts of these flats are **Old Orchard Shoal** and **West Bank**, which border on the main channel up the bay. **Hoffman Island** and **Swinburne Island**, artificial islands on West Bank, are part of Gateway National Recreation Area; landing is not permitted. A channel, used by local vessels of less than 8-foot draft, leads westward of West Bank. From the gong buoy 2.5 miles southward of Fort Wadsworth, steer southwestward through the dredged channel and then steer a course for Old Orchard Shoal Light.

(305)

## Raritan Bay

(306) **Raritan Bay** is that part of Lower Bay lying westward of Point Comfort and southward of Staten Island. The bay is full of shoals with depths of 7 to 18 feet.

(307)

## Channels

(308) A federal project provides for a 35-foot channel extending through Lower Bay, the northern part of

Raritan Bay, to the junction with Arthur Kill. 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.

(309)

## Anchorage

(310) General anchorages are in Raritan Bay. (See **33 CFR 110.1** and **110.155(j)**, chapter 2, for limits and regulations.)

(311)

## Ice

(312) In ordinary winters ice does not seriously interfere with navigation in Raritan River or Arthur Kill, but in severe winters the ice sometimes prevents the movements of vessels for periods of 2 weeks at a time. In easterly winds the drift ice in Lower Bay collects in Raritan Bay and obstructs navigation, but usually only for a short time, as the prevailing westerly winds drive the ice out of the bay.

(313)

## Pilotage, Raritan River and Arthur Kill

(314) Pilotage for ports in the States of New York and New Jersey is compulsory for foreign vessels and U.S. vessels under register. Pilotage for vessels bound for Perth Amboy, South Amboy or up the Raritan River and Arthur Kill is available from the United New York New Jersey Sandy Hook Pilot Association. Pilotage is also available from the Interport Pilots Agency, Inc. See Pilotage, New York Harbor and Approaches (indexed as such) earlier in this chapter.

(315)

## Towage

(316) Tugs are used by the larger vessels and are available in New York. (See Towage, New York Harbor, discussed earlier in this chapter.)

(317)

**Customs, quarantine, immigration and agricultural quarantine** inspections are discussed earlier in this chapter under New York Harbor.

(318)

## Supplies

(319)

Water can be had at most of the wharves in Perth Amboy and South Amboy. Provisions and marine supplies can be had at Perth Amboy, Tottenville, New Brunswick and South Amboy.

(320)

**Great Kills Harbor**, a shallow bight on the south side of Staten Island northwestward of Old Orchard Shoal Light, is used as an anchorage by small craft. The chart is the best guide for entering the harbor. The channel is marked by buoys and a light. **Great Kills Light** (40°31'18"N., 74°07'54"W.), 35 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped dayboard on a red concrete base east of the channel entrance.



(321)

**Anchorage**

(322) A **special anchorage** is in Great Kills Harbor. (See **33 CFR 110.1** and **110.60**, chapter 2, for limits and regulations.)

(323) **Great Kills**, on the west side of Great Kills Harbor, has several small-craft facilities with berths, electricity, gasoline, diesel fuel, water, ice, storage and marine supplies. A public launching ramp is located in the northeast corner of the harbor.

(324) **Lemon Creek**, 0.2 mile westward of Seguine Point, is a narrow shallow stream used only by local boats that enter at high water. The midchannel controlling depth over the bar is about 2 feet with deeper water inside. The abutment of a former bridge is on the south side of the creek just inside the mouth. Overhead power cables crossing the creek at the bridge abutment have a clearance of 47 feet.

(325) A small marina on the creek can haul out craft up to 8 tons for minor engine and hull repairs; berths, electricity, water, ice and outside storage are available.

(326) A prominent tower of a former lighthouse with a statue on top is on the south side of Staten Island, 0.8 mile westward of Seguine Point. Prominent buildings are near the point at **Red Bank**, 0.3 mile southwestward of the tower.

(327) **Keansburg**, on **Point Comfort** on the south side of Raritan Bay, is a summer resort. The wharves on the west side of Point Comfort are in ruins and no longer used.

(328) A **special anchorage** surrounds the shoreline and waters north of Point Comfort. (See **33 CFR 110.1** and **110.60**, chapter 2 for limits and regulations.)

(329) **Waackaack Creek** and **Thorns Creek**, about 0.6 mile southwest of Point Comfort, have a common entrance protected by floodgates. The gates are lowered, thereby closing the harbor, when tides above 4½ feet are sustained for a period of time. An overhead power cable with a clearance of 32 feet crosses the creek entrance at the floodgates. Small-craft facilities on Thorns Creek provide berths, electricity, ice, water, gasoline, marine supplies and a 20-ton forklift and a 12-ton mobile hoist for hull and engine repairs. In 1982, the channels into the creeks were reported dredged to 7 feet.

(330) **Keyport Harbor**, 3 miles westward of Point Comfort, is a shallow harbor on the south side of Raritan Bay between **Conaskonk Point** and **Matawan Point**. A buoyed approach channel leads southward from the bay to a dredged marked channel that leads through the harbor to the mouth of Matawan Creek; the federal project depth is 8 feet. (See Notice to Mariners and latest editions of charts for controlling depths.)

(331) **Matawan Creek**, entered at the head of Keyport Harbor, is used mostly by local craft. In 2023, the controlling depth was 2.5 feet to the first highway bridge, thence 1-foot to the Route 35 highway bridge; thence in 1981, 2 feet to shoaling to bare was reported to the railroad bridge about 1.5 miles above the mouth. Greater depths are available with local knowledge. Three fixed

bridges, one railroad and two highway, cross the creek; least clearances are 48 feet horizontal and 8 feet vertical. Least clearance of overhead power cables crossing the creek is 54 feet.

(332) **Keyport** is a town on the east side of the entrance to Matawan Creek.

(333)

**Small-craft facilities**

(334) There are several small-craft facilities on Matawan Creek and on the southeast side of Keyport Harbor at Keyport. Berths with electricity, gasoline, diesel fuel, water, ice, marine supplies, sewage pump-out, lifts to 30 tons, marine railways to 40 feet and complete hull and engine repairs are available. Vessels proceed to the small-craft facilities at Keyport at high water.

(335) A privately dredged channel, about 25 feet wide in places, leads about 0.3 mile southwesterly from the mouth of Matawan Creek to a marina basin at the entrance to **Luppataong Creek**. In 1981, a reported depth of 4 feet was available to the marina.

(336) **Cheesequake Creek** and **Stump Creek** share a common entrance on the south side of Raritan Bay, 6 miles westward of Point Comfort. The entrance is between two stone jetties marked by lights on the outer ends. The east jetty is awash at high water. A dredged channel leads between the jetties to the railroad bridge about 0.3 mile above the jetties.

(337) Local boats from Lower Bay usually head for a point about 1.6 miles east-northeastward of the jetties and then shape a course to enter between the jetties at the entrance to Cheesequake and Stump Creeks.

(338)

**Caution**

(339) Caution should be exercised to avoid the sunken wrecks 0.2 mile eastward of the east jetty and 0.2 mile northeast of the west jetty.

(340) The State Route 35 highway bridge, 0.2 mile inside the jetties, has a bascule span with a clearance of 25 feet. The overhead power cable just north of the bridge has a clearance of 89 feet. The railroad bridge, 0.3 mile inside the jetties, has a bascule span with a clearance of 3 feet. The bridgetender monitors VHF-FM channel 13; call sign KT-3859. (See **33 CFR 117.1** through **117.59** and **117.709**, chapter 2, for drawbridge regulations.) The twin fixed highway bridges over Cheesequake Creek, 1.1 miles inside the jetties, have clearances of 16 feet.

(341) **Laurence Harbor** is a summer resort on the east side of Stump Creek, and **Morgan** is a settlement on the west side of Cheesequake Creek.

(342)

**Small-craft facilities**

(343) There are small-craft facilities that can provide berths with electricity, gasoline, diesel fuel, water, ice, marine supplies, a pump-out station, storage facilities, lifts to 35 tons and a 50-foot marine railway; complete hull and engine repairs are available.

(346)



(344)

## Raritan River and South River

(345) **Raritan River** empties into the western end of Raritan Bay between Perth Amboy and South Amboy. The channel from South Amboy to **New Brunswick** is 11 miles long and very crooked but is well marked with navigational aids. Waterborne commerce on the river is in coal, ore and petroleum products.

(347)

### Channels

(348) Vessels enter Raritan River from the east by way of Great Beds Reach and from the north by way of Arthur Kill via Raritan River Cutoff Channel. A federal project provides for a 20-foot channel in Raritan River Cutoff, a 25-foot channel from Great Beds Reach in Raritan Bay to the head of Red Root Reach about 1.9 miles above Garden State Parkway bridge, and thence a 15-foot channel to the junction with Washington Canal. 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. Above Washington Canal, the controlling depth in Raritan River was about 9 feet at midchannel to New Brunswick in 1962.

(349) A dredged channel in Titanium Reach and South Channel branches south from Raritan River about 0.6 mile above Garden State Parkway bridge. The federal project depths are 25 feet in Titanium Reach and 15 to 10 feet in South Channel to Crossman Dock. 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. In 1991, the channels were not being maintained near project depth and the project above Crossman Dock was not being maintained.

(350) A dredged channel in **Washington Canal** branches south from Raritan River about 4.3 miles above Garden State Parkway bridge and connects with **South River**. A dredged channel leads south for about 3.4 miles in South River.

(351) A sunken drydock, marked by a lighted buoy, is on the east side of Raritan River at 40°29'29"N., 74°19'43"W. The ruin extends 60 feet into the channel and is visible at all stages of the tide.

(353)

### Current

(354) The tidal current has a velocity of about 1.5 knots at the Victory Highway Bridge at Perth Amboy.

(355) **South Amboy** is a city on the south side of the entrance to Raritan River. Waterborne commerce at the

(352)

| Structures across Raritan River and South River  |                          |        |  |   |  |
|--|--------------------------|--------|--|---|--|
| Name•Description•Type  | Location                 | Miles* | Clear Width of Draw or Span Opening (feet) | Clear Height above Mean High Water (feet) | Information                              |
| NJTRO bridge (swing)   | 40°29'46"N., 74°16'51"W. | 0.5    | 124 (north draw)<br>125 (south draw)       | 8   | Bridge Under Construction (2023) - Note1 |
| Overhead power cable   | 40°29'46"N., 74°16'51"W. | 0.5    |  | 140                                       |  |
| Victory Bridge (fixed)   | 40°30'32"N., 74°17'27"W. | 1.6    | 354  | 110                                       |  |
| Thomas Edison Memorial Bridges (fixed)   | 40°30'39"N., 74°18'02"W. | 2.1    | 197  | 110                                       |  |
| Alfred E. Driscoll Bridge (fixed)  | 40°30'39"N., 74°18'04"W. | 2.2    | 193  | 134                                       |  |
| Overhead power cable   | 40°28'52"N., 74°21'20"W. | 5.2    |  | 128                                       |  |
| Junction with Washington Canal   | 40°28'17"N., 74°22'00"W. | 6.1    |  |   |  |
| New Jersey Turnpike bridge (fixed)   | 40°29'18"N., 74°23'46"W. | 10.2   | 150  | 45  |  |
| Overhead power cables  | 40°29'24"N., 74°23'55"W. | 10.4   |  | 114                                       |  |
| US Highway 1 bridges (fixed)   | 40°29'33"N., 74°24'47"W. | 11.1   | 90   | 90  |  |
| Albany Street bridge (fixed)   | 40°29'51"N., 74°26'16"W. | 12.8   | 75   | 16  |  |
| <b>South River</b>   |                          |        |  | 103                                       |  |
| Route 535 bridge (fixed)   | 40°27'19"N., 74°22'17"W. | 2.2    | 80   | 25  |  |
| CONRAIL bridge (swing)   | 40°26'54"N., 74°22'12"W. | 2.8    | 49   | 4   | Note 2                                   |
| * Distance is in nautical miles above the mouth  |                          |        |  |   |  |
| Note 1 – See 33 CFR 117.1 through 117.59 and 117.745, chapter 2, for drawbridge regulations. |                          |        |  |   |  |
| Note 2 – See 33 CFR 117.1 through 117.59 and 117.756, chapter 2, for drawbridge regulations. |                          |        |  |   |  |

port is in fuel oils, coal, sand and gravel. Depths alongside the wharves and piers range from about 6 to 30 feet. Water, provisions and marine supplies can be obtained here, and berths with electricity, water, ice and winter dry storage are available at a boat club.

(356) **Sayreville** is 6 miles above South Amboy on the south bank of the Raritan River. Most of the wharves are privately owned.

(357) **South River** is a town on the west side of South River 7.5 miles above South Amboy. A marina about 200 yards north of the highway bridge at Old Bridge provides berths, water, marine supplies, a 2-ton lift and engine repairs. In 1981, a reported depth of about 1 foot could be carried to the marina.

(358) The **Delaware and Raritan Canal**, closed to navigation since 1933, had its entrance to the Raritan River at New Brunswick.

(359) **Highland Park** is across Raritan River opposite New Brunswick. In 1981, a reported depth of about 3½ feet was available from the head of the federal project to Highland Park, the practical head of navigation.

(360)

## Arthur Kill

(361) **Arthur Kill** is the narrow body of water separating Staten Island from New Jersey. The cities of Perth Amboy, Tottenville and Elizabeth and many large factories, oil refineries and storage facilities are on its shores. Northern Arthur Kill and Kill Van Kull are the major channels for bulk, containerize, and petroleum cargo in New York Harbor.

(362)

## Channels

(363)

Federal project depth in Arthur Kill is 35 feet. 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.

(364)

## Caution

(365)

Numerous sunken and visible wrecks are adjacent to both sides of the channel in Arthur Kill; caution is advised.

(366)

A liquefied petroleum gas (LPG) facility is on the west side of Arthur Kill immediately south of **Morses Creek**. A moving **safety zone** has been established around loaded LPG vessels transiting between Scotland Lighted Whistle Buoy S at the entrance to Sandy Hook Channel and the LPG facility. (See 33 CFR 165.1 through 165.7, 165.20 through 165.25, and 165.160, chapter 2, for limits and regulations.)

(367)

## Anchorage

(368)

General anchorages are in Arthur Kill. (See 33 CFR 110.1 and 110.155 (i), chapter 2, for limits and regulations.)

(369)

## Current

(370)

Throughout Arthur Kill the flood sets from Raritan Bay to Newark Bay and the ebb in reverse direction. Velocities of current vary with the location from about 1 to 1.5 knots.



(394)



Kill Van Kull and Constable Hook, New Jersey  
Image courtesy of Airphoto/Jim Wark (2004)

(371) In 1991, tidal currents in Arthur Kill were reported to deviate significantly from official predictions published by NOAA. Mariners should exercise caution and discretion in the use of published tidal current predictions.

(372) **Perth Amboy** is on the point at the junction of Raritan River and Arthur Kill at the western end of Raritan Bay. The principal wharves are along the west bank of Arthur Kill. The greatest draft entering is about 30 feet. The wharves have depths of 14 to 30 feet alongside. Good anchorage is found abreast some wharves in 30 feet.

(373) **Anchorage**

(374) A **special anchorage** is south of Perth Amboy. (See **33 CFR 110.1** and **110.60**, chapter 2, for limits and regulations.)

(375) Perth Amboy is a **customs port of entry**.

(376) **Repairs**

(377) Several ship and boat repair yards are in Perth Amboy. Small-craft engine and hull repairs can be made.

(378) **Supplies**

(379) Diesel oil, diesel fuel, gasoline, water, lubricants and marine supplies are available at Perth Amboy.

(380) **Outerbridge Crossing Bridge**, 1.7 miles above **Ward Point**, is under construction (2019) across Arthur

Kill between Perth Amboy and **Tottenville**. A private sound signal is at the bridge. A marina at Tottenville provides berths, electricity, water, storage facilities and a 15-ton mobile hoist for do-it-yourself repairs.

(381) **Port Socony**, on the east side of Arthur Kill 2.9 miles above Ward Point, is a bulk oil storage terminal. A privately maintained dredged channel leads from the main channel in Arthur Kill to the oil company dock. In 2008, a depth of 22 feet was alongside the south half of the dock with 12 to 28 feet available alongside the northern half in 2007, except for shoaling to 8 feet along the north edge of the channel.

(382) **Smith Creek** enters Arthur Kill from northward about 3.3 miles above Ward Point. The entrance channel is privately marked by buoys. In 1981, a reported depth of 3 feet was available to just above the first bend in the channel. The creek is used principally by small craft.

(383) **Small-craft facilities**

(384) Several small-craft facilities are along Smith Creek. Berths with electricity, gasoline, water, ice, marine railways to 40 feet and partial hull and engine repairs are available.

(385) **Port Reading**, 4.5 miles above Ward Point on the north side of Arthur Kill, has several oil storage facilities. Depths of 18 to 36 feet are reported alongside. **Fresh Kills** enters Arthur Kill from eastward about 6 miles above Ward Point.

(386)

**Rahway River to Kill Van Kull**

(387) **Rahway River** enters Arthur Kill from westward, about 7.2 miles above Ward Point, and extends westward for about 4.5 miles to the town of **Rahway**. It is used only by small craft. In 1981, a reported depth of 5 feet could be taken to Lamberts Wharf about 2.1 miles above the mouth and about 0.5 mile above the New Jersey Turnpike bridge.

(388) An overhead power cable with a clearance of 165 feet crosses Arthur Kill about 1.7 miles north of the Rahway River entrance.

(389) **The Goethals Bridge**, 10 miles above Ward Point, is a fixed highway bridge with a vertical clearance of 140 feet. The railroad bridge above Goethals Bridge has a vertical lift span with a clearance of 31 feet down and 135 feet up. The bridgetender at the railroad bridge monitors VHF-FM channel 13; call sign KXS-237. (See **33 CFR 117.1** through **117.59** and **117.702**, chapter 2, for drawbridge regulations.)

(390) **Elizabethport**, about 11 miles above Ward Point, is the eastern part of the city of **Elizabeth**. It is at the northern end of Arthur Kill at its junction with Newark Bay.

(391) Most of the wharves along the Elizabeth waterfront are of the bulkhead-marginal type. Depths alongside range from 3 to 32 feet. Waterborne commerce at these wharves is in petroleum, sand and gravel, chemicals and petrochemicals and vegetable and animal oils.

(392) **Elizabeth River** enters Arthur Kill from westward at Elizabethport. The overhead power cables just above the entrance have a reported clearance of 23 feet. There are numerous bridges further up the Elizabeth River. (See **33 CFR 117.1** through **117.59** and **117.718**, chapter 2, for drawbridge regulations.)

(393) **Kill Van Kull** separates the southern shore of the city of Bayonne from Staten Island and connects the Upper Bay of New York Harbor with Newark Bay and Arthur Kill. Kill Van Kull is a major channel for petroleum and bulk cargo in New York Harbor, and has extensive through traffic and large factories on its shores.

(395)

**Channels**

(396) A federal project provides for a 45-foot dredged channel leading through Kill Van Kull and a 35-foot dredged channel north of **Shooters Island** to Arthur Kill. The dredged channel south of Shooters Island has a project depth of 30 feet. 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.

(397) Shoals, obstructions and numerous wrecks are along both sides of the dredged channel in Kill Van Kull.

Numerous sunken and visible wrecks are in the channel southward of Shooters Island; caution is advised.

(398) **Bayonne Bridge**, a fixed span with a minimum clearance of 154 feet over the channel (215 feet centerline), crosses Kill Van Kull near the southwestern end of the city of Bayonne and connects **Bergen Point** with Staten Island.

(399)

**Current**

(400) The flood current sets westward and the ebb eastward. In the bight on the south side of the channel between West New Brighton and Port Richmond there is more or less of an eddy when the current is at strength.

(401) In 1991, tidal currents in Kill Van Kull were reported to deviate significantly from official predictions published by NOAA. Mariners should exercise caution and discretion in the use of published tidal current predictions.

(402) **Constable Hook** and **Port Johnson**, on the north shore of Kill Van Kull, are parts of the city of **Bayonne**. They are commercially important for the shipment of petroleum and other products. A dredged channel 23 feet deep, marked by buoys, leads from the easterly end of Kill Van Kull to the wharf on the north side of Constable Hook.

(403) Several private yacht and boat clubs and a public marina are on the southwestern shore of Bayonne above Bergen Point. A 90-ton crane at the marina can haul out craft for engine and hull repairs; berths, electricity, gasoline, water, ice and marine supplies are available.

(404) **New Brighton, Port Richmond** and **Mariners Harbor** are on the south shore of Kill Van Kull. The largest of several shipyards and floating drydocks on the south shore can handle vessels up to 6,400 tons, 400 feet long, 85 feet wide and 26 feet in draft. All kinds of repairs can be made.

(405)

**Newark Bay**

(406) **Newark Bay** has a length of about 4 miles from Kill Van Kull to the junction of the two channels leading to Passaic and Hackensack Rivers. The greater part of the bay is very shoal, but a dredged channel leads through the bay to the rivers. The channel is well marked by lights and buoys. Strangers in small vessels should have no difficulty when using the chart as a guide. Deep-draft vessels should employ a pilot.

(407)

**Channels**

(408) Federal project depth in the main channel to about 0.3 mile north of the branch channel to the Port Elizabeth Marine Terminal is 45 feet, thence 40 feet to Port Newark, thence 35 feet to the junction of Passaic and Hackensack Rivers. 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

(427)

| Structures across Passaic River  |                          |        |   |   |                                    |
|--|--------------------------|--------|---|---|------------------------------------|
| Name•Description•Type  | Location                 | Miles* | Clear Width of Draw or Span Opening (feet)    | Clear Height above Mean High Water (feet) | Information                        |
| Lincoln Highway bridge (vertical lift)   | 40°43'57"N., 74°07'05"W. | 1.8    | 300   | 40 (down)<br>135 (up)                     | Note 1                             |
| Pulaski Skyway bridge (fixed)  | 40°44'06"N., 74°07'02"W. | 2.0    | 520   | 135                                       |                                    |
| Overhead power cables  | 40°44'22"N., 74°07'04"W. | 2.4    |   | 135                                       |                                    |
| CONRAIL bridge (swing)   | 40°44'30"N., 74°07'15"W. | 2.6    |   |   | Bridge under construction 2022     |
| Overhead power cable   | 40°44'30"N., 74°07'17"W. | 2.6    |   | 135                                       |                                    |
| New Jersey Turnpike (fixed)  | 40°44'32"N., 74°07'22"W. | 2.7    | 319   | 100                                       |                                    |
| Jackson Street bridge (swing)  | 40°44'01"N., 74°09'19"W. | 4.6    | 72  | 18  | Note 1                             |
| Amtrack bridge (vertical lift)   | 40°44'10"N., 74°09'41"W. | 5.0    | 200   | 24 (down)<br>138 (up)                     | Notes 1 and 2<br>Call sign WRY-593 |
| Overhead power cables  | 40°44'10"N., 74°09'41"W. | 5.0    |   | 170                                       |                                    |
| Bridge Street bridge (swing)   | 40°44'42"N., 74°09'57"W. | 5.6    | 80  | 7   | Note 1                             |
| NJTRO Newark-Harrison bridge (swing)   | 40°44'51"N., 74°09'57"W. | 5.8    | 77  | 15  | Notes 1 and 2                      |
| Overhead power cables  | 40°44'51"N., 74°09'57"W. | 5.8    |   | 135                                       |                                    |
| US 280 bridge (vertical lift)  | 40°44'53"N., 74°09'57"W. | 5.8    | 200   | 35 (down)<br>135 (up)                     | Note 1                             |
| Clay Street bridge (swing)   | 40°45'04"N., 74°09'55"W. | 6.0    | 75  | 8   | Note 1                             |
| Railroad bridge (bascule)  | 40°45'16"N., 74°09'52"W. | 6.3    | 126   | 7   | Bridge left open                   |
| NJTRO West Arlington bridge (swing and fixed)  | 40°46'36"N., 74°09'00"W. | 8.0    | 45 (E draw)<br>48 (W draw)<br>70 (fixed span) | 36<br>35                                  | Notes 1 and 2                      |
| Route 7/Rutgers Street bridge (vertical lift)  | 40°47'12"N., 74°08'51"W. | 8.9    | 99  | 7 (down)<br>51 (up)                       |                                    |
| Overhead power cables  | 40°48'04"N., 74°08'19"W. | 9.8    |   | 142                                       |                                    |
| Avondale bridge (swing)  | 40°48'40"N., 74°08'18"W. | 10.7   | 65  | 7   | Note 1                             |
| NJTRO bridge (swing)   | 40°49'14"N., 74°07'36"W. | 11.7   | 47  | 26  | Notes 1 and 2                      |
| Route 3 bridge (fixed)   | 40°49'22"N., 74°07'26"W. | 11.8   | 125   | 33  |                                    |
| Union Avenue bridge (fixed)  | 40°50'30"N., 74°07'22"W. | 13.2   | 60  | 15  |                                    |
| Gregory Avenue bridge (fixed)  | 40°51'16"N., 74°07'11"W. | 14.0   | 71 (E draw)<br>90 (W draw)                    | 12  | Note 1                             |
| Second Street bridge (fixed)   | 40°51'36"N., 74°06'57"W. | 14.7   | 100   | 5   |                                    |
| Eighth Street bridge (fixed)   | 40°51'19"N., 74°06'34"W. | 15.3   |   |   | Bridge under construction          |
| Overhead power cable   | 40°51'42"N., 74°06'26"W. | 15.7   |   | 35  |                                    |
| Wall Street bridge (fixed)   | 40°51'53"N., 74°06'36"W. | 15.9   | 78  | 5   |                                    |
| * Distance in nautical miles above the mouth   |                          |        |   |   |                                    |
| Note 1 – See 33 CFR 117.1 through 117.59 and 117.739, chapter 2, for drawbridge regulations. |                          |        |   |   |                                    |
| Note 2 – Bridgetenders monitor VHF-FM channel 13.  |                          |        |   |   |                                    |

through a USACE hydrographic survey website listed in Appendix A.

(409)

### Anchorage

A special anchorage is in Newark Bay. (See 33 CFR 110.1 and 110.60, chapter 2, for limits and regulations.)

(411)

### Ice

Ice sometimes closes navigation during a part of January and February.

The Port Elizabeth Marine Terminal operated by the Port Authority of New York and New Jersey, is on Newark Bay in Elizabeth, NJ, on the south side of Elizabeth Channel south of Port Newark. The facility is

about 8 miles from The Narrows via Kill Van Kull. It is adjacent to the New Jersey Turnpike and Newark Airport in the heart of the New Jersey industrial area, about 25 minutes by highway from Manhattan.

The terminal has 25 deep-draft berths with depths of 32 to 40 feet reported alongside and deck heights of 12 feet. In 1996, a rock with 36 feet of water over it was reported in about 40°40'26.6"N., 74°7'57.1"W., about 200 yards north-northeast of Buoy 14.

A large container-handling complex with extensive lift-on/lift-off and roll-on/roll-off systems is at the terminal. Included in this complex are cranes up to 50 tons, mobile straddle carriers with 32-ton capacities, cargo-handling buildings with more than 1-million square



feet of storage space and a large area for open storage. A Class I railroad provides the terminal with direct rail services. Excellent cargo handling and storage facilities are available.

(416)

### Channels

(417) Federal project depth in Elizabeth Channel, leading to the terminal from the main channel in Newark Bay, is 50 feet. 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.

(418) **Port Newark Terminal**, operated by the Port Authority of New York and New Jersey, is on the western side of Newark Bay 2.7 miles above the south entrance, northward of the Port Elizabeth Marine Terminal. It is in the heart of the New Jersey industrial area, adjacent to the New Jersey Turnpike and Newark Airport. There are 37 deep-draft berths; reported depths alongside, 32 to 35 feet; deck heights, 11 to 12 feet; many transit and storage areas and excellent cargo handling facilities, used for the receipt and shipment of general cargo, metals, vegetable oils, petroleum, automobiles and machinery and for the receipt of bananas, rubber products, lumber and pulpwood and chemicals. A Class I railroad provides the terminal with direct rail service.

(419)

### Channels

(420) Federal project depth in Port Newark Channel and Port Newark Pierhead Channel, leading to the terminal from the main channel in Newark Bay, is 40 feet. 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.

(421) The New Jersey Turnpike (IS 78) bridge, 0.7 mile above the entrance to Port Newark Terminal, has a fixed span with a clearance of 135 feet. The railroad bridge, 0.2 mile above the New Jersey Turnpike bridge, has a vertical-lift span with a clearance of 35 feet down and 135 feet up. (See **33 CFR 117.1** through **117.59** and **117.735**, chapter 2, for drawbridge regulations.) The bridgetender at the railroad bridge monitors VHF-FM channel 13; call sign KS-9968.

(422) A marina on the east side of Newark Bay about 0.9 mile above the New Jersey Turnpike bridge provides berths, gasoline, diesel fuel, water, electricity, ice, storage, marine supplies and a 25-ton lift; hull and engine repairs can be made.

(423)

## Passaic River to Hackensack River

(424) **Passaic River**, which flows into the northwest end of Newark Bay, is used by vessels to **Passaic**, a

manufacturing city at the head of navigation 13 miles above the mouth. Above the Wall Street bridge at Passaic the river is obstructed by boulders partly showing above the water for 1.5 miles to the **Dundee Dam**. The city of **Newark** extends along the river for a distance of nearly 5 miles above the mouth. The towns of **Belleville**, **Arlington**, **Rutherford** and **Nutley** and several villages are on the river between Newark and Passaic. The channel entrance is well marked. Waterborne commerce on the river consists of barge shipments of sand, gravel and petroleum products.

(425)

### Channels

(426) A federal project provides for a 30-foot channel from Newark Bay to a point about 0.5 mile above the Lincoln Highway Bridge; thence 20 feet to the Jackson Street bridge; thence 16 feet to the railroad bridge at Arlington; thence 10 feet to the Eighth Street Bridge at Passaic. 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.

(428)

The center pier and approach spans of a former railroad swing bridge remain in Passaic River channel about 1.1 miles above the mouth. An obstruction, covered 15 feet, was reported in the channel east of the center pier. Mariners should use extreme caution when passing between the former bridge remains.

(429)

**Freshets** overcome the flood current down as far as Newark and sometimes to the mouth of the river. Ordinary freshets usually of a few hours duration cause a rise of about 2 feet and a current velocity of about 3 knots at Newark. Destructive freshets occasionally occur at intervals of years, generally in the spring and fall.

(430)

### Small-craft facilities

(431) There are several boatyards along the Passaic River between the entrance and Passaic. A marine railway at Arlington can handle vessels to 40 feet long for complete engine and hull repairs. Berths, electricity, gasoline, water, ice, storage and marine supplies are available along the river below Kearny.

(432)

**Hackensack River** flows into the northeast end of Newark Bay and is navigable for about 17.8 miles to the dams at **New Milford**.

(433)

### Channels

(434) A federal project provides for a 30-foot channel from Newark Bay to a 25-foot turning basin about 0.3 mile above the railroad bridge at **Marion**. 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. Above this point in 1971, depths of 11 feet were available

(435)

| Structures across Hackensack River  |                          |        |  |   |                                       |
|---|--------------------------|--------|--|---|---------------------------------------|
| Name•Description•Type   | Location                 | Miles* | Clear Width of Draw or Span Opening (feet) | Clear Height above Mean High Water (feet) | Information                           |
| Lincoln Highway bridge (vertical lift)  | 40°43'38"N., 74°05'57"W. | 1.8    | 200  | 35 (down)<br>135 (up)                     | Note 1                                |
| General Pulaski Skyway bridge (fixed)   | 40°44'07"N., 74°05'40"W. | 2.2    | 300  | 135                                       |                                       |
| Overhead power cables   | 40°44'23"N., 74°05'00"W. | 3.0    |  | 139                                       |                                       |
| PATH Railroad bridge (vertical lift)  | 40°44'24"N., 74°04'58"W. | 3.0    | 168  | 40 (down)<br>165 (up)                     | Notes 1, 2 and 3<br>Call sign KQ-7198 |
| Hack-Freight Railroad bridge (vertical lift)  | 40°44'25"N., 74°04'54"W. | 3.1    | 158  | 7 (down)<br>135 (up)                      | Notes 1 and 3                         |
| Wittpenn/Route 7 bridge (vertical lift)   | 40°44'26"N., 74°04'53"W. | 3.1    | 158  | 7 (down)<br>135 (up)                      | Bridge under construction             |
| NJTRO Lower Hack bridge (vertical lift)   | 40°44'36"N., 74°04'37"W. | 3.4    | 150  | 40 (down)<br>135 (up)                     | Note 1<br>Call sign KR-6939           |
| Overhead power cables   | 40°44'40"N., 74°04'33"W. | 3.5    |  | 140                                       |                                       |
| Overhead power/telephone cables   | 40°45'12"N., 74°05'43"W. | 5.0    |  | 102                                       |                                       |
| Amtrak Portal bridge (swing bridge)   | 40°45'12"N., 74°05'42"W. | 5.0    | 99   | 23  | Notes 1 and 3<br>Call sign KMC-297    |
| NJ Turnpike bridge (fixed)  | 40°45'26"N., 74°05'40"W. | 5.3    | 259  | 103                                       |                                       |
| Railroad bridge (swing)   | 40°45'30"N., 74°05'36"W. | 5.4    |  |   | Bridge under construction<br>2023     |
| Overhead power cable  | 40°45'30"N., 74°05'35"W. | 5.4    |  | 137                                       |                                       |
| Overhead power cable  | 40°46'41"N., 74°05'24"W. | 6.9    |  | 89  |                                       |
| NJTRO Upper Hack bridge (vertical lift)   | 40°46'41"N., 74°05'24"W. | 6.9    | 127  | 8 (down)<br>110 (up)                      | Notes 1 and 3<br>Call sign KR-7035    |
| NJTRO HX bridge (basculer)  | 40°47'17"N., 74°04'54"W. | 7.7    | 101  | 4   | Notes 1 and 3<br>Call sign KR-7034    |
| State Route 3 bridge (fixed)  | 40°47'54"N., 74°04'06"W. | 8.8    | 148  | 50  |                                       |
| State Route 3 bridge (fixed)  | 40°48'02"N., 74°04'01"W. | 8.9    | 150  | 50  |                                       |
| Interstate 95 highway bridge (fixed)  | 40°49'25"N., 74°02'03"W. | 11.2   | 165  | 49  |                                       |
| Winant Avenue/State Route 46 bridge (basculer)  | 40°51'03"N., 74°01'44"W. | 14.0   | 150  | 35  | Note 1<br>Bridge is not operational   |
| Interstate 80 bridge (fixed)  | 40°52'02"N., 74°02'08"W. | 15.2   | 148  | 51  |                                       |
| Court Street bridge (swing)   | 40°52'45"N., 74°02'23"W. | 16.2   | 57   | 3   | Note 1                                |
| New York, Susquehanna and Western Railroad bridge (fixed)   | 40°52'52"N., 74°02'14"W. | 16.3   | 43   | 2   | Note 1                                |
| Midtown bridge (fixed)  | 40°52'57"N., 74°02'09"W. | 16.5   | 53   | 7   | Note 1                                |
| Anderson Street bridge (fixed)  | 40°53'31"N., 74°02'11"W. | 17.3   | 45   | 3   |                                       |
| * Distance is in nautical miles above the mouth   |                          |        |  |   |                                       |
| Note 1 – See 33 CFR 117.1 through 117.59 and 117.723, chapter 2, for drawbridge regulations.                |                          |        |  |   |                                       |
| Note 2 – To expedite openings, mariners are requested to give 1 hour advance notice by calling 201-963-2552 |                          |        |  |   |                                       |
| Note 3 – Bridgetender monitors VHF-FM channel 13.   |                          |        |  |   |                                       |

for varying widths with local knowledge to the N.Y.S. & W.R.R. bridge at Hackensack, 14.2 miles above the mouth. The channel is well marked with aids.

(436)

### Current

The river has little freshet flow, and the tidal currents are rarely affected by it.

(438)

### Small-craft facilities

There are several boatyards and marinas on the Hackensack River at **Little Ferry** and at **Carlstadt**, opposite **Secaucus**. A mobile hoist at Carlstadt can handle boats to 50 tons, and a marine railway can handle craft to 32 feet long for complete engine and hull repairs.

Berths, electricity, gasoline, water, ice, storage and marine supplies are available.

**Berrys Creek Canal** flows into the Hackensack River from westward 8.5 miles above the mouth. A midchannel depth of about 11 feet is available to the bridge about 1 mile above the entrance. Two fixed highway bridges with a least clearance of 35 feet cross the creek just above the entrance. The bridge about 1 mile above the entrance has a clearance of 40 feet, and the overhead power cable close southward of the bridge has a clearance of 45 feet.

**Overpeck Creek** flows into the Hackensack River from eastward, nearly 14 miles above the mouth. The railroad bridge spans at the entrance have bascule and swing spans with a horizontal clearance of 36 feet and a

vertical clearance of 3 feet. The bridge spans are locked in the closed position. A dam, about 0.8 mile above the mouth, forms the head of navigation on the creek.