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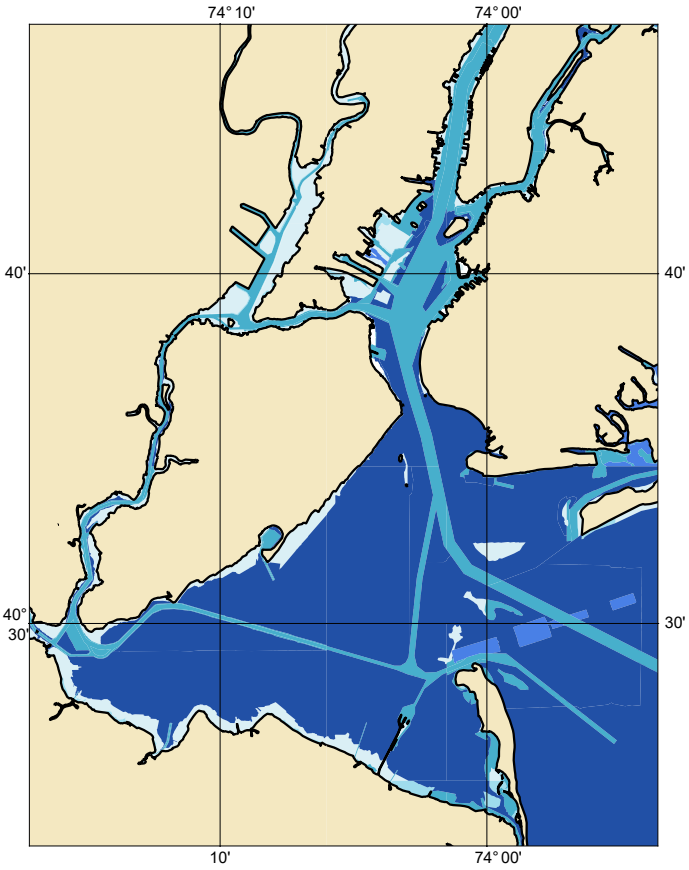
Zone of Confidence (ZOC) Diagram



ZOC CATEGORIES

ZOC	COLOR	POSITION ACCURACY	DEPTH ACCURACY	SEAFLOOR COVERAGE
A1		± 5 m + 5% depth ± 16.4 ft + 5% depth	= 0.50 m +1% d = 1.6 ft +1% d = 0.3 fm +1% d	All significant seafloor features detected.
A2		± 20 m ± 65.6 ft	= 1.00 m +2% d = 3.3 ft +2% d = 0.6 fm +2% d	All significant seafloor features detected.
B		± 50 m ± 164.0 ft	= 1.00 m +2% d = 3.3 ft +2% d = 0.6 fm +2% d	Uncharted features hazardous to surface navigation are not expected but may exist.
C		± 500 m ± 1640.4 ft	= 2.00 m +2% d = 6.6 ft +2% d = 1.1 fm +2% d	Depth anomalies may be expected.
D		Worse than ZOC C	Worse than ZOC C	Large depth anomalies may be expected.
U		Unassessed - The quality of the bathymetric data has yet to be assessed.		

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NOAA CUSTOM CHART
NOTES GEOSPATIAL DATABASE
VERSION 3.0C - 17 MARCH 2026

The records of the NOAA Custom Chart Notes Geospatial Database are current as of March 17, 2026. Subsequent additions and refinements are to be expected. Please refer to all available navigational publications for complete information about the charted area.

CAUTION
CHART UPDATES

This NOAA Custom Chart contains up-to-date information only as of the time of creation, and will become outdated. Mariners are advised to visit https://distribution.charts.noaa.gov/navigation-updates/ to check for critical and routine updates, and to render a new NOAA Custom Chart when the ENC data used to make the chart is updated. Notices to Mariners are not issued for corrections to this NOAA Custom Chart.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, U.S. Coast Guard and National Geospatial-Intelligence Agency.

COMMENTS REQUESTED

NOAA encourages users to submit inquiries, discrepancies, or comments about this chart via NOAA's ASSIST tool at https://nauticalcharts.noaa.gov/customer-service/assist/ .

CAUTION
AUTOMATED CHART GENERATION

This NOAA Custom Chart has been automatically rendered from NOAA Electronic Navigational Chart (NOAA ENC®) data. Mariners using this NOAA Custom Chart are advised that this is a static reproduction of the NOAA ENC®. This NOAA Custom Chart has not been individually quality checked or adjusted for optimal use for navigation. The portrayal may be at a different scale from that of the original NOAA ENC®. Mariners are advised to use caution when using this NOAA Custom Chart for navigation and are encouraged to use the latest NOAA ENC® to access the most up-to-date information. Mariners must also comply with all applicable regulatory requirements.

HEIGHTS

Heights of fixed aids to navigation and vertical clearances of overhead obstructions will be shown in feet if the units are set to feet or fathoms. If units are set to meters, heights will be shown in meters. Land elevation values are shown in meters only.

WATER LEVELS, CURRENTS, AND TIDES

Real-time water levels, tide predictions, and tidal current predictions are available on the internet from NOAA’s Center for Operational Oceanographic Products and Services (CO-OPS) at https://tidesandcurrents.noaa.gov/water_level_info.html and https://tidesandcurrents.noaa.gov/currents_info.html .

ABBREVIATIONS

For complete list of Symbols and Abbreviations, see Chart No. 1.

POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 2 for important supplemental information.
Refer to charted regulation section numbers.

VERTICAL DATUM

Overhead clearances are referred to Mean High Water (MHW).

COLREGS DEMARCATION LINE

The Inland Navigational Rules Act of 1980 is in effect for vessels transiting this area. The seaward boundaries of this area are the COLREGS demarcation lines. In the area seaward of the COLREGS demarcation lines, vessels are governed by COLREGS: International Regulations for Preventing Collisions at Sea, 1972. The COLREGS demarcation line is defined in COLREGS 33 CFR 80.165.

AIDS TO NAVIGATION

Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

ADDITIONAL INFORMATION

Additional information can be obtained at www.nauticalcharts.noaa.gov

SOUNDING DATUM

Soundings referred to Mean Lower Low Water (MLLW).

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 2. Additions or revisions to Chapter 2 are published in the Notices to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 1st Coast Guard District in Boston, MA or at the Office of the District Engineer, Corps of Engineers in New York, NY.
Refer to charted regulation section numbers.

PRECAUTIONARY AREA

Traffic within the Precautionary Area may consist of vessels making the transition between operating in Ambrose or Sandy Hook Channels and one of the traffic lanes. Mariners are advised to exercise extreme care in navigating within this area.

VESSEL TRAFFIC SERVICES

The U.S. Coast Guard operates a mandatory Vessel Traffic Services (VTS) system in the New York Bay and surrounding areas. Vessel operating procedures and designated radiotelephone frequencies are published in 33 CFR 161, the U.S. Coast Pilot, and/or the VTS User's Manual. Mariners should consult these sources for applicable rules and reporting requirements. Although mandatory VTS participation is limited to the navigable waters of the United States, certain vessels are encouraged or may be required, as a condition of port entry, to report beyond this area to facilitate vessel traffic management within the VTS area.

CAUTION
LIMITATIONS ON THE USE OF RADIO SIGNALS

Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117.

Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.

CAUTION
BASCULE BRIDGES

For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.

RECOMMENDED VESSEL TRACKS

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, tug and barge vessels are requested to follow the designated tracks. See U.S. Coast Pilot 2, Chapter 11.

INTRACOASTAL WATERWAY AIDS

The U.S. Aids to Navigation System is designed for use with nautical charts, and the exact meaning of an aid to navigation may not be clear unless the appropriate chart is consulted. Aids to navigation marking the Intracoastal Waterway exhibit unique yellow symbols to distinguish them from aids marking other waterways. When following the Intracoastal Waterway southward from Manasquan Inlet to Cape May, NJ, aids with yellow triangles should be kept on the starboard side of the vessel and aids with yellow squares should be kept on the port side of the vessel. A horizontal yellow band provides no lateral information, but simply identifies aids to navigation as marking the Intracoastal Waterway. All lights and lighted buoys marking the Intracoastal Waterway show a flash every four seconds, unless otherwise specified. The aids marking tributary channels, in general, are maintained by the state of New Jersey.

CAUTION
FISH TRAP AREAS

Uncharted stakes, piles and, fishing structures, some submerged, may exist within this area.

CAUTION
SUBMERGED CABLES AND PIPELINES

Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging or trawling.

Covered wells may be marked by lighted or unlighted buoys.

CAUTION
DANGER AREA

Area is open to unrestricted surface navigation but all vessels are cautioned neither to anchor, dredge, trawl, lay cables, bottom, nor conduct any other similar type of operation because of residual danger from mines on the bottom.

CAUTION
VERRAZANO - NARROWS BRIDGE
SUSPENSION BRIDGE

A traveling maintenance platform when in operation reduces the vertical clearances by 4.5 meters/15 feet.

CAUTION

Improved channels are subject to shoaling, particularly at the edges.

CAUTION

The Corps of Engineers has confirmed that this Upper Bellvillle Reach and Nutley Reach are not actively maintained.

CAUTION

Soundings within Wallabout Bay are reported and should be used with caution.

CAUTION

Sporadic shoal obstructions exist within Chapel Hill Channel, but are not charted. Consult the Corps of Engineers for location of obstructions.

CAUTION
OBSTRUCTIONS

Subsurface hydro acoustic arrays and fish pots. Arrays are 6.7 meters/ 22 feet in length, secured to bottom by concrete moorings. Occasional pop-up buoys may be present as arrays are released for retrieval.

CAUTION

USACE conducts hydrographic surveys to monitor navigation conditions. These surveys are not intended to detect underwater features. Uncharted features hazardous to surface navigation are not expected but may exist in federal channels. For more information visit https://navigation.usace.army.mil/Survey/Hydro.

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CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.
During some winter months or when endangered by ice, certain aids to navigation are replaced by other types or removed. For details, see U.S. Coast Guard Light List.

CAUTION
BRIDGE UNDER CONSTRUCTION

Fixed and floating obstructions, some submerged, may exist within the bridge construction area. Mariners are advised to proceed with caution.

RESTRICTED AREA
RIGHT WHALE SEASONAL
MANAGEMENT AREA
(50 CFR 224.105)

All vessels greater than or equal to 65 feet / 19.8 meters in length must slow to speeds of 10 knots or less in seasonal management areas.

CAUTION
BRIDGE UNDER CONSTRUCTION

Fixed and floating obstructions, some submerged, may exist within the bridge construction area. Mariners are advised to proceed with caution.

CAUTION
BRIDGE UNDER CONSTRUCTION

Fixed and floating obstructions, some submerged, may exist within the bridge construction area. Mariners are advised to proceed with caution.

NOTE Z
NO-DISCHARGE ZONE, 40 CFR 140

Under the Clean Water Act, Section 312, all vessels operating within a No-Discharge Zone (NDZ) are completely prohibited from discharging any sewage, treated or untreated, into the waters. All vessels with an installed marine sanitation device (MSD) that are navigating, moored, anchored, or docked within a NDZ must have the MSD disabled to prevent the overboard discharge of sewage (treated or untreated) or install a holding tank. Regulations for the NDZ are contained in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) website: https://www.epa.gov/vessels-marinas-and-ports .

NOTE Z
NO-DISCHARGE ZONE, 40 CFR 140

The State of New York waters in the Hudson River from the Battery in Manhattan to the Federal Dam in Troy designated a No-Discharge Zone (NDZ). Under the Clean Water Act, Section 312, all vessels operating within a No-Discharge Zone (NDZ) are completely prohibited from discharging any sewage, treated or untreated, into the waters. All vessels with an installed marine sanitation device (MSD) that are navigating, moored, anchored, or docked within a NDZ must have the MSD disabled to prevent the overboard discharge of sewage (treated or untreated) or install a holding tank. Regulations for the NDZ are contained in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) website: https://www.epa.gov/vessels-marinas-and-ports .

BORROW AREA

Depths deeper than charted may exist in the borrow area in Raritan Bay.

STRONG CURRENTS

Strong tidal currents of up to 5 knots, heavy swirls and heavy traffic in Hell Gate require extra caution on the part of the mariner to avoid accidents and collisions. See U.S. Coast Pilot 2 and the Tidal Current Tables for New York Harbor for additional information.

OBSTRUCTIONS

Numerous snags and obstructions reported along the eastern shore of Newark Bay.

CAUTION

Mariners are warned to stay clear of the protective riprap surrounding navigational light structures.

CHANGEABLE AREA

Great Kills Channel and Harbor are subject to continual change due to shoaling. Buoys may be frequently relocated to mark best water.

SHEEPSHEAD BAY AND APPROACH

Sheepshead Bay and approaches are subject to continual change due to shoaling. Buoys may be frequently relocated to mark best water.

WRECKS

There are dangerous pilings and remains of ruined barges along Shell Bank Channel and Gerritsen Creek.

BRIDGE IN RUINS

Mariners are advised to exercise caution Mill Creek as some parts of the bridge structure have fallen into the water and are an obstruction to navigation.

UNCHARTED PILING

Numerous uncharted pilings may exist throughout Great Kills Harbor.

BORROW AREA

Depths deeper than charted may exist in the borrow areas in Lower Bay.

LOCAL MAGNETIC DISTURBANCE

Differences of as much as 5° from the normal variation have been reported in the vicinity of 40°29.6'N, 74°04.2'W.

NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio station listed below provides continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.
Southard, NJ WXM-60 162.450 MHz

NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio station listed below provides continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.
New York City, NY KWO-35 162.550 MHz