

Lake Erie

Chart Datum, Lake Erie

- (1) Depths and vertical clearances under overhead cables and bridges given in this chapter are referred to Low Water Datum, which for Lake Erie is an elevation 569.2 feet (173.5 meters) above mean water level at Rimouski, QC, on International Great Lakes Datum 1985 (IGLD 1985). (See Chart Datum, Great Lakes System, indexed as such, chapter 1.)

Dimensions, Etc.

- (2) Length, steamer track, Detroit River Lighthouse to Buffalo; 236 miles.
- (3) Length (right line), clear of Point Pelee and Long Point; 241 miles.
- (4) Breadth (right line), Ashtabula to Port Talbot; 57 miles.
- (5) Depth, maximum; 210 feet.
- (6) Water surface of lake; 4,980 square miles (U.S.), 4,930 square miles (Canada).
- (7) Entire drainage basin; 22,980 square miles (U.S.), 9,650 square miles (Canada).

General description

- (8) **Lake Erie** is the southeasternmost and fourth largest of the five Great Lakes. With a greatest depth of 210 feet, it is the shallowest of the lakes and the only one with a floor above sea level. The deepest part of the lake is generally at the east end, while the island region in the west part of the lake is the most shallow. The lake has an average depth of 62 feet. The lake is fed at the northwest end by water from Lake Huron via St. Clair River, Lake St. Clair, and Detroit River. The only natural outlet of the lake is at the northeast end through Niagara River. Welland Canal bypasses the falls and rapids of Niagara River and provides a navigable connection to Lake Ontario.
- (9) The waters of Lake Erie east of Long Point are part of the St. Lawrence Seaway and are under the navigational control of the Saint Lawrence Seaway Development Corporation, a corporate agency of the United States, and the St. Lawrence Seaway Management Corporation of Canada. These agencies issue joint regulations covering vessels and persons using the Seaway. The regulations are codified in **33 CFR 401**, and are also contained in the Seaway Handbook, published jointly by the agencies. A copy of the regulations is required to be kept on board every vessel transiting the Seaway. A schedule of the Seaway tolls is contained in the handbook. (See St.

Lawrence Seaway, chapter 3, and **33 CFR 401**, chapter 2.)

- (10) Extensive waterborne commerce is carried out between the ports on the lake as well as to and from the other lakes. The bulk of commerce on the lake radiates from the mouth of Detroit River to the various ports on the lake, to the Niagara River, and to Welland Canal. Most of the vessel traffic proceeds from the Detroit River through the north part of the island region and Pelee Passage. This is the most important channel of the lake. Vessels plying between Lake Erie and Lake Ontario are restricted in size by the locks in the Welland Canal; the maximum vessel dimensions are 730 feet overall length, 76 feet extreme breadth, and 26 feet draft.

Vessel traffic control

- (11) Lake Erie east of Long Point is Sector 7 of the St. Lawrence Seaway vessel traffic control system. The objective of the system is to provide safe and efficient scheduling of vessel traffic, efficient search and rescue coverage, information regarding pilot requirements to the pilot dispatch centers, marine weather broadcasts, and information on vessel location to all interested parties. St. Catharines traffic control center controls traffic in Sector 7 through "Seaway Long Point," VHF-FM channel 11.

Calling-in point

- (12) Upbound and downbound vessels shall contact "Seaway Long Point" on VHF-FM channel 11 when approximately abeam of the east end of Long Point, ON. After initial contact, downbound vessels shall guard VHF-FM channel 16.
- (13) Complete information on the traffic control sectors and their respective calling-in points is contained in the Seaway Handbook.

Vessel Traffic Service

- (14) The Canadian Coast Guard operates a Vessel Traffic Service in Canadian waters from Long Point in Lake Erie through the Detroit and St. Clair Rivers to De Tour Reef Light in Lake Huron. (See chapter 3 and the Annual Edition of Canadian Notices to Mariners for complete information.)

Fluctuations of water level

- (15) The normal elevation of the lake surface varies irregularly from year to year. During the course of each year, the surface is subject to a consistent seasonal rise

and fall, the lowest stages prevailing during the winter and the highest during the summer.

- (16) In addition to the normal seasonal fluctuations, oscillations of irregular amount and duration are also produced by storms. Winds and barometric pressure changes that accompany squalls can produce fluctuations that last from a few minutes to a few hours. At other times, strong winds of sustained speed and direction can produce fluctuations that last a few hours or a day. These winds drive forward a greater volume of surface water than can be carried off by the lower return currents, thus raising the water level on the lee shore and lowering it on the windward shore. This type of fluctuation has a very pronounced effect on Lake Erie, because it is the shallowest of the Great Lakes and affords the least opportunity for the impelled upper water to return through lower return currents beneath the depth disturbed by storms. As a result, the water level in the harbors, particularly those at the ends of the lake, fluctuates markedly under the influence of the winds; the amount of fluctuation depends on the direction, strength, and duration of the wind. Fluctuations as great as 10 feet and lasting as long as 12 hours have been observed. September through April is the most likely period, particularly November, December, and January. At the east end of the lake, west winds pile up water in Buffalo Harbor and increase the depth in Niagara River, while east winds drive the water out of Buffalo Harbor and decrease the flow and depths in Niagara River. The winds produce exactly the opposite effect at the west end of the lake; the greatest effects are at Sandusky, Toledo, and the mouth of Detroit River. Intermediate points are not subject to level changes as great as those at the ends of the lake. Along the south shore, fluctuations caused by winds are generally less than 1 foot above or below normal; extreme fluctuations of about 2 feet above or below normal may occur.

- (17) Water level information for the Buffalo area may be obtained by contacting Buffalo Coast Guard Sector on VHF-FM channel 16; for the Toledo area by contacting Toledo Coast Guard Station, same channel; for the Gibraltar area by contacting Detroit Coast Guard Sector, same channel. The information is given in whole inches above or below chart datum.

Weather, Lake Erie

- (18) Strong winds are mostly likely in autumn during the navigation season; November and December are the worst as gales blow 6 to 9 percent of the time. However, Lake Erie's maximum wind occurred in July, north-northwest at 87 knots. Reported by two vessels, these winds were triggered by an Independence Day (1969) squall line. Gales, however, are encountered less than 1 percent of the time from May through September. Summer winds blow mainly out of the south through west, particularly southwest. These directions are also favored during other seasons along with northwesterlies and northeasterlies.

- (19) The shallowness and orientation of Lake Erie make it susceptible to southwest and northeast winds, which can quickly raise dangerous seas and, if persistent, create a dangerous surge problem at both ends of the lake. Rough seas are most frequent in autumn and in the east half of the lake. Waves of 10 feet (3 m) or more can be expected up to 3 percent of the time in the east, while seas of 5 feet (1.5 m) or more are encountered 30 percent of the time lakewide; extremes of 15 to 20 feet (4.5 to 6 m) have been encountered.

- (20) Poor visibility is mainly a spring and autumn navigational problem. Over open waters, spring is the most prevalent fog season. Visibilities of less than 0.5 statute mile (0.4 nm) occur up to 5 percent of the time. Visibilities of 2 statute miles (1.7 nm) or less occur 5 to 10 percent of the time during most of the navigation season. The shoreline is susceptible to both autumn radiation fogs and early spring advection fogs. Fog is more frequent along the north shore.

- (21) The visibilities at **Simcoe, ON**, drop to less than 0.5 statute mile (0.4 nm) on an average of 46 days annually compared to a range of 15 to 23 days along the south shore. At Simcoe this includes about 4 to 6 days of fog per month in autumn and early spring, about twice as many days as Buffalo, Erie, or Toledo.

- (22) Thunderstorms are responsible for some of the strongest winds on the lake. They are generally a problem from April through September, but can occur at any time. Over the open lake, they occur 1 to 3 percent of the time with a peak during the summer months. They are most likely between sunset and sunrise. Onshore they most often occur during the late afternoon, on 25 to 30 days annually. During June, July, and August, they blow on 5 to 10 days per month.

Ice

- (23) The west end of Lake Erie is very shallow and freezes rapidly, the time of occurrence depending heavily on the temperatures. The ice attains an average thickness of 7 inches and an average maximum thickness of 11 inches. In Maumee Bay, the ice forms a solid sheet about 12 to 18 inches thick. The track through the channel to Toledo remains open except for a 3-foot thickness of brash ice, a slush ice under the refrozen surface. In South Passage, the ice reaches a thickness of about 18 inches because of slight rafting and ridging. During severe winters, thicknesses to 24 inches and windrows 5 feet high have been observed. By mid-March, the ice in the west end of the lake starts to clear because of the temperatures and the prevailing west winds. The ice in this area is field ice and covers over an opened track.

- (24) The central part of the lake remains open through January except for a few strips of thin ice. Growth is rapid in February, and high concentrations of thin ice develop by mid-month. By early March, medium-thickness lake ice predominates, with somewhat better conditions along the Canadian shore. Decay and clearing is rapid in mid-March, and the remaining pack is

usually concentrated east of Long Point by the end of the month.

- (25) In the east part of the lake, ice begins to form in early to mid-January and may reach a thickness of 8 to 12 inches by the end of the month. The solid ice increases to 16 to 20 inches thick by the end of February. In Buffalo Harbor, an average thickness of 9 inches and an average maximum thickness of 18 inches can occur. In the lake, the prevailing west winds usually jam and pack the ice to form considerable windrows. Extremely hard pressure ridges 3 to 4 feet thick are not uncommon in February and March. As the ice on the rest of the lake begins to break up, the winds force it into the east end of the lake, and it completely blocks the approach to Buffalo Harbor. The soft deteriorating ice forms mush ice about 3 to 6 feet deep, interspersed with pressure ridges 4 to 6 feet deep. The mush ice has been reported as much as 20 feet deep in places. Rafted ice fields 15 to 20 feet above the water level have occurred during severe winters; under these conditions, ice can persist thought late May. (See Winter Navigation, chapter 3.)

Submerged wellheads and pipelines

- (26) Mariners are cautioned that oil and gas drilling towers are temporarily established in various parts of Canadian waters of Lake Erie. These towers have a quick flashing white light and a sound signal that sounds one blast of 2 seconds duration followed by 18 seconds of silence.
- (27) There are many submerged gas pipelines and wellheads in the Canadian waters of Lake Erie; most of them are shown on the charts. Damage to these structures can be extremely hazardous because the natural gas is flammable, under pressure and contains toxic chemicals. Mariners are cautioned not to anchor in the vicinity of the submerged structures.

Fish netting areas

- (28) In parts of Lake Erie that are intensively fished, gill nets, impounding nets, and trap nets may create a hazard to navigation. The areas most intensively fished and the principal type of nets employed are shown in an inset on NOAA chart 14820. However, fishing gear may be encountered at any location in the lake.

Routes

- (29) The Lake Carriers' Association and the Canadian Shipowners Association have recommended, for vessels enrolled in the associations, the following separation of routes for upbound and downbound traffic in Lake Erie.
- (30) Downbound: Vessels leaving the Detroit River for ports east of Middle Ground Shoal shall continue on course **164°** until 0.9 mile beyond **East Outer Channel Light 1E**; thence **095°** for 27 miles for **Pelee Passage Traffic Lighted Buoy P**; thence **122°** for 8.5 miles to pass one mile south of Southeast Shoal Light.
- (31) Downbound vessels for Port Colborne or Buffalo, from point of departure, Southeast Shoal, shall lay a

course of **071°** for 135 miles to pass not more than 9 miles off Long Point; then steer **054°** for 45 miles to Port Colborne or steer **063°** for 60 miles to Buffalo.

- (32) Upbound vessels from Port Colborne or Buffalo, to a point on the south shore, east of Marblehead, lay a course to pass not over 5 miles off **Presque Isle Light**. The course from Port Colborne is **228°** for 62 miles, and the course from Buffalo is **236°** for 77 miles.
- (33) Upbound vessels for Southeast Shoal from Port Colborne or Buffalo lay a course to pass not over 3 miles off Long Point. The course from Port Colborne is **241°** for 44 miles, and the course from Buffalo is **248°** for 60 miles; then steer **249°** for 134 miles to a position 1 mile south of Southeast Shoal.
- (34) Upbound vessels for **Detroit River Light** departing from a position 1 mile south of **Southeast Shoal Light** shall steer **302°** for 8.5 miles to a position **323°** 1.75 miles from Pelee Passage Light, then steer **275°** for East Outer Channel Light 1E.
- (35) For Toledo and Monroe, when 0.75 mile off Pelee Passage Light steer **272°** to pass 1.5 miles north of Middle Sister Island Light, thence to destination.
- (36) It is understood that masters may exercise discretion in departing from these courses when ice and weather conditions are such as to warrant it. The recommended courses are shown on chart 14820, Lake Erie.

Pilotage

- (37) The following waters of Lake Erie are Great Lakes designated waters: in the approach to Welland Canal within an arc drawn 1 mile to south of the outer light on the west breakwater at Port Colborne (Port Colborne Outer Light); west of a line on a bearing of about **026°** from Sandusky Harbor Breakwater Light to Southeast Shoal Light; and within a radius of 1 mile east of Sandusky Harbor Breakwater Light. Registered vessels of the United States and foreign vessels in these waters are required to have in their service a United States or Canadian registered pilot. The remaining waters of Lake Erie are Great Lakes undesignated waters; the above vessels are required to have in their service a United States or Canadian registered pilot or other officer qualified for Great Lakes undesignated waters. Registered pilots for the Welland Canal are supplied by Great Lakes Pilotage Authority, Ltd., St. Catharines, and for Lake Erie by Great Lakes Pilotage Authority, Ltd., St. Catharines, and Lakes Pilots Association. (See Appendix A for addresses.) Pilot exchange points are 1 to 2 miles south of Port Colborne and just below the Ambassador Bridge on the Detroit River. The pilot boat in the Detroit River, J. W. WESTCOTT II, has a black hull encircled by an orange band and a white cabin with the words "U.S. Mail" in black letters. (See Pilotage, chapter 3, and **46 CFR 401**, chapter 2.)

Principal ports

- (38) The principal ports on Lake Erie are Buffalo, NY; Erie, PA; and Conneaut, Ashtabula, Fairport Harbor,



Cleveland, Lorain, Huron, Sandusky, and Toledo, OH. Companies at several of the ports make above-the-waterline repairs to deep-draft vessels.

of Grand Island. The boundary again follows a general middle of the river course around the south side of **Goat Island** and over Niagara Falls.

Charts 14822, 14832, 14833

Niagara River above Niagara Falls

(39) At its east end, Lake Erie becomes comparatively narrow and has its outlet in the Niagara River. From the head of the river, it is about 20 miles to the falls and rapids of **American Falls** and **Horseshoe Falls**. About 5 miles below the head, the river is divided into two channels by **Strawberry Island** and **Grand Island**. **Tonawanda Channel** and **Niagara River Channel**, the U.S. channels, lead to the east of these islands, and **Chippawa Channel**, the Canadian channel, leads to the west of these islands. At the lower end of Grand Island, the channels rejoin and lead for about 3.5 miles to the falls.

(40) The **International boundary** between the United States and Canada follows a general middle of the river course in the upper Niagara River from the head of the river downstream to the head of Grand Island where the river forks around the island. The boundary then follows Chippawa Channel and is generally less than 1,000 feet off the west shore of Grand Island until Chippawa Channel and Niagara River Channel join at the northwest end

Chart Datum, Upper Niagara River

(41) Depths and vertical clearances under overhead cables and bridges in the Niagara River from its confluence with Lake Erie to the head of navigation, the turning basin at Niagara Falls, NY, is as follows: from Lake Erie to the Black Rock Canal Lock is the Low Water Datum of Lake Erie, 569.2 feet (173.5 meters); from just below the Black Rock Canal Lock to the south end of Grand Island is the sloping surface of the river, when the water surface just below the lock is at 564.4 feet (172.03 meters) and the Huntley Station gauge (at Niagara Mohawk Power Corporation plant) reads 563.8 feet (171.85 meters); from the south end of Grand Island to the south end of Tonawanda Island is the sloping surface of the river, when the Huntley Station gauge reads 563.8 feet (171.85 meters) and the gauge at Tonawanda Island reads 563.4 feet (171.73 meters); from the south end of Tonawanda Island to the turning basin at Niagara Falls, NY, is the sloping surface of the river, when the gauge at Tonawanda Island reads 563.4 feet (171.73 meters) and the gauge at Power Plant Intakes reads 561.5 feet (171.13 meters). All elevations are above mean water level at Rimouski, QC, on International Great Lakes Datum 1985 (IGLD 1985). (See Chart Datum, Great Lakes System, indexed as such, chapter 1.)

Fluctuations of Water Level

- (42) Variations in Lake Erie levels above or below Low Water Datum are reflected in Niagara River levels. The amount of the variation ranges from the full Lake Erie variation at the head of the river and gradually diminishes downstream to the vicinity of Chippawa, ON, just above Niagara Falls.
- (43) From Lake Erie, the fall of the Niagara River is about 10 feet to the head of the upper rapids near the junction with the Welland River. Just below the Welland River entrance, about 1.2 miles east of Goat Island, the Niagara waters begin their rapid descent to the level of Lake Ontario through the rapids above the falls, the great falls themselves, and the rapids below the falls. From the upper rapids, the fall of the river to Lake Ontario is about 316.5 feet.

Currents

- (44) For about 1.7 miles, from its head to just above Peace Bridge, the river is wide, shallow, and rocky, and the current is from 2 to 3 mph. Just above the Peace Bridge, the river becomes a narrow gorge for about 2 miles to the lower end of Squaw Island. In the upper part of this gorge, the river is shallow, and the currents are about 8 mph at low to mean river stages and 9 mph at high stages. In the lower part of the gorge, the river is deeper and somewhat wider.
- (45) In 1986, with water level at 4.8 feet above low water datum, speed of the current was 7.7 to 9.7 knots.
- (46) Currents just below the International Bridge have speeds of 4 mph at low to mean river stages and 4.75 to 5 mph at high stages. In Tonawanda and Chippawa Channels, the currents vary from 1 to 4 mph.

Channels

- (47) Black Rock Canal is the recommended route from Lake Erie to facilities in the Niagara River below **Squaw Island**. The channel formerly dredged in the open river west of Bird Island and Squaw Island has shoaled to depths of 10 feet or less. The bottom in this reach is generally rocky, and the currents are strong and variable. Great care should be exercised in navigating this section of the river.
- (48) A floating steel pontoon ice boom is placed across the entrance to the head of the Niagara River during the winter. In any one year, installation of the boom shall not commence prior to December 16 or prior to the water temperature at the Buffalo water intake reaching 4°C (39°F), whichever occurs first. The boom shall be opened by April 1, unless there is more than 250 square miles of ice east of Long Point (42°33'N., 80°03'W.); complete disassembly and removal of all floatation equipment shall be completed within two weeks thereafter.
- (49) **Black Rock Canal** provides a safe passage for vessels around the rapids and shoals in the head of the Niagara River.

- (50) The Lake Erie entrance to Black Rock Canal is through Buffalo Harbor North Entrance Channel and across the northern section of Outer Harbor to Black Rock Canal Entrance Channel. From its entrance, the canal leads northward along the Buffalo front, parallel with the river and separated from it by **Bird Island Pier** and Squaw Island. Bird Island Pier and Squaw Island retain the canal pool from the west, and, along with Black Rock Lock, serve to keep the canal level at the same elevation as the water surface of Lake Erie.
- (51) From Black Rock Lock at the northern end of Squaw Island, a dredged channel continues northward through Tonawanda Channel for about 9 miles to a turning basin on the north side of **Tonawanda Island** at North Tonawanda.
- (52) From Buffalo North Entrance Channel through Black Rock Canal and Lock to and in the turning basin north of Tonawanda Island, the Federal project depth is 21 feet. (See Notice to Mariners and the chart for controlling depths.)
- (53) From the downstream end of the turning basin at North Tonawanda, Niagara River Channel leads along the north side of Grand Island to a basin off the public dock at Niagara Falls, NY.
- (54) Black Rock Canal and the dredged channels leading to the turning basin north of Tonawanda Island are marked by lights, buoys, and lighted ranges.
- (55) Passing down the Niagara River from Lake Erie toward Niagara Falls is considered "proceeding from seaward." Buoyage in the river and the Black Rock Canal is based on this convention. Red buoys are on the right-hand side, looking downstream, and green on the left-hand side.
- (56) **Black Rock Lock** connects the canal with the river near the foot of Squaw Island. The lock has a usable length of 625 feet with a clear width of 68 feet and a depth of 21 feet over the sills. The lock has an average lift of 5.2 feet.
- (57) The lockmaster monitors VHF-FM channels 16 and 12, call sign WUD-21 or voice call Black Rock Lock. A vessel desiring passage through the lock is requested to contact the lockmaster by radio, or telephone 716-876-5454, well in advance of her arrival at the lock. (See **33 CFR 207.590**, chapter 2, for details on establishing early communications with the lockmaster.)
- (58) Effective in 1969, all vessels transiting the Black Rock Canal shall adhere to the following when entering or departing the Black Rock Lock. These controls, including the whistle signal of two long and two short blasts, are in addition to the regulations and information otherwise noted in this Coast Pilot.
- (59) 1. Maintain only that speed which is necessary to provide sufficient control of the vessel and reasonable headway.
- (60) 2. Refrain from using bow thruster either in the lock chamber or in the canal from the signal light on the upper east wall to the lower end of the east wall.

(61) Vessels are requested to follow these procedures in order that damage to the operating gates may be prevented.

(62) Lockage for pleasure craft is scheduled downbound on the hour, upbound on the half hours, commercial traffic permitting.

(63) The following signals control the movement of vessels through Black Rock Lock:

(64) For downbound (northbound) traffic, a signal light mounted on a standard on the east approach wall at the entrance to the lock chamber shows green to indicate a clear entrance into the lock chamber. When this signal is red, the downbound vessel will moor at the east approach wall until such time as clear entrance to the lock is indicated by the green light.

(65) For upbound (southbound) traffic approaching the lock from the Niagara River channel, a signal light shows green to indicate a clear entrance to the lock chamber and red to indicate that the lock chamber is closed.

(66) **Bird Island** is on the west side of the Black Rock Canal about 1.3 miles below the entrance. Piers that enclose the canal extend south from Bird Island and north to connect with Squaw Island. A **special anchorage** is on the north and south sides of Bird Island. (See **33 CFR 110.1 and 110.84**, chapter 2, for limits and regulations.)

(67) **Caution.**—The canal generally has a slight current downstream. During rapidly rising or high water in Lake Erie, there is a strong crosscurrent at the south end of Bird Island Pier.

Bridges

(68) Three bridges cross Black Rock Canal. Peace Bridge, 2 miles below the south entrance, has a fixed span with a clearance of 100 feet. An overhead power cable 0.2 mile below the bridge has a clearance of 144 feet. Ferry Street Bridge, 2.6 miles below the entrance, has a bascule span with a clearance of 17 feet for 86 feet from the east abutment, thence decreasing to 12 feet at the west abutment. The bridgetender monitors VHF-FM channel 16 and works on channel 12. International Bridge, with a combined rail and highway swing span 3.8 miles below the entrance, has a clearance of 17 feet. An overhead power cable, 500 feet southeast of the bridge, has a reported clearance of 121 feet. (See **33 CFR 117.1 through 117.49 and 117.769**, chapter 2, for drawbridge regulations.)

Regulations

(69) A **speed limit** of 6 mph (5.2 knots) is enforced in Black Rock Canal. (See **33 CFR 162.175 and 207.590**, chapter 2, for canal regulations.)

(70) The canal has no docks or facilities for mooring large vessels. The Buffalo Yacht Club maintains a small-craft basin on the canal adjacent to the Buffalo

waterworks pumping station. Downstream from the yacht club basin, a berthing area about 12 feet deep has been dredged for the U.S. Naval and Marine Corps Reserve Training Center. Several small-craft facilities are on **Scajquada Creek**, which enters the canal about 0.5 mile southeast of the lock. Transient berths, gasoline, water, electricity, marine supplies, a launching ramp, a 4-ton mobile crane, and hull and gasoline engine repairs are available. In 1977, 4 feet was reported available in the approach and alongside the berths.

(71) **Peace Bridge** crosses the open Niagara River about 1.5 miles from the head. The bridge has several fixed spans with center clearances of 56 to 91 feet. The normal vessel route is under the fourth span from the U.S. mainland (the first being the bowstring truss over the Black Rock Canal). This span has a clearance of 67 feet at the center. An intake crib marked by a light is just downstream of the third span from the U.S. mainland. Navigation through this span is difficult in the turbulent current.

(72) An overhead power cable with a clearance of 126 feet crosses the river 0.2 mile downstream of Peace Bridge.

(73) **International Bridge** crosses the river about 1.5 miles below Peace Bridge. This railroad bridge has fixed spans with clearances of 22 feet.

(74) Just below International Bridge on each side of the river are submerged flowmeter pilings about 13 feet below the water surface.

(75) **Fort Erie, ON** is a community on the west side of the head of the Niagara River.

(76) **Lower Black Rock Harbor** is the name applied to the part of Buffalo which fronts on the Niagara River below Black Rock Lock. The harbor is about 0.75 mile long with the upper part between the lock and the mainland. Loaded vessels should use the Black Rock Canal to approach the harbor. Approaching from the open river, the current passing the guide pier below the Black Rock Lock creates a powerful eddy with water flowing upstream along the U.S. side for more than 0.5 mile below the lock. Caution is advised when entering the harbor or docking. The harbor has several marinas. Transient berths, gasoline, diesel fuel, water, ice, electricity, marine supplies, a launching ramp, mobile lifts to 30 tons, and hull, engine, and electronic repairs are available. In 1977, depths of 7 to 12 feet were reported alongside the berths.

(77) Just below Black Rock Lock, **Strawberry Island** divides the Niagara River into Chippawa Channel and Tonawanda Channel, leading west and east, respectively, of Grand Island. **Chippawa Channel** extends from Strawberry Island for about 11 miles along the southwest and west sides of Grand Island to **Navy Island** at the downstream end. The channel leads around either side of Navy Island and joins Niagara River Channel to flow to **Niagara Falls**. In 1982, Chippawa Channel had a reported controlling depth of about 9 feet with shallower depths along the shores. Both sides of Navy Island

have good channels but care must be taken to avoid the shoals that extend off the south and northwest tips of the island.

(78) Chippawa Channel has several small-craft facilities on both the Grand Island, United States, side of the channel and the mainland Ontario side. Beaver Island State Park Marina is at the south end of Grand Island. Transient berths, water, electricity, and sewage pump-out facilities are available. In 2002, depths of 5 feet were reported in the entrance with 4 feet alongside the berths. Big Six Mile Creek Marina is on the west side of Grand Island about 7.5 miles from the upper end of the channel. Transient berths, gasoline, water, electricity, sewage pump-out facilities, and launching ramps are available. In 1977, depths of 8 feet were reported in the entrance with 6 to 10 feet alongside the berths reported in 1982. A fixed highway bridge and two overhead cables crossing the entrance have a reported least clearance of 16 feet.

(79) The Niagara Parks Commission marina, on the Canadian side of Chippawa Channel opposite Beaver Island State Park, has gasoline, diesel fuel, and sewage pump-out facilities. Depths of 10 feet are reported alongside the marina wharf.

(80) **Tonawanda Channel** extends from Strawberry Island for about 8.5 miles along the east side of Grand Island to Tonawanda Island and the adjoining cities of Tonawanda and North Tonawanda. The dredged and natural channel through this stretch was previously described.

(81) **South Grand Island Bridge**, crossing the channel about 3.4 miles below Strawberry Island, has twin fixed highway spans with a clearance of 99 feet at the center of the central spans. Vessels requiring the full height should keep at least 90 feet from the face of the piers. Two overhead power cables with a minimum clearance of 115 feet cross the channel about 0.75 mile downstream of the bridge.

Wharves

(82) Several deep-draft facilities are in Tonawanda Channel on the east side of the river. (For a complete description of the port facilities, refer to Port Series No. 41, published and sold by the U.S. Army Corps of Engineers. See Appendix A for address.) The depths alongside are reported depths. (For latest depths, contact the operators.)

(83) **C. R. Huntley, Station Coal Wharf:** (42°58'03"N., 78°55'47"W.); 753-foot face; 17 to 21 feet alongside; deck height, 10 feet; open storage for 500,000 tons of coal; rail connections; receipt of coal; owned and operated by Niagara Mohawk Power Corp.

(84) **Marathon Petroleum Co. Wharf:** (48°59'00"N., 78°56'30"W.); 1,120-foot face; 1,410 feet with dolphins; 22 feet alongside; deck height, 8 feet; tank storage for 162,000 barrels of asphalt; receipt of asphalt by barge; owned and operated by Marathon Petroleum Co.

(85) **NOCO Energy Corp. Wharf:** about 700 feet south of South Grand Island Bridge; 400 feet of berthing space with dolphins; 22 feet alongside; deck height, 12 feet; storage tank capacity of 1,066,150 barrels; receipt and shipment of petroleum products and chemicals; owned and operated by NOCO Energy Corp.

(86) **Ashland Oil Wharf:** about 0.3 mile south of South Grand Island Bridge; 330 feet of berthing space with dolphins; 22 feet alongside; deck height, 7 feet; tank storage capacity of 200,000 barrels; receipt of petroleum products; owned and operated by Ashland Oil, Inc.

(87) Several marinas on both sides of Tonawanda Channel between Strawberry Island and South Grand Island Bridge provide transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, marine supplies, and launching ramps. Mobile lifts to 40 tons are available for hull, engine, and electronic repairs. In 1977, depths of 25 feet and less were reported alongside the berths.

(88) **Tonawanda Harbor**, about 12 miles via Tonawanda Channel below the head of the Niagara River, is the west terminus of the New York State Barge Canal. The harbor comprises the river frontage of **Tonawanda, NY**, and **North Tonawanda, NY**; **Tonawanda Creek**, which separates the two cities, for about 1,400 feet to the Main-Webster Street Bridge; and all of the waterfront of Tonawanda Island, which lies in the river off the main shore.

(89) The part of Tonawanda Harbor extending south from the North Tonawanda turning basin along the east side of Tonawanda Island has depths of about 15 feet with depths of 12 feet in Tonawanda Creek from the mouth to the highway bridge 0.2 mile above the mouth.

Bridges

(90) Two bridges cross Tonawanda Harbor from the south part of Tonawanda Island to the mainland. Frederick B. Durkee Memorial Bridge is a fixed highway span with a clearance of 14 feet at the center. A railroad swing bridge just south has a clearance of 10 feet, but is being maintained in the open position. (See **33 CFR 117.1 through 117.59 and 117.811**, chapter 2, for drawbridge regulations.)

(91) Three bridges cross the lower part of Tonawanda Creek. A railroad swing bridge just above the mouth has a clearance of 9 feet. (See **33 CFR 117.809**, chapter 2, for drawbridge regulations.) The bridge is maintained in the open position. Fixed highway bridges 0.2 and 0.3 mile above the mouth have clearances of 24 and 15 feet, respectively.

(92) A **speed limit** of 5 mph (4.4 knots) is enforced in the harbor and in Tonawanda and Ellicott Creeks within the Tonawanda and North Tonawanda city limits. The **harbormasters** of both communities and the sheriff of

Erie County enforce these laws and can be contacted through their respective departments.

(93) Several marinas in the harbor provide transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, and marine supplies. Mobile lifts to 40 tons are available for hull, engine, and electronic repairs. In 1977, depths of 8 to 13 feet were reported alongside the berths.

(94) The **New York State Canal System** is entered through Tonawanda Creek. (The canal system is described in chapter 14.)

(95) **Niagara River Channel**, a dredged channel, leads from the lower end of the turning basin at North Tonawanda along the north side of Grand Island to a basin off the public dock at Niagara Falls, NY. In 2007, the controlling depth was 12 feet with lesser depths to 10 feet along the edges; the channel is marked by lighted buoys.

(96) **Cayuga Island**, close to the north shore of Niagara River Channel about 5 miles below Tonawanda Island, is separated from the mainland by **Little River**, which outlets at either end of the island. **Cayuga Creek** flows into Little River at about midlength of the island. Little River and Cayuga Creek afford a well-protected harbor for small craft. A dredged channel leads from deep water in Niagara River through the lower entrance to Little River. In 1977, the reported controlling depth was 5 feet. The upper entrance to Little River, marked by a private **344°** range, had a reported controlling depth of 4 feet in 1980. Depths inside are about 4 to 7 feet. A fixed highway bridge with a reported clearance of 10 feet crosses Little River just west of the mouth of Cayuga Creek. An overhead cable with a clearance of 55 feet crosses the river about 0.35 mile west of the bridge. A fixed highway bridge crossing Cayuga Creek just above the mouth has a clearance of 9 feet.

(97) A marina on the north side of the lower entrance to Little River provides gasoline, ice, a launching ramp, a 2-ton lift, and hull and engine repairs.

(98) **Buckhorn Island** is at the northwest end of Grand Island opposite Niagara Falls, NY. A two-section permanent flow control dike extends northwest from the west end of Buckhorn Island closing off the former Buckhorn Channel. Lights mark the ends of the dikes.

(99) An unmarked **dumping ground** is between the dredged portion of Niagara River Channel and the northeast end of Buckhorn Island; caution is advised.

(100) **North Grand Island Bridge**, a twin fixed highway bridge, crosses the river between Niagara Falls, NY, and Buckhorn Island. The vertical clearance is 44 feet through the central spans where Niagara River Channel passes. Two overhead power cables crossing the river about 0.5 and 0.7 mile below the bridge have clearances of 79 and 75 feet, respectively. Cable support towers in the river are marked by lights.

(101) **Niagara Falls, NY**, is on the north shore of the Niagara River at the west end of Niagara River Channel.

A public dock on the north side of the dredged basin at Niagara Falls provides 300 feet of berthing space with 4 feet reported alongside in 1977.

Weather, Niagara Falls

(102) Niagara Falls, NY, located in extreme northwestern New York is on the isthmus between Lake Ontario and Lake Erie. The average annual temperature is 48°F (8.9°C) with an average maximum of 56°F (13.3°C) and an average minimum of 40°F (4.4°C). The all time extremes in temperature are 96°F (35.6°C) and -16°F (-26.7°C). July is the warmest month averaging 72°F (21.7°C) and January the coolest, averaging 24°F (-4.4°C). June through September have each recorded temperatures in excess of 90°F (32.2°C) and every month except June, July, and August have seen temperatures below freezing (0°C).

(103) The average annual precipitation for Niagara Falls is 33.93 inches (861.8 mm) which is fairly evenly distributed throughout the year. The wettest month is August with 4.31 inches (109.4 mm) and the driest, June, averages only 1.87 inches (47.5 mm). Snow fall averages about 66 inches (1676 mm) each year. December, January, and February each average greater than 15 inches (381 mm) per year with a slight maximum in January. Snow has fallen in every month except June, July, and August.

(104) The prevailing wind direction in Niagara Falls is southwest, off the lake, throughout the year.

(105) (See Appendix B for **Niagara Falls climatological table**.)

(106) Niagara Falls is a **customs port of entry**.

(107) Southwest of Niagara Falls, NY, Niagara River Channel and Chippawa Channel join, and the Niagara River, more than 1 mile wide at the junction, flows west for almost 3 miles to the falls. In this stretch above the falls, the river becomes quite shallow with numerous submerged rocks. The deeper water is generally close to the south shore west of Navy Island as far as Chippawa, ON.

(108) **Chippawa, ON**, is on the south shore of the Niagara River about 1.8 miles above Niagara Falls, at the junction with the **Welland River**. At the junction of the two rivers are the intake structures of the Queenston plant of the Ontario Hydro-Electric Power Commission. Because of the intake structures, the flow of the Welland River has been reversed and is now from the Niagara River. Mariners are cautioned that the current in the Niagara River at the entrance to the Welland River is very strong. From the entrance, the power commission has dredged the Welland River to a depth of 30 feet for about 4 miles. Above this point, the controlling depth is about 6 feet.

(109) The United States and Canadian Governments have designated the Niagara River for about 2 miles above the falls a safety zone. (See **33 CFR 165.1 through 165.7**,



165.20 through 165.25, and 165.902, chapter 2, for limits and regulations in U.S. waters.)

Canadian Regulations Respecting Navigation on the Upper Niagara River

- (110) 1. These Regulations may be cited as the Upper Niagara River Regulations.
- (111) 2. In these Regulations,
- (112) (a) "Upper Niagara River" means the Canadian Waters of the Niagara River between the crest of Horseshoe Falls at Niagara Falls, ON, and the Peace Bridge at Fort Erie, ON; and
- (113) (b) "vessel" means any ship or boat or any other description of vessel used or designed to be used in navigation.
- (114) 3. No vessel shall navigate the Upper Niagara River downstream of a straight line joining the end of the breakwater at the mouth of the Welland River to the west side of the mouth of Gill Creek at Niagara Falls, NY, except for the purpose of saving life in an emergency.
- (115) 4. The Minister of Transport may exempt any vessel from compliance with these Regulations.
- (116) 5. (1) A person who violates the provisions of section 3, is guilty of an offence and liable on summary conviction to a fine not exceeding five hundred dollars.
- (117) (2) A person who
- (118) (a) operates any vessel contrary to the provisions of section 3;

(119) (b) is a party to any act described in paragraph (a);
or

(120) (c) is the owner, charterer, hirer, master or person in charge of a vessel that is operated contrary to the provisions of section 3 shall be deemed to have violated those provisions unless, in any prosecution for such violation, he establishes that the act in respect of which the prosecution has been commenced took place without his consent and that he exercised all due diligence to prevent its commission.

Charts 14822, 14832, 14833

- (121) **Buffalo Harbor** is at the east end of Lake Erie, where the lake converges to an open and comparatively shallow bay about 8 miles across north and south and is subject to great storms from the southwest. The lake discharges into the Niagara River at the northeast corner of this bay. The city of **Buffalo, NY**, is along the east lakeshore and the east bank of the head of the Niagara River. **Buffalo River** meanders through the city from east to west and enters the lake near the head of the Niagara River.
- (122) Waterborne commerce at the port is in iron ore, limestone, iron and steel products, petroleum and coal products, grain, sand, tar, cement, salt, other minerals, and general and containerized cargo in the foreign and domestic trades.

Prominent features

(123) The stacks of Bethlehem Steel Corp. at Lackawanna near the south end of the harbor are the most conspicuous objects when approaching Buffalo Harbor. Also prominent are the HSBC Bank building and the City Hall tower in downtown Buffalo.

(124) **Buffalo Harbor Light** (42°52'14"N., 78°54'09"W.), 71 feet above the water, is shown from a white tower on the south end of the detached west breakwater on the north side of Buffalo Harbor North Entrance Channel. A mariner activated sound signal is at the light, initiated by keying the microphone five times on VHF-FM channel 83A.

Channels

(125) A Federal project provides for dredged channels in an **Outer Harbor** formed by breakwaters parallel with the shore and in **Buffalo River**, **Buffalo Ship Canal** and **Black Rock Canal**. (See Notices to Mariners and the latest edition of the chart for controlling depths.)

(126) The north and south entrances to the Outer Harbor are marked by lights on the ends of the breakwaters; the north entrance is also marked by lighted buoys. There is a strong north current across the north entrance channel; navigators should guard against this by holding up toward the south. The Outer Harbor provides a safe harbor of refuge and anchorage and is also used extensively by large lake vessels as a channel. Vessels seeking anchorage and small vessels passing along the breakwaters are cautioned against approaching them nearer than 100 feet in order to avoid striking the stone riprap.

(127) **Lackawanna Canal** extends south for 0.75 mile from the south end of the Outer Harbor. The entrance is marked by private lights. In 1977, the reported controlling depth was 26½ feet.

(128) **Union Canal** extends east for about 0.8 mile from the south end of the Outer Harbor. In 1977, the controlling depth in the dredged section was 20½ feet.

(129) The dredged section of the **Buffalo River** extends southeast and then generally east for about 5.8 miles from the north end of the Outer Harbor to the ConRail railroad bridge. The entrance to the river is marked by lights and buoys. The river is subject to extensive shoaling. Navigation is possible above the dredged channel to Bailey Avenue Bridge, however, submerged rocks above the bridge render navigation very hazardous.

(130) From about 1,000 feet downstream from the junction of the Buffalo River and Buffalo Ship Canal upstream for about 1 mile, the river bottom is soft clay and mud overlying rock to a depth ranging from 1 to several feet. Vessels grounding in this portion of the river are seldom damaged by contact with the bottom. Above this point for about 1 mile, the channel is cut through solid rock.

(131) **Buffalo Ship Canal** extends southeast for about 1.4 miles from the inner end of Buffalo River Entrance Channel.

(132) **Black Rock Canal Entrance Channel**, marked by lights and buoys, extends north from the north end of the Outer Harbor. Black Rock Canal is the navigable channel of the upper Niagara River as far north as Tonawanda and is discussed more fully under Niagara River. The Lake Erie west terminus of the Erie branch of the New York State Canal System is at Tonawanda.

Anchorage

(133) The Outer Harbor is all good anchorage ground, except that the bottom is very soft clay south of the middle gap of the breakwaters. There are about 22 large mooring rings on the breakwater adjoining the North Entrance Channel and 25 on the breakwater adjoining the South Entrance Channel. Vessels are permitted to moor to the breakwaters with manila or synthetic lines, but not with wire rope or chains. Vessels are requested not to anchor north of Berthing Area 11. Vessels not longer than 550 feet will be permitted to anchor in Berthing Areas 11 through 17. However, no anchorage will be permitted in Berthing Areas 11 through 24 until vessel traffic to the Niagara Frontier Transportation Authority pier at the foot of Michigan Avenue has south ended for the navigation season, and then only by permission from the District Engineer, U.S. Army Corps of Engineers, Buffalo, NY. Anchorage will be permitted in berthing areas south of Berthing Area 24 with no restrictions as to length of vessel. The berthing areas are all marked by large orange numbers painted on the harbor face of the breakwaters.

(134) An explosives anchorage is in Outer Harbor. (See **33 CFR 110.1 and 110.208**, chapter 2, for limits and regulations.)

(135) A special anchorage is in the small-craft basin on the east side of Outer Harbor. (See **33 CFR 110.1 and 110.84b**, chapter 2, for limits and regulations.)

Dangers

(136) Numerous unmarked detached shoal spots with depths less than 30 feet are in the east end of Lake Erie, in the approaches to Buffalo Harbor and the Niagara River. **Waverly Shoal**, with a least depth of 10 feet, is 1.9 miles west-southwest of Buffalo Harbor Light. Depths of 18 feet extend about 0.4 mile north and 1 mile south from the shallowest part of the shoal.

(137) Unmarked 20-foot shoals are 1.4 and 2.6 miles southwest of Buffalo Harbor Light.

(138) An artificial reef is 1.9 miles south-southeast of Buffalo Harbor Light in about 42°50'41"N., 78°53'27"W.

Local bridge regulations

(139) **Sec. 305. Bridge Control and Traffic.**—Whenever, between 6:30 a.m. and 8 p.m., at movable bridges over any portion of the harbor, persons, teams, or vehicles have been delayed at said bridge 10 minutes by reason of any such bridge being open for a vessel to pass, it shall be the duty of the bridgetender or other persons in charge thereof to give said signals and immediately close said

Structures across the Buffalo Waterways						
Name-Description-Type	Location	Miles*	Clear Width of Draw or Span Opening (feet)	Clear Height above Low Water Datum (feet)	Information	
Buffalo River						
1	Buffalo Skyway Bridge (fixed)	42°52'28"N., 78°52'42"W.	1.00	215	100	
2	Michigan Avenue Bridge (vertical lift)	42°52'18"N., 78°52'23"W.	1.34	183	15 (down) 101 (up)	Note 1
3	Ohio Street Bridge (vertical lift)	42°51'43"N., 78°52'03"W.	2.10	250	17 (down) 105 (up)	Note 1
4	Overhead power cable	42°51'24"N., 78°51'17"W.	3.40		133	
5	CSX Transportation Railroad Bridge (bascule)	42°51'47"N., 78°51'13"W.	4.02	100	18	Note 1
6	CSX Transportation Railroad Bridge (bascule)	42°51'36"N., 78°50'55"W.	4.39	97	12	Note 1
7	Buffalo Creek Railroad Bridge (bascule)	42°51'36"N., 78°50'55"W.	4.39	97	12	
8	ConRail Bridge (bascule)	42°51'41"N., 78°50'42"W.	5.07	110	38	Bridge is reported removed
9	South Park Avenue Bridge (vertical lift)	42°51'47"N., 78°50'34"W.	5.22	200	19 (down) 95 (up)	Notes 1 and 2
10	Conrail Bridge (bascule)	42°51'38"N., 78°49'58"W.	5.79	100	26	Bridge is reported removed
11	Bailey Avenue Bridge (bascule)	42°51'44"N., 78°49'30"W.	6.24	90	21	
Cazenovia Creek						
12	Overhead power cable	42°51'38"N., 78°49'32"W.	6.19	N/A	N/A	
13	Bailey Avenue Bridge (fixed)	42°51'38"N., 78°49'31"W.	6.22		12	
Buffalo Ship Canal						
14	Buffalo Skyway Bridge (fixed)	42°52'20"N., 78°52'44"W.	1.10	193	100	
Union Canal						
15	Fuhrmann Boulevard Bridge (bascule)	42°50'02"N., 78°51'17"W.	0.68	80	9	
16	Father Baker Memorial Bridge (fixed)	42°50'02"N., 78°51'15"W.	0.70	200	105	

* Miles above North Breakwater South End Light

Note 1 – See 33 CFR 117.1 through 117.59 and 117.773, chapter 2, for drawbridge regulations.

Note 2 – Clear height when raised is 95 feet at left channel limit increasing to 100 feet 25 feet channelward of right channel limit and 100 feet at right channel limit. Clear height when closed is 19 feet at left channel limit and 20 feet at right channel limit with an increased height of 21 feet over a width of 140 feet 50 feet channelward of the left channel limit and extending within 10 feet of the right channel limit.

bridge and keep it closed 10 minutes for such persons, teams, or vehicles to pass, if so much time shall be required, when said bridge shall be opened again and kept open for a like period, if necessary, for vessels to pass, and so on, alternately, if necessary, during the hours aforesaid.

(140) **Sec. 307. Time to Remain Open.**—Whenever any person having charge of any vessel shall wish to move the same past any bridge over any portion of the harbor, reasonable time shall be allowed for opening the same.

(141) **Sec. 308. Fire and Police Vehicles-Right of Way.**—Whenever at any alarm of fire any fire engine, hose cart, or other fire apparatus shall approach any bridge over the harbor, for the purpose of crossing the same toward such fire, the bridgetender shall, if such bridge is open, close the same as soon as practicable and keep it closed until such fire apparatus shall have had an opportunity to pass over said bridge, notwithstanding vessels may be delayed thereby. All vehicles of the fire department and the police department and vessels operated by either of said departments, shall have the right of way across or through any such bridge over all other traffic.

(142) **Sec. 309. Vessel Signals.**—It shall be unlawful for the owner, officer, or other person in charge of any vessel to attempt to pass any movable bridge across the harbor while a stop signal is being given or displayed.

(143) The commissioner of public works shall provide and maintain signals at the public highway bridges over the harbor, as required by the U.S. Commissioner of Lighthouses, for the security of navigation.

(144) The owner of any movable bridge over the harbor shall provide and maintain vessel signals, as required by the Commissioner of Lighthouses, or by ordinances of the city of Buffalo, for the security of navigation. During closed seasons of navigation, lights on bridges over the harbor and other structures in the harbor must be exhibited from sunset to sunrise at all times when vessels can enter port or are navigating in the vicinity.

(145) **Sec. 310. Railroad Bridges.**—For all bascule or swing bridges over any portion of the harbor not carrying highway traffic, when any vessel shall signal for its opening, the bridgetender shall immediately open the bridge, unless a train be on the bridge or approaching it so closely as to be unable to stop, and in that case the

bridge shall be kept closed long enough for the passage of one train and no more.

(146) **Sec. 312. Steamboat Whistles.**—No person, firm, or corporation shall blow or cause to be blown the steam whistle of any vessel, for any purpose whatever, while lying at any wharf or dock in the city of Buffalo, or when approaching or leaving such wharf or dock, or when passing through any drawbridge over the harbor, or when running in the harbor, except when necessary as a signal of danger and in cases and under circumstances prescribed by the laws and regulations of the United States and by the ordinances of the city of Buffalo.

(147) No captain or person in charge of a vessel in the Buffalo harbor shall permit any whistle upon such vessel to be blown except for the purpose of giving and answering signals; and no “four whistles” shall be answered by any vessel while lying at the dock.

Fluctuations of water level

(148) The water level of Lake Erie at Buffalo is frequently affected, usually for periods of less than 12 hours, by strong southwest or northeast winds. It is reported that these winds may raise or lower water levels by as much as 6 feet. The record fluctuations recorded are 10½ feet above and 4½ feet below Low Water Datum.

(149) The records of the monthly mean stages at Buffalo show that the periods of lowest water during the navigation season are in the spring and fall, the latter being the busiest time of the year in the harbor, when the necessity for deep water is greatest.

(150) Water level information for the Buffalo area is available on the internet at <http://tidesandcurrents.noaa.gov>.

Currents

(151) There is very little current in the outer harbor except during sudden fluctuations of water level, which may cause considerable current, especially in the entrance channels.

(152) The currents in the river are reported to reach velocities of 3 to 5 mph, changing direction and velocity abreast Buffalo Ship Canal. Rapid fluctuations in Lake Erie produce quite strong currents in the river within 1 mile of the mouth, inflowing or outflowing as the case may be. Heavy rainfalls and spring freshets are attended by strong outflowing currents due to rapid rises of the river and the consequent discharge of flood water. These conditions cause difficulties to navigation and sometimes damage to vessels by tearing them from their moorings, but occur only two or three times each year and for only a few hours at a time. With heavy rainfalls, it is reported that currents in the river sometimes reach velocities of 6 to 10 knots.

Weather, Buffalo and vicinity

(153) Buffalo, NY, located on the extreme northeast shore of Lake Erie and in the western part of the state,

averages about four days each year with maximum temperatures in excess of 90°F (32.2°C). July is the warmest month with an average high of 81°F (27.2°C) and an average minimum of 62°F (16.7°C). January is the coolest month with an average high of 31°F (-1°C) and an average minimum of 18°F (-7.8°C). The highest temperature on record for Buffalo is 99°F (37.2°C) recorded in August 1948; the lowest temperature on record is -20°F (-28.9°C) recorded in February 1961. About 131 days each year sees temperatures below 32°F (0°C) and an average 11 days each year records temperatures below 5°F (-15°C). Every month has seen temperatures below 50°F (10°C) and every month except June, July, and August has recorded temperatures below freezing (0 °C).

(154) The average annual precipitation for Buffalo is 38.3 inches (972.83 mm) which is fairly evenly distributed throughout the year. Precipitation falls on about 236 days each year. The wettest month is November with 3.9 inches (99.1 mm) and the driest, February, averages only 2.5 inches (64 mm). An average of 30 thunderstorm days occur each year with July and August being the most likely months. Snow falls on about 106 days each year and averages about 90 inches (2286 mm) each year. December and January each average greater than 20 inches (508 mm) per year while February averages 18 inches (457 mm). Eighteen inch (457 mm) snowfalls in a 24-hour period have occurred in each month November through February and 38 inches (965 mm) fell in one 24-hour period during December 1995. About 19 days each year has a snowfall total greater than 1.5 inches (38 mm) and snow has fallen in every month except June, July, and August. Fog is present on average 158 days each year and is evenly distributed throughout the year with a slight maximum in the spring and again in August.

(155) The prevailing wind direction in Buffalo is the southwest, off the lake. January is the windiest month and a maximum gust of 71 knots occurred in February 1967.

(156) (See Appendix B for **Buffalo climatological table.**)

Ice

(157) Heavy ice forms in the river, usually in January. A narrow channel is kept open through the ice by tugs, but the ice remains in place because the east end of Lake Erie also freezes over, and the harbor entrance is usually blocked with ice from January to March or April. The ice usually goes out in the spring during a freshet in the river, and the combined effect of the then prevailing strong outflowing currents and the heavy moving ice is at times very great and may last for 2 or 3 days. During this time, the liability of damage to vessels is considerable.

(158) Heavy ice forms in the Buffalo Ship Canal in winter, usually in January. A narrow channel is kept open through the ice by tugs, but the ice remains in place, the same as in the Buffalo River. The ice drifts out on

the opening of the entrance channel in March or April, or melts in place, and its breaking up in the spring is not attended with the same liability to damage as in the case of the Buffalo River.

Towage

- (159) Tugs to 1,250 hp are available at Buffalo. Arrangements for tugs are made through the Great Lakes Towing Co. dispatcher in Cleveland at 800-321-3663 or on VHF-FM channels 16, 10, 12, and 18A via remote antenna. The tugs' VHF-FM channels include 16, 6, 12, 14, and 18A. At least 4 hours advance notice is requested. City regulations require that all vessels which require the opening of one or more bridges while navigating in the Buffalo River must have the assistance of one or more tugs when approaching and passing these bridges. Vessels navigating stern first are required to have a tug on the stern and a tug on the bow.

Quarantine, customs, immigration, and agricultural quarantine.

- (160) (See chapter 3, Vessel Arrival Inspections, and appendix for addresses.)
- (161) **Quarantine** is enforced in accordance with the regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)
- (162) Buffalo is a **customs port of entry**.

Coast Guard

- (163) Buffalo Coast Guard Station and Sector Office are on the south side of the entrance to the Buffalo River (See Appendix A for address.)

Harbor regulations

- (164) A **speed limit** of 6 mph (5.2 knots) is enforced in Buffalo Harbor except in the Outer Harbor where the speed limit is 10 mph (8.7 knots). (See **33 CFR 162.165 and 207.580**, chapter 2, for regulations.)
- (165) Local harbor regulations are established by the Corporation Counsel and enforced by the **harbormaster**, who may be reached at City Hall. Vessels shall not approach or pass any movable bridge at a speed exceeding 3 mph (2.6 knots). Copies of the regulations may be obtained from the Corporation Counsel, City Hall, Niagara Square, Buffalo, NY 14202.

Wharves

- (166) Buffalo has more than 60 piers and wharves in the Outer Harbor, the Buffalo River, and the Lackawanna, Union, and Buffalo Ship Canals. Only the deep-draft facilities are described. (For a complete description of the port facilities, refer to Port Series No. 41, published and sold by the U.S. Army Corps of Engineers. See Appendix A for address.) The alongside depths for the facilities described are reported depths. (For information on the latest depths, contact the operators.) All of the facilities have direct highway connections, and most have rail

connections. Water is available at many of the piers and wharves. General cargo at the port is usually handled by ship's tackle.

Facilities in Lackawanna Canal:

- (167) **Gateway Metroport, Lackawanna Canal West Dock:** west side of Lackawanna Canal; 3,900-foot face, 27 feet alongside; deck height, 7½ feet outer section, 12½ feet inner section; open storage for 20,000 tons of limestone; seven storage tanks, 362,310-barrel capacity; receipt and shipment of conventional general cargo and dry bulk commodities; owned and operated by Gateway Trade Center, Inc.
- (168) **Gateway Metroport, Lackawanna Canal East Dock:** east side of Lackawanna Canal; 3,975-foot face; 27 feet alongside; deck height, 12½ feet; two electric, traveling, bridge cranes, each with 17-ton clamshell buckets, receiving hopper served by a belt conveyor; 60 acres of open storage for over 3 million tons iron ore, 650,000 tons limestone, and 1 million tons coal; receipt and shipment of conventional general cargo and dry bulk commodities; owned and operated by Gateway Trade Center, Inc.

Facilities in Union Canal:

- (169) **Gateway Metroport, Union Canal South Dock:** south side of Union Canal west of highway bridge; 778 feet of berthing space; 22 feet alongside; deck height, 10½ feet; open storage for 400,000 tons of limestone; receipt and shipment of dry bulk commodities; owned and operated by Gateway Trade Center, Inc.
- (170) **St. Lawrence Cement Corp.:** north side of Union Canal west of highway bridge; 634 feet of berthing space; 22 feet alongside; deck height, 8 feet; belt conveyor system with shiploading chute and hopper, pipeline extends to 42 storage silos with 115,000-ton capacity; 48 acres open storage; receipt of cement; owned and operated by St. Lawrence Cement Corp.

Facilities in Buffalo Ship Canal:

- (171) **Founders Supplies, Inc.:** west side of canal about 1 mile above the entrance; 1,000-foot face; 22 feet alongside; deck height, 8 feet; one crawler-crane with 40-foot boom and clamshell bucket, hopper served by bucket-conveyor extending to two, 1,500 ton (total) storage silos; open storage for 80,000 tons of sand; receipt of sand; owned by Sand Products Corp. and operated by Founders Supplies, Inc.
- (172) **Pillsbury Mutual Wharf:** east side of canal about 0.6 above the entrance; 1,520 feet of berthing space; 21 feet alongside; deck height, 8 feet; two traveling unloading towers, 10,000-bushel-per-hour capacity each; one loading tower, 11,000-bushel-per-hour capacity; facility maintained on a stand-by or idle basis; owned by The Pillsbury Co. and operated by The Pillsbury Co. and Gaelic Tugboat Co.
- (173) **General Mills Wharf:** east side of canal about 0.2 mile above the entrance; 1,025-foot face; 22 feet alongside;

deck height, 8 feet; two marine legs, 25,000-bushel-per-hour unloading rate each; 4-million-bushel grain elevator; receipt of grain; owned and operated by General Mills, Inc.

Facilities in the Buffalo River:

(174) **Lafarge Corp., Buffalo Terminal Upper Wharf:** left bank of river below Ohio Street Bridge; 475-foot face; 20 to 22 feet alongside; deck height, 10 feet; two unloading hoses extend to cement storage silos with 21,000-ton capacity; receipt of cement; owned and operated by Lafarge Corp., Great Lakes Region.

(175) **Con-Agra Buffalo Elevator Wharf:** left bank of river 800 feet above Ohio Street Bridge; 578-foot face; 24 feet alongside; deck height, 8 feet; two unloading towers, 25,000-bushel-per-hour capacity; 3¼-million-bushel grain elevator; receipt of grain; owned and operated by Con-Agra, Inc.

(176) **Pillsbury Standard Elevator Wharf:** right bank of river above Ohio Street Bridge; 875-foot lower face, 19 to 22 feet alongside; 388-foot upper face, 16 to 20 feet alongside; deck height, 8 feet; two traveling towers, 15,000-bushel-per-hour capacity; 5-million-bushel grain elevator; receipt of grain; owned and operated by The Pillsbury Co.

(177) **International Multifoods Corps. Lake and Rail Elevator Wharf:** left bank of river about 800 feet above the Con-Agra Wharf; 345 feet of berthing space north face, 14 to 20 feet alongside, deck height, 7 feet; 555 feet of berthing space east face, 20 to 24 feet alongside; deck height, 10 feet; two traveling unloading towers, 12,500-bushel-per-hour capacity; 4½-million-bushel grain elevator; receipt of grain; owned and operated by International Multifoods Corp.

(178) **Mobil Oil Corp., Bulk Terminal:** right bank of river about 0.4 mile above South Park Avenue Bridge; 1,470-foot face; 15 to 22 feet alongside; deck height, 12 feet; pipelines to oil storage tanks; receipt of petroleum products, fueling of small vessels; owned and operated by Mobil Oil Corp.

Supplies

(179) Water, provisions, and marine supplies are available at Buffalo. Bunker fuel and diesel fuel are delivered to vessels at their berths by tank vessels. Arrangements should be made through ships' agents. Occasionally tank trucks supply vessels with bunker fuel.

Repairs

(180) There are no facilities for drydocking or hauling out large, deep-draft vessels. Two companies that have no waterfront facilities maintain shops and portable equipment for making above-the-waterline repairs and for installing equipment and machinery.

Small-craft facilities

(181) Erie Basin, close north of the mouth of the Buffalo River, is the site of the city's marina. Transient

berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out facilities, marine supplies, a launching ramp, and minor engine repairs are available. In 1977, depths of 20 feet were reported in the entrance channel and alongside the berths, with 17 feet alongside the gasoline dock. The Buffalo **harbormaster** maintains an office in Erie Basin; telephone, 716-842-0452.

(182) The Niagara Frontier Transportation Authority operates a small-craft basin on the east side of Buffalo Outer Harbor about 2.3 miles southeast of the mouth of Buffalo River. Transient berths, gasoline, water, ice, electricity, marine supplies, a launching ramp, and engine repairs are available. In 2001, a depth of 4 feet was reported in the entrance.

Measured course

(183) A measured mile, statute and nautical, is marked on the east face of the breakwater at the north end of the Outer Harbor.

Communications

(184) Buffalo has excellent rail and highway connections with major United States and Canadian cities. Greater Buffalo International Airport is 8 miles east-northeast of the city.

Chart 14822

(185) From **Stony Point** at the south end of Buffalo Harbor, the shoreline trends south for about 3.5 miles and is obstructed by shallow patches extending 1 mile offshore.

(186) A diked disposal area on the west side of Stony Point begins at South Buffalo Pierhead Light and curves southwest to a point on shore about 0.5 mile south. The north end of the dike is marked by a light.

(187) South of the disposal area, a **dumping ground** extends about 0.5 mile from the shoreline for about 1 mile. A least depth of 6 feet was reported in 1977.

(188) About 3.5 miles south of Stony Point, the shoreline turns southwest and continues this trend, with some southerly recessions and slight irregularities, for about 210 miles to a point about 3 miles east of Huron, OH, the southernmost point on the lake. The hydrography along this entire reach is generally of a uniform character, with no shoals, other than Seneca Shoal, at any great distance offshore, and the land varies from a low character to moderate bluffs of 60 to 120 feet high. The usual routes between ports are well out in deep water, and there are no natural obstacles which make navigation especially hazardous. From the bend south of Stony Point for the first stretch of 12 miles to Sturgeon Point, there are a number of submerged and exposed cribs as much as 0.6 mile offshore.

(189) **Seneca Shoal**, about 4.4 miles southwest of Stony Point, has a least depth of 12 feet and is marked on its northwest edge by a lighted buoy.

Chart 14823

(190) Between **Sturgeon Point** (42°41'24"N., 79°02'54"W.) and **Silver Creek**, about 12 miles southwest, the hydrography is less regular. west of **Big Sister Creek**, about 2 miles from Sturgeon Point, an unmarked boulder ledge with a least depth of 3 feet extends 2 miles offshore.

(191) **Cattaraugus Creek** is about 9.5 miles southwest of Sturgeon Point. A dredged entrance channel leads between two breakwaters and through the creek to a railroad bridge about 0.8 mile above the mouth. The ends of the breakwaters are marked by lights. In 2009, the controlling depth was 3.1 feet at the midchannel to about 42°34'03"N., 79°08'00"W., thence shoaling to bare to the head of the project. The channel inside the breakwaters is narrow and unmarked with numerous turns; mariners are advised to seek local knowledge before transiting the creek. Several marinas in the creek provide transient berths, gasoline, diesel fuel, water, ice, electricity, marine supplies, towing, and launching ramps. Mobile lifts to 20 tons are available for hull and minor engine repairs. In 1977, depths of 2 to 10 feet were reported alongside the berths.

(192) Between Cattaraugus Creek and Silver Creek, a stony ledge extends 1.5 miles from shore. From Silver Creek, the shoreline trends generally southwest for 10 miles to Dunkirk, and shoal water extends about 0.8 mile offshore.

(193) **Dunkirk Harbor**, about 35 miles southwest of Buffalo Harbor, is in an indentation of the shore between **Battery Point** on the east and **Point Gratiot** on the west. The harbor serves the town of **Dunkirk, NY**.

(194) An unmarked **dumping ground** with a least reported depth of 35 feet is 1 mile northeast of Point Gratiot.

(195) **Dunkirk Light** (42°29'38"N., 79°21'15"W.), 82 feet above the water, is on Point Gratiot.

Channels

(196) The harbor is entered from Lake Erie through a dredged entrance channel northeast of Point Gratiot. The channel leads southeast between a pier on the west and a detached breakwater on the east to the harbor basin off the Municipal Pier. The pier and breakwater are marked on the channel ends by lights, and the channel limits are marked by buoys. (See Notice to Mariners and the latest edition of the chart for controlling depths.)

(197) Two small-craft harbors on the east and west sides of the Municipal Pier are protected by breakwaters; the breakwaters are marked by lights at the entrances. In 2008, depths of 2 to 5 feet were available in the east basin and 3½ feet in the west basin with shoaling to less than one foot near the western end.

Anchorage

(198) Because of the rock bottom, anchorage in the harbor is poor. The shallow water does not permit mooring to the breakwater.

Dangers

(199) Vessels entering the harbor should hold to the east to avoid the shoals along the southwest side of the channel. As there is no breakwater protection on the east side, the harbor is subject to severe wave action from east storms.

Small-craft facilities

(200) In 1977, the **harbormaster** reported that the Dunkirk Public Dock at the foot of Central Avenue was in an unsafe condition and was no longer being used by commercial vessels. Persons desiring to load or unload cargo at the dock should contact the harbormaster or the city engineer for additional information. The dock has water and electricity available for transient small craft. In 1977, depths of 5 to 8 feet were reported along the north end of the east face.

(201) Small-craft facilities southwest of the city dock provide gasoline, diesel fuel, water, sewage pump-out, marine supplies, and a launching ramp. Mobile lifts to 1½ tons are available for emergency hull and minor engine repairs.

(202) Between Gratiot Point and **Van Buren Point** (42°27'12"N., 79°25'00"W.), 4.3 miles southwest, a rocky bank with less than 20 feet of water extends 1 mile from shore. From Van Buren Point, the shoreline trends southwest for about 12 miles to Barcelona Harbor. The shore is clear to within 0.7 mile except just west of Van Buren Point where depths to 19 feet extend 1.2 miles off.

(203) **Barcelona Harbor**, just east of the mouth of **Chautaugua Creek**, is about 17 miles southwest of Dunkirk. Although it is not protected from east winds or strong winds from any direction, it is sometimes used as a harbor of refuge by light-draft vessels. A large white building with a red roof is prominent on the west side of the harbor entrance.

Channels

(204) The harbor is entered from Lake Erie through a dredged entrance channel between two converging breakwaters to a harbor basin just inside. A light marks the west breakwater and the outer end of the east breakwater. In 2007, the controlling depth was 5 feet in the entrance channel, thence depths of 2 to 5 feet were available in the basin with lesser depths along the edges.

Small-craft facilities

(205) An unmarked channel leads from the harbor basin southeast to the city dock. In 1977, depths of 4 feet were reported in the channel and along the north 200 feet of the west face of the dock. A marina on the southwest side of the harbor provides transient berths, gasoline, diesel fuel, water, ice, electricity, and marine supplies. Mobile lifts to 9 tons are available for hull and gasoline

engine repairs. In 1977, depths of 4 feet were reported alongside the berths.

Charts 14823, 14824, 14828

- (206) Erie Harbor is about 28 miles southwest of Barcelona. The intermediate shore has no shoals beyond a distance of about 0.7 mile. The **State boundary** between New York and Pennsylvania is about 10 miles southwest of Barcelona.

Charts 14824, 14828, 14835

- (207) **Presque Isle** (42°10'N., 80°06'W.) is an irregularly shaped peninsula forming nearly landlocked Erie Harbor. The peninsula is connected to the mainland by a narrow neck at the west end and broadens as it curves around to the northeast and east. The entrance to Erie Harbor is on the south side of the east end of the peninsula. Presque Isle State Park is on the peninsula. **Presque Isle Light** (42°09'57"N., 80°06'55"W.), 73 feet above the water, is shown from a square tower on the northwest shore of the peninsula. Numerous shore protection structures extend lakeward from the lakeside of the peninsula. Small-craft operators are cautioned to keep 500 feet offshore in the vicinity of these structures.

- (207.01) **Gull Point**, the eastern end of Presque Isle extends further eastward each year due to the shift of sand along the length of the peninsula. This annual eastward shift is typically greatest during the winter when Lake Erie does not freeze and westerly gales cause increased erosion of the beaches on Presque Isle. Mariners are warned that the depths shoal very quickly upon approaching to within ¼ mile of the eastern end of Presque Isle.

- (208) **Erie Harbor**, about 78 miles southwest of Buffalo, is in **Presque Isle Bay**, enclosed from the lake by Presque Isle. The bay opens to the east and is about 4.5 miles long and 1.5 miles wide. Erie Harbor, serving the city of **Erie, PA** is in the southeast part of the bay.

- (209) Principal commerce at the port is in limestone, sand, salt, petroleum products, coke, steel products, pig iron, other alloys, gravel, clay, and general cargo in the domestic trade.

Prominent features

- (210) The stacks at the paper plant 1 mile southeast of Erie Harbor Pierhead Light and the lighted stack 2.2 miles east-southeast of the light are prominent.

- (211) **Erie Harbor Pierhead Light** (42°09'24"N., 80°04'18"W.), 42 feet above the water, is shown from a black and white horizontally banded square tower on the outer end of the north entrance pier.

Channels

- (212) A Federal project provides for a dredged entrance channel leading southwest from deep water in Lake Erie between two parallel piers to a harbor basin and three

adjacent turning basins in Presque Isle Bay. The north pier is marked by lights on the outer and inner ends and the south pier is marked by a light on the outer end and by two lights near its midlength which form a 235° range. The channel limits are marked by lighted and unlighted buoys. The Federal project depths are 29 feet in the entrance channel, 28 feet in Harbor Basin, 27 feet in Approach Turning Basin, 21 feet in Erie Turning Basin, and 18 feet in Harbor Turning Basin. (See Notice to Mariners and latest edition of charts for controlling depths.)

- (213) **Misery Bay** is an indentation in the south side of Presque Isle north of Erie Harbor Entrance Channel. The bay has depths of 5 to 10 feet except for shoaling along the edges. A rock which bares is on the east side of the bay on the south side of the channel leading to **Horse Shoe Pond**.

Anchorage

- (214) Good anchorage is in the center of Presque Isle Bay in depths of 12 to 22 feet, mud bottom. Local regulations prohibit vessels from anchoring in any channel or mooring to channel markers and buoys. Vessels over 100 feet long or over 50 tons are prohibited from anchoring within 500 feet of the city water intake or sewer pipelines. The city water intake extends northwest across Presque Isle Bay and is marked by buoys.

Dangers

- (215) An unmarked submerged pier, covered 1 to 2 feet, extends about 2,000 feet from shore 0.8 mile south-southeast of Erie Harbor Pierhead Light.

Weather, Erie and vicinity

- (216) Erie, PA, located on the southeast shore of Lake Erie and in extreme northwestern Pennsylvania, averages about three days each year with maximum temperatures in excess of 90°F (32.2°C). July is the warmest month with an average high of 79°F (26.1°C) and an average minimum of 62°F (16.7°C). January is the coolest month with an average high of 33°F (0.6°C) and an average minimum of 20°F (-6.7°C). The highest temperature on record for Buffalo is 100°F (37.8°C) recorded in June 1988 and the lowest temperature on record is -18°F (-27.8°C) recorded in January 1994. About 124 days each year sees temperatures below 32°F (0°C) and an average nine days each year records temperatures below 5°F (-15°C). Every month has seen temperatures below 50°F (10°C) and every month except July, August, and September has recorded temperatures at or below freezing (0°C).

- (217) The average annual precipitation for Erie is 40.5 inches (1029 mm) which is fairly evenly distributed throughout the year. Precipitation falls on about 223 days each year. The wettest month is September with 4.1 inches (104 mm) and the driest, February, averages only 2.3 inches (58 mm). An average of 36 thunderstorm days occur each year with July and August being the

most likely months. Snow falls on about 91 days each year and averages about 83 inches (2108 mm) each year. December and January each average greater than 20 inches (508 mm) per year while February averages 16 inches (406 mm). One foot or greater (>305 mm) snowfalls in a 24-hour period have occurred in each month November through March and 23 inches (584 mm) fell in one 24-hour period during November 1956. About 17 days each year has a snowfall total greater than 1.5 inches (38 mm) and snow has fallen in every month except June, July, August, and September. Fog is present on average 140 days each year and is evenly distributed throughout the year with a slight maximum in March.

(218) The prevailing wind direction in Erie is south from May through November, south-southwest in December and January, and west-southwest from February through April. The winter season is the windiest with each month, December through April, averaging 12 knots. The highest gust on record was a west wind of 68 knots recorded in January 1978.

(219) (See Appendix B for **Erie climatological table.**)

Towage

(220) Tugs for Erie are available from Conneaut or Cleveland. (See Towage under Conneaut and Cleveland.)

Quarantine, customs, immigration, and agricultural quarantine

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

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

(223) Erie is a **customs port of entry.**

Coast Guard

(224) Erie Coast Guard Station is on the north side of the entrance channel.

Harbor Regulations

(225) **Harbor Regulations** are established by the Erie-Western Pennsylvania Port Authority and enforced by the **harbormaster**. A **speed limit** of 3 mph (2.6 knots) is enforced in the East and West Canal Basins and within 300 feet of the shoreline, and 5 mph (4.4 knots) elsewhere in the harbor. Copies of the regulations may be obtained from the Port Authority Office, 17 W. Dobins Landing, Erie, PA 16501, telephone 814-455-7557.

Wharves

(226) The piers and wharves of Erie Harbor are along the south side of Presque Isle Bay. Only the deep-draft facilities are described. (For a complete description of the port facilities, refer to Port Series No. 42, published and sold by the U.S. Army Corps of Engineers. See Appendix A for address.) The alongside depths for the facilities described are reported depths. (For information on

the latest depths, contact the operator.) All the facilities described have highway and rail connections. Water and electrical shore-power connections are available at some of the piers and wharves.

(227) General cargo at the port is usually handled by ship's tackle; special handling equipment, if available, is mentioned in the description of the particular facility. Cranes to 300 tons are available at the Erie International Marine Terminal.

(228) **Erie International Marine Terminal, Berths No. 1, 2, and 3:** (42°08'58"N., 80°04'57"W.); 1,508 feet of berthing space; 23 to 26 feet alongside; deck height, 8.4 feet; 95,300 square feet covered storage; 22 acres open storage; 300-ton fixed crane; one 160-ton, and one 230-ton crawler cranes; receipt and shipment of miscellaneous dry bulk commodities, machinery, steel products, and locomotives; owned by Erie-Western Pennsylvania Port Authority and operated by Mountfort Terminal, Ltd.

(229) **Erie Sand and Gravel Company Dock:** (42°08'25"N., 80°04'58"W.); 1,220 feet of berthing space; 24 to 27 feet alongside; deck height, 7.5 feet; 12 acres of open storage; one 160-ton crawler crane; receipt of salt and sand; owned by Erie-Western Pennsylvania Port Authority and operated by Erie Sand and Gravel Co.

Supplies

(230) By special arrangement, local dealers make tank truck deliveries of bunker fuel to vessels at the berths. Diesel fuel, marine supplies, and provisions are available at Erie.

Repairs

(231) The port has no active drydock or major repair facilities for deep-draft vessels. The nearest such facilities are at Lorain, OH. Metro Machine of Pennsylvania, Inc. operates a large graving dock in the southeast part of the harbor (42°08'21"N., 80°05'02"W.); the east and west slips are used for mooring and outfitting vessels. The graving dock is 1,250 feet long, 120 feet wide at the entrance, and has a depth of 21 feet over the sill. Overhead cranes to 140 tons are available.

Small-craft facilities

(232) Numerous marinas and boatyards in **Canal Basin** on the south side of Erie Harbor provide transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, and marine supplies. Vertical boat lifts to 40 tons and a 40-ton marine railway are available for hull, engine, and electronic repairs. In 1990, depths of 3 to 12 feet were alongside the gasoline docks.

(233) Presque Isle State Park Marina is in a dredged basin on the northwest side of Presque Isle Bay. The entrance to the basin is marked by private lights and a **339°45'** lighted range. In 2007, depths of 5 feet were available in the entrance channel; thence in 1977, depths of 8 feet were reported in the basin except for an isolated 6-foot spot in the east part, and 8 feet alongside the berths.

Gasoline and a launching ramp are available. Mobile lifts to 10 tons are available for emergency propeller and minor repairs.

- (234) A municipal marina, protected by breakwaters, is south of the Erie Harbor entrance channel. The marina entrance is marked by private lights.

Communications

- (235) Erie is connected by air, rail, and highway to other major United States and Canadian cities. Passenger ferries operate between the Erie City Dock and Presque Isle State Park (42°08'52"N., 80°07'47"W.) near the waterworks and setting basins.

Charts 14824, 14828

- (236) From the neck of Presque Isle, the shoreline extends about 23 miles southwest to Conneaut Harbor. The shore in this stretch has the appearance of low wooded hills with interspersed communities. Deep water is about 0.8 mile offshore.

- (237) The **State boundary** between Pennsylvania and Ohio is about 1.5 miles east of Conneaut.

- (238) **Conneaut Harbor**, serving **Conneaut, OH**, is about 107 miles southwest of Buffalo and about 73 miles northeast of Cleveland. It comprises an outer harbor sheltered by breakwaters and an inner harbor in the lower part of the **Conneaut River**.

- (239) A large unmarked **dumping ground** with a least depth of 41 feet in 1976 is 5 miles northwest of the harbor entrance.

Prominent features

- (240) Green water tanks 1.7 and 2.8 miles south-southwest of the harbor are prominent.

- (241) **Conneaut Harbor West Breakwater Light** (41°58'48"N., 80°33'30"W.), 80 feet above the water, is shown from a square pyramidal tower on the outer end of the breakwater.

Channels

- (242) The harbor is entered from natural deep water in Lake Erie between converging breakwaters to an outer harbor channel inside the breakwaters. A dredged channel leads from the southeast end of the outer harbor upstream in Conneaut River for about 0.4 mile to the wharves on either side of the river. Lights mark the outer ends of the breakwaters and the piers at the river mouth. A Federal project provides for depths of 28 feet in the outer harbor channel and 22 feet in an outer harbor mooring area just west of the outer harbor channel, thence 27 feet in the river channel. (See Notice to Mariners and latest edition of charts for controlling depths.)

- (243) A privately dredged turning basin in the river immediately above the limit of the dredged channel had a controlling depth of 20 feet in 1979 except for shoaling

along the edges. A private slip extending south from the turning basin has a least depth of 17 feet near the south end.

Anchorage

- (244) Vessels are reported to anchor west of the west breakwater in 28 to 38 feet, but the holding ground is poor in shale bottom.

Dangers

- (245) Vessels approaching the harbor from the east are cautioned to not mistake the lights on the piers at the river mouth for the breakwater lights.

Bridges

- (246) An overhead cable crossing the southeast side of the privately dredged turning basin in the river has a clearance of 124 feet. An inoperative swing bridge with a clearance of 3 feet crosses the Conneaut River just above this cable. An overhead cable with a clearance of 122 feet crosses the entrance to the slip that extends south from the privately dredged turning basin.

Towage

- (247) Tugs to 1,250 hp are available in Conneaut Harbor. Arrangements for tugs are made through the Great Lakes Towing Co. dispatcher in Cleveland at 800-321-3663 or on VHF-FM channels 16, 10, 12, and 18A via remote antenna. The tugs' VHF-FM channels include 16, 6, 12, 14, and 18A. At least 12 hours advance notice is requested.

Quarantine, customs, immigration, and agricultural quarantine

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

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

- (250) Ashtabula/Conneaut is a **customs port of entry**.

Harbor regulations

- (251) A **speed limit** of 6 mph (5.2 knots) is enforced in the harbor except in the outer harbor where the speed limit is 10 mph (8.7 knots). (See **33 CFR 162.160 and 207.570**, chapter 2, for regulations.)

Wharves

- (252) The deep-draft facilities at Conneaut Harbor are in the inner harbor inside the mouth of the Conneaut River. (For a complete description of the port facilities, refer to Port Series No. 42, published and sold by the U.S. Army Corps of Engineers. See Appendix A for address.) The alongside depths for the facilities described are reported depths. (For information on the latest depths, contact the operator.) All the facilities described have rail connections and all but the Pittsburgh and



Conneaut Dock Co., Dock No. 4, have highway connections. All the described facilities have water and electrical shore-power connections.

(253) **Pittsburgh and Conneaut Dock Co., Dock No. 1 Extension:** (41°58'12"N., 80°32'58"W.); 1,974-foot face; 22 to 27 feet alongside; deck height, 8½ feet; open storage for 600,000 tons of limestone; two front-end loaders; receipt of limestone; owned by Bessemer and Lake Erie Railroad Co. and operated by the Pittsburgh & Conneaut Dock Co.

(254) **Pittsburgh and Conneaut Dock Co., Dock No. 3:** east side of slip south of the turning basin; 1,250-foot face; 27 to 28 feet alongside; deck height, 8½ feet; one fixed coal loading tower, capacity 7,000 tons per hour; one slewing coal loader, capacity 4,000 tons per hour; conveyor system for 3½-million-ton open storage area; shipment of coal; occasional bunkering of vessels; owned by Bessemer and Lake Erie Railroad Co. and operated by The Pittsburgh & Conneaut Dock Co.

(255) **Pittsburgh and Conneaut Dock Co., Dock No. 4:** east side of river opposite Dock No. 1 extension; 2,078 feet of berthing space; 27 to 28 feet alongside; deck height, 8½ feet; five 17-ton hulett-type ore unloaders, capacity 875 tons per hour each; open storage for 3½ million tons of ore; receipt of iron ore and limestone; owned and operated by Pittsburgh and Conneaut Dock Co.

Supplies

(256) Diesel oil by tank truck and some marine supplies and provisions are available at Conneaut.

Small-craft facilities

(257) The Municipal Pier, about 0.4 mile southwest of the river mouth, can provide gasoline, diesel fuel, and electricity. The Conneaut Port Authority operates a small-craft basin northeast of the Municipal Pier. The entrance to the basin is marked by private lights. In 1977, the reported controlling depth was 5 feet in the entrance with 3 to 18 feet alongside the berths. Transient berths, gasoline, diesel fuel, water, ice, electricity, marine supplies, and launching ramps are available.

Communications

(258) Conneaut has good highway and rail connections.

Charts 14824, 14828, 14825

(259) From Conneaut to Ashtabula, 13.5 miles southwest, there is deep water about 0.8 mile offshore. The shore is a series of low wooded hills with interspersed communities.

(260) Two wrecks, covered 35 feet, are 1.5 miles offshore about 3.9 miles east-northeast of the entrance to Ashtabula Harbor.

Charts 14825, 14828, 14836

(261) **Ashtabula Harbor** is about 119 miles southwest of Buffalo and about 59 miles northeast of Cleveland. It comprises an outer harbor, the navigable portion of the **Ashtabula River** for about 2 miles above the mouth, and two large slips opening directly into the lake under the protection of the breakwaters.

(262) The major commodities handled at the port are limestone, iron and other ores, coal and other dry bulk commodities, pig iron, iron products, raw rubber, and general cargo in the domestic trade.

(263) Two unmarked **dumping grounds**, with least reported depths of 35 feet, are 2.4 miles north and 2 miles northeast of the harbor entrance.

Prominent features

(264) The lighted stacks 1.5 miles southeast and 1.8 miles east-southeast of the harbor entrance are conspicuous. The silos on the west side of the river mouth are also prominent.

(265) **Ashtabula Harbor Light** (41°55'06"N., 80°47'46"W.), 51 feet above the water, is near the outer end of west breakwater.

Channels

(266) The harbor is entered from Lake Erie through a dredged entrance channel that leads between converging breakwaters to an outer harbor where the channel divides into east and west channels with a central turning basin. The west channel leads to the mouths of the Ashtabula River and Pinney Minnesota Slip, and continues upstream in the river for 2 miles; a turning basin is 0.3 mile below the head of the project. The east channel leads southeast to a basin off the entrance of two large slips. Lights mark the outer ends of the breakwaters and Ashtabula Light is on the west breakwater. A detached breakwater, just south of the turning basin, is mark by a light on the west end. In 2011, shoaling to 25 feet was reported in the entrance channel just off the outer end of the west breakwater in 41°55'14"N., 80°47'40"W.

(267) The Federal project depths are 29 feet in the approach channel from deep water in the lake to the outer harbor, thence 27 to 28 feet in the west channel to the mouth of Ashtabula River and Pinney Minnesota Slip, thence 27 feet for the first 0.4 mile in the river channel, thence 18 feet to about 1 mile above the mouth of the river, thence 16 feet to the head of the project. The east channel has a project depth of 28 feet and 22 feet for the turning basin. (See Notice to Mariners and latest edition of charts for controlling depths.)

Anchorage

(268) Deep-draft vessels normally anchor about 2 miles east-northeast or west of the breakwater entrance in 35 to 45 feet, sand and mud bottom.

Bridges

(269) An overhead conveyor with a clearance of 100 feet crosses the Ashtabula River about 0.5 mile above the mouth. An overhead power cable with a clearance of 120 feet is about 0.1 mile north of the overhead conveyor. The Fifth Street bridge about 0.15 mile upstream from the conveyor has a bascule span with a clearance of 11 feet. The CSX Transportation Railroad bridge about 1.5 miles above the river mouth has a bascule span with a clearance of 11 feet. An overhead cable on the north side of the bridge has a clearance of 131 feet. (See **33 CFR 117.1 through 117.59 and 117.847**, chapter 2, for drawbridge regulations.)

Local bridge regulations

(270) **147.35 Bridges to be Lighted.**

(271) All bridges over the Ashtabula River in the City of Ashtabula shall be lighted in accordance with the regulations of the United States Coast Guard, and lights shall be visible on a dark night with clear atmosphere at least one (1) nautical mile or about 2,000 yards.

(272) **147.36 Vessels Passing through Bridges.**

(273) All vessels navigating the harbor when passing any bridge shall be moved as expeditiously as is consistent with a proper movement in the river, and shall not be anchored or fastened to interfere with the opening or closing of any bridge.

(274) **147.37 One Vessel Tow.**

(275) It shall be unlawful for any person to cause any vessel to tow more than one vessel at a time through any movable bridge in the harbor, providing that this shall not be construed as applying to scows or yachts.

(276) **147.41 Duty of Bridge Operators.**

(277) It shall be the duty of the bridge operator in all cases to report to his immediate superior and the Harbor Master any infraction of this article.

(278) **147.42 Penalty for Violation.**

(279) Any master, owner or person in possession, charge or control of any vessel, or any other person, firm or corporation who shall violate any of the provisions of this article shall be fined not less than fifty dollars (\$50.00) nor more than five hundred dollars (\$500.00).

Towage

(280) Tugs to 1,400 hp are available at Ashtabula. Arrangements for tugs are made through the Great Lakes Towing Co. dispatcher in Cleveland at 800-321-3663 or on VHF-FM channels 16, 10, 12, and 18A via remote antenna. The tugs' VHF-FM channels include 16, 6, 12, 14, and 18A. At least 6 hours advance notice is requested.

Quarantine, customs, immigration, and agricultural quarantine

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

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

(283) Ashtabula/Conneaut is a **customs port of entry**.

Coast Guard

(284) Ashtabula Coast Guard Station is on the east side of the Ashtabula River about 0.5 mile above the mouth.

Harbor regulations

(285) A **speed limit** of 6 mph is enforced in the harbor except in the outer harbor where the speed limit is 10 mph (8.7 knots). (See **33 CFR 162.160 and 207.570**, chapter 2, for regulations.)

(286) Local harbor regulations are established by the City Council and enforced by the **harbormaster** who may be reached at the Port Authority Office. The harbormaster controls vessel movement and berthage in the harbor. Local regulations specify a **speed limit** of 6 mph (5.2 knots) in the harbor for vessels over 100 feet long. Copies of the regulations may be obtained from Port Authority Office, 529 Prospect Road, Ashtabula, OH 44004.

Wharves

(287) The wharves of Ashtabula Harbor are on the south side of the outer harbor and along both sides of the Ashtabula River. Only the deep-draft facilities are described. (For a complete description of the port facilities, refer to Port Series No. 42, published and sold by the U.S. Army Corps of Engineers. See Appendix A for address.) The alongside depths for the facilities described are reported depths. (For information on the latest depths, contact the operator.) All the facilities described have highway connections, and all except the R. W. Sidley Wharf have railway connections. Water and electrical shore-power connections are available at most of the facilities.

Facilities in the Ashtabula River:

(288) **Consolidated Rail Corp., Coal Dock No. 10:** west side of the river inside the mouth; 2,800-foot face; 14 to 27 feet alongside; deck height, 7 feet; one traveling coal loader, capacity 8,000 tons per hour; open storage for 1½ million tons of coal; shipment of coal; owned and operated by Consolidated Rail Corp.

(289) **R. W. Sidley Wharf:** east side of the river 0.6 mile above the mouth; about 350 feet of berthing space; 15 to 17 feet alongside; one crawler crane; one mobile front-end loader; open storage for 60,000 tons of limestone; receipt of limestone; owned and operated by R. W. Sidley, Inc.

Facilities in the outer harbor:

(290) **Pinney Dock & Transport Co., Dock No. 1 Extension:** south side of outer harbor, east of river mouth and outer portion of west side of Minnesota Slip; 1,030-foot north face, 17 to 25 feet alongside; 1,165-foot east face, 27 feet alongside; deck height, 7 feet; open storage for 1 million tons of iron ore; receipt of iron ore; owned by

Consolidated Rail Corp. and operated by Pinney Dock & Transport Co., Inc.

(291) **Consolidated Rail Corp., Dock No. 2 Extension:** south side of outer harbor, inner portion of east side of Minnesota Slip; 1,198-foot face; 27 feet alongside; deck height, 7 feet; one front-end loader and one traveling bridge crane with 15-ton bucket; open storage for 1 million tons of iron ore; receipt of iron ore; owned and operated by Consolidated Rail Corp.

(292) **Pinney Dock & Transport Co., Dock Nos. 1 and 2:** west and east sides of Slip No. 1, about 0.5 mile east of the river mouth; Dock Nos. 1 and 2, 2,000-foot face; 28 to 30 feet alongside; deck height, 8 feet; 10 mobile front-end loaders; open storage for about 2 million tons in rear of Docks 1, 2, and 3; receipt of sand, potash, quartz, limestone, and manganese ore; owned and operated by Pinney Dock & Transport Co., Inc.

(293) **Pinney Dock & Transportation Co., No. 3:** west side of Slip No. 2, about 0.6 mile east of the river mouth; 2,000-foot face, 27 feet alongside; deck height, 8 feet; use of mobile equipment from Dock No. 1; receipt of sand, quartz, limestone, and manganese ore; owned and operated by Pinney Dock & Transport Co., Inc.

(294) **Pinney Dock & Transportation Co., Dock No. 4:** east side of Slip No. 2; 2,000-foot face; 27 feet alongside; deck height, 7 feet; two 45-ton gantry cranes; use of mobile equipment from Dock No. 1; 131,000 square feet covered storage; about 5 acres open storage; receipt and shipment of general cargo, receipt of raw titanium ore, china clay, pig iron, newsprint, lumber, raw rubber, and scrap metal; owned and operated by Pinney Dock and Transport Co., Inc.

Supplies

(295) Diesel oil by tank truck and limited marine supplies and provisions are available at Ashtabula.

Repairs

(296) Three companies in Ashtabula make above-the-waterline repairs and install equipment and machinery for vessels at berth in the harbor.

Small-craft facilities

(297) There are several marinas on the Ashtabula River south of the overhead conveyor. These marinas can provide transient berths, gasoline, diesel fuel, water, ice, electricity, pump-out facilities, marine supplies, and launching ramps. Mobile lifts to 40 tons are also available for full repairs.

Communications

(298) Ashtabula is served by ConRail and Norfolk Southern Railway, and has good highway connections.

Structures across Grand River at Fairport

	Name•Description•Type	Location	Miles*	Clear Width of Draw or Span Opening (feet)**	Clear Height above Low Water Datum (feet)	Information
1	Overhead power cable	41°44'56"N., 81°16'52"W.	1.32		120	
2	Overhead power cable	41°44'07"N., 81°16'13"W.	2.50		15	Note 1
3	CSX Railroad Bridge (fixed)	41°44'08"N., 81°16'00"W.	2.73	72	20	
4	Overhead power cable	41°44'08"N., 81°15'59"W.	2.74		40	
5	High Street Bridge (fixed)	41°44'09"N., 81°15'58"W.	2.76	115 (right) 115 (left)	10	
6	Overhead cable	41°44'09"N., 81°15'58"W.	2.77		23	
7	St. Clair Street Bridge (fixed)	41°44'28"N., 81°15'44"W.	3.24	90	15	

* Miles above West Breakwater Light
 Note 1 – Cables cross the river from the north bank to an island at midstream.

Charts 14825, 14828, 14829

(299) From Ashtabula southwest for 27 miles to Fairport, the shore continues as a series of low wooded hills and small communities. Deep water is about 1 mile offshore. A sunken wreck, covered 10 feet, is about 0.6 mile offshore about 15 miles southwest of Ashtabula. A boulder, covered 15 feet, is about 3 miles east-northeast of the entrance to Fairport Harbor.

Charts 14825, 14829, 14837

(300) **Fairport Harbor** is about 29 miles northeast of Cleveland Harbor. It comprises an outer harbor, and an inner harbor formed by the lower 1 mile of the **Grand River**.

(301) An unmarked **dumping ground** with a least reported depth of 35 feet is 3.5 miles north-northeast of the harbor entrance.

(302) **Fairport Harbor West Breakwater Light** (41°46'04"N., 81°16'52"W.), 56 feet above the water, is shown from a tower about 500 feet from the outer end of the west breakwater; a sound signal is at the light.

Channels

(303) The harbor is entered from Lake Erie through a dredged channel from deep water in the lake between two converging breakwaters to an outer harbor basin, thence between parallel piers through the mouth of the river for about 1.5 miles; the piers are marked at the outer ends by lights. A turning basin is on the west side of the channel about 1 mile above the mouth. The areas on the east and west sides of the entrance channel in the outer basin and the lower 1.2 miles of the river channel are not maintained. The Federal project depths are 25 feet in the approach channel and through the outer harbor to the mouth of the river, thence 24 feet in the river channel for about 0.7 mile, thence 21 feet to Olive Street on the west bank, thence 8 feet to the head of the project; the turning basin has a project depth of 18 feet.

(See Notice to Mariners and latest edition of charts for controlling depths.) The east breakwater, from its inner end, turns east and parallels the shore for about 1 mile. Lights mark the outer ends of the breakwaters and the east end of the east breakwater.

Dangers

(304) A wreck, covered 30 feet, is about 0.6 mile northwest of the breakwater entrance. In 1986, a sunken wreck was reported in the harbor approach in 41°46'18"N., 81°16'54"W. A shoal that extends northwest from the north end of the west breakwater tends to encroach the west side of the approach channel. Deep-draft vessels should avoid favoring the west channel limit when entering or leaving the harbor. At times a very strong current past the river mouth pierheads makes it difficult and dangerous for unaided vessels to enter the river channel.

(305) A wreck, covered 6 feet, is in the outer harbor basin about 1,000 feet east of East Pier Light in about 41°45'41"N., 81°16'35"W.

(306) Mariners are cautioned to avoid dragging anchor over the submerged pipeline just above the river mouth. The harbormaster reports that vessels sometimes scrape the pipeline during low water conditions.

(307) The east end of the east breakwater may become submerged during certain weather conditions. The center pier abutment of a former railroad swing bridge, about 1.72 miles above the river entrance, has been removed to about 4 feet below water level; mariners are advised to use extreme caution when transiting the area.

Towage

(308) Tugs for Fairport Harbor are available from Ashtabula or Cleveland. (See Towage under Ashtabula and Cleveland.)

Quarantine, customs, immigration, and agricultural quarantine

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

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

(311) Fairport Harbor is a **customs station**.

Coast Guard

(312) Fairport Harbor Coast Guard Station is on the west side of the river just inside the mouth.

Harbor Regulations

(313) **Harbor Regulations** are enforced by the **harbor-master** who may be reached through the Chief of Police, 220 3rd Street, Fairport Harbor, OH 44077. **Speed limits** of 6 mph (5.2 knots) and 10 mph (8.7 knots) are enforced in Grand River and in the outer harbor, respectively. (See **33 CFR 162.160 and 207.570**, chapter 2, for regulations.) Copies of the local regulations may be obtained from Village Hall, 220 3rd Street, Fairport Harbor, OH 44077.

Wharves

(314) Fairport Harbor has several wharves and docks in Grand River. Only the deep-draft facilities are listed in the table. For a complete description of the port facilities, refer to Port Series No. 42, published and sold by the U.S. Army Corps of Engineers. (See Appendix A for address.) The alongside depths given in the table are reported depths. (For information on the latest depths, contact the operator.) All the facilities described have highway connections and many have railway connections. A few of the facilities have water available.

Supplies

(315) Bunker fuel is available by tank vessel from Cleveland. Limited marine supplies and provisions are available at Fairport Harbor.

Small-craft facilities

(316) Several marinas on the Grand River provide transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, marine supplies, and launching ramps. Mobile lifts to 18 tons are available for hull, engine, and electronic repairs. In 1977, depths of 2 to 7 feet were reported alongside the berths.

Communications

(317) Fairport Harbor has good highway connections and is served by CSX Transportation, Inc.

Charts 14825, 14826, 14829

(318) From Fairport Harbor, the shoreline trends southwest for about 29 miles to the main entrance to Cleveland Harbor. There is deep water about 1 mile offshore at Fairport Harbor, decreasing to 0.5 mile or less offshore at Cleveland. Several small-craft harbors and marinas are along this stretch of low wooded hills.

Charts 14825, 14829

(319) **Mentor Harbor**, about 4.5 miles southwest of Fairport Harbor, comprises a group of privately developed small-craft channels and basins. The entrance to the harbor, protected by parallel breakwaters, is marked by private lights on the outer and inner ends of the breakwaters; a private **142°** range marks the approach. Local yachting interests usually maintain the entrance channel, close to the east breakwater. After strong northwest to northeast winds, sandbars are reported to form in the entrance channel. In 1985, depths of 10 feet were reported in the entrance channel with, in 1979, 4 feet alongside the berths in the harbor. Transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out facilities, and marine supplies are available. Mobile lifts to 25 tons are available for hull, engine, and electronic repairs.

(320) A wreck, covered 20 feet, is 1.5 miles west-northwest of the entrance to Mentor Harbor.

(321) **Chagrin River** is about 10 miles southwest of Fairport Harbor. The entrance is marked by a private light on the east side and by private lights on the pier on the west side of the mouth. In 1979, the controlling depth in the river was 1 foot, except for shoaling to bare on the east side about 200 feet inside the entrance. Several marinas in the river provide transient berths, water, electricity, sewage pump-out, marine supplies, and launching ramps. Mobile lifts to 40 tons are available for hull, engine, and electronic repairs. In 1999, depths of about 8 feet were reported in the lagoon on the west side of the river just inside the entrance.

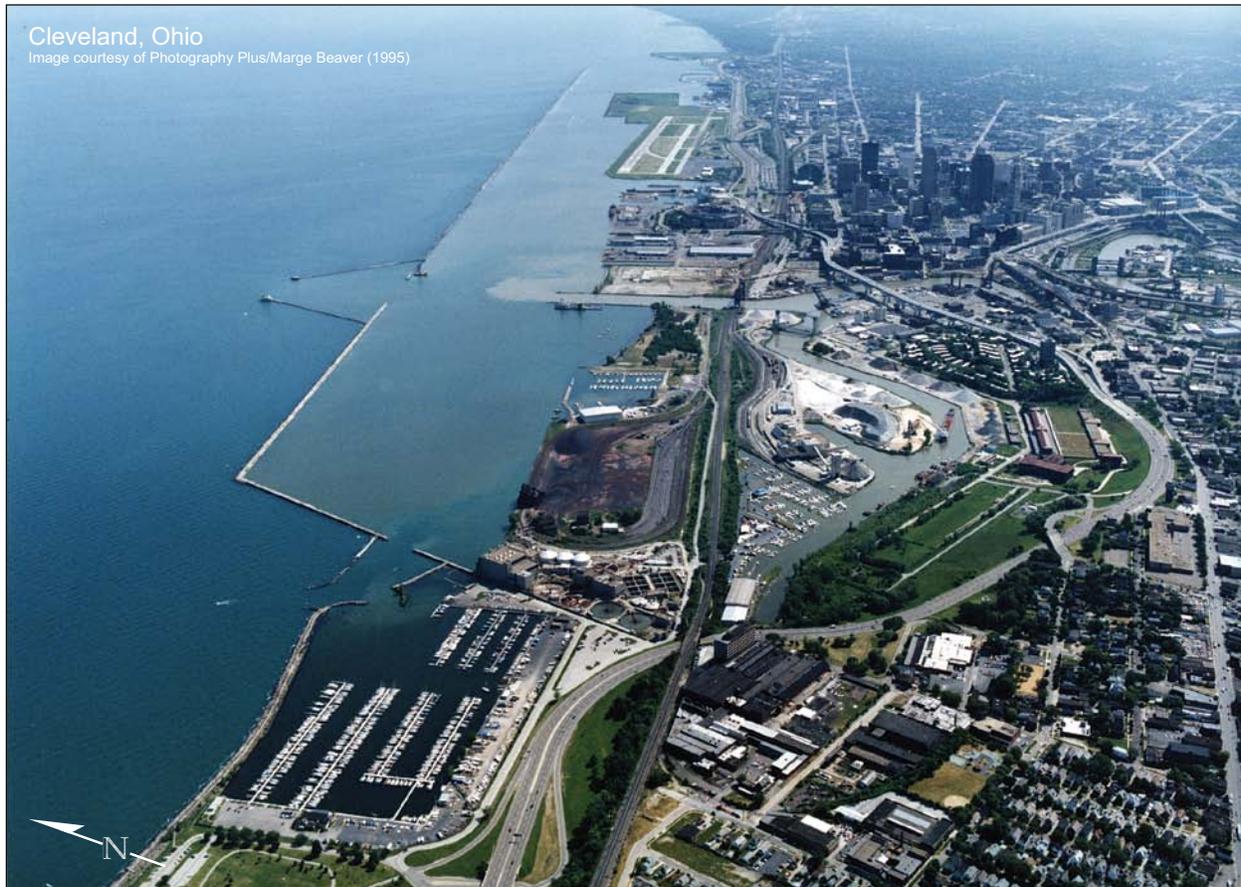
(322) The intake channel of a powerplant is just west of the mouth of Chagrin River. A private light marks the outermost part of the breakwaters that protect the channel.

Charts 14826, 14829

(323) The Wildwood Yacht Club harbor is about 5.4 miles northeast of Cleveland Harbor East Entrance Light, close northeast of **Euclid Creek**. The entrance is marked by private lights on the ends of the east and west pierheads. A detached breakwater is marked by private lights. In 1977, the reported controlling depths were 7 feet in the entrance, and 7 to 11 feet in the harbor.

(324) The Northeast Yacht Club Basin is adjacent to the Cleveland sewage disposal plant, about 4 miles northeast of Cleveland Harbor East Entrance Light. The entrance is marked by private lights on the east end of the north breakwater and the north end of the east breakwater. In 1977, the reported controlling depth was 6 feet in the entrance and in the basin.

(325) In 1984, a dangerous submerged wreck was reported about 2 miles northwest of the mouth of Euclid Creek in about 41°36'N., 81°36'W.



- (326) About 3.1 miles southwest of Euclid Creek, at the mouth of a stream known locally as **Dugway Brook**, are submerged pilings in 12 feet of water.

Charts 14826, 14829, 14839

- (327) **Cleveland Harbor**, about 175 miles southwest of Buffalo and 95 miles east of Toledo, consists of an outer harbor formed by breakwaters and an inner harbor made up of the **Cuyahoga River**, and the **Old River** which was the original outflow channel of the Cuyahoga River. The city of **Cleveland, OH**, is one of the major industrial centers on Lake Erie. The major commodities handled at the port are steel, heavy machinery, dry bulk and salt.

- (328) Vessels calling at Cleveland Harbor may obtain information on river traffic by contacting the Great Lakes Towing Co. dispatcher on VHF-FM channels 16 or 10, or by radiotelephone through a land station, telephone, 800-321-3663.

- (329) An unmarked **dumping ground** with a least reported depth of 35 feet is about 9.3 miles north of the main entrance to Cleveland Harbor.

Prominent features

- (330) The most prominent objects when approaching Cleveland Harbor are the Municipal Stadium 0.7 mile east of the mouth of the Cuyahoga River, the Federal

Office Building and the Erievue Plaza Tower about 1.1 miles east of the mouth, the Terminal Tower 1 mile southeast of the mouth, and the lighted *W* sign 3.3 miles west of the mouth on the lakefront.

- (331) **Cleveland Waterworks Intake Crib Light** (41°32'54"N., 81°45'00"W.), 55 feet above the water, is a private aid shown from a square house on a cylindrical crib about 3.3 miles northwest of the harbor entrance; a sound signal is at the light.

- (332) **Cleveland Waterworks East Entrance Light 2** (41°32'35"N., 81°39'05"W.), 59 feet above the water, is shown from a skeleton tower at the end of the outer harbor breakwater.

- (333) **Cleveland Harbor Main Entrance Light** (41°30'32"N., 81°43'04"W.), 63 feet above the water, is shown from a white conical tower with attached building on the west side of the main entrance to Cleveland Harbor; a seasonal sound signal is at the light.

Channels

- (334) Cleveland outer harbor is formed by a series of breakwaters paralleling the shore for about 1 mile west and 4 miles east of the mouth of the Cuyahoga River. Lights mark the ends of each of the breakwaters. The main entrance from Lake Erie is through a dredged approach channel opposite the mouth of the river. The harbor may also be entered at the east end, and small craft may enter at the west end. The anchorage in the outer harbor has a mud and sand bottom. In the inner

Structures across Cuyahoga River						
Name•Description•Type	Location	Miles*	Clear Width of Draw or Span Opening (feet)	Clear Height above Low Water Datum (feet)	Information	
Old River						
1	CSX Railroad Bridge (bascule)	41°29'54"N., 81°42'30"W.	0.89	170	6	
2	Willow Avenue Bridge (vertical lift)	41°29'51"N., 81°42'38"W.	1.02	150	12 (down); 98 (up)	
Main River Channel						
3	Norfolk Southern Railroad Bridge (vertical lift)	41°30'00"N., 81°42'33"W.	0.76	250	8 (down); 98 (up)	Note 1
4	Main Avenue Viaduct	41°29'55"N., 81°42'19"W.	1.01	218	92	A vertical clearance of 97 feet is available for the 165-foot center width
5	CSX Railroad Bridge (bascule)	41°29'45"N., 81°42'08"W.	1.28	229	8	
6	Center Street Bridge (swing)	41°29'39"N., 81°42'12"W.	1.39	113	17	
7	Detroit-Superior Viaduct	41°29'37"N., 81°42'13"W.	1.42	113	98	
8	Union Terminal Viaduct	41°29'18"N., 81°42'05"W.	1.89	200	98	
9	Columbus Road Bridge (vertical lift)	41°29'18"N., 81°42'02"W.	1.93	220	17 (down); 98 (up)	
10	Flats Industrial Railroad Bridge (vertical lift)	41°29'31"N., 81°41'59"W.	2.24	200	8 (down); 97 (up)	
11	Conrail Bridge (vertical lift)	41°29'39"N., 81°41'53"W.	2.42	200	23 (down); 98 (up)	
12	Carter Road Bridge (vertical lift)	41°29'39"N., 81°41'52"W.	2.43	201	22 (down); 97 (up)	
13	Eagle Avenue Bridge (vertical lift)	41°29'36"N., 81°41'32"W.	2.80	187	15 (down); 97 (up)	
14	Hope Memorial Bridge (fixed)	41°29'21"N., 81°41'37"W.	3.14	178	96	
15	Conrail Bridge (bascule)	41°29'19"N., 81°41'37"W.	3.19	134	20	
16	Norfolk Southern Railroad Bridge (vertical lift)	41°29'12"N., 81°41'30"W.	3.34	200	64 (down); 97 (up)	
17	Inner Belt Freeway Bridge (fixed)	41°29'10"N., 81°41'25"W.	3.42	230	93	A vertical clearance of 97 feet is available for the 199-foot center width
18	West 3 rd Street Bridge (vertical lift)	41°29'17"N., 81°41'09"W.	3.69	200	10 (down); 97 (up)	
19	Overhead power cable	41°29'17"N., 81°41'08"W.	3.71		124	
20	Newburgh & South Shore Railroad Bridge (bascule)	41°28'46"N., 81°40'30"W.	4.72	102	11	
21	CSX Railroad Bridge (bascule)	41°28'45"N., 81°40'28"W.	4.75	102	10	
22	Overhead power cable	41°28'45"N., 81°40'27"W.	4.76		121	
23	Overhead power cable	41°28'44"N., 81°40'27"W.	4.77		105	
24	I-490 Bridge (fixed)	41°28'43"N., 81°40'25"W.	4.79	110	101	
25	Overhead power cable	41°28'18"N., 81°40'08"W.	5.34		122	
26	Overhead conveyor	41°28'18"N., 81°40'08"W.	5.35	210	99	
27	Overhead pipeline	41°28'16"N., 81°40'08"W.	5.39	210	99	
28	River Terminal Railroad Bridge (bascule)	41°28'14"N., 81°40'08"W.	5.42	129	15	
29	Wheeling & Lake Erie Railroad Bridge (vertical lift)	41°28'11"N., 81°40'08"W.	5.47	200	28 (down); 97 (up)	
30	Overhead power cable	41°28'11"N., 81°40'09"W.	5.49		122	
31	Norfolk Southern Railroad Bridge (fixed)	41°27'53"N., 81°40'37"W.	6.07	27	14	
32	Overhead telephone cable	41°27'53"N., 81°40'38"W.	6.08	N/A	N/A	
33	Newburgh & South Shore Railroad Bridge (fixed)	41°27'53"N., 81°40'38"W.	6.09	59	14	
34	Overhead cable	41°27'52"N., 81°40'40"W.	6.10		118	

* Miles above West Pierhead Light

Note 1 – The bridgetender monitors VHF-FM channel 16 and works on channel 13; call sign, KUF-618.

See 33 CFR 117.1 through 117.49, chapter 2, for drawbridge regulations.

Bridges over Cuyahoga River will be closed to river traffic as follows: Carter Road and Eagle Avenue bridges, 0730 to 0800, 0815 to 0845, 1615 to 1645, and 1700 to 1730, provided that when these two bridges are opened between 0800 and 0815 and between 1645 and 1700 the opening shall be so timed as to permit a moving vessel to pass through both draws; Columbus Road and West Third Street, 0730 to 0800 and 1700 to 1730. The above hours are not applicable to Sundays, legal holidays, and Saturday afternoons, nor at times of emergency when fire tugs request the opening of any draw, nor when there is a swift current in the river. The rush hour bridge closures do not apply to commercial vessels; however, commercial vessels are asked to voluntarily comply with such closures.

harbor, dredged channels lead upstream for about 5.6 miles in the Cuyahoga River and for about 1 mile in Old River, which branches west from Cuyahoga River 0.4 mile above the mouth. Lighted and unlighted buoys mark the limits of the dredged areas in the outer harbor. The piers at the mouth of the river are marked on the outer ends by lights.

- (335) The Federal project depths are 29 feet in the approach channel from deep water in the lake, thence 28 feet through the entrance channel to the mouth of the river and in West Basin, 28-27 feet in East Basin, and 25 feet in Airport Range. In the inner harbor, project depths are 27 feet in the Cuyahoga River from the mouth to the junction with Old River, thence 23 feet to the upstream limit of the project, and 27 feet in Old River. (See Notice to Mariners and latest edition of charts for controlling depths.)

Anchorage

- (336) Deep-draft vessels normally anchor about 2 miles southwest or 3 miles east of Cleveland Waterworks Intake Crib Light in about 40 to 48 feet of water, clay and gravel bottom. The holding ground at these locations is reported to be good. Avoid anchoring over the potable water intake, the outer end of which is marked by a lighted buoy 0.7 mile west of Cleveland Waterworks Intake Crib Light. General anchorages are in the northwest part of West Basin and south of the dredged channel in the east part of East Basin. An explosives anchorage is on the northwest side of the east breakwater. (See **33 CFR 110.1 and 110.207**, chapter 2, for limits and regulations.) In 1977, it was reported that the East Basin general anchorage and the explosives anchorage had not been used for about 10 years. The West Basin anchorage has a sand and mud bottom and is used only occasionally. The harbor master, who has control of the waters for all three anchorages, generally orders vessels to anchor outside the harbor. Vessels are prohibited from anchoring within 2,000 feet west of the main entrance channel.

Dangers

- (337) During flood stages of the Cuyahoga River, debris may be encountered in the river and in the outer harbor.
- (338) **Safety zones** have been established in the vicinity of river bends along Cuyahoga and Old Rivers. Mooring, standing or anchoring is prohibited in these areas. (See **33 CFR 165.1 through 165.7, 165.20** through 165.23, and 165.903, chapter 2, for limits and regulations.)
- (339) Heavy small pleasure-craft traffic during the boating season is in Old River and on the Cuyahoga River as far upstream as just below the Conrail Bridge at mile 2.42.

Local bridge regulations

- (340) **Sec. 7.1511.** A copy of the ordinances relating to the management of bridges and viaducts and the signals for opening and closing the same shall be posted up in the pilot house of every tug employed in navigating the Cuyahoga River or old river bed, and the harbor master is hereby instructed to furnish, upon application, a printed copy of the same to the master of any such tug.
- (341) **Sec. 7.1701.** No more than one boat or craft for which the draw of any bridge has to be opened or swung shall pass through said draw at the same time.
- (342) **Sec. 7.1706.** The captain, bridgetenders, or other persons in charge of any of the drawbridges shall not close the same against vessels or boats seeking to pass through, until passengers and teams have been delayed fully 10 minutes by the said draws of the above-mentioned bridges being open.
- (343) **Sec. 7.1708.** The director of port control shall by rule designate the hours when it may be necessary to keep any city drawbridge closed for the accommodation of traffic.
- (344) **Sec. 7.1713.** No material of any kind shall be deposited under any of the viaducts, without a permit from the Director of Port Control; no material shall be deposited adjacent to viaduct that would injure the structure in case of fire; and no bills, posters, or advertisements of any kind shall be posted on any part of any viaduct.
- (345) **Sec. 7.1714.** Any person violating any of the provisions of this subdivision shall be fined not less than \$5 nor more than \$25, and shall also be liable to the city for all damage that may be done to the drawbridge by collision or otherwise.

Weather, Cleveland and vicinity

- (346) Cleveland, OH, located on the south shore of Lake Erie and in northeastern Ohio, averages about 12 days each year with maximum temperatures in excess of 90°F (32.2°C). July is the warmest month with an average high of 83°F (28.3°C) and an average minimum of 62°F (16.7°C). January is the coolest month with an average high of 34°F (1.1°C) and an average minimum of 19°F (-7.2°C). The highest temperature on record for Cleveland is 104°F (40°C) recorded in June 1988 and the lowest temperature on record is -20°F (-28.9°C) recorded in January 1994. About 122 days each year sees temperatures below 32°F (0°C) and an average ten days each year records temperatures below 5°F (-15°C). Every month has seen temperatures below 40°F (4.4°C) except July (41°F, 5°C) and every month except July, August, and September has recorded temperatures at or below freezing (0°C).
- (347) The average annual precipitation for Cleveland is 37.2 inches (945 mm) which is fairly evenly distributed throughout the year. Precipitation falls on about 220 days each year. The wettest month is July with 3.6 inches (91 mm) and the driest, February, averages only 2.3 inches (58 mm). An average of 33 thunderstorm days occur each year with June and July being the most

Facilities in Cleveland Harbor								
Name	Location	Berthing Space (feet)	Depths* (feet)	Deck Height (feet)	Mechanical Handling Facilities and Storage	Purpose	Owned/ Operated by:	
West Basin								
1	Cleveland Bulk Terminal	41°29'48"N., 81°43'25"W.	1875	24	9	• Open storage (1 million tons) • Three diesel front-end loaders	Receipt of iron ore, iron-ore pellets and other dry-bulk commodities	Cleveland-Cuyahoga County Port Authority/ Carause Lime & Stone
East Basin								
2	Cleveland-Cuyahoga Port Authority Berth 22	41°30'17"N., 81°42'26"W.	780	27	10	• Open storage (9 acres)	Receipt of miscellaneous dry-bulk material	Cleveland-Cuyahoga County Port Authority
3	Cleveland-Cuyahoga Port Authority Pier 24	41°30'21"N., 81°42'23"W.	1833	27	10.4	• Open storage (3 acres) • Covered storage (144,000 square feet)	Receipt and shipment of conventional/containerized general cargo and steel products. Receipt of fluorspar, bauxite and newsprint	Cleveland-Cuyahoga County Port Authority/ Ceres Terminals Co.
4	Cleveland-Cuyahoga Port Authority Pier 26	41°30'25"N., 81°42'18"W.	1676	25	10.4	• Open storage (1.2 acres) • Transit shed	Receipt and shipment of conventional/containerized general cargo	Cleveland-Cuyahoga County Port Authority/ Ceres Terminals Co.
5	Cleveland-Cuyahoga Port Authority Stadium Wharf Berths 28, 30, 32	41°30'33"N., 81°42'01"W.	1606	27	10.4	• Open storage (10 acres) • Five crawler cranes (65 to 230-tons) • Front-end loaders	Receipt and shipment of conventional/containerized general cargo. Receipt of aluminum pigs; handling of steel products	Cleveland-Cuyahoga County Port Authority/ Federal Marine Terminals Co., Inc.
Old River								
6	Lafarge Cement Corp. Cleveland Terminal Wharf	41°29'49"N., 87°42'32"W.	415	24	8	• Silo storage (36,000 tons) • Two 10-inch pipelines extend from wharf to silos	Receipt of cement	Lafarge Cement Corp.
7	Ontario Stone Corp. Old River Dock No. 3	41°29'41"N., 81°42'49"W.	600	25	8	• Open storage (200,000 tons of material storage) • Four front-end loaders	Receipt of limestone and other dry bulk commodities	Ontario Stone Corp.
8	Ontario Stone Corp. Old River Dock No. 4	41°29'37"N., 81°42'49"W.	1620	19	7	• Open storage (300,000 tons of material storage) • Four front-end loaders	Receipt of limestone and other dry bulk commodities	Ontario Stone Corp.
9	Sand Products Corp.	41°29'33"N., 81°42'56"W.	1000	20		• Silo storage (1,000 tons) • Four front-end loaders	Receipt of sand	Sand Products Corp.
10	Cargill Salt Division Cleveland Mine Wharf	41°29'36"N., 81°43'05"W.	602	18	12	• Covered storage (36,000 tons) • One fixed loading tower with ground-level hopper serves belt-conveyor system	Shipment of graded, dry-bulk rock salt	Cargill Salt Division, Cargill Inc.
Cuyahoga River								
11	Cleveland-Cuyahoga Port Authority Dock 20	41°30'09"N., 81°42'38"W.	1200	27	8	Open storage (9 acres)	Receipt of miscellaneous dry-bulk materials	Cleveland-Cuyahoga County Port Authority
12	Essroc Italcemente Group, Cement Dock	41°30'03"N., 81°42'34"W.	1495	27	8	• Silo storage (13,800 tons) • Three 10-inch unloading pipelines	Receipt of cement	Cleveland-Cuyahoga County Port Authority/ Essroc Italcemente Group
13	Ontario Stone Corp. Old River Dock No. 1	41°29'58"N., 81°42'34"W.	500	25	8	Open storage (140,000 tons)	Receipt of limestone and other dry-bulk commodities	Ontario Stone Corp.
14	Southdown Cement Co. Cleveland Dock	41°29'28"N., 81°42'00"W.	600	20	5	Silo storage (15,000 tons)	Receipt of bulk cement	Southdown Cement Co.
15	United Ready Mix	41°29'28"N., 81°41'56"W.	895	18	10	• Open storage (19,000 tons of sand and gravel) • Front-end loaders	Receipt of sand and gravel; occasional receipt of stone	Forest City Enterprise Inc./United Ready Mix Inc.
16	Mid Continent Coal and Coke Co. Cleveland Dock	41°29'30"N., 81°41'33"W.	1745	8	6	• Open storage (20,000 tons) • One fixed loading tower with conveyor and loading chute serves belt-conveyor system	Shipment of coal, lignite and coal coke	Mid Continent Coal and Coke Co.
17	River Dock Inc.	41°29'17"N., 81°41'33"W.	630	19	8	• Open storage (780,000 tons) • One 4½-cubic-yard front-end loaders	Receipt of limestone	River Dock, Inc.
18	Lafarge Corp. W 3 rd St Cleveland Wharf	41°29'15"N., 81°41'17"W.	1680	24	6	• Open storage (185,000 tons) • Three front-end loaders	Receipt of sand, limestone and dry-bulk materials	Lafarge Corp., Construction Materials Group
19	Ontario Stone Corp., Cuyahoga River Dock No. 2	41°29'20"N., 81°41'05"W.	565	22	8	• Open storage (100,000 tons) • Four front-end loaders	Receipt of limestone	Ontario Stone Corp.

Facilities in Cleveland Harbor

	Name	Location	Berthing Space (feet)	Depths* (feet)	Deck Height (feet)	Mechanical Handling Facilities and Storage	Purpose	Owned/ Operated by:
20	Fleet Supplies Cuyahoga River Wharf	41°29'20"N., 81°40'58"W.	383	20	9	Tank storage for 2.6 million gallons of liquid calcium and 92,320 barrels of petroleum	Receipt of liquid calcium and diesel fuel	Arc Terminal
21	Osborne Concrete and Stone Co. Cuyahoga Stone Dock	41°29'15"N., 81°40'48"W.	2150	22	6	• Open storage (27 acres) • Cranes and portable electric belt conveyors • Four front-end loaders	Receipt of gravel and shipment of iron ore	Osborne Concrete and Stone Co.
22	Bituminous Products Co. Cleveland Terminal Dock	41°29'03"N., 81°40'39"W.	300	18	10	Tank storage (215,900 barrels)	Receipt of asphalt	Osborne Inc./ Bituminous Products Co.
23	Blue Circle Cement Co. Cuyahoga Terminal Dock	41°28'58"N., 81°40'38"W.	1335	19	8	Silo storage (24,000 tons)	Receipt of cement	Blue Circle Cement Co.
24	Lafarge Corp. Cleveland "J" Wharf	41°28'54"N., 81°40'35"W.	550	19	5	Open storage (4 acres)	Receipt of limestone and other dry-bulk materials	Lafarge Corp., Construction Materials Group
25	LTV Steel Corp. Cuyahoga Lower Dock, West Side	41°28'28"N., 81°40'14"W.	2054	10	10.7	• Open storage for 750,000 tons of iron-ore pellets and 35,000 tons of limestone • One traveling bridge crane	Receipt of iron-ore pellets and limestone	LTV Steel Corp.
26	LTV Steel Corp. Cuyahoga West Side, Middle Dock	41°28'02"N., 81°40'19"W.	2780	19	9.5	Open storage for 850,000 tons of iron-ore pellets and 150,000 tons of limestone	Receipt of iron-ore pellets, limestone and ferrous scrap	LTV Steel Corp.
27	LTV Steel Corp. Cuyahoga Fuel Dock	41°28'03"N., 81°40'15"W.	1150	20	8	Tank storage (285,700 barrels)	Receipt of fuel oil for plant consumption	LTV Steel Corp.
28	LTV Steel Corp. Cuyahoga Upper Dock, East Side	41°27'52"N., 81°40'29"W.	1320	20	10	• Open storage for 674,000 tons of iron-ore pellets • Two electric traveling bridge cranes • Three front-end loaders	Receipt of iron-ore pellets	LTV Steel Corp.

* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.

likely months. Snow falls on about 84 days each year and averages about 57 inches (1448 mm) each year. December, January, and February each average greater than 12 inches (305 mm) per month. One foot or greater (>1;305 mm) snowfalls in a 24-hour period have occurred in each month November, December, and February and 14 inches (356 mm) fell in one 24-hour period during February 1993. About 12 days each year has a snowfall total greater than 1.5 inches (38 mm) and snow has fallen in every month except June, July, August, and September. Fog is present on average 148 days each year and is evenly distributed throughout the year with a slight maximum in August.

(348) The prevailing wind direction in Cleveland is southwest. March is the windiest month. The highest gust on record was a southwest wind of 71 knots recorded in 1978.

(349) (See Appendix B for **Cleveland climatological table**.)

Towage

(350) Tugs to 2,000 and 1,200 hp are available from Great Lakes Towing Co. or Gaelic Tugboat Co., respectively. Arrangements for tugs are made through the companies' dispatchers in Cleveland at 800-321-3663 or 216-566-0400, respectively. Both dispatchers may be contacted on VHF-FM channel 16 (156.80 MHz). At least 3 hours advance notice is requested.

(351) At least 2 hours advance notice is requested. Vessels carrying 1,200 tons or more of gasoline, oil, explosives, or other dangerous material, and all vessels carrying 3,000 tons or more of cargo of any kind, must have the assistance of a tug or tugs while navigating the Cuyahoga River south of Superior Avenue.

Quarantine, customs, immigration, and agricultural quarantine

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

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

(354) Cleveland is a **customs port of entry**.

Coast Guard

(355) A Marine Safety Unit and the headquarters of the Ninth Coast Guard District are at Cleveland. (See Appendix A for addresses.) **Cleveland Coast Guard Station** is on the south side of the outer harbor just west of Burke Lakefront Airport.

Harbor Regulations

(356) Federal regulations specify a **speed limit** of 6 mph (5.2 knots) in the harbor except in the outer harbor where the speed limit is 10 mph (8.7 knots). (See **33 CFR 162.160 and 207.570**, chapter 2, for regulations.) However, the city of Cleveland has adopted a lesser **speed**

limit of no wake, 4 mph (3.5 knots) in the Cuyahoga River and Old River. During fog or when a blue light or flag is shown from any pier, wharf, bridge or other place where person or property may be endangered, a **speed limit** of 2 mph (1.7 knots) is enforced.

(357) Local harbor regulations are established by the city of Cleveland and enforced by the **harbormaster** who can be contacted at Water Control Laboratory, New West Pier, Whiskey Island, c/o Water Control Laboratory, 1201 Lakeside Avenue, Cleveland, OH 44114. Copies of the regulations can be obtained from the Office of the City Clerk, Room 216, City Hall, 601 Lakeside Avenue, Cleveland, OH 44114.

Wharves

(358) There are extensive waterfront facilities in Cleveland outer harbor and along both banks of Cuyahoga River and Old River. Only the deep-draft facilities are listed in the table. (For a complete description of the port facilities, refer to Port Series No. 43, published and sold by the U.S. Army Corps of Engineers. See Appendix A for address.) The alongside depths for the facilities in the table are reported depths. (For information on the latest depths, contact the operator.) All the facilities described have highway connections, and many have railway, water, and electrical shore-power connections. Many of the piers, wharves, and docks are available for winter mooring of vessels during the closed navigation season.

Supplies

(386) All types of marine supplies and provisions are available at Cleveland. Vessels normally receive bunker and diesel fuels at their berths from self-propelled vessels.

Repairs

(387) The Halvorsen Boiler and Engineering Company maintains portable equipment for making repairs to vessels at their berths and a machine shop capable of producing shafts 16 feet by 14 inches. G and W Industries, Inc. has a berth on the south side of the river above the Carter Road bridge with a 60-ton crane and floating cranes to 35 tons. They produce shafts up to 12 feet by 36 inches. The above repair companies are on the Cuyahoga River and provide all types of above- the-waterline repairs to vessels in Cleveland harbor.

(388) Great Lakes Towing Company's facility is in Old River and has a 250-ton floating drydock, a heavy lift crane, and complete machinery facilities for above and below-waterline repairs of all types.

Small-craft facilities

(389) Two large marinas on the southern edges of West Basin can provide transient berths, gasoline, diesel fuel, water, ice, electricity, some marine supplies, pump-out facilities and dry winter storage. Marine lifts to 75 tons

are available for full repairs. A boatyard at the upper end of Old River has a travellift and crane with capacities to 20 tons, and can make small-craft repairs of all kinds. Marine supplies and provisions are available in the city and at several marine supply companies on the Cuyahoga River. Numerous marinas are along the banks of Old River and Cuyahoga River.

Communications

(390) Cleveland is a major transportation terminus. The city is served by several rail lines and has excellent highway connections. Major international and domestic airlines serve Cleveland-Hopkins International Airport in the southwest part of the city and Burke Lakefront Airport on the south side of the outer harbor.

Charts 14826, 14829

(391) West from Cleveland, the shore consists of 10- to 20-foot-high bluffs and sandy beaches, and the shoreline trends generally west to **Avon Point** (41°30'54"N., 82°00'48"W.), a broad rounding point projecting somewhat to north about 15 miles from the Cleveland entrance. From Avon Point to Lorain, about 10 miles southwest, the bluffs are smaller. Between Cleveland and Lorain, deep water is no more than 1.2 miles offshore except just east of Lorain where detached shoal spots extend 3 miles into the lake. A wreck, covered 30 feet, is 4.3 miles north-northeast of Avon Point.

(392) **Rocky River Harbor** is at the mouth of the **Rocky River**, about 6.5 miles west of Cleveland Harbor entrance, at the city of **Lakewood, OH**.

(393) Two unmarked **dumping grounds** with least reported depths of 35 feet are 1.3 and 3.6 miles north of the mouth of Rocky River.

Channels

(394) The harbor is entered from Lake Erie through a dredged entrance channel on the southwest side of a pier that extends lakeward from the east side of the mouth of Rocky River. Lights mark the outer and inner ends of the pier. The dredged channel extends upstream for 0.9 mile above the mouth to a turning basin at the head. An anchorage basin is on the southwest side of the channel just inside the mouth of the river. (See Notice to Mariners and the latest edition of the chart for controlling depths.)

Bridges

(395) Three fixed bridges with a least clearance of 49 feet cross the navigable portion of Rocky River. The Clifton-Westlake highway bridge, the Norfolk Southern Railway bridge, and the Detroit Road highway bridge are 0.4, 0.5, and 0.7 mile above the mouth, respectively. Overhead power cables with a minimum clearance of 49 feet are just below the railroad bridge and just below the Detroit Road bridge.

(396) **Harbor regulations** have been established by the city of Lakewood. The Department of Public Safety enforces a 6 mph (5.2 knots) **speed limit**. Copies of the regulations may be obtained from the Department of Public Safety.

Small-craft facilities

(397) Most of the facilities in the harbor are private. However, limited transient berths, gasoline, water, electricity, a launching ramp, and marine supplies are available. Hoists to 6 tons are available for hull and engine repairs.

(398) About 2.2 miles west-southwest of Avon Point, a private light marks the outer end of the breakwaters protecting the intake channel of the Cleveland Electric Illuminating Co. A wreck, covered 6 feet, is close north of the light.

Charts 14826, 14829, 14841

(399) **Lorain Harbor**, serving the city of **Lorain, OH**, is about 25 miles west of Cleveland Harbor. It comprises the lower 3 miles of the **Black River** and an outer harbor.

(400) An unmarked **dumping ground** with a least reported depth of 35 feet is centered about 3.5 miles north of the harbor entrance.

Prominent features

(401) The ore docks on the west side of the mouth of Black River and the stacks of the powerplant 0.3 mile southwest of the mouth are prominent.

(402) **Lorain Harbor Light** (41°28'52"N., 82°11'43"W.), 60 feet above the water, is shown from a tower on the west end of the detached breakwater on the north side of the entrance channel. A mariner radio activated sound signal is at the light, initiated by keying the microphone five times on VHF-FM channel 83A.

Channels

(403) The harbor is entered through a dredged entrance channel that leads east-southeast from the deep water in Lake Erie on the south side of a detached breakwater, and then leads southeast between converging breakwaters to the mouth of Black River. The mouth of the river is entered between parallel piers, and the dredged channel leads upstream for about 2.8 miles. A turning basin is on the southwest side of the channel, 1.6 miles above the mouth and two turning basins are at the head of the project. In the outer harbor, basins are on either side of the entrance channel. From the south side of the outer harbor west basin, an approach channel leads southeast to the municipal pier 0.2 mile west of the mouth of the river. Lights mark the ends of the breakwaters and the piers at the river mouth. (See Notice to Mariners and the latest edition of the chart for controlling depths.)

(404) In 2008, the controlling depths were 25 feet through the entrance channel and mouth of the Black River to the Lorain Yacht Basin, thence 22 feet to the

21st Street bridge (except for lesser depths to 17½ feet along the channel edges), thence 18 feet to the head of the project (except for lesser depths to 12½ feet at the head of the project.) The turning basin on the southwest side of the channel, 1.6 miles above the mouth, had depths of 16 to 20 feet. The two turning basins at the head of the project, one on the north side and the other at the head, had depths of 13 to 16 feet and 7 to 10 feet, respectively. The depths in both the east and west basins of the outer harbor were 20 to 23 feet with lesser depths along the edges.

(405) A semicircular diked disposal area is on the northeast side of the east breakwater. A floating breakwater extends about 750 feet at right angles from the southwest side of the same breakwater.

Dangers

(406) Several detached shoals are in the approach to Lorain Harbor. A shoal with least depths of 22 feet extends 1.4 miles from shore within 2 miles east of the harbor entrance. Several shoal spots with depths of 24 to 28 feet are from 1.4 to 2.4 miles north of Lorain Harbor Light.

Bridges

(407) Erie Avenue bridge, about 0.6 mile above the mouth of Black River, has a bascule span with a clearance of 33 feet at the center. Norfolk Southern Railway bridge, 1.2 miles above the mouth, has a vertical lift span with clearances of 35 feet down and 123 feet up. The 21st Street bridge, 2 miles above the mouth, has a fixed span with a clearance of 97 feet. An overhead power cable on the east side of the bridge has a clearance of 120 feet. (See **33 CFR 117.1 through 117.59 and 117.850**, chapter 2, for drawbridge regulations.)

Towage

(408) Tugs for Lorain are available from Cleveland. (See Towage under Cleveland.)

Quarantine, customs, immigration, and agricultural quarantine

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

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

(411) Lorain is a **customs station**.

Coast Guard

(412) Lorain Coast Guard Station is on the east side of the Black River just inside the mouth.

Harbor regulations

(413) A **speed limit** of 6 mph (5.2 knots) is enforced in the harbor except in the outer harbor where it is 10 mph (8.7 knots). (See **33 CFR 162.160 and 207.570**, chapter 2, for regulations.)

- (414) Local harbor regulations are established by the City of Lorain. Information may be obtained by contacting the Lorain Port Authority, City Hall, 200 West Erie, Lorain, OH 44052, telephone: (216) 244-2269.

Wharves

- (415) Lorain has piers and wharves in the southwest part of the outer harbor and along both sides of the Black River. Only the deep-draft facilities are described. (For a complete description of the port facilities, refer to Port Series No. 42, published and sold by the U.S. Army Corps of Engineers. See Appendix A for address.) The alongside depths given for the facilities described are reported depths. (For the latest depths, contact the operator.) All the facilities described have highway connections. Many have railroad, water, and electrical shore-power connections. Special cargo handling equipment is described under the individual facilities. Many of the facilities are used for mooring vessels during the closed navigation season.

- (416) **LTV Steel Co. Lorain Pellet Terminal Mooring Basin:** 0.1 mile west of the entrance to Black River; northeast face 1,090 feet berthing space; 20 to 23 feet alongside; southwest face 1,095 feet berthing space; 25 feet alongside; deck height, 8 feet; mooring of vessels awaiting berth at LTV Steel Corp., Lorain Pellet Terminal Wharf; owned and operated by LTV Steel Corp.

- (417) **LTV Steel Corp. Lorain Pellet Terminal Wharf:** west side of the river 0.2 mile above the outer end of the west pier; 2,200 feet of berthing space; 27 feet alongside; deck height, 8 feet; open storage for 532,000 tons of ore; receipt and shipment of iron ore pellets; owned and operated by LTV Steel Corp.

- (418) **USX Corp., Lorain Works, Slag Dock:** southwest side of the river 0.3 mile above the 21st Street bridge; 220 feet of berthing space with dolphins; 20 feet alongside; three front-end loaders; open storage for 30,000 tons of material; receipt of miscellaneous dry bulk materials and occasional shipment of crushed slag and coke breeze; owned and operated by USX Corp.

- (419) **USX Corp., Lorain Works, Ore Dock:** south side of the river 0.6 mile above the 21st Street bridge; 2,490-foot face; 26 feet alongside; deck height, 10½ feet; traveling of bridge crane; conveyor belt capacity 5,000 tons per hour; three front-end loaders; open storage for 3 million tons of iron ore and 310,000 tons of limestone; receipt of iron ore and limestone; owned and operated by USX Corp.

- (420) **Gold Bond Building Products, Lorain Plant Wharf:** east side of the river about 0.3 mile above the 21st Street bridge; 750 feet of berthing space with dolphins; 20 feet alongside; deck height, 7 feet; open storage for 120,000 tons of gypsum rock; receipt of gypsum rock; owned and operated by Gold Bond Building Products, Division of National Gypsum Co.

- (421) **Jonick Dock and Terminal Wharf:** east side of river 0.2 mile above the Norfolk Southern Railway bridge; 300 feet berthing space with dolphins; 27 feet alongside;

deck height, 5 feet; covered storage for 40,000 tons of bulk material, open storage for 12,000 tons of material; receipt of crushed stone, occasional receipt of miscellaneous bulk materials; owned and operated by Jonick & Co.

- (422) **Terminal Ready-Mix Dock:** north side of the river above the Norfolk Southern Railway bridge; 150-foot face; 500-foot natural bank; 10 to 25 feet alongside; deck height, 5 feet; open storage for 50,000 tons of sand and stone; receipt of sand and stone; owned by Ethel Falbo and operated by Terminal Ready-Mix, Inc.

Supplies

- (423) Bunker C oil is available by tank barge, and diesel oil is available by truck from local companies. Provisions and marine supplies are available on the north side of the Black River just east of the Erie Avenue bridge.

Small-craft facilities

- (424) Marinas in Lorain Harbor are in the outer harbor east of the river mouth, on the north side of the river just inside the mouth, on the east side of the river just upstream of the Erie Avenue bridge and further upstream on the north side, just past the railroad bridge. These marinas can provide transient berths, gasoline, diesel fuel, water, ice, pump-out facilities, launching ramps, winter storage, marine supplies, and hull, engine, and electrical repairs. A 50-ton marine lift is available at the marina on the east side of the river, just upstream of the Erie Avenue bridge.

Communications

- (425) Lorain has highway connections and is served by three major rail lines, ConRail, Norfolk Southern, and CSX Transportation, Inc. Lorain County Airport is south of the city.

Charts 14826, 14829

- (426) From Lorain, the shoreline trends southwest for about 4 miles to Beaver Creek, thence 6 miles west to Vermilion. Throughout this stretch, deep water is about 0.9 mile offshore.

- (427) **Beaver Creek,** about 4 miles southwest of Lorain Harbor, has a small-craft harbor and summer resort at the mouth. The channel leads south between a pier and a breakwater at the mouth of the river. The entrance is marked by private lights.

- (428) In 1993, the reported depth through the channel was 8 feet. A bar that forms across the entrance reportedly washes out during the spring and after some storms, and restricts the harbor to small craft with shallow drafts. The fixed bridges and cables that cross the creek about 0.3 mile above the mouth have a minimum clearance of 9 feet. Several other overhead cables with unknown clearances cross the creek and the marina slips upstream. This harbor is within the legal boundary

of the city of Lorain, and the local harbor regulations of Lorain apply.

- (429) A marina inside the mouth of the creek has transient berths, gasoline, diesel fuel by truck, water, electricity, and a 30-ton travel lift for hull and engine repairs. For craft that can navigate under the bridges, two marinas upstream can provide gasoline, electricity, ice, marine supplies, launching ramps and full repairs .

Charts 14826, 14830

- (430) **Vermilion**, about 34 miles west of Cleveland, has a harbor used mainly by fishing and recreational craft. The harbor comprises the lower 3,000 feet of the **Vermilion River**, and an approach channel from the lake. About 0.6 mile southeast of the river entrance, a lighted tank with the name VERMILION on the side is prominent.
- (431) An unmarked **dumping ground** with a least reported depth of 32 feet is about 2.3 miles north of the entrance to Vermilion River.

Channels

- (432) The approach to the river from Lake Erie is through two dredged channels that lead around either end of a detached breakwater, join, and lead south between two piers at the mouth of the river. The channel leads upstream for about 0.6 mile to the Liberty Avenue bridge. Lights mark the ends and center of the breakwater at the ends of the piers. (See Notice to Mariners and latest editions of charts for controlling depths.)
- (433) In 2008, the controlling depths were 5 feet and 4½ feet in east and west approaches, respectively, to the mouth of the river, thence 5½ feet to the entrance of Superior Lagoon, thence 3 feet to the Liberty Avenue bridge (except for lesser depths to 1 foot along the south side of the channel about 600 feet below the bridge.)

Dangers

- (434) Just south of the dumping ground, several fish net stakes are in about 32 feet of water. A 6-foot shoal, is about 0.4 mile west of the west approach channel.

Bridges

- (435) The Liberty Avenue bridge, 0.7 mile above the pierheads, has a fixed span with a clearance of 12 feet. The Norfolk Southern Railroad bridge 0.1 mile upstream has a fixed span with a clearance of 21 feet. The Norfolk Southern Railway bridge, 1 mile above the pierheads, has a fixed span with a clearance of 14 feet. Several overhead cables with unknown clearances cross the river in the vicinity of these bridges.

Harbor Regulations

- (436) A **speed limit** of 6 mph (5.2 knots) is enforced in the harbor. (See **33 CFR 162.160 and 207.565**, chapter 2, for regulations.)

Small-craft facilities

- (437) The Kishman Fish Co. operates a 450-foot wharf on the west side of the river 0.4 mile above the entrance. There are depths of 9 to 15 feet reported alongside and a deck height of 5 feet.
- (438) Several marinas in the lower 1.2 miles of the river provide transient berths, gasoline, diesel fuel, water, ice, electricity, launching ramps, and marine supplies. Hoists to 20 tons are available at several boatyards in the river for hull and engine repairs.

Chart 14830

- (439) From Vermilion, the shoreline extends southwest for about 7.3 miles to the southernmost point of Lake Erie. Along this stretch, rocky shallows extend 1 mile offshore with deep water as much as 1.5 miles off. Thence northwest for 3.4 miles to Huron Harbor, deep water is about 1 mile offshore except just east of Huron Harbor. An unmarked 13-foot spot is near the outer end of a shoal that extends 1.5 miles into the lake east-northeast of the Huron Harbor entrance channel.

Charts 14830, 14843

- (440) **Huron Harbor** is about 44 miles west of Cleveland inside the mouth of the **Huron River** at the city of **Huron, OH**.
- (441) Grain, iron ore, and limestone are the principal commodities handled at the port.
- (442) An unmarked **dumping ground** with a least reported depth of 35 feet is 3 miles north of the entrance to Huron Harbor.

Prominent features

- (443) The stacks of the Huron Lime Co. on the east side of the river mouth are prominent.
- (444) **Huron Harbor Light** (41°24'16"N., 82°32'38"W.), 80 feet above the water, is shown from a square pyramidal tower on the west pierhead. A mariner activated sound signal is at the light, initiated by keying the microphone five times on VHF-FM channel 83A.

Channels

- (445) The harbor is entered through a dredged channel that leads southwest from deep water in Lake Erie between a pier and an adjacent disposal area on the northwest side, and a breakwater on the southeast side to the mouth of the Huron River. The channel leads into the river to a turning basin with its upper end about 0.4 mile above the mouth. Buoys mark the entrance channel, and lights mark the outer end of the pier and breakwater and each side of the river mouth. Federal project depths are 29 feet in the entrance channel to the inner end of the west pier, thence 28 feet to the turning basin, thence 27 feet in the east half of the basin and 21 feet in the west half of the basin. (See Notice to Mariners and latest

Structures across Huron River						
Name•Description•Type	Location	Miles*	Clear Width of Draw or Span Opening (feet)	Clear Height above Low Water Datum (feet)	Information	
1 Overhead telephone cables	41°23'24"N., 82°33'12"W.	0.72		70		
2 Cleveland Road East Bridge (fixed)	41°23'23"N., 82°33'11"W.	0.73	86	21		
3 Overhead cable	41°23'22"N., 82°33'11"W.	0.73		52		
4 Overhead power cable	41°23'21"N., 82°33'11"W.	0.77		50		
5 Norfolk Southern Railroad Bridge (fixed)	41°23'20"N., 82°33'11"W.	0.79	57 (right) 57 (left)	19		
6 Overhead power cable	41°23'20"N., 82°33'11"W.	0.79		50		

editions of charts for controlling depths.) Huron River is navigable by small craft for about 10 miles above the mouth.

(446) A semicircular diked disposal area is on the west side of the west pier.

Dangers

(447) An extensive area of fish net stakes is off the entrance to Huron Harbor.

Towage

(448) Tugs for Huron are available from Cleveland. (See Towage under Cleveland.)

Quarantine, customs, immigration, and agricultural quarantine

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

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

(451) Huron is within the Sandusky **customs port of entry**.

Harbor Regulations

(452) A **speed limit** of 6 mph (5.2 knots) is enforced in the harbor except in the outer harbor where the speed limit is 10 mph (8.7 knots). (See **33 CFR 162.155 and 207.570**, chapter 2, for regulations.)

(453) Local harbor regulations are established by the city of Huron and enforced by local law enforcement officials. Copies of the regulations may be obtained from the City Manager, Municipal Building, Huron, OH 44839.

Wharves

(454) Huron Harbor has deep-draft facilities on the east side of the Huron River and in the two slips that extend southeast just inside the mouth of the river. (For a complete description of the port facilities, refer to Port Series No. 42, published and sold by the U.S. Army Corps of Engineers. See Appendix A for address.) The alongside depths given for the facilities described are reported depths. (For the latest depths, contact the operator.) The facilities described have highway and rail connections.

The Norfolk Southern Railway Co., Ore Dock has water connections. During the closed navigation season, vessels moor in Slip No. 1. Special arrangements can be made for electrical connections.

(455) **The Pillsbury Co., Grain Elevator Wharf:** west side of Slip No. 2; 832-foot face; 27 feet alongside; deck height, 10½ feet at center and 6½ feet at ends; 2¼-million-bushel grain elevator; fixed tower equipped with a marine leg, and a loading spout, capacity 30,000 bushel per hour; shipment of grain; owned and operated by The Pillsbury Co.

(456) **Huron Lime Co., Stone Dock:** east side of the river mouth and the outer east side of Slip No. 1; total of 1,100 feet of berthing space; 28 to 24 feet alongside channel face, 24 to 16 feet alongside curved section, 16 to 17 feet along east side of Slip No. 1; deck height, 8 feet; one front-end loader; open storage for 120,000 tons of limestone; silos for 1,800 tons of lime; receipt of limestone; owned by Norfolk Southern Railway Co. and operated by Huron Lime Co.

Supplies

(457) Marine supplies are available in the city. Diesel fuel and provisions are available by truck from Sandusky.

Small-craft facilities

(458) Huron Boat Basin has its entrance just southwest of the turning basin and can provide transient berths, gasoline, electricity, water, ice and pump-out facility. Numerous additional small-craft facilities are on the west side of the lower mile of the Huron River. Transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out facilities, marine supplies, and launching ramps are available. Lifts to 20 tons are available for hull, engine, and electronic repairs.

Communications

(459) Huron has highway connections and is served by CSX and Norfolk Southern Railway.

Chart 14830

(460) From Huron, the wooded shoreline trends northwest for 9.7 miles to **Cedar Point** (41°29'30"N., 82°41'18"W.), the southeast entrance point to Sandusky

Bay. In this stretch, deep water is about 0.9 to 1.2 miles off except at Cedar Point where the shallow depths widen to 1.5 miles.

Charts 14830, 14844, 14842, 14845

(461) **Sandusky Harbor**, serving the city of **Sandusky, OH**, is in the southeast part of Sandusky Bay about 50 miles west of Cleveland. The harbor is a major shipping point for coal. Sand, gypsum, and fish are also handled. The harbor is an excellent natural harbor of refuge for small craft.

(462) An unmarked **dumping ground** with a least reported depth of 30 feet is 2.7 miles north of Sandusky Harbor entrance channel.

Prominent features

(463) A large amusement park on Cedar Point, brightly lighted at night, is conspicuous. The most prominent object in the park is the 330-foot observation tower on the east side of Cedar Point, 0.9 mile from the north extremity. The Erie County Courthouse lighted clock tower in the city is also prominent.

(464) **Sandusky Harbor Breakwater Light** (41°29'57"N., 82°40'29"W.) 30 feet above the water, is shown from a white cylindrical tower with a green band on the outer end of the jetty that extends northeast from Cedar Point. A mariner radio activated sound signal is at the light, initiated by keying the microphone five times on VHF-FM channel 83A.

Channels

(465) The harbor is entered from Lake Erie through a dredged entrance channel that leads southwest from deep water in the lake along the northwest side of a jetty extending northeast from Cedar Point. Inside Cedar Point, the channel turns south-southwest across Sandusky Bay. About midway across the bay, the channel divides with the deeper channel leading west then south along a deep-draft wharf to a turning basin at the southwest corner of the harbor. The shallower channel continues south-southwest to a channel leading west along the Sandusky docks to the turning basin.

(466) The dredged channels are marked by lighted and unlighted buoys and lighted ranges. The lighted clock tower of the Erie County Courthouse is prominent on the line of **017°** Inner Range which marks Upper and Lower Straight Channels.

(467) Federal project depths are 26 feet in Moseley Channel, 25 feet in the Upper Straight Channel and Upper Bay Channel, 24 feet in Lower Bay Channel and the turning basin, 22 feet in Dock Channel, and 21 feet in Lower Straight Channel. (See Notice to Mariners and latest edition of charts for controlling depths.)

(468) It is the recommendation of the Lake Carriers' Association that, at the junction of the straight channel and the bay channel, the master of an outbound vessel

should slow down if necessary to avoid meeting vessels at the intersection. This recommendation should not be construed as relieving the inbound vessel of the obligation to exercise due caution in approaching the intersection.

Anchorage

(469) A special anchorage is in a basin on the east side of Sandusky Bay about 1.3 miles southeast of the entrance. (See **33 CFR 110.1 and 110.83a**, chapter 2, for limits and regulations.)

(470) **Danger**.—In 1977, it was reported that the jetty extending northeast from Cedar Point is partially submerged during periodic high water conditions.

(471) **Caution**.—A submarine cable crosses the inner end of Moseley Channel; vessels are cautioned not to drag anchor in this area.

(472) **Fluctuations of water level**.—In addition to the fluctuations of level that affect Lake Erie somewhat uniformly, strong winds produce abnormal fluctuations in Sandusky Bay. In combination with prevailing high or low water, these abnormal fluctuations may reach a maximum effect of 6 feet above or 2½ feet below Low Water Datum.

Towage

(473) Tugs for Sandusky are available from Cleveland or Toledo. (See Towage under Cleveland and Toledo.)

Quarantine, customs, immigration, and agricultural quarantine

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

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

(476) Sandusky is a **customs port of entry**.

Coast Guard

(477) Search and rescue functions for Sandusky Harbor are handled by Marblehead Coast Guard Station, 4 miles northwest of Cedar Point.

Harbor Regulations

(478) A **speed limit** of 10 mph (8.7 knots) is enforced in Sandusky Harbor. (See **33 CFR 162.155 and 207.560**, chapter 2, for regulations.)

Wharves

(479) Sandusky has numerous waterfront facilities along the south side of the harbor, but only a few deep-draft facilities. (For a complete description of the port facilities, refer to Port Series No. 42, published and sold by the U.S. Army Corps of Engineers. See Appendix A for address.) The alongside depths given are reported depths. (For latest depths, contact the operator.) Rail,

highway, water, and electrical shore-power connections are available at the berths except at the Erie Sand and Gravel Co., Salt Dock where only highway connections are available.

(480) **Erie Sand and Gravel Co. Dock:** (41°27'24"N., 82°43'15"W.); 188-foot face; 14 to 12 feet alongside; deck height, 6 feet; open storage for 30,000 tons of materials; crawler crane for unloading sand; deep-draft vessels discharge by boom from Dock Channel; receipt of sand and gypsum; owned and operated by Erie Sand and Gravel Co.

(481) **Erie Sand and Gravel Co., Salt Dock:** 450 feet west of Erie Sand and Gravel Co. Dock; 150-foot face; 16 to 0 feet alongside; deck height, 3 feet; open storage for 160,000 tons of salt; deep-draft vessels discharge by boom from Dock Channel; receipt of salt; owned and operated by Erie Sand and Gravel Co.

(482) **Lower Lake Dock Co., Pier No. 3:** (41°27'32"N., 82°43'55"W.); 3,495-foot east side; 25 feet alongside; deck height, 12 feet; open storage for 850,000 tons of coal; one fixed car dumper with chute for loading vessels; winter mooring; shipment of coal; owned by Norfolk Southern Railway Co. and operated by Lower Lake Dock Co.

Supplies

(483) Deep-draft vessels do not normally obtain provisions at Sandusky. Vessels are supplied with bunker at Lower Lake Dock Co., Pier No. 3.

Small-craft facilities

(484) There are several marinas in Sandusky Harbor. Two of the larger marinas are on the west side of Cedar Point and at the east end of the Sandusky waterfront. These marinas can provide gasoline, diesel fuel, water, ice, electricity, pump-out facilities, marine supplies, full repairs, travel lifts to 50-tons and launching ramps. Other facilities are along the Sandusky waterfront.

(485) In the southeast part of Sandusky Bay, a privately dredged and marked channel leads to Pipe Creek. Marinas on the north side of the creek can provide transient berths, gasoline, diesel fuel, electricity, water, launching ramps, pump-out facility and marine supplies. Marine lifts to 30 tons and marine railways to 100 tons are available for hull and engine repairs. In 2010, the approach to the facilities had a reported depth of 6 feet. The highway bridge over the channel entrance has a 38-foot fixed span with a clearance of 21 feet. The channel is bordered on the west side by diked wetland areas.

Communications

(486) Sandusky has good highway connections and is served by the Norfolk Southern Railroad and CSX. A small airport is southeast of the city. Ferry service connects Sandusky with Kelleys Island and South Bass Island.

Charts 14830, 14844, 14842

(487) **Sandusky Bay** extends west from its entrance between Cedar Point and Bay Point for about 15 miles to **Muddy Creek Bay**. **Sandusky River** flows into the south side of Muddy Creek Bay. Small craft can navigate through Sandusky Bay, Muddy Creek Bay, and upstream in the Sandusky River for about 15 miles to the Norfolk Southern Railway Bridge at the town of **Fremont, OH**. Depths of about 5 feet can be carried through Sandusky Bay, thence 2 to 4 feet through Muddy Creek Bay, and thence 2 to 19 feet in the river. The channels through the bays are indefinite and not marked. A submerged dike extends into Muddy Creek Bay from the west side of the Sandusky River mouth and a dike, marked by daybeacons, is on the east side of the mouth; caution is advised.

(488) In 1985 and 1987, submerged obstructions were reported at the mouth of the river in about 41°27'01"N., 82°59'57"W. and 41°26'59"N., 83°00'02"W., respectively.

(489) From **Martin Point**, about midlength of the south shore of Sandusky Bay, two bridges cross to Danbury, OH on the north shore. The east bridge is a railroad bridge with the main draw having a bascule span with a clearance of 9 feet and three fixed spans having a maximum clearance of 8½ feet. The bascule span is remotely operated and can be contacted at 419-254-1539. The bridge has been filled solid in various places, causing strong currents to flow through the openings; caution is advised. Caution is also advised because of piles that bare near the bridge. An overhead power cable west of the railroad bridge has a clearance of 62 feet through the main navigation opening, which is marked by lights, and 32 feet through the other openings. The west bridge is the Ohio Route 2 highway bridge, a fixed span with a clearance of 43 feet. (See **33 CFR 117.1 through 117.59 and 117.853**, chapter 2, for drawbridge regulations.)

(490) The Ohio Turnpike I-80 and I-90 Bridge crossing the Sandusky River about 9 miles above the mouth has twin fixed spans with clearances of 40 feet. The Ohio Route 20 bridge about 13.5 miles above the mouth has a fixed span with a clearance of 53 feet. The Norfolk Southern Railway bridges that cross the river on either side of Bradys Island at the head of navigation at Fremont have fixed spans with clearances of 24 feet. Overhead cables crossing the navigable part of the river have a minimum clearance of 36 feet.

(491) A submerged breakwater off the south shore of Sandusky Bay 3.6 miles southwest of Martin Point is marked by private lighted buoys. In 1987, a sunken wreck was reported about 2 miles west-northwest of Martin Point in about 41°28'34"N., 82°51'57"W. A sunken wreck, covered ½ foot, is off the north shore of the bay 3.9 miles west-northwest of Martin Point.

(492) **Johnson Island**, in the northeast corner of Sandusky Bay west of Bay Point, is connected to the north

shore of the bay by a causeway having five openings. Each opening has a horizontal clearance of 50 feet with the center opening having a vertical clearance of 29 feet and each of the others 8 feet.

(493) From the Sandusky Harbor entrance channel north to Point Marblehead, there are several offlying shoal spots. **Bay Point Shoal**, with a least depth of 4 feet, is 1 mile east of Bay Point and is marked on the east side by a lighted buoy. A submerged rock is close to shore in about 41°31'13"N., 82°43'02"W. Shoal spots with depths of 22 to 24 feet are from 1.5 to 3 miles east of Point Marblehead and 1.7 to 2.7 miles north of Sandusky Harbor Breakwater Light.

(494) An unmarked **dumping ground** with a least reported depth of 30 feet is 3 miles east of Point Marblehead. Between Point Marblehead and the dumping ground, south to the Sandusky Bay entrance, are numerous submerged fish net stakes.

(495) **Point Marblehead** (41°32'10"N., 82°42'42"W.), marked by a light, is the east extremity of the peninsula that encloses the north side of Sandusky Bay.

(496) About 1 mile west-northwest of Point Marblehead are the Marblehead Stone Docks, two piers owned and operated by Lafarge North America. The west pier extends 800 feet into the lake and has depths of 26 to 15 feet along the outer 500 feet of the west side with a deck height of 8 feet. A mobile shuttle loads limestone into vessels at a rate of 2,000 tons per hour. The east side of the west pier and the west side of the east pier are used for loading barges. A prominent overhead conveyor, lighted at night, extends from the piers inland to the quarry.

(497) **Marblehead Coast Guard Station** is close west of Marblehead Stone Docks. A small sheltered basin at the station has depths of 8 feet decreasing to 6 feet at the edges.

(498) Automobile and passenger ferry services to Kelleys Island are available from a dock just west of the Coast Guard station.

(499) **Catawba Island** (41°35'N., 82°50'W.), west of Point Marblehead, juts north from the peninsula on the north side of Sandusky Bay and terminates in **Scott Point**. **Mouse Island**, useful as a radar target, is a small island on the shoal bank about 0.2 mile north of Scott Point. In the bight between Point Marblehead and Mouse Island, the depths are 18 feet about 1.3 miles off and shoal toward shore. The bottom is rock and boulder strewn. **Middle Harbor Shoal**, with a least depth of 2 feet, is marked on the north side by a lighted buoy about 2.4 miles southeast of Mouse Island. A shoal bank with depths of 9 feet is 1.8 miles southeast of Mouse Island. Within the bight are the facilities at Lakeside, East Harbor, and West Harbor.

(500) A lighted microwave tower is prominent 2 to 3 miles offshore of Catawba Island.

(501) At **Lakeside, OH**, about 2.2 miles west-northwest of Point Marblehead, a dock extends offshore about 600 feet into depths of 10 feet. Several smaller docks to the

west extend into lesser depths. Berths with electricity, gasoline, water, marine supplies, sewage pump-out, and hull and engine repairs are available for small craft.

(502) Marblehead-Lakeside is a **customs station**.

(503) **East Harbor**, 3.9 miles west of Point Marblehead, is a shallow bay with an entrance channel between two parallel piers marked on the outer ends by private lights. The north shore of the harbor is a State park and recreation area, and the waters in the harbor are a public fishing area and game refuge. Numerous small-craft facilities are on the south side of the bay and east of the entrance channel. In 1970, the controlling depth was 5 feet in the entrance channel and thence south and west to the facilities on the south side of the bay. The basin on the east side of the entrance had a controlling depth of 3 feet. Private buoys mark the channel through the harbor.

(504) **West Harbor** is entered 2.5 miles northwest of East Harbor through two entrance channels. The northwest entrance channel is privately maintained and leads to a large small-craft harbor. The entrance is protected by jetties marked by lights at their outer ends. In 1993, the reported controlling depth was 5 feet with 3 to 6 feet in the harbor. A fixed highway bridge at the head of the harbor has a reported clearance of 20 feet. Beyond the bridge, a dredged inner channel leads southeast through West Harbor for about 1.3 miles to the head of the project. The southeast entrance is protected by converging jetties marked at their outer ends by lights. A dredged channel, marked by lights, buoys, and day-beacons, leads between the jetties and into the harbor to the inner channel within the harbor. (See Notices to Mariners and the latest edition of the chart for controlling depths.)

(505) There are several small-craft facilities in West Harbor. Supplies and services available include gasoline, diesel fuel, water, ice, electricity, pump-out facilities, marine supplies, launching ramps, hoists to 40 tons and full repairs (engine, hull, electrical) can be made. Depths of 3 to 8 feet are available alongside the docks.

(506) Just west of Scott Point is the mainland terminus of the automobile and passenger ferry line operating to the islands north of Catawba Island. A depth of about 11 feet is at the outer face of the dock. About 400 feet west of the ferry dock is a dock of the Port Clinton Fish Co., with depths of about 4 feet alongside. Catawba State Park is on the west side of Catawba Island. A light marks the outer end of the park pier.

(507) Just southeast of the State park pier, a pier marked at the outer end by a private light protects the southwest side of the entrance to a small-craft basin. The entrance channel has depths of about 5 feet with 5 feet at the berths on the west side of the harbor and 3 feet at the berths on the east side. Gasoline, diesel fuel, water, ice, electricity, marine supplies, and hoists to 40 tons for hull, engine, and minor electronic repairs are available.

Charts 14830, 14844, 14842, 14846

(508) Between Catawba Island and **Locust Point** (41°36'N., 83°05'W.), a rounding projection 12 miles west, a broad open bight has depths less than 24 feet. The Portage River empties into the south side of the bight. A large shallow bank with depths less than 14 feet extends about 5.5 miles north and northeast off Locust Point. A least depth of 2 feet, marked on the east side by a buoy, is about 4.7 miles northeast of the point, and there are scattered patches of 3 to 10 feet elsewhere. **Niagara Reef**, a detached shoal with a least depth of 3 feet, is 6.8 miles northeast of the point and is marked on the north side by a lighted buoy. Strangers should not attempt passage south of Niagara Reef.

(509) **Port Clinton, OH**, is at the mouth of the **Portage River**, about 29 miles southeast of Toledo Harbor entrance. The river enters the lake at the south end of the bight immediately west of Catawba Island. This bight is quite shoal, the depths ranging from 6 feet off the end of the piers to 18 feet about 3.3 miles from shore. A lighted relay tower in the city near the inner end of the entrance channel is prominent.

Channels

(510) The harbor is entered through a dredged entrance channel leading from deep water in Lake Erie between two parallel piers upstream in Portage River for about 0.4 mile to the Monroe Street highway bridge. Lights mark the outer ends of the piers. In 2010, the controlling depth was 9 feet in the entrance channel and between the piers to the Monroe Street highway bridge (except for shoaling to 3 feet along the edge of the channel just northeast of the Port Clinton Yacht Club entrance and to 5 feet along the south edge of the channel and docks fronting the town.) The channel lakeward of the piers is subject to shoaling.

Bridges

(511) The Monroe Street highway bridge, 0.4 mile above the river mouth, has a bascule span with a clearance of 9 feet. An overhead cable 0.1 mile above the bridge has a clearance of 83 feet. The Norfolk Southern Railroad bridge 1.5 miles above the mouth has a roller-lift span with a clearance of 13 feet. (See **33 CFR 117.1 through 117.59 and 117.851**, chapter 2, for drawbridge regulations.) The State Route 2 bridge, 3 miles above the mouth, has a fixed span with a clearance of 30 feet.

Harbor regulations

(512) A **speed limit** of 4 mph (3.5 knots) is enforced in the harbor by the city of Port Clinton.

Wharves

(513) Along the south side of the Portage River, Port Clinton Fisheries receives fish at Fisherman's Wharf near

the City Dock. Ferry service is also available to South Bass Island (Put-In-Bay) on the south side of the river.

Small-craft facilities

(514) Above the Monroe Street bridge, several marinas provide transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, and marine supplies. Hoists to 50 tons and a 100-ton marine railway are available for hull, engine, and electronic repairs. A marina on the lakefront about 2 miles west-northwest of Port Clinton has transient berths available and can provide gasoline, diesel fuel, water, ice, electricity and sewage pump-out. The marina also has a 36-ton marine lift and hull, engine, and electronic repairs can be made.

Charts 14830, 14846

(515) About 4 miles west of Port Clinton, a **danger zone** for small arms and artillery firing extends 6.5 miles northeast, 10 miles north, and 12 miles northwest from **Camp Perry**. (See **33 CFR 334.850**, chapter 2, for limits and regulations.) A jetty extends from the shore at Camp Perry to a pier about 1,000 feet offshore.

(516) **Toussaint River** is entered about 8 miles northwest of Port Clinton on the east side of Locust Point through an entrance channel that crosses a bar. In 2010, the controlling depth in the channel was less than a foot with shoaling to bare in the right and left outside channel quarters at the river mouth. The channel is marked by seasonal buoys. The buoys are uncharted as they are frequently shifted in position to mark the best water. Mariners should use caution and seek local knowledge before navigating the entrance channel.

(517) An overhead power cable with a reported clearance of 65 feet crosses the river about 1.4 miles above the mouth. A marina is about 1.6 miles above the mouth and can provide transient berths, gasoline, water, ice sewage pump-out facilities, and launching ramps are available.

(518) The cooling tower of the Davis-Besse Nuclear Power Station is prominent northwest of the mouth of the Toussaint River.

(519) A **security zone** has been established in the waters off Locust Point, just northwest of the Toussaint River mouth. (See **33 CFR 165.1 through 165.8, 165.30 through 165.33, and 165.915**, chapter 2 for limits and regulations.)

(520) Between Locust Point and **Cedar Point**, 15 miles northwest, the 18-foot contour decreases from about 7 miles offshore at Locust Point to 2.5 miles at Reno Beach and then increases to 4.5 miles at Cedar Point. Several isolated 17-foot spots are beyond the 18-foot contour northeast of Cedar Point.

(521) **Long Beach**, a private harbor for small boats, is on the north side of Locust Point. A private **159°** lighted range marks the entrance to the basin.

(522) **Turtle Creek**, about 2.5 miles west of Locust Point, has two marinas at its mouth. In 1977, the reported

controlling depth in the mouth of the creek was 1 to 2 feet. The entrance is marked by a private **129°** lighted range and buoys. Numerous submerged piles are in the mouth of the creek. Caution is advised. Transient berths, gasoline, water, ice, launching ramps, and a 60-ton hoist are available.

(523) A highway bridge with a reported clearance of 10 feet crosses Turtle Creek just inside the entrance.

(524) **Ward Canal** is entered about 6 miles west-northwest of Turtle Creek. Two jetties protect the entrance channel. A light marks the outer end of the east jetty. In 1981, a sandbar was reported across the mouth of the canal. Caution is advised. Small-craft facilities are available in the canal.

(525) **Cooley Canal** is entered 2.9 miles northwest of Ward Canal. The breakwaters that protect the entrance channel are marked at the outer ends by lights. In 2010, the controlling depth in the entrance channel was 1 foot. Facilities in the creek provide transient berths, gasoline, diesel fuel, water, ice, electricity, marine supplies, and launching ramps. Hoists to 75 tons are available for hull and engine repairs.

Charts 14830, 14846, 14847

(526) **Maumee Bay** is a large shallow expanse forming the southwest corner of Lake Erie. The bay has prevailing depths of less than 10 feet and is obstructed by several dumping grounds. A dredged channel leads from deep water in Lake Erie southwest through the bay to the mouth of the Maumee River.

(527) **Toledo Harbor**, serving the city of **Toledo, OH**, is at the west extremity of Lake Erie. The harbor includes the lower 7 miles of the **Maumee River** and a channel about 18 miles long through Maumee Bay from deep water in Lake Erie to the mouth of the river. The principal cargoes handled at the port are coal, iron ore, grain, petroleum products, and general cargo.

Prominent features

(528) The TV towers south to southwest of Cedar Point and the stacks of the Consumers Power Company 6.6 miles west-northwest of Toledo Harbor Light are conspicuous in the approach to the harbor.

(529) **Toledo Harbor Light** (41°45'43"N., 83°19'44"W.), 72 feet above the water, is shown from the northwest side of the entrance channel about 8.5 miles northeast of the river mouth; a seasonal sound signal is at the light. Maumee Bay Entrance Light 2, about 8 miles northeast of Toledo Harbor Light, is equipped with racon and a sound signal.

Channels

(530) A dredged entrance channel, marked by buoys, lights, and a **237.4°** lighted range, leads southwest for about 18 miles from deep water in Lake Erie through the shallow water of Maumee Bay to the mouth of Maumee

River, thence upstream for about 7 miles. Maumee Mooring Basin is on the northwest side of the channel at the mouth of the river, and turning basins are 2.7, 6.3, and 7 miles above the mouth.

(531) The Federal project depths are 28 feet from deep water in the lake through the entrance channel to the mouth of the river and in Maumee Mooring Basin; thence 27 feet in the river channel to the turning basin 6.3 miles above the mouth; thence 25 feet to the upstream limit of the project with 10 feet in Riverside Turning Basin, 2.7 miles above the mouth; thence 27 feet in the turning basin 6.3 miles above the mouth; and thence 18 feet in the turning basin at the head of the project, 7 miles above the mouth. (See Notice to Mariners and latest edition of charts for controlling depths.)

(532) No distinct bars form in the dredged channel, which is, however, subject to considerable fill along its south sides each year. Depths in Maumee Bay outside of the improved channel are less than 10 feet, and navigation is possible for small boats only. In the lake, dredge operations have thrown up a ridge of earth along the edges of the channel. This ridge may rise as much as 3 feet above the natural lake bottom. In order to avoid the ridges, deep-draft vessels should pass **Safe Water Lighted Buoy** (41°50'08"N., 83°10'11"W.) close aboard and enter the entrance channel between Entrance Light 2.

(533) Upstream of the dredged channel in the Maumee River, the channels are irregular and of uncertain depths, with numerous shoals and rock bars. Boats with local knowledge drawing less than 5 feet can usually pass as far as **Perrysburg, OH**, about 7 miles above Toledo.

Fluctuations of water level

(534) In addition to the fluctuations that affect Lake Erie somewhat uniformly, sudden abnormal changes due to wind frequently occur at this port. The observed wind-produced fluctuations, in combination with prevailing high or low water, range between extremes of 8 feet above and 7 feet below Low Water Datum. northeast winds can increase water levels as quickly as 2 feet in 1 hour. Ice jams near the mouth of Maumee River have raised the water in the river as high as 12 feet above Low Water Datum.

(535) Mariners are cautioned that when water levels are above Low Water Datum, bridge clearances are correspondingly reduced. The Toledo-Lucas County Port Authority, telephone, 419-243-8251, will measure the height of masts upon request.

(536) A NOAA water level gage house is near the west shoreline of the river adjacent to the Toledo Coast Guard Station. A submerged intake pipe extends about 300 feet riverward from the gage house. Mariners should avoid all movement of deep-draft vessels or the dragging of anchors in the vicinity of the water intake pipe.

(537) Upon request, the Toledo Coast Guard Station will broadcast water level information in the following format:

Structures across Maumee River at Toledo

Name-Description-Type	Location	Miles*	Clear Width of Draw or Span Opening (feet)**			Clear Height above Low Water Datum (feet)	Information
			Right	Left	Center		
1 Overhead power cable	41°41'03"N., 83°28'43"W.	0.92				154	
2 Overhead power cable	41°41'01"N., 83°28'52"W.	1.03				129	Clearance is 132 feet over the channel
3 Overhead power cable	41°41'00"N., 83°28'54"W.	1.06				146	
4 CSX Railroad Bridge (swing)	41°40'59"N., 83°28'54"W.	1.07	145	143		22	Note 2
5 Norfolk Southern Railroad Bridge (swing)	41°40'29"N., 83°29'23"W.	1.80	134	134		20	
6 Veterans Glass Memorial Bridge (fixed)	41°39'39"N., 83°30'41"W.	3.25			205	124	
7 Craig Memorial Bridge (bascule)	41°39'38"N., 83°30'43"W.	3.30			200	38	Clearance is 44 feet at the center
8 Overhead power cable	41°39'18"N., 83°31'29"W.	4.06				140	
9 Martin Luther King Jr. Memorial Bridge (bascule)	41°39'08"N., 83°31'39"W.	4.30			200	21	Clearance is 31 feet at the center
10 Anthony Wayne Bridge (fixed)	41°38'27"N., 83°32'00"W.	5.16			738	107	Note 1
11 Norfolk Southern Railroad Bridge (swing)	41°37'57"N., 83°31'51"W.	5.76	115	115		17	
12 Overhead power cable	41°37'56"N., 83°31'51"W.	5.76				105	
13 Michael DiSalle Bridge (fixed)	41°37'31"N., 83°32'31"W.	6.73	110	110		45	
14 CSX Railroad Bridge (swing)	41°34'51"N., 83°36'23"W.	11.38	110	110		53	
15 Overhead power cable	41°34'50"N., 83°36'24"W.	11.40				100	
16 Ohio Turnpike Bridges (fixed)	41°34'50"N., 83°36'25"W.	11.42	110	110		37	
17 Perrysburg-Maumee Bridge	41°33'27"N., 83°39'00"W.	14.72	100	100		29	

* Miles above the mouth of the river
 ** Clear width proceeding upstream

See 33 CFR 117.1 through 117.59 and 117.855, chapter 2, for drawbridge regulations.

Note 1 – Bridge has a vertical clearance of 107 feet (32.6 meters) for a central channel width of 200 feet (60.9 meters), decreasing to 97 feet (29.6 meters) at the edges of the channel.

Note 2 – Mariners are requested to make initial calls to the CSX Railroad Bridge at Mile 1.07 over Maumee River at least 45 minutes prior to intended time of passage through the draw. A second call should be made when approximately 15 minutes from the bridge to help ensure timely opening. The bridgetender monitors VHF-FM channel 14.

(538) “This is the U.S. Coast Guard Toledo Station. The National Ocean Service water level gage at this station now reads plus/minus inches above/below Low Water Datum. This is the U.S. Coast Guard Toledo Station. Out.”

Currents

(539) The current in the Maumee River is about 1 mph.

(540) The Coast Guard reported a hazardous condition in 1994 at the ConRail bridge at Mile 5.76. Currents in excess of 2 knots were reported in the restricted channel at the bridge following heavy rains. The current appears to deflect off the east river bank causing a sheer towards the west bank. Caution is advised when transiting this area.

Weather, Toledo and vicinity

(541) Toledo, OH, located on the extreme southwest shore of Lake Erie and in the north-central part of the state, averages about 15 days each year with maximum temperatures in excess of 90°F (32.2°C). July is the warmest month with an average high of 84°F (28.9°C)

and an average minimum of 61°F (16.1°C). January is the coolest month with an average high of 31°F (-0.6°C) and an average minimum of 16°F (-8.9°C). The highest temperature on record for Toledo is 104°F (40°C) recorded in July 1995 and the lowest temperature on record is -20°F (-28.9°C) recorded in January 1984. About 140 days each year sees temperatures below 32°F (0°C) and an average 16 days each year records temperatures below 5°F (-15°C). Every month has seen temperatures at or below 40°F (4.4°C) and every month except July and August has recorded temperatures below freezing (0°C).

(542) The average annual precipitation for Toledo is 32.4 inches (823 mm) which is fairly evenly distributed throughout the year. Precipitation falls on about 205 days each year. The wettest month is June with 3.6 inches (91 mm) and the driest, February, averages only 1.7 inches (43 mm). An average of 38 thunderstorm days occur each year with June and July being the most likely months. Snow falls on about 78 days each year and averages about 37 inches (940 mm) each year. December through February each average greater than

eight inches (203 mm) per year while January averages 10 inches (254 mm). Greater than ten inch (254 mm) snowfalls in a 24-hour period have occurred in December and January and 14 inches (356 mm) fell in one 24-hour period during December 1974. About eight days each year has a snowfall total greater than 1.5 inches (38 mm) and snow has fallen in every month except June, July, and August. Fog is present on average 162 days each year and is evenly distributed throughout the year with a slight maximum in August and September.

(543) The prevailing wind direction in Toledo is the west-southwest. The winter months are the windiest period however a peak gust of 65 knots occurred in August 1988.

(544) (See Appendix B for **Toledo climatological table.**)

Towage

(545) Tugs to 2,200 and 1,400 hp are available from Gaelic Tugboat Co. or Great Lakes Towing Co., respectively. Arrangements for tugs are made through the companies' dispatchers at 419-243-8972 or 800-321-3663, respectively. Great Lakes Towing Co. has VHF-FM capability for tug arrangements. At least 3 hours advance notice is requested.

(546) Vessels proceeding upstream to the grain elevators near the head of the Federal project usually require the assistance of tugs, but vessels proceeding to the general cargo wharves below the bridges generally do not require assistance.

Quarantine, customs, immigration, and agricultural quarantine

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

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

(549) Toledo is a **customs port of entry.**

Coast Guard

(550) A Coast Guard Marine Safety Unit is at Toledo. (See Appendix A for address.) Toledo Coast Guard Station is on the northwest side of the mouth of the Maumee River.

Harbor regulations

(551) In Maumee Bay, lakeward of Maumee River Lighted Buoy 49, no vessel greater than 100 feet long shall exceed 12 mph (10.4 knots). No person shall operate any vessel over 40 feet long in the harbor at a speed greater than 6 mph (5.2 knots). Vessels greater than 100 feet long shall not overtake another vessel in the harbor. (See **33 CFR 162.150**, chapter 2, for speed limits and regulations.)

(552) Copies of the harbor regulations may be obtained from City of Toledo, Division of Streets, Bridges and Harbor, 1189 West Central Avenue, Toledo, OH 43610.

Harbor Patrol

(553) The Toledo Harbor Patrol maintains an office adjacent to the Coast Guard station.

Wharves

(554) Toledo has numerous facilities along both sides of the Maumee River. Only the deep-draft facilities are described. (For complete information on the port facilities, refer to Port Series No. 44, published and sold by the U.S. Army Corps of Engineers. See Appendix A for address.) The depths alongside for the facilities described are reported depths. (For the latest depths, contact the operator.) All the facilities described have highway connections, and most have railway connections. Water and electrical shore-power connections are available at many of the piers, wharves, and docks. General cargo at the port is generally handled by ships' tackle. Specialized equipment is described under the individual facility. Many of the harbor facilities are used for mooring of vessels during the closed navigation season.

Facilities on the east side of the river:

(555) **CSX Toledo Lakefront Ore Docks, TORCO Slip No. 1:** (41°41'00"N., 83°26'55"W.); 1,133-foot east side, 1,815-foot west side; 27 feet alongside; deck height, 10 feet; open storage for 923,000 tons of material; receipt of iron ore pellets; owned by CSX Transportation, Inc.; operated by Toledo Ore Co.

(556) **CSX Toledo Presque Isle Coal Dock, Slip No. 1:** (41°41'40"N., 83°27'30"W.); 1,760-foot east side, 1,398-foot west side; 27 feet alongside; deck height, 12 feet; one traveling coal loading tower, rate 6,000 tons per hour; shipment of coal and petroleum coke; bunkering vessels; owned by Toledo-Lucas County Port Authority and operated by CSX Transportation-Toledo Docks

(557) **CSX Toledo Presque Isle Coal Docks, Slip No. 2:** (41°41'38"N., 83°27'39"W.) across slip west of CSX Toledo Presque Isle Coal Docks, Slip No. 1; 1,993-foot east side; 1,124 feet of berthing space along west side; 27 feet alongside; deck height, 12 feet; shipment of coal and occasional receipt of limestone, ore, and petroleum coke; bunkering vessels; owned by Toledo-Lucas County Port Authority and operated by CSX Transportation-Toledo Docks.

(558) **Toledo-Lucas County Port Authority Facility No. 1 Wharf:** (41°41'19"N., 83°28'08"W.); 4,196-foot face; 27 feet alongside; deck height, 11 feet; 120,000 square feet covered storage; tank storage for 2.5 million gallons of liquid cargo; two traveling gantry cranes, four diesel electric cranes, and two diesel crawler cranes; receipt and shipment of conventional and containerized general cargo and miscellaneous dry bulk materials, metal products and processed foods; owned by Toledo-Lucas County Port Authority and operated by Toledo World Industries, Inc.

(559) **BP Oil Co., Toledo Refinery Marine Dock:** (41°40'50"N., 83°28'55"W.); 800 feet above CSX Railroad

bridge; 257-foot face; 21 feet alongside; deck height, 7½ feet; pipeline extends to tank storage, capacity 113,600 barrels; shipment and occasional receipt of petroleum products; owned by Norfolk Southern Railway Co. and operated by BP Oil Co.

- (560) **Sunoco MidAmerica Marketing and Refining Co. Pier Slip:** (41°39'34"N., 83°30'35"W.); 100 feet below Craig Memorial Bridge; 918 feet of berthing space; 18 to 27 feet alongside; deck height, 12 feet; tank storage for about 2½ million barrels; shipment of fuel oil and carbon oil black; owned and operated by Sunoco MidAmerica Marketing and Refining Co.

- (561) **ADM/Countrymark, Toledo Elevator Wharf:** (41°37'33"N., 83°31'59"W.); 1,790 feet of berthing space; 27 feet alongside; deck height, 10 feet; three vessel-loading spouts, total combined loading rate 80,000 bushels per hour; 9 million-bushel grain elevator; shipment of grain; owned and operated by ADM/Countrymark, Inc.

Facilities on the west side of the river:

- (562) **Clark Refining and Marketing Co. Wharf:** (41°40'31"N., 83°29'31"W.); immediately above Norfolk Southern Railway bridge; 527-foot southwest face; 18 feet alongside; deck height, 10 feet; tank storage for 216,000 barrels; receipt and shipment of petroleum products; owned and operated by Clark Refining and Marketing Co.

- (563) **Arms/Criscione Grain Co. Wharf:** (41°39'46"N., 83°30'40"W.) immediately below Craig Memorial Bridge; 675-foot face, 26 feet alongside; deck height, 12 feet; covered storage for 75,000 tons of materials; open storage for 500,000 tons of materials; receipt of stone, salt, fertilizer, and oats; owned and operated by Arms Dock Co. and Criscione Grain Co.

- (564) **City of Toledo, Salt Wharf:** (41°39'30"N., 83°31'11"W.); 0.4 mile above Craig Memorial Bridge; 1,280-foot face; 12 feet alongside; deck height, 10 feet; open storage for 45,000 tons of material; receipt of salt; owned by Norfolk Southern Railway and operated by City of Toledo.

- (565) **LaFarge Corp., Toledo Terminal Wharf:** (41°39'16"N., 83°12'38"W.); immediately below Martin Luther King, Jr. Memorial Bridge; 1,061 feet of berthing space; 18 to 22 feet alongside; deck height, 8 feet; receipt of bulk cement; owned and operated by LaFarge Corp.

- (566) **The Andersons, Toledo Kuhlman Drive Terminal Wharf:** (41°37'52"N., 83°32'00"W.); 0.7 mile above Anthony Wayne Bridge; 1,030-foot face; 27 feet alongside; deck height, 9 and 15 feet; six vessel-loading spouts, combined loading rate 50,000 bushels per hour; 7-million-bushel grain elevator; shipment and receipt of grain, receipt of dry bulk and liquid fertilizer; owned and operated by The Andersons, Inc.

- (567) **Kuhlman Corp., Upper Dock:** (41°37'40"N., 83°32'12"W.); immediately below Michael DiSalle Bridge; 340 feet of berthing space; one diesel crawler crane; covered storage for 136,500 tons of fertilizer, open storage for 150,000 tons of miscellaneous dry bulk;

receipt of dry bulk fertilizer, salt, stone, and petroleum coke; owned and operated by Kuhlman Corp.

Supplies

- (568) All types of marine supplies and provisions are available at Toledo. Water can be obtained at most berths. Bunker fuel is available by barge at most berths, by pipeline at refinery landings, and by truck at some wharves.

Repairs

- (569) All types of above- and below-the-waterline repairs to hulls, boilers, engine and deck machinery, and electronic equipment can be made in the harbor. Toledo Shipyard has two drydocks on the east side of the river about 2.5 miles above the mouth. The largest has a length of 800 feet with widths of 100 feet at the top and 83 feet at the keel blocks. The depth over the sill is 14 feet. Hans Hansen Welding Co., on the west side of the river 2 miles above the mouth, has a 50-ton hoist that can handle 75-foot vessels. Merce Boiler and Welding Co. performs repairs to vessels at their berths.

Small-craft facilities

- (570) Several marinas at Toledo provide transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, marine supplies, and launching ramps. A 40-ton hoist is available for hull and engine repairs.

Communications

- (571) Toledo is served by nine railroad lines and has good highway connections. Several airports are near the city.

- (572) **Ottawa River** empties into Lake Erie about 3.5 miles north of the mouth of the Maumee River. The river is used by small boats drawing 2 to 4 feet. In 1980, a submerged obstruction was reported in the approach to the river in about 41°44'30"N., 83°27'18"W. Fred C. Young fixed highway bridge about 2 miles above the mouth has a clearance of 14 feet. Several marinas on the river provide gasoline, water, electricity, sewage pump-out, launching ramps, marine supplies, and hoists to 20 tons for hull and engine repairs. A **slow-no wake speed** is enforced on the river.

- (573) **Shantee Creek** and **Halfway Creek** empty into Lake Erie just north of the mouth of Ottawa River. A **slow-no wake speed** is enforced on both creeks.

Charts 14830, 14846

- (574) From **North Cape**, on the north side of Maumee Bay, north to the mouth of the River Raisin, the shore is low and wooded. The 18-foot contour varies from 9 miles offshore at Toledo to 3 miles offshore at Monroe. The **State boundary** between OH and Michigan is about 2.5 miles north of the mouth of the Maumee River.

- (575) **Toledo Beach** is a small-craft harbor about 6.3 miles northwest of Toledo Harbor Light. The entrance

channel is marked by a private **290°** lighted range, and the ends of the breakwaters are marked by private lights. A depth of 8 feet was reported in the entrance channel. A yacht club and marina are in the harbor and can provide transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, launching ramps and some marine supplies. The marina has a 60-ton hoist and can also provide full repairs.

(576) **Otter Creek**, 1.3 miles north of Toledo Beach, has a small-craft harbor inside the mouth. The entrance channel to the creek is 25 to 30 feet wide between two short piers. Two private lights on the south pier form a **284°** range for approaching the creek. Depths in the approach and creek are 1 to 3 feet. In 1985, shoaling to an unknown extent was reported about 200 feet, 095° from the front range light. Overhead power cables cross the creek about 1,200 feet above the mouth and have a reported clearance of 50 feet. Facilities in the creek can provide gasoline, water, ice, sewage pump-out, and some marine supplies. A hoist can handle 38-foot vessels for hull and engine repairs.

(577) **Bolles Harbor**, MI, is a small-craft harbor at the mouth of **La Plaisance Creek**, about 2.7 miles southwest of the mouth of the River Raisin. A dredged entrance channel leads northwest from Lake Erie through **La Plaisance Bay** to the mouth of La Plaisance Creek, thence upstream for about 0.8 mile. A jetty is on the west side of the mouth and a diked disposal area extends about 1,700 feet Lakeland from the east side of the mouth. The entrance channel is marked by seasonal lighted and unlighted buoys, a daybeacon, and a **341.5°** lighted range. Lights mark the outer end of the jetty, the west side of the creek mouth, and the southwest corner of the diked disposal area. (See Notice to Mariners and the latest edition of the chart for controlling depths.)

(578) A **slow-no wake speed** is enforced in La Plaisance Creek. There are several marinas along the south side of the creek which provide transient berths, gasoline, diesel fuel, water, ice, electricity, pump-out facilities, marine supplies, launching ramps and hull/engine repairs.

(579) **Monroe Harbor** is within the mouth of the **River Raisin**, which flows into the west end of Lake Erie about 15 miles north-northeast of the mouth of the Maumee River. Two 816-foot lighted stacks are prominent near the mouth of the River Raisin.

Channels

(580) A Federal project provides for a 21-foot entrance channel from deep water in Lake Erie to an 18-foot turning basin at the head of the project. (See Notice to Mariners and latest editions of charts for controlling depths.) The entrance channel is marked by lighted and unlighted buoys and a **291.8°** lighted range.

Bridges

(581) Two overhead power cables with a minimum clearance of 160 feet cross the River Raisin 0.75 mile above

the mouth. Another cable, with a clearance of 60 feet, crosses the river about 1.7 miles above the mouth. The Detroit-Toledo Freeway bridge 2.1 miles above the mouth has a fixed span with a clearance of 23 feet.

Harbor regulations

(582) A **speed limit** of 10 mph (8.7 knots) is enforced in the entrance channel and 6 mph (5.2 knots) in the river channel. (See **33 CFR 162.145**, chapter 2, for regulations.)

Towage

(583) Tugs for Monroe Harbor are available from Detroit. (See Towage under Detroit.)

Wharves

(584) Monroe Harbor has four deep-draft facilities. (For a complete description of the port facilities, refer to Port Series No. 45, published and sold by the U.S. Army Corps of Engineers. See Appendix A for address.) The alongside depths given are reported depths. For information on the latest depths, contact the operators.

(585) **DTE Energy Co., Monroe Plant Wharf**: south side of the mouth of the river; 1,550-foot face; 21 feet alongside; deck height, 12 to 15 feet; open storage for 2 million tons of coal; receipt of coal; owned and operated by Detroit Edison Co.

(586) **Holnam, Monroe Dock**: southwest side of the river, 0.4 mile below turning basin; 700 feet of berthing space; 12 to 20 feet alongside; deck height, 12 feet; 8 acres of open storage with a capacity for 40,000 tons of petroleum coke; receipt of petroleum coke; owned and operated by the Holnam, Inc.

(587) **Detroit Bulk Materials, Port of Monroe Bulk Cargo Dock**: southwest side of the river, 500 below turning basin; 1,547 feet of berthing space; 12 to 21 feet alongside; deck height, 6 feet, natural bank; 16 acres of open storage; receipt of logs by barge and occasional receipt of miscellaneous dry bulk commodities and conventional general cargo; owned by Monroe Port Commission and operated by Detroit Bulk Materials.

(588) **Port of Monroe, General Cargo Wharf**: east side of turning basin; 1,060 feet of berthing space; 18 feet alongside; deck height, 7 to 9 feet; five storage tanks, capacity 166,000 barrels; receipt of asphalt; owned and operated by Monroe Port Commission.

Small-craft facilities

(589) A marina is just west of the Detroit-Toledo Freeway bridge (I-75) on the north side of the river. Transient berths, gasoline, water, electricity, sewage pump-out and marine supplies are available. Diesel fuel can be brought in by truck. Two forklifts and a 15-ton travel lift are available for hull and engine repairs and haul-out. A public boat launch ramp is on the south side of the river behind **Sterling Island**.

(590) From the mouth of the River Raisin, the shoreline trends north about 4 miles and then east about 2 miles to **Stony Point**, a narrow peninsula extending about 0.5 mile south into the lake. **Brest Bay** is the bight formed on the west side of the point. A wreck covered 17 feet is 1.9 miles south-southeast of Stony Point. In 1982, a dangerous sunken wreck was reported about 1.5 miles southwest of Stony Point in about 41°55'N., 83°17'W.

(591) **Sandy Creek** empties into the west side of Brest Bay about 2 miles north of Monroe Harbor. Sterling State Park is on the south side at the creek entrance. A channel marked by private lighted and unlighted buoys leads southwest from Sandy Creek to a boat basin at the park. In 2007, the reported depth in the channel and basin was 4 feet. Several launching ramps are in the southeast corner of the basin. Services available inside the creek include: transient berths, gasoline, water, ice, and electricity.

(592) **Stony Creek** empties into the north side of Brest Bay. Spoil banks that extend southeast from the mouth of the creek protect the entrance channel to the creek. Piles mark the channel between the spoil banks. Submerged rocks are close south of the channel. In 1977, it was reported that a submerged pipeline, covered 1 foot, crosses the entrance to the creek, limiting the harbor to small craft. A marina inside the creek mouth can provide transient berths, gasoline, electricity, water, ice, launching ramp and some marine supplies. The marina also has an 8-ton lift and full repairs can be made.

(593) On the east side of Stony Point, the 18-foot curve is about 0.6 mile offshore, increasing to 3.8 miles off at Swan Creek. From Swan Creek to **Pointe Mouillee**, on the west side of the mouth of the Detroit River, depths are generally less than 18 feet except for the dredged channels leading to the Detroit River.

(594) The water intake channel of the Enrico Fermi Power Plant is 2 miles north of Stony Point. Private lights mark the dikes on either side of the channel. Two 403-foot cooling towers at the plant are prominent.

(595) A **security zone**, marked by private buoys, has been established in the waters off the Enrico Fermi Power Plant, between Stony Point and Swan Creek. (See **33 CFR 165.1 through 165.8, 165.30 through 165.33, and 165.915**, chapter 2 for limits and regulations.)

(596) **Swan Creek** is about 3 miles north of Stony Point. The entrance to the creek is marked by seasonal, private lighted and unlighted buoys and a **315°** lighted range. Inside the entrance, daybeacons mark the north limit of the channel. In 1977, a controlling depth of 2 feet was reported in the entrance channel. In 1985, an obstruction was reported in the entrance channel in about 41°58'32"N., 83°14'42"W. A **slow-no wake speed** is enforced in the creek. Transient berths, gasoline, water, ice, electricity, sewage pump-out facilities, limited marine supplies, a 10-ton lift, and hull and engine repairs are available.

Charts 14830, 14848

(597) **Detroit River Light** (42°00'03"N., 83°08'28"W.), 55 feet above the water, is shown from a white conical tower with black top, on a hexagonal pier in the entrance to the Detroit River east of Pointe Mouillee; a sound signal and racon are at the light.

(598) An irregularly shaped diked disposal area is about 2.5 miles west of Detroit River Light. A dredged channel, marked by buoys, leads west from the light to the disposal area, but is not intended for public use.

Charts 14820, 14830

(599) For about 25 miles west from a line between Point Marblehead on the south shore and Point Pelee on the north shore, Lake Erie is rendered foul by a group of islands and shoals. The main route for large vessels is through Pelee Passage in the north part of the area, but other passages of limited capacity are also available to the south. Submerged fish net stakes may be encountered throughout the west end of Lake Erie.

(600) The **International boundary** between the United States and Canada extends through this area in a series of straight lines bearing from the east into the northwest.

Charts 14830, 14844, 14842

(601) **South Passage** extends along the south shore of Lake Erie, bounded by Point Marblehead and Catawba Island on the south and Kelleys Island, South Bass Island, and Green Island on the north. Although it is obstructed by numerous shoals, a depth of 16 feet can be carried through the passage.

(602) **Kelleys Island** is about 4 miles north of Point Marblehead with a deep channel 2.7 miles wide between. The island, about 3 miles long east and west and about 2 miles wide north and south, is bordered on the east side by a rocky bank that extends 0.7 mile off. A buoy marks the extent of the bank east of **Long Point**, the northeast point of the island. The other shores of the island should not be approached closer than 0.25 mile except at the landings. West of Long Point, an open bay has depths of 18 feet to within 0.4 mile of the shore. A dangerous sunken wreck is 0.4 mile west of Long Point. Kellstone, Inc. has a dock on the west side of the island, and a ferry dock with service to Marblehead, Sandusky, and South Bass Island (Put-In-Bay) is on the southwest side of the island. A marina and a small-craft basin are on the east side of the broad bight on the south side of the island. Jetties protect the entrance channel to the basin. In 1980, shoaling to 4 feet was reported to extend 75 feet west from the outer end of the south jetty. The basin has a depth of about 8 feet. Another marina is located on the north side of the bight, about 0.4 mile northwest of the basin. The marinas can provide

transient berths, gasoline, diesel fuel, water, ice, marine supplies and pump-out facility. The marinas monitor VHF-FM channels 68 and 80.

(603) West of **Carpenter Point**, the west point of Kelleys Island, several submerged rocks are covered less than 18 feet. A rock covered 12 feet, is marked on the west side by a lighted buoy 0.6 mile west-northwest of Carpenter Point. A wreck, covered 17 feet, is 0.6 mile north of the point.

(604) **American Eagle Shoal**, extending west from Carpenter Point, has a least depth of 10 feet about 1.7 miles west of the point. **South Shoal**, with depths of 15 to 18 feet, continues west from American Eagle Shoal. These shoals lie on the northeast side of the vessel route through South Passage. Numerous submerged net stakes, covered 13 to 18 feet, are in or near the vessel route southeast of South Shoal.

(605) **Scott Point Shoal**, west of South Shoal on the southwest side of the vessel route, is rocky and has a least depth of 11 feet at the northeast end where it is marked by a lighted buoy. From the buoy, the shoal extends southwest to within 0.6 mile of **Mouse Island**. **Mouse Island Reef**, with a least depth of 9 feet, is on the southwest side of the vessel route, 1 mile Wnorthwest of Scott Point Shoal. **Starve Island Reef**, with a least depth of 7 feet, is on the northeast side of the vessel route and is marked off its west side by a lighted buoy. **Starve Island**, 1 mile north of Starve Island Reef, is on a shoal bank off the southeast side of South Bass Island. The shoal bank extends from South Bass Island to an 8-foot spot 0.5 mile southeast of Starve Island. A deepwater passage about 0.4 mile wide is between the 8-foot spot and Starve Island Reef.

(606) **South Bass Island**, about 3.5 miles long northeast and southwest, is 2.5 miles north of Mouse Island and 5 miles northwest of Kelleys Island. Shoals extend 0.2 to 0.5 mile off the southeast side of the island except at Starve Island, and the west side of the island is deep-to. **South Bass Island Light** (41°37'44"N., 82°50'29"W.), 95 feet above the water, is shown from a white skeleton tower with a red and white diamond-shaped daymark on the southwest point of the island.

(607) **Put-In-Bay**, a semicircular inlet on the north side of South Bass Island, is protected on the west side by **Peach Orchard Point**. A shoal with a least depth of 2 feet extends 0.25 mile northeast from the point and is marked at the outer end by a lighted buoy. **Gibraltar Island** is a small bold islet in the west part of the bay on the east side of Peach Orchard Point. Shallow water is between the southwest side of the island and the shore. A buoy marks a detached shoal with a least depth of 10 feet on the east side of the bay.

(608) **Perrys Victory and International Peace Memorial**, commemorating his victory in the naval battle of 1813, is a conspicuous landmark on the east side of Put-In-Bay on the narrow constriction of South Bass Island. The 335-foot monument is a granite tower marked by a light and surmounted by a glass-covered bronze bowl.

(609) **Put-In-Bay, OH**, a harbor on the south side of the bay, is used principally for fruit shipments and excursion business. Ferry service is available to Sandusky, Port Clinton, and Kelleys Island.

Channels

(610) The approach to the harbor is marked by lighted and unlighted buoys. A dredged channel, marked by buoys, leads west along the piers on the south side of the bay. In 2010, the controlling depth was 8 feet (except for lesser depths to 5 feet along the north edge of the channel between Buoys 8 and 10).

(611) Small-craft facilities at Put-In-Bay provide transient berths, gasoline, diesel fuel, electricity, water, ice, pump-out, marine supplies and a 5-ton hoist.

(612) **Green Island**, rocky and wooded, is 1 mile west of South Bass Island. A light marks the west end of the island. A shoal extends 0.3 mile off the east end.

(613) **Kelleys Island Shoal**, with a least depth of 2 feet, is northeast of Kelleys Island. A narrow channel with depths of 18 feet or more is between the northeast end of Kelleys Island and the southwest end of the shoal. The northeast end of the shoal is about 2.5 miles from the island and is marked by a lighted buoy. A buoy marks the northwest side of the shoal.

(614) **Gull Island Shoal**, 2.4 miles north of Kelleys Island, is marked on the south side by a lighted buoy. The shoal extends 1.5 miles northeast from the buoy. The southwest part of the shoal has numerous bare rocks.

(615) **Middle Island** is about 1.6 miles north of Gull Island Shoal. A dangerous sunken wreck is on the southwest side of the island. A deep passage about 0.5 mile wide is between the island and Gull Island Shoal.

(616) **Ballast Island** is about 0.8 mile northeast of the northeast point of South Bass Island with shoal water between. A channel with a depth of about 8 feet and marked by buoys leads across the bank about 0.3 mile south of Ballast Island. The north side of Ballast Island is deep-to and is marked by a light.

(617) **Middle Bass Island** is 0.5 mile north of the northeast projection of South Bass Island, and the main body of the island extends north 1.5 miles. From the northeast end of the island, a narrow peninsula extends 1.4 miles east-northeast. A shoal with bare rocks extends 0.75 mile from the end of the peninsula and is marked by a lighted bell buoy. **Sugar Island** is connected to the northwest corner of Middle Bass Island by a rocky ledge covered 1 foot. A 10-foot spot is about 0.5 mile northeast of Sugar Island. The east, south, and west sides of Middle Bass Island have deep water within 0.3 mile. Middle Bass Island State Park Marina is on the east side of the island near the south end. The marina provides transient berths, gasoline, diesel fuel, electricity, water, ice, pump-out facility, launching ramp and monitors VHF-FM channel 71.

(618) **Rattlesnake Island**, 1 mile west of Middle Bass Island, has clean shores except for a shoal extending 0.15 mile from the east end and a shoal and small islet extending 0.3 mile from the west end. A wreck, covered 23 feet, is 1.2 miles west-northwest of the island.

(619) **North Bass Island** is about 1 mile north of Middle Bass Island. Shoals and rocks extend about 0.4 mile offshore around the island except on the west side where a broad bank with depths of 5 to 12 feet extends 1.2 miles off. A buoy marks the southwest extremity of the bank. A lighted buoy marks the extent of shoals off the northeast side of the island. A sunken wreck with masts visible is 1.2 miles east of North Bass Island, in about 41°43'09"N., 82°47'16"W.

Charts 14830, 14844

(620) An extensive group of shallow rocky spots, covered 10 to 16 feet, is about 1 to 2.5 miles north of North Bass Island. A buoy and a lighted bell buoy mark the south and west extremities of the area, respectively. A dangerous sunken wreck is just southeast of the shoals.

(621) A group of small islands and bare rocks is on a shallow bank centered about 4 miles north of North Bass Island. **Hen Island**, 4.5 miles north of North Bass Island, is the largest and northernmost of the group. Shallow water extends about 0.2 mile offshore around the island. About 1 mile south of Hen Island, a very shallow bank extends 2 miles east and west. The other islands of the group are on this bank. **Little Chicken Island** is a small outcropping 1.1 miles south of Hen Island. On the north part of the bank, 0.4 mile north-northwest of Little Chicken Island, is a 2-foot spot. Between this spot and Hen Island is a deep passage about 0.25 mile wide. **Chick Island**, 4 feet high, is about 1.2 miles southwest of Hen Island. Bare rocks are off the northwest and southeast sides of the island. **Big Chicken Island**, 12 feet high, is about 1.6 miles southwest of Hen Island; bare rocks are off the northwest side of the island. A depth of 11 feet is available across the center of the bank between Big Chicken Island and Little Chicken Island.

(622) **Hen Island Shoal**, with a least depth of 19 feet, is 1.3 miles north of Hen Island and is unmarked.

(623) **East Sister Island** is 8.5 miles west of Sheridan Point on Pelee Island and 3.2 miles northwest of Hen Island. Shoals extend off about 0.25 mile around the island. **East Sister Shoal**, with a least depth of 7 feet, is 0.8 mile northeast of the island.

(624) **North Harbour Island**, 0.7 mile north of East Sister Island, is on a shallow bank with depths to 9 feet extending 0.4 mile north and southeast from the island.

Chart 14830

(625) **North Harbour Island Reef**, with a least depth of 3 feet and marked on the north side by a lighted buoy, is 1.6 miles north of North Harbour Island. In rough weather, vessels should not attempt passage between the island and the reef.

(626) **Middle Sister Island**, the northwesternmost of the Lake Erie island group, is 7.6 miles west-northwest of East Sister Island. The island, about 0.3 mile long, is marked at the northeast end by a light. Shoals extend about 0.4 mile off the south shore.

(627) **West Sister Island** (41°44'21"N., 83°06'21"W.), the westernmost of the island group, is about 8.5 miles north-northwest of Locust Point on the south lake-shore. The shores of the island are deep-to except for **West Sister Reef**, a 1-foot shoal extending 0.4 mile off the southeast side. A light marks the southwest end of the island.

Charts 14830, *2123

(628) **Pelee Passage, ON** is the main vessel route through the island group in the west end of Lake Erie. The passage is bounded on the southwest side by **Pelee Island, ON** and its contiguous shoals and on the north side by **Point Pelee, ON** and its contiguous shoals. The controlling depth through the passage is about 29 feet. Lighted midchannel buoys mark the turns through the passage, and lights and buoys mark the bordering shoals.

Canadian Waters

(629) **Bar Point** is the rounding point of land forming the east side of the mouth of the Detroit River. The **International Boundary** roughly bisects the mouth of the Detroit River and thence proceeds upstream in a north direction, putting Bar Point in Canada. Proceeding easterly from Bar Point along the north shoreline of Lake Erie, to past the Welland Canal, to the headwaters of the Niagara River, the entire shoreline is in Canada. For a description of the Canadian waters/shoreline of Lake Erie see **Canadian Sailing Directions CEN303**; this includes Pelee Island and Pelee Passage.