



Lake Huron

Chart Datum, Lake Huron

- (1) Depths and vertical clearances under overhead cables and bridges given in this chapter are referred to Low Water Datum, which for Lake Huron is on elevation 577.5 feet (176.0 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, De Tour Passage to Fort Gratiot; 223 miles.
- (3) Length, steamer track, Straits of Mackinac to Fort Gratiot; 247 miles.
- (4) Length (right line), Drummond Island, at nearest point to entrance of False Detour, to Blue Point; 206 miles.
- (5) Breadth (right line), on about latitude 44°30'N.; 183 miles.
- (6) Depth, maximum recorded; 750 feet.
- (7) Water surface of lake (including St. Marys River below Brush Point, North Channel, and Georgian Bay); 9,100 square miles (U.S.), 13,900 square miles (Canada).
- (8) Entire drainage basin (including St. Marys River below Brush Point, North Channel, and Georgian Bay); 25,300 square miles (U.S.), 49,400 square miles (Canada).

General description

- (9) **Lake Huron** is the second largest of the Great Lakes. Three large bays extend from the main body of the lake, Saginaw Bay on the west side and North Channel and Georgian Bay on the northeast side. The lake receives the waters of Lake Michigan through the Straits of Mackinac and those of Lake Superior from the St. Marys River. The lake discharges at its south end into St. Clair River at Fort Gratiot. The lake is a connecting link in the Great Lakes chain. The depth of water in St. Marys River, St. Clair River, and Detroit River governs the draft of vessels navigating Lake Huron to and from Lakes Superior and Erie.

Vessel Traffic Service

- (10) 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 Radio Aids to Marine Navigation-Atlantic, St.

Lawrence, Great Lakes, Lake Winnipeg and Eastern Arctic for complete information.)

Fluctuations of water level

- (11) 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.
- (12) 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 effect is more pronounced in bays and at the extremities of the lake, where the impelled water is concentrated in a small space by converging shores, especially if coupled with a gradually sloping inshore bottom which even further reduces the flow of the lower return currents. This condition is very pronounced at the mouth of Saginaw River.

Weather, Lake Huron

- (13) Gales are most frequent in autumn. By late summer there is a noticeable increase, lakewide, in the frequency of gales, and this increase continues until the end of the navigation season. During November and December, gales are blowing 5 to 10 percent of the time, while windspeeds of 28 knots or more may be encountered up to 23 percent of the time. These winds are mainly generated by winter storms; their frequency falls dramatically in spring. By June and July, gales are expected less than 1 percent of the time, while winds of 28 knots or more blow less than 3 percent of the time. However, squall lines and thunderstorms can produce violent short-period winds from spring through fall. For example, the strongest measured wind on Lake Huron's open waters occurred in August 1965 and was measured at 95 knots from west-northwest. Shoreline extremes range from 43 to 53 knots. Directions of these extremes are often out of the southwest; but west, northwest, and northeast winds have set some of these records. Most of the records were set from late fall through late winter.

(14) The shape of Lake Huron is such that strong winds from any quarter may generate rough seas somewhere on the lake. South through west winds are common in early autumn, while westerlies and southwesterlies prevail in late autumn. West through northwest winds are often the strongest. Winds from a northerly quadrant can raise dangerous seas in the south, especially near the south outlet of the lake. In the central waters a long fetch of strong easterlies or northeasterlies can generate high seas along the Michigan shore, which run athwart the north-south traffic through the lake. Southerlies can be dangerous particularly near the converging north shore. If the fetch and duration are sufficient, waves of 10 feet or more can be generated in open waters by winds from any direction once they reach 20 knots or more. This occurs most often during October, November, and December, when waves of 10 feet (3 m) or more can be expected 2 to 4 percent of the time in the northwest and south parts of the lake and 4 to 7 percent in the wide central portion. Extreme waves of 20 to 22 feet (6 to 7 m) have been encountered throughout the lake.

(15) Dense fog plagues the mariner most often in spring and early summer over the open lake waters. From April into July visibilities drop below 0.5 mile up to 11 percent of the time. May and June are the worst times, and the cold, central waters are the most likely place. These fogs are usually the result of warm air moving across the lake that is still cold from the previous winter season. They often come on winds with a southerly component; but northwest, northeast, and east winds also bring them. Fog is most prevalent and thickest during the morning hours. Rain, blowing snow and low clouds also reduce visibilities, particularly from late fall through early spring.

(16) Thunderstorms are most frequent from April through October, with peak activity during June, July, and August. Over the open water during this peak season thunderstorms are encountered 2 percent of the time. They are most likely between midnight and sunrise. Onshore thunderstorms can be expected on 4 to 7 days per month in the summer months. They are most likely during the late afternoon.

Ice

(17) The central part of Lake Huron is mainly an open water area, but drifting patches of thin ice may be present from early February until mid-March. These patches drift south toward the St. Clair River. An ice bridge forms across the head of the river. Ice accumulates to a depth of 12 to 18 inches above the ice bridge; the bridge itself achieves a much greater thickness. The ice bridge is occasionally broken by high winds.

(18) In North Channel, fast ice forms in mid-January and reaches a thickness of 25 to 30 inches by mid-March, then decays rapidly and clears by mid-April. In Georgian Bay, ice begins to form near the end of December, and fast ice is well established by early January. The

cover spreads over the entire bay by the end of January, but although concentrations are high, the ice is moved around by the wind to form leads and dispersed ice areas. This ice usually reaches the thick category during the first half of March. Decay begins in mid-March; the ice melts within the bay, and the area is clear by mid-April. Rotting fast ice may be present in some areas until the end of April.

(19) The Straits of Mackinac is subject to severe problem ice conditions. The area is very susceptible to wind action, and the ice cover is unpredictable. Ice forms early in the season in the Straits and attains an average thickness of 17 inches and an average maximum thickness of 25 inches. The solid ice thickness remains about the same throughout the season. The prevailing west winds cause considerable ridging and 4- to 6-foot windrows are common. Some ice ridges as much as 30 feet deep have been reported.

(20) Ice normally begins to form in harbors and shallow-water areas in early December with ice fields and concentrated brash forming in early January. The first ice barrier across the Straits usually forms between Waughoshance Point and St. Helena Island.

(21) As ice forms in South Channel and between St. Ignace and Mackinac Island, these waters are closed to navigation to allow the formation of ice bridges. Mariners are notified of the closure by Broadcast Notice to Mariners.

(22) Prevailing west winds cause ice conditions at the Lake Michigan end of the Straits of Mackinac to be more difficult than at the Lake Huron end. From the Mackinac Bridge to Lansing Shoals, the Straits are normally frozen over with solid plate ice by mid-January. Heavy accumulations and ridging occur in the vicinity of St. Helena Island, White Shoal, and the reefs along the Upper Peninsula of Michigan. To avoid danger to vessels, Grays Reef Passage may be closed to navigation; mariners will be informed of any closure by Broadcast Notice to Mariners.

(23) As deterioration begins in March or April, stable fast ice becomes drift ice moving with winds and currents. Tracks cut by icebreakers become unreliable as the ice field deteriorates and shifts. Thick shore ice may drift into otherwise open channels and endanger even ice-reinforced vessels. A vessel which becomes beset in drift ice is vulnerable to grounding because of the many shoals, reefs and shallow-water areas in the Straits of Mackinac.

(24) Wind-driven currents in the western Straits run eastward. Vessels beset in ice southeast of St. Helena Island have become endangered by drifting toward McGulpin Point or the Mackinac Bridge pilings.

(25) The brash and drift ice between Mackinaw City, St. Ignace and Round Island remains east of the Mackinac Bridge, trapped by the ice in South Channel. The north-northwest winds will flush this ice out into Lake Huron when the ice in South Channel begins to break up.

(26) Coast Guard icebreakers assigned to the Straits of Mackinac are based in St. Ignace and Cheboygan. Their services can be requested through Commander, Coast Guard Sector Sault Ste. Marie; VHF-FM channel 16. (See Winter Navigation, chapter 3.)

Routes

(27) 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 Huron:

(28) Downbound vessels shall lay a course from De Tour Passage of **137°** for 56 miles to pass not less than 15 miles **045°** from **Middle Island Light**, then a course of **161°** for 105 miles to not less than 12 miles **067°** from **Harbor Beach Light**; then a course of **180°** for 57 miles to the entrance to Lake Huron Cut.

(29) Downbound vessels from the Straits of Mackinac shall lay a course of **070°** for 6 miles from a point south of Poe Reef; then a course of **115°** for 61 miles to join the regular downbound course from De Tour Passage at a point not less than 15 miles **045°** from Middle Island Light.

(30) Downbound vessels from Calcite from a point abreast of Adams Point (45°24'52"N., 83°42'57"W.) shall lay a course of **100°** for 30 miles to intersect the regular downbound course from De Tour Passage at a point not less than 15 miles **045°** from Middle Island Light.

(31) Downbound vessels from Stoneport Harbor shall lay a course of **098°** for 18 miles to intersect the regular downbound course from De Tour Passage at a point 14 miles **071°** from Middle Island Light.

(32) Downbound vessels from Alpena shall steer **159°** for 58 miles on Harbor Beach Light to a point 12 miles **353°** from **Points aux Barques Light**; then a course of **134°** for 28 miles to intersect the regular downbound course from De Tour Passage at a point 12 miles **067°** from Harbor Beach Light.

(33) Downbound vessels from De Tour Passage to Cove Island from a position abreast of **De Tour Reef Light** shall lay a course of **137°** for 12 miles; then **123°** for 37 miles to a position 10 miles **213°** from **Great Duck Island Light**, then **103°** for 61¼ miles.

(34) Downbound vessels from Cove Island to Lake Huron Cut, shall lay a course of **224°** for 7 miles; then **189°** for 157 miles to Lake Huron Cut.

(35) Eastbound vessels from the Straits to northern ports on the west side of Lake Huron shall take departure from 0.5 mile north-northeast of **Cordwood Point Lighted Buoy 1** and steer not less than **117°** for 47 miles to a point 2.5 miles off Presque Isle Light; then steer **138°** for 23.4 miles to a point on the upbound recommended course off Nordmeer Wreck Lighted Buoy WR1.

(36) Southbound vessels bound for Alpena from Nordmeer Wreck Lighted Buoy WR1 shall steer **189°** for for about 7.25 miles to a point 1.5 miles abeam of Thunder

Bay Island Light; then steer **227°** on Thunder Bay Traffic Buoy for 5.5 miles; then to destination.

(37) Southbound vessels bound for Saginaw from Nordmeer Wreck Lighted Buoy WR1 shall steer **181°** for 29.5 miles to a point 6 miles east of Sturgeon Pt. Light; then steer **189°** for 27.75 miles to a point 3 miles east of **Au Sable Point Lighted Buoy 1**; then steer **224°** for 19.25 miles to Charity Island Shoal Lighted Bell Buoy 1; then to destination.

(38) Upbound vessels shall lay a course of **353°** for 54 miles to pass not more than 5 miles **067°** from Harbor Beach Light; then steer **341°** for 99 miles to pass not over 7 miles **071°** off Middle Island Light; then a course of **325°** for 60 miles to De Tour Passage.

(39) Upbound vessels for the Straits of Mackinac shall lay a course of **318°** for 16.5 miles from off Middle Island Light to a point 5 miles **050°** from Presque Isle Light; then steer a course of **295°** for 47 miles to abreast of Cordwood Point Lighted Buoy 1; then steer a course of **270°** for 3 miles to a point off **Poe Reef Light**.

(40) Eastbound vessels from Round Island Passage shall lay a course of **090°** for 22 miles to a point 4.75 miles off Martin Reef Light; then steer a course of **061°** for 14 miles to point 0.75 miles **128°** from De Tour Reef Light.

(41) Upbound vessels from Lake Huron Cut to Cove Island shall steer a course of **037°** for 15 miles; then steer a course of **008°** for 143.5 miles.

(43) Upbound vessels from Cove Island to De Tour Passage from a position abreast of **O'Brien Patch Lighted Bell Buoy TC** shall lay a course of **284°** for 61.5 miles to a position 6 miles **194°** from Great Duck Island Light; then steer **300°** for 48 miles to a position 3 miles **137°** from De Tour Light; then steer **317°** for 3 miles to a point 0.75 miles **128°** from De Tour Reef Light.

(44) 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 14860, Lake Huron.

(45) It is recommended that the following limit of anchorage be observed in Lake Huron off De Tour Light so that vessels may enter or leave De Tour Passage in time of congestion due to fog or other conditions: No vessel to anchor east of a bearing on De Tour Light of **340°**, or closer than 0.75 mile to the light or north of the De Tour Martin Reef course.

Pilotage

(46) The waters of Lake Huron in the approach to St. Clair River south of 43°05'30"N. are Great Lakes designated waters; registered vessels of the United States and foreign vessels are required to have in their service a United States or Canadian registered pilot. The remaining waters of Lake Huron 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 St. Clair River are supplied by Lakes Pilots Association, and for Lake Huron by Western

Great Lakes Pilots Association (See Appendix A for addresses.) Pilot exchange points are off Port Huron at the head of St. Clair River in about 43°05'30"N., 82°24'42"W. and at De Tour, MI, at the entrance to St. Marys River. Three pilot boats are at Port Huron; HURON BELLE has an international orange hull with an aluminum cabin, and HURON MAID and HURON LADY each have an international orange hull with a white cabin. The pilot boat at De Tour, LINDA JEAN, has a green hull and a white cabin. (See Pilotage, chapter 3, and **46 CFR 401**, chapter 2.)

Principal ports

- (47) The principal ports on Lake Huron are Bay City and Saginaw in the Saginaw River and Cheboygan. Private docks for deep-draft vessels are also at Alabaster, Port Gypsum, Alpena, Rockport, Stoneroot, Calcite, and Port Dolomite.

Charts 14862, 14865

- (48) The south end of Lake Huron in the approach to the head of the St. Clair River is obstructed by an extensive shoal area. A dredged channel, maintained at the Federal project depth of 30 feet, leads south for about 6 miles through the shoals to the head of the river. The channel is marked by lighted buoys and a **180.3°** lighted range at Point Edward, ON. A racon is at the front light. Lake Huron Cut Lighted Buoy 12 marks the entrance to the channel from Lake Huron. Lake Huron Cut Light 7, about 2.2 miles from the entrance, is equipped with a racon.

- (49) **Fort Gratiot Light** (43°00'23"N., 82°25'21"W.), 82 feet above the water, is shown from a white brick conical tower on the west side of the head of St. Clair River. Port Huron Coast Guard Station is close south of the light. A **regulated navigation area** has been established off the Coast Guard Station. (See **33 CFR 165.1 through 165.13 and 165.920**, chapter 2, for limits and regulations.)

- (50) Dredging spoils are adjacent to both sides of the dredged channel. On the east side of the channel, the spoil bank extends about 4 miles north from Point Edward and is about 1 mile wide with depths of 6 to 12 feet. A wreck, covered 15 feet, is east of the channel 3.4 miles northeast of Fort Gratiot Light. On the west side of the channel, the spoil bank has depths of 9 to 15 feet for 4.5 miles north of Fort Gratiot Light, thence 16 to 24 feet for another 1.5 miles north.

- (51) **Black River Canal**, entered about 1.4 miles north-northwest of Fort Gratiot Light, extends southwest for about 1.1 miles to its junction with the Black River.

- (52) From the head of the St. Clair River north-northwest for 19 miles to Lexington, the shore is low. In this stretch, the lake bottom is generally rocky with depths to 18 feet extending 1.3 miles offshore. A shoal with a least depth of 12 feet is 0.9 mile northeast of the mouth

of **Burtch Creek**, 7 miles south of Lexington. A 16-foot diameter potable water intake extends from shore 5.7 miles north-northwest of Fort Gratiot Light northeast for 5 miles to a crib covered 38 feet. A wreck, covered 29 feet, is 10.7 miles north-northeast of Fort Gratiot Light.

Chart 14862

- (53) **Lexington, MI**, is an artificial harbor 19 miles north-northwest of the head of St. Clair River. An elevated white water tank in Lexington is prominent from lakeward.

Channels

- (54) A dredged entrance channel leads north from deep water in Lake Huron to a harbor basin and anchorage area formed by two breakwaters. The harbor entrance is marked by lights on the outer ends of the breakwaters. In 2012, the controlling depth was 3 feet in the entrance channel to the basin, thence depths of 6 to 8 feet were available in the basin.

- (55) A wreck, covered 13 feet, is 0.6 mile east-southeast of the harbor entrance.

Small-craft facilities

- (56) A marina developed by the Michigan State Waterways Commission is in the harbor basin. Transient berths, gasoline, diesel fuel, electricity, water, launching ramps, sewage pump-out facilities, and harbormaster services are available. The harbormaster monitors VHF-FM channels 16 and 9.

- (57) The shore from Lexington north for 11 miles to Port Sanilac consists of low bluffs. The 18-foot contour is about 0.6 mile offshore, and there are numerous submerged rocks as much as 0.5 mile offshore in this stretch. The most dangerous is a group of rocks that uncover during low water conditions about 5 miles north of Lexington.

- (58) **Port Sanilac, MI**, an artificial harbor used by pleasure craft, is on the west shore of Lake Huron about 30 miles north of the head of St. Clair River. An elevated blue tank just north of the harbor is prominent from lakeward.

- (59) **Port Sanilac Light** (43°25'44"N., 82°32'25"W.), 69 feet above the water, is shown from a white octagonal tower in the village, southwest of the harbor basin.

Channels

- (60) A dredged entrance channel leads north from deep water in Lake Huron, between two breakwaters, to a harbor basin. (See Notice to Mariners and the latest edition of the chart for controlling depths.) The outer ends of the breakwaters are marked by lights.

Small-craft facilities

- (61) A marina developed by the Michigan State Waterways Commission is on the west side of the harbor

basin. A private marina is in the basin. Transient berths, gasoline, diesel fuel, water, electricity, haul-out facilities, sewage pumpout, launch ramp, and harbormaster services are available. The harbormaster monitors VHF-FM channels 16 and 9. The private marina also provides a 20-ton hoist, and hull, engine, and electronic repairs.

(62) From Port Sanilac the shore continues bluff and rocky for 29 miles north to Harbor Beach. The 18-foot contour is no more than 1 mile offshore, but numerous rocks, bare and submerged, present a hazard to small craft navigating this stretch. The most dangerous are a rock that bares about 0.3 mile offshore 1 mile north of Port Sanilac and a group of rocks, covered 3 to 6 feet, 0.5 mile offshore 11.5 miles north of Port Sanilac.

(63) **Forester, MI**, 5 miles north of Port Sanilac, can be identified by two church spires close to shore. There are no docks; shoals, rocks, and dock ruins render navigation hazardous. Landing should not be attempted without local knowledge.

(64) **Forestville, MI**, about 16 miles north of Port Sanilac, can be identified by the spire of a small white church. A rock jetty with a launching ramp on its north side extends about 200 feet from shore at the village. There is excellent holding ground southeast of the jetty in 30 feet.

(65) From Forestville north to Harbor Beach numerous submerged rocks extend as much as 0.7 mile offshore.

(66) **Harbor Beach, MI**, is an artificial harbor about 60 miles north of the head of the St. Clair River. It is an important harbor of refuge for large vessels on the west shore of Lake Huron. A 300-foot stack at the powerplant in the north part of the harbor is prominent.

(67) **Harbor Beach Light** (43°50'44"N., 82°37'53"W.), 54 feet above the water, is shown from a white conical tower on the north side of the harbor entrance; a seasonal sound signal is at the light.

Channels

(68) A dredged entrance channel leads west from deep water in Lake Huron between detached breakwaters to a dredged anchorage basin inside the north breakwater. Lights mark the ends of the breakwaters at the harbor entrance, and buoys mark the channel inside the harbor. (See Notice to Mariners and the latest edition of the chart for controlling depths.) Small craft can enter the harbor through a gap in the north breakwater. Small craft with local knowledge can enter the harbor at the south end; a depth of about 3 feet can be carried, taking care to avoid shoals and a wreck covered 1 foot off the south end of the south breakwater.

Dangers

(69) Two wrecks in the harbor, covered 6 feet and 1 foot, are about 0.6 mile west-northwest and west-southwest of Harbor Beach Light, respectively.

Coast Guard Station

(70) **Harbor Beach Coast Guard Station**, seasonal, is just north of Harbor Beach at Waterworks Park.

Harbor Regulations

(71) (See **33 CFR 207.480**, chapter 2, for harbor regulations.)

Wharves

(72) The Detroit Edison Co. Harbor Beach Power Plant Wharf is on the west side of the harbor about 0.7 mile northwest of Harbor Beach Light. The wharf has 700 feet of berthing space with dolphins, and reported depths of 15 feet alongside. There is storage for 150,000 tons of coal.

(73) No services, other than dockage along the breakwater, are available to large vessels in Harbor Beach.

Small-craft facilities

(74) An 850-foot public dock west-southwest of the harbor entrance is in reasonably good condition and has a launching ramp on its north side. A Michigan State Waterways Commission marina is at the north end of the harbor. A private marina is located just south of the Detroit Edison power plant. In 1977, the reported controlling depth was 7 feet in the approach channel with 2½ feet along the docks. The channel is marked by private buoys. Gasoline, diesel fuel, water, electricity, launch ramps, pump-out facilities, and harbormaster services are available. The harbormaster monitors VHF-FM channels 16 and 9. The private marina also has marine supplies and outboard motor repairs.

(75) There is a hospital in Harbor Beach.

(76) From Harbor Beach north-northwest for 15 miles to Points aux Barques Light, the shore is low and wooded with bluffs from close up to 1 mile from shore. An extensive flat with rock ledges and detached bare and submerged rocks extends as much as 1.5 miles offshore. Off **Forest Bay**, from 2 to 3 miles north of Harbor Beach, several dangerous ledges with depths of 2 to 10 feet extend north and south, 1 to 1.5 miles offshore.

(77) **Port Hope, MI**, a small village about 7 miles north of Harbor Beach, has a dock in very poor condition and a small basin formed by breakwalls. The approach and the basin have less than 2 feet of water. A marina, with 1 foot reported alongside in 1977, is just south of the basin and provides water. Port Hope Chimney, a freestanding stone and brick stack on the beach, is a State monument. This stack and the spire in the village are prominent. Good holding ground is found east and north of Port Hope, in depths of 35 to 40 feet.

(78) **Point aux Barques Light** (44°01'22"N., 82°47'36"W.), 93 feet above the water, is shown from a white conical tower with an attached dwelling on a point 15 miles north-northwest of Harbor Beach.

(79) A dangerous reef, with rocks covered less than 6 feet near its outer edge, extends 2 miles east from Points aux Barques Light. A 5-foot spot is 1.2 miles northeast

of the light, and boulders, covered 13 to 15 feet, extend up to 2.5 miles north and northeast from the light. A lighted buoy marks the extent of the reefs northeast of the light.

Chart 14863

(80) From Points aux Barques Light to **Points aux Barques** (44°03'N., 82°57'W.), 9 miles northwest, the shore continues low and wooded. Ledges and detached rocky spots render the stretch dangerous within 3 miles of shore. **Orion Rock**, covered 3 feet, is about 0.8 mile offshore 3 miles northwest of Points aux Barques Light.

(81) **Grindstone City, MI**, a small settlement 5.5 miles northwest of Points aux Barques Light, has a small-craft harbor formed by two jetties. A privately dredged channel, marked by private buoys, leads along the northwest side of the southeast jetty, thence angles west between projections on the inner sides of the jetties to a harbor basin. In 1977, the reported controlling depth was 4 feet in the approach, entrance channel, and basin. However, it was reported that sudden atmospheric pressure or wind changes may change the water level in the harbor by as much as 1 foot. The harbor should not be entered without local knowledge. Gasoline is available in the harbor.

(82) In 1983, a sunken wreck was reported about 1.2 miles east of the harbor in about 44°03'24"N., 82°51'50"W.

(83) At **Burnt Cabin Point**, 2 miles east of Points aux Barques, a rocky ledge extends off about 0.8 mile around the point. **Alaska Bay**, a small bight between Burnt Cabin Point and Points aux Barques, has good water to within about 0.4 mile of its head. **Port Austin Reef** is a dangerous reef extending 1.7 miles northwest from Points aux Barques. **Port Austin Reef Light** is near the outer edge of the reef. The light should not be passed close aboard even by vessels of shallow draft because of riprap and other obstructions that extend out 900 feet from the base. A detached 11-foot shoal, marked on the north side by a buoy, is 0.9 mile north-northwest of the light. Vessels should not pass inside the buoy.

(84) From Points aux Barques the shore extends southwest to Port Austin with rocky flats extending about 0.5 mile offshore.

(85) **Port Austin, MI**, is a village and small-craft harbor at the mouth of **Bird Creek** about 2 miles southwest of Points aux Barques on the shore of a shallow bay between that point and **Flat Rock Point** (44°02'42"N., 83°01'36"W.). A church spire just east of town and a radio mast on high ground 1.5 miles south of the harbor are prominent.

Channels

(86) A dredged entrance channel leads south from deep water in Lake Huron to a harbor basin protected by a breakwater on the west and northwest sides and a

detached breakwater on the northeast side. (See Notice to Mariners and the latest edition of the chart for controlling depths.) The outer ends of both breakwaters are marked by lights.

(87) The entrance should be approached from the north or northwest to avoid the reef area northeast of the harbor. A buoy 0.4 mile north of the northeast breakwater light marks the northwest extent of the reef. Buoys mark the east and southeast limits of the dredged basin. The harbor affords limited protection from all winds.

(88) Bird Creek enters the harbor at the south end of the basin. The west side of the mouth of the creek is protected by a pier that extends about 450 feet north. The entrance to the creek had a reported midchannel controlling depth of 4½ feet in 1992. About 350 feet up the creek, at the first bend, extensive shoaling was reported along the east side in 1990; mariners are advised to favor the far west side when transiting this bend in the creek.

Small-craft facilities

(90) A basin and marina developed by the Michigan State Waterways Commission is west of the creek mouth. The basin has been dredged to 6 feet, mostly from solid rock, leaving a hazardous, abrupt shoal border along its limits. The west limits of the basin are marked by private buoys. The marina can provide: transient berths, gasoline, diesel fuel, ice, water, electricity, launch ramp, and pump-out. The marina monitors VHF-FM channel 16. Marinas in Bird Creek also provide diesel fuel, gasoline, water, ice, electricity, and marine supplies. A 40-ton hoist is available for hull, engine, and electrical repairs.

(91) **Saginaw Bay**, the largest indentation on the west side of Lake Huron, is 26 miles wide at its entrance between Points aux Barques to southeast and **Au Sable Point** (44°20'N., 83°20'W.) to northwest. The bay extends about 52 miles southwest to its head at the mouth of the Saginaw River. At about its midpoint, the bay is constricted to a width of about 13 miles between Sand Point (43°55'N., 83°24'W.) to southeast and Point Lookout (44°03'N., 83°35'W.) to northwest.

(92) The mouth of the bay is wide and open with good depths, but the deepwater channel leading to the upper part of the bay is restricted to a width of about 1.8 miles between a shoal that extends southeast from Point Lookout and a very shallow bank that extends as much as 14 miles from the east shore of the bay. south of Point Lookout, the bay widens to as much as 22 miles. A deepwater channel up to 7 miles wide, with depths of 24 feet or more, extends to within 8 miles of the head of the bay. A dredged channel extends through the shallower water at the head of the bay to the mouth of the Saginaw River.

(93) **Fluctuations of water level.**—The water level in Saginaw Bay is subject to sudden changes due to the wind. A northeast gale driving water into the bay can raise the level at the mouth of Saginaw River 3 to 4 feet, sometimes in less than as many hours, while a

southwest wind sometimes lowers the level sufficiently to cause large vessels to ground in the channel.

(94) **Caution.**—The course across the mouth of Saginaw Bay is dangerous in heavy weather. Tawas Bay, on the west side of the mouth, has good anchorage with protection from all but southwest winds. Numerous charted and uncharted fish net stakes and structures, some submerged, are in Saginaw Bay.

(96) From Port Austin, the east shore of Saginaw Bay trends generally southwest for 22 miles to **Sand Point**. From **Flat Rock Point**, 1.5 miles west of Port Austin, the shore consists of low bluffs for 3 miles south-southwest to the mouth of **Pinnebog River**, thence 3 miles west to **Hat Point**. The bluffs become wooded from Hat Point west for about 8 miles to **Oak Point** (43°58'30"N., 83°15'42"W.). At Oak Point the shore turns southwest for 2 miles to Caseville Harbor, thence southwest and west for 7 miles to the extremity of Sand Point.

(97) Between Flat Rock Point and Oak Point, shoals extend as much as 5 miles north from the shoreline. **Flat Rock Point Reef**, with a least depth of 2 feet, is west of Flat Rock Point with its south end about 1.7 miles northwest of the mouth of Pinnebog River and thence extending 1 mile north. **Hat Point Reef**, with a least depth of 2 feet near its outer end, extends 2 miles north from shore, just east of Hat Point. Detached 20- and 21-foot spots are 4 miles north and 5.2 miles northwest of Hat Point, respectively. Midway between Hat Point and Oak Point, depths of 7 feet and 1 foot are 1.5 and 0.9 miles offshore, respectively. A detached 12-foot spot is 2 miles northwest of Oak Point.

(98) From Sand Point, a shoal bank extends about 13 miles northwest. **Little Charity Island** and **Charity Island** are on the bank about 7 and 8 miles northwest of Sand Point, respectively. Between the point and the islands, the bottom is generally sandy with scattered boulders. Depths of 7 feet are available across the shoal, but the prevailing depths are less. Charity Island, low and wooded, is marked at the northwest end by an abandoned lighthouse. From the island, the shoal bank extends about 3½ miles west and 4 miles north. Numerous spots with depths of 13 to 20 feet are from 3 to 5 miles northeast of the island. A lighted bell buoy, about 5.5 miles northwest of Charity Island, marks the northwest extent of the shoal bank.

(99) Entering Saginaw Bay, a course south from the lighted bell buoy leads 6.5 miles through deep water to abreast Gravelly Shoal Light, which marks the shoals off Point Lookout at the narrowest point of the deepwater channel into the bay. A 17-foot spot, marked on the west side by a lighted buoy, is 3.6 miles west-northwest of Charity Island and close east of the course between the lighted bell buoy marking Charity Island Shoal and Gravelly Shoal Light.

(100) **Caseville Harbor, MI**, is at the mouth of the **Pigeon River**, about 18 miles southwest of Points aux Barques and 6.5 miles east-northeast of Sand Point. A white spire in the town is prominent.

Channels

(101) A dredged entrance channel leads from deep water in Saginaw Bay to the mouth of Pigeon River and thence upstream for 0.3 mile. A breakwater extends bayward from the mouth of the river on the north side of the entrance channel. The outer end of the breakwater is marked by a light and the channel is marked by buoys aa private **113.5°** lighted range. Buoys in the dredged channel may be relocated as necessary to best mark the channel limits. (See Notice to Mariners and the latest edition of the chart for controlling depths.)

(102) A **slow-no wake speed** is enforced in the harbor.

Small-craft facilities

(103) A Michigan State Waterways Commission marina and private marinas are in the harbor. Transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, marine supplies, launching ramp, boat hoist, and harbormaster services are available. The harbormaster monitors VHF-FM channels 16 and 9.

(104) **Sand Point** (43°55'N., 83°24'W.) is a narrow point extending 4 miles west from about midpoint of the east shore of Saginaw Bay. Canals and approach channels have been privately dredged at the west end and along the south side of the point. Dockage for small craft is available in the canals, but the channels are subject to shoaling and caution is advised.

(105) From Sand Point southwest for 28 miles to the mouth of the Quanicasee River, the southernmost point of Saginaw Bay, the shore is generally low and marshy. The shore then trends northwest for 10 miles to the mouth of the Saginaw River. Above Sand Point, the east side of the bay is a sandy flat extending 8 to 10 miles offshore within the 18-foot contour. The bottom is irregular, with depths less than 10 feet scattered over the entire area.

(106) **Wild Fowl Bay** is enclosed by Sand Point on the north and by **North Island**, 2.3 miles southwest of Sand Point, and **Wild Fowl Point** on the south. The bay has central depths of 6 feet or more, with much lesser depths toward shore.

(107) On the southeast side of Wild Fowl Bay, a channel locally known as Wallace Cut leads to a marina basin. The entrance is marked by a private lighted range. In 1999, the entrance channel had a reported controlling depth of 5 feet with 8 to 10 feet in the basin. The marina provides berths, gasoline, water, ice, electricity, sewage pump-out, marine supplies, engine repairs, a 30-ton hoist and a launching ramp.

(108) **Bay Port Harbor, MI**, is on the south shore of Wild Fowl Bay just east of Wild Fowl Point and about 25 miles southwest of Points aux Barques. Commercial fishermen use the harbor. A launching ramp is available.

Channels

(109) A Federal project provides for a dredged entrance channel leading south from deep water in Wild Fowl Bay to join privately maintained channels. In 2011, the

Structures across the Saginaw River						
Name•Description•Type	Location	Miles*	Clear Width of Draw or Span Opening (feet)	Clear Height above Low Water Datum (feet)	Information	
Main Channel						
1	Overhead power cable	43°38'33"N., 83°50'54"W.	0.55		181	
2	Overhead power cable	43°38'15"N., 83°50'46"W.	0.93		125	
3	Lake State Railroad Bridge (swing)	43°36'47"N., 83°51'26"W.	3.10	96 (right) 94 (left)	7	Note 1
4	Independence Bridge (bascule)	43°36'47"N., 83°52'22"W.	3.88	150	22	Note 1 Vertical clearance is 30 feet at center
5	Canadian National Railroad Bridge (swing)	43°36'19"N., 83°53'23"W.	4.94	101 (right) 101 (left)	8	Notes 1 and 2
6	Liberty Street Bridge (bascule)	43°36'17"N., 83°53'25"W.	4.99	150	25	Note 1
7	Veterans Memorial Bridge (bascule)	43°35'46"N., 83°53'37"W.	5.60	146	15	Note 1 Vertical clearance is 23 feet at center
8	Overhead power cable	43°35'36"N., 83°53'40"W.	5.79		135	
9	Lafayette Street Bridge (bascule)	43°34'47"N., 83°53'59"W.	6.78	150	20	Note 1
10	Overhead power cable	43°30'04"N., 83°53'44"W.	12.97		142	
11	Overhead power cable	43°29'03"N., 83°54'42"W.	14.40		138	
12	Overhead power cable	43°28'57"N., 83°54'45"W.	14.52		136	
13	I-75 Bridge (fixed)	43°28'56"N., 83°54'46"W.	14.61	300	121	
14	Overhead power cable	43°28'45"N., 83°54'50"W.	14.77		130	
15	CSX Railroad Bridge (bascule)	43°26'34"N., 83°56'18"W.	18.00	150	13	Maintained in closed position
16	Overhead power cable	43°26'32"N., 83°56'19"W.	18.03		124	
17	I-675 Bridge (fixed)	43°26'14"N., 83°56'25"W.	18.38	138	34	
18	Johnson Street Bridge (fixed)	43°26'14"N., 83°56'25"W.	18.52	100	25	
19	Genesee Avenue Bridge (fixed)	43°26'01"N., 83°56'29"W.	18.65	88	25	
20	Canadian National Railroad Bridge (swing)	43°25'36"N., 83°56'40"W.	19.20	70 (right) 70 (left)	12	Maintained in closed position
21	Holland Avenue Bridge (fixed)	43°25'17"N., 83°57'07"W.	19.67	113	20	
22	Court Street Bridge (fixed)	43°24'56"N., 83°57'42"W.	20.34	107	32	
23	Rust Avenue Bridge (fixed)	43°24'38"N., 83°57'56"W.	20.74	66	18	
24	Overhead power cables	43°24'09"N., 83°57'57"W.	21.28		52	
25	Douglas G. Schenck Bridge (fixed)	43°24'06"N., 83°57'57"W.	21.34	116	19	
26	Overhead cable	43°23'17"N., 83°57'54"W.	22.28		30	
27	Overhead power cable	43°23'12"N., 83°57'57"W.	22.36		56	
Tittabawassee River						
28	Overhead power cable	43°23'05"N., 83°58'49"W.	23.10		52	
29	Overhead cable	43°23'06"N., 83°58'52"W.	23.14		30	
Channel West of Middle Ground						
30	Pedestrian Bridge	43°35'04"N., 83°54'02"W.	6.64	N/A	N/A	
31	Overhead power cable	43°34'53"N., 83°54'10"W.	6.72		27	
32	Salzburg Avenue Bridge (fixed)	43°34'48"N., 83°54'15"W.	6.84	71	18	
33	Overhead power cable	43°34'29"N., 83°54'27"W.	7.26		32	
34	Overhead power cables	43°33'57"N., 83°54'38"W.	7.90		18	

* Miles above Saginaw Bay Channel Range Front Light

Note 1.—See 33 CFR 117.1 through 117.59 and 117.647, chapter 2, for drawbridge regulations.

Note 2.—The bridge will not have a tender on duty and will be left in an open position from 0300 to 1100 Tuesday through Friday and from 0300 Saturday to 1100 Monday except for one special closing usually between 1200 and 1600. A bridgetender will be on duty at all other times and proper whistle signals should be sounded to have the bridge opened for passage.

controlling depth was 5 feet in the Federal channel, thence 3 feet in the private channel to a launching ramp.

- (110) From Wild Fowl Point southwest for 11.5 miles to **Fish Point** (43°43'06"N., 83°31'30"W.), a shoal bank with depths less than 6 feet extends about 3.5 miles offshore. This bank has numerous islands, the largest of which are **Heisterman Island**, 1 mile south of North Island, and **Middle Grounds Island** and **Maisou Island**, just south of Heisterman Island.

- (111) **Sebewaing Harbor** is at the mouth of the Sebewaing River, on the east shore of Saginaw Bay about 12 miles south of Sand Point. A stack on the north side of the river in the village of **Sebewaing, MI**, is prominent.

Channels

- (112) A dredged entrance channel leads southeast from deep water in Saginaw Bay through the mouth of the Sebewaing River and upstream to about 800 feet below the CSX Railroad bridge. In 2011, the controlling depth was 2½ feet in the entrance channel to the head of the project. With local knowledge, depths of about 3 feet were available for another 0.75 mile, thence the river shoals to bare.

Bridge

- (113) A fixed railroad bridge with a clearance of 9 feet crosses the river at the village.
- (114) A **slow-no wake speed** is enforced on the Sebewaing River and connecting channels and canals.
- (115) From Fish Point southwest to the Quanicassee River, depths less than 6 feet extend about 1 mile offshore. A marina about 8.5 miles southwest of Sebewaing provides transient berths, gasoline, ice, water, electricity, sewage pump-out, and a launching ramp. A 25-ton hoist is available for minor engine repairs.
- (116) **Quanicassee River** flows into the southeast corner of Saginaw Bay. A marina is along the east side of the river about 0.5 mile above the mouth. Services and supplies available include: transient berths, gasoline, diesel fuel, pump-out, electricity, water, launching ramp, marine supplies, a 6-ton marine lift, and full repairs. The entrance to the river is marked by private seasonal buoys and has a reported approach depth of 4 feet.

Charts 14863, 14867

- (117) The **Saginaw River** is formed by the confluence of the Tittabawassee and Shiawassee Rivers at **Green Point** (43°23'08"N., 83°58'05"W.) at the south limit of the city of Saginaw. The river flows north for 22 miles and empties into the head of Saginaw Bay. The lower 18 miles of the river form a commercial harbor. Grain, chemicals, petroleum products, limestone, coal, sand, gravel, and cement are the major commodities handled at the ports of **Bay City, MI**, just above the river mouth, and **Saginaw, MI**, 19 miles above the river mouth. Other towns on the river are **Essexville, MI**, on the east side just

above the mouth, and **Zilwaukee, MI**, and **Carrollton, MI**, on the west side just below Saginaw.

Prominent features

- (118) Two 500-foot stacks at the powerplants on the east side of the river mouth and a TV mast at Essexville are prominent.

Channels

- (119) A Federal project provides for a dredged entrance channel leading southwest from the deep water in Saginaw Bay for about 13.5 miles to the mouth of the Saginaw River and thence upstream for about 20 miles to the ports of Bay City and Saginaw. The entrance and river channels are well marked by lighted and unlighted buoys. A **211°20'** lighted range marks the entrance channel, and a **160°** lighted range marks a reach in the lower part of the river.

- (120) The Federal project depths are 27 feet in the entrance channel to the mouth of the river, thence 26 feet through the mouth, thence 25 feet to the Canadian National Railroad bridge at Bay City, thence 22 feet to the CSX railroad bridge in Saginaw. Four turning basins in the river have project depths as follows: 25 feet at Essexville, 22 feet in Bay City opposite the airport, 20 feet at Carrollton, and 20 feet just below the CSX railroad bridge at Sixth Street in Saginaw. (See Notice to Mariners and latest editions of charts for controlling depths.)

- (121) A **slow-no wake speed** is enforced in the Saginaw River.

- (122) Above the Holland Avenue bridge in Saginaw depths in the river vary from 7 to 15 feet for about 2.8 miles to Green Point.

- (123) In 1977, it was reported that the **Tittabawassee River** was navigable by small boats for only about 1.5 miles above Green Point. Above that point stumps, sunken logs, and snags severely obstruct the river.

- (124) The **Shiawassee River**, near Green Point, has an available depth of 5 to 6 feet, and the crooked channel across Shiawassee Flats is 15 or 16 feet deep in many places. In 1977, numerous submerged pilings were reported at the mouth of the river in the vicinity of Green Point. Above the flats, the Shiawassee River is very narrow and crooked, but is navigable for small boats to the junction with **Bad River**, and thence the Bad River to the village of St. Charles, 13 miles from Green Point. A highway bridge with a 19-foot fixed span and a clearance of 8½ feet crosses Shiawassee River about 6.7 miles above the mouth.

- (125) The **Cass River** and **Flint River**, tributaries of the Shiawassee, are navigable by rowboats to a limited extent, being greatly obstructed by sunken logs and snags.

- (126) An irregularly shaped diked disposal area is on the east side of the entrance channel to the Saginaw River about 1 mile northeast of the mouth.

- (127) The former dredged approach to the Saginaw River leads north from the mouth to deep water in Saginaw

Bay. The channel, with a least depth of about 13, is unmarked and no longer maintained.

Fluctuations of water level

- (128) Each year the normal variation in level between the highest and lowest mean monthly stages in the Saginaw River is about 3 feet. In addition, spring floods and excessive rains may cause an abnormal rise of as much as 14 feet in the river at Saginaw. Occasionally a considerable change takes place within a few hours, resulting from the raising or lowering of Saginaw Bay by violent northeast or southwest winds. Water level information for the river may be obtained by contacting Saginaw Coast Guard Station on VHF-FM channel 16. Water levels are given in whole inches above or below chart datum.

Towage

- (129) A 4,000 hp tug, GREGORY J. BUSCH, is also available at Bay City. Arrangements are made through Busch Marine Services, at 517-754-2507 or 517-751-3847, or by contacting the tug on VHF-FM channel 16. Working channels include 16, 6, 10, 12, 13, 21, and 22. Two hours advance notice is requested; however, the tug is manned 24 hours a day. The tug operates on all lakes and meets vessels at any location including midlake. The tug is equipped with radar and operates under any conditions. Open water rescue towing between Port Huron and De Tour Passage is available, and the tug has ice breaking capabilities. Tugs are also available from Great Lakes Towing Co. docks in Detroit, at 800-321-3663. At least 30 hours advance notice is requested.

Quarantine, customs, immigration, and agricultural quarantine

- (130) (See chapter 3, Vessel Arrival Inspections, and appendix for addresses.)
- (131) **Quarantine** is enforced in accordance with the regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)
- (132) Saginaw-Bay City is a **customs port of entry**.

Coast Guard Station

- (133) **Saginaw River Coast Guard Station** is on the east side of the river about 1.7 miles above the mouth.

Wharves

- (134) The Saginaw River has numerous facilities along both sides for 18 miles above the mouth. Only the deep-draft facilities are described. (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 for the facilities described are reported depths. (For information on the latest depths, contact the operator.) All the facilities described have highway connections, and

many have railway connections. Some of the facilities have water and electrical shore-power connections.

Facilities on the east side of the river at Essexville and Bay City:

- (135) **Consumers Energy Co. Dock:** east side of river mouth; 2,664-foot face; 18 feet alongside; deck height, 7 feet; open storage for 350,000 tons of coal; receipt of coal; owned and operated by Consumers Energy Co.
- (136) **ESSROC Cement Corp:** 2 miles above the river mouth; 850 feet of berthing space; 22 to 25 feet alongside; deck height, 7 feet; open storage for 30,000 tons closed storage 50,000 tons, and silo storage for 75,000 tons of cement; receipt of cement clinker and limestone; owned by Italcementi Group and operated by ESSROC Cement Corp.
- (137) **Carrollton Paving Corp., Essexville Dock:** just above ESSROC Cement Corp.; 800-foot face; 18 to 20 feet alongside; deck height, 7 feet; open storage for 100,000 tons; receipt of stone; owned by Carrollton Concrete Mix Corp., and operated by Carrollton Paving Corp.
- (138) **Sand and Stone Dock:** 0.5 mile above ESSROC Cement Corp.; 1,400-feet of berthing space along stone-revetted natural bank; 15 to 25 feet alongside; bank height, 3 feet; covered storage for 95,000 tons of pot-ash; about 3.8 acres open storage for about 70,000 tons of limestone; receipt of miscellaneous dry bulk commodities; owned by Jack Wirt and operated by Sand and Stone, Inc. and Saginaw Bay Fertilizer Inc.
- (139) **Liquifuels Inc. Wharf:** 0.15 mile below Detroit and Mackinac Railway bridge; 170 feet of berthing space with dolphins; 20 feet alongside; deck height, 8 feet; tank storage for 183,000 barrels; receipt of petroleum products; owned and operated by Liquifuels Inc.
- (140) **Bay Aggregate, Dock:** 0.2 mile above Veterans Memorial Bridge; 980-foot face; 15 to 20 feet alongside face; deck height, 4 to 6 feet; open storage for 200,000 tons; receipt of stone, and sand rock; owned by Port Fisher, LLC and operated by Bay Aggregate Inc.
- (141) **Bay Aggregate, I.B. Industrial Park Wharf:** 0.3 mile above Veterans Memorial Bridge; 1,320 feet of total berthing space with dolphins along bulkhead and concrete-revetted natural bank, 1,320-foot face; 10 to 12 feet alongside; bank height, 7 feet, deck height, 5 feet; open storage for 200,000 tons of stone; receipt of stone; owned by Port Fisher, LLC and operated by Bay Aggregate Inc.
- (142) **Saginaw Valley Marine Terminal Wharf:** about 1.1 miles above Lafayette Street bridge; 550 feet of berthing space; 17 to 22 feet alongside; deck height, 5 feet; 24,000 square feet covered storage; 4 acres open storage; occasional receipt and shipment of conventional general cargo; owned and operated by Saginaw Valley Marine Terminal and Warehouse Inc.

Facilities on the west side of the river at Bay City:

- (143) **Dow Chemicals USA Lower Wharf:** 0.3 mile below Detroit and Mackinac Railway bridge; 1,000 feet of berthing space; 23 to 25 feet alongside; deck height, 6 feet; pipelines extend to tank storage, capacity 16 million gallons; shipment of Liquidow; owned and operated by Dow Chemicals USA.
- (144) **Marathon Ashland Petroleum LLC:** 0.35 mile above Detroit and Mackinac Railway bridge; offshore wharf, 370 feet of berthing space with dolphins; 20 to 23 feet alongside; deck height, 6 feet; pipelines extend to tank storage, capacity 850,000 barrels; receipt and shipment of petroleum products; owned and operated by Marathon Ashland Petroleum LLC.
- (145) **Wirt Transport Co., Bay City Stone Dock:** immediately above Independence Bridge; 2,500 feet of berthing space along revetted natural bank; 15 feet alongside; deck height, 3 to 6 feet; 13 acres of open storage; receipt of limestone, slag, sand and stone; owned and operated by Wirt Transport Co.

Facilities on the east side of the river at Saginaw:

- (146) **Saginaw Asphalt Paving Co., Buena Vista Dock:** 0.25 mile above Route I-75 bridge; 1,050 feet of berthing space with dolphins along natural bank; 22 feet alongside; deck height, 6 feet; 14 acres open storage, with a capacity for 100,000 tons of stone; receipt of miscellaneous dry bulk commodities, including stone, sand, and salt; owned and operated by Saginaw Asphalt Paving Co.
- (147) **Bay Dock Co., Wirt Saginaw Stone Wharf:** 0.5 mile above Route I-75 bridge; 1,800 feet of berthing space; 16 to 22 feet alongside; deck height, 4 feet; 28 acres open storage; covered storage for 18,000 tons of potash; receipt of stone, sand, salt, potash, and coal; owned by Alice Wirt and operated by Bay Dock Co. Inc.
- (148) **International Materials Inc. Dock:** 0.2 mile above Lafarge Corp., 1,500-foot face; 20 to 22 feet alongside; deck height, 2 to 4 feet; 13 acres open storage; receipt of stone, sand, sand, coal, and slag; owned and operated by International Materials, Inc.
- (149) **Saginaw Rock Products Co. Dock:** 0.4 mile below CSX railroad bridge; 1,200 feet of berthing space; 10 to 20 feet alongside; deck height, 6 feet; 8 acres of open storage for 220,000 tons of coal and 780,000 tons of stone; receipt of miscellaneous dry bulk commodities, including stone and coal; owned by Saginaw Rock Products Co. and City of Saginaw and operated by Saginaw Rock Products Co.

Facilities on the west side of the river at Zilwaukee, Carrollton, and Saginaw:

- (150) **Edw. C. Levy Co. Dock:** 1.1 miles below Route I-75 bridge; 1,100-foot face; 20 to 23 feet alongside; deck height, 7 feet; 10 acres open storage; receipt of stone; owned by Edw. C. Levy Co. and operated by Burroughs Material Corp.
- (151) **Sargent Dock and Terminal Co., Inc.:** 0.1 mile below Route I-75 bridge; 1,100 feet of berthing space; 20

feet alongside; 40,000-ton covered storage; 650,000 ton open storage; receipt of sand, aggregate, gypsum, potash, salt and stone; owned operated by Sargent Docks and Terminal Co., Inc.

- (152) **ADM/Countrymark, Inc.:** 1.1 miles above Route I-75 bridge; 556 feet of berthing space with dolphins; 20 feet alongside; deck height, 6 feet; grain elevator, capacity over 2½ million bushels; grain gallery with one vessel-loading spout, loading rate 30,000 bushels per hour; shipment of grain; owned and operated by ADM/Countrymark, Inc.
- (153) **Lafarge Corp., Sixth Street Dock:** (43°27'19"N., 83°55'37"W.); 545-foot face; 20 feet alongside; deck height, 10 feet; storage silos for 8,300 tons of cement; receipt of bulk cement; owned and operated by Lafarge Corp., Great Lakes Region.
- (154) **Peavey Co., Carrollton Elevator Wharf:** (43°27'13"N., 83°55'51"W.); 700 feet of berthing space with dolphin; 20 feet alongside; deck height, 4 feet; 3-million-bushel grain elevator; vessel-loading spout; shipment of grain; owned and operated by Peavey Co., a division of ConAgra Co.
- (155) **Saginaw Asphalt Paving Co., Carrollton Dock:** (43°27'09"N., 83°55'58"W.); 924 feet of berthing space along bulkhead and revetted natural bank; 20 feet alongside; deck heights, 6 and 11 feet; 10 acres open storage; receipt of miscellaneous dry bulk commodities, including stone, sand, coal, and salt; owned and operated by Saginaw Asphalt Paving Co.
- (156) **Valley Asphalt Co. Dock:** 0.2 mile below CSX railroad bridge; 1,200-foot face; 15 to 20 feet alongside; deck height, 8 feet; open storage for 100,000 tons of stone; receipt of stone; owned and operated by Valley Asphalt Co.
- (157) **Carrollton Concrete Mix Dock:** 0.2 mile immediately below the CSX railroad bridge, 850 feet of berthing space along rock-revetted natural bank; 10 to 20 feet alongside; bank height, 8 feet; one crawler crane; open storage for 100,000 tons of stone; receipt of stone; owned and operated by Carrollton Concrete Mix Inc.

Supplies

- (158) Marine supplies and provisions are available at firms in Bay City and Saginaw. Water is available at some wharves.

Repairs

- (159) Above-the-waterline repairs, some engine repairs, and a 100-ton marine railway are available at a marine contractor at the south end of Middle Ground, about 8 miles above the river mouth in Bay City.

Small-craft facilities

- (160) Marinas are on the west side of the river 1.6 miles above the mouth, just north of the Grand Trunk Western Railroad Bridge, on the east side opposite Middle Ground, and at Saginaw 1.5 miles below Green Point. A Michigan State Waterways Commission marina is in the

harbor. Transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, marine supplies, launch ramp, and harbormaster services are available. The harbormaster monitors VHF-FM channels 16 and 9. Hoists to 50 tons are available for hull and engine repairs.

Communications

- (161) Bay City and Saginaw have good highway and rail freight connections. Passenger and freight service are available at the Tri-City Airport, 12 miles southwest of the river mouth.

Chart 14863

- (162) From the mouth of the Saginaw River the west shore of Saginaw Bay extends 3 miles northwest, thence north-northwest about 7 miles to **Nayanquing Point**, thence north about 11 miles to the mouth of the **Saganing River**, thence north-northeast about 5 miles to **Wigwam Bay**, thence east about 9 miles to Point Au Gres, and thence north and east for about 8 miles to Point Lookout. The shoreline in this reach is generally low and marshy with numerous cottages. The 18-foot contour extends from 5 miles north of the Saginaw River mouth northwest to 3 miles east of Nayanquing Point and thence northeast to Point Lookout, passing 1 mile off Point Au Gres. The flat inside the 18-foot contour is sandy and stony and generally shelving, with depths of 12 feet or less within 1 mile of that contour and depths of less than 7 feet extending over 1 mile off most of the shoreline. Off the mouths of some of the rivers in this reach, very shallow bars project well out over the flat.

Charts 14863, 14867

- (163) The **Kawkawlin River**, emptying into Saginaw Bay about 2 miles northwest of the mouth of the Saginaw River, is entered by a dredged channel that leads just inside the mouth. In 1998, the controlling depth was 2½ feet (4½ feet midchannel) to the mouth of the river. Continually changing conditions have been reported at the mouth and the approach channel is marked by buoys that are shifted to mark the best water. An overhead power cable with a clearance of 51 feet crosses the river about 0.3 mile above the entrance. In 1989, bridge ruins were reported about 0.7 mile above the entrance. A fixed highway bridge 0.2 mile further upstream has a reported clearance of 10 feet. A **slow-no wake speed** is enforced on the river.

Chart 14863

- (164) The **Pinconning River** is about 5.5 miles north of Nayanquing Point. Two water tanks in the village of **Pinconning, MI**, about 2.5 miles west of the mouth of the river, are prominent. A marina on the south side of the river mouth provides gasoline, ice, and a launching

ramp. In 2000, it was reported that the approach to the marina was bare, due to the extremely low water level of Lake Huron.

- (165) **Pinconning Bar**, extending about 3 miles east from the mouth of the Pinconning River, and **Saganing Bar**, extending about 3.5 miles east from the mouth of the Saganing River, are very shallow banks with about 2 feet near their outer ends.

- (166) Off the **Rifle River**, about 3.5 miles west of Point Au Gres, **Rifle Bar**, a shoal area with 1 or 2 feet of water, extends southeast about 3 miles, with the 18-foot contour about 0.5 mile farther out. The Rifle River is navigable by canoes for about 10 miles above the village of Omer, MI.

- (167) **Point Au Gres** is on the west side of Saginaw Bay about 25 miles north-northeast of the mouth of Saginaw River. The bottom is quite shallow and rocky to 1 mile off around the point, with 30 feet close outside of this limit. A buoy marks a submerged obstruction just off the end of the point.

- (168) Close northwest of Point Au Gres, a 30-foot-wide canal provides refuge for small craft. In 2000, the reported centerline controlling depth in the canal was 3 feet. The entrance to the canal is marked by private buoys. Gasoline and water are available in the canal.

- (169) Between Point Au Gres and Point Lookout, 6.5 miles northeast, a shallow bight has depths less than 18 feet extending 2 miles from its head. **Au Gres River** empties into the head of the bight.

- (170) **Point Lookout Harbor** is a harbor of refuge at the mouth of the Au Gres River about 2 miles south of the city of **Au Gres, MI**.

Channels

- (171) A dredged entrance channel leads northwest from deep water in Saginaw Bay between parallel piers to the mouth of the river and thence upstream for about 2 miles to U.S. Route 23 highway bridge. The approach channel is marked by buoys and the outer ends of the piers by lights. In 2004-2006, the controlling depths were 6.8 feet in the entrance and between the piers to about 0.8 mile above the outer ends of the piers, thence 2.8 feet to the head of the project at the bridge.

Bridges

- (172) Two overhead power cables with a minimum clearance of 68 feet cross the river 2.3 miles above the outer ends of the piers. The U.S. Route 23 highway bridge, about 0.5 mile upstream, has a fixed span with a horizontal clearance of 15 feet on either side of the center pier and a vertical clearance of 8 feet.

- (173) A **slow-no wake speed** is enforced on the Au Gres River.

Small-craft facilities

- (174) A marina on the south side of the river mouth and a Michigan State Waterways Commission facility just below the Route 23 bridge provide transient berths,

gasoline, diesel fuel, water, electricity, marine supplies, sewage pump-out, launching ramp, and harbor master services. The harbor master monitors VHF-FM channels 16 and 9. Minor repairs are available at the marina. In 1977, depths of 2 to 5 feet were reported alongside the marina berths.

(175) At **Point Lookout** (44°03'N., 83°35'W.), also known as **Gravelly Point**, a shoal with depths of 5 to 18 feet extends southeast for 3 miles. **Gravelly Shoal Light** (44°01'11"N., 83°32'18"W.), 75 feet above the water, is shown from a white square tower on a cylindrical base near the outer end of the shoal; a sound signal is at the light. This shoal is important because it restricts the available deep water between it and the Charity Islands for vessels making the Saginaw River. Vessels should not pass between the light and the point. Protection from north and west winds with holding ground in 20 to 30 feet, mud bottom, is close south of Point Lookout, but fish net stakes obstruct this area.

(176) From Point Lookout to **Tawas Point** (44°15'N., 83°27'W.), 15 miles north-northeast, the shoreline is bordered by shoals extending 0.5 to 1.2 miles off. A 2-foot shoal is 0.6 mile southeast of **Whitstone Point**, 4.5 miles north of Point Lookout. About 10 miles north of Point Lookout, shoals with depths of 4 to 7 feet extend 1 mile off. The shore in this reach is low from Point Lookout to Whitstone Point, thence bluff to Tawas City, and becomes low again to Tawas Point.

(177) At **Alabaster, MI**, 9.5 miles north of Point Lookout, is the former site of a 6,800-foot aerial tramway operated by the United States Gypsum Co. In 2006, the towers and cables of the tramway were dismantled and all that remains are eight tower bases and the offshore wharf. The tower bases are marked by private seasonal lights and the wharf is marked by a private 270° lighted range.

(178) At **Port Gypsum**, 3.5 miles north of Alabaster, a 1,078-foot conveyor system connects the shore and a 650- by 80-foot offshore gypsum-loading wharf of the National Gypsum Co. The wharf has a deck height of 9 feet, and in May 2000, had a reported depth of 22 feet alongside. There is open storage for 60,000 tons of gypsum. A privately dredged channel, marked by a 293.5° lighted range, leads from deep water in Saginaw Bay to a turning basin at the wharf. In May 2000, the reported controlling depth was 20 feet in the channel and basin.

(179) **Tawas Bay** is a bight about 4 miles wide, enclosed on the east by Tawas Point and on the north and west by the curving mainland. It is an excellent harbor, affording secure anchorage at its head in all but southwest winds. The 18-foot contour is about 1.3 miles off the northwest shore of the bay decreasing to 0.5 mile off the north shore. Inside this contour, the depths shoal gradually toward shore. On the east side of the bay, a sand flat with depths of 1 foot extends 0.4 mile southwest and about 0.7 mile west from Tawas Point. At the northwest limit of the flat, marked by a buoy, the depths increase rapidly to 20 feet or more. A lighted buoy off the

southwest limit of the flat marks the entrance to Tawas Bay.

(180) **Tawas Light** (44°15'13"N., 83°26'58"W.), 70 feet above the water is shown from a white conical tower with attached dwelling on Tawas Point. A mariner radio activated sound signal is 0.6 mile southwest of the light is initiated by keying the microphone five times on VHF-FM channel 83A. The light has a 045°–135° red sector which covers the sand flat on the west side of the point.

(181) To anchor in Tawas Bay, vessels should round the lighted buoy southwest of Tawas Point, and from a point about 800 feet west of the buoy, head 000° until Tawas Light bears 112½°; thence change course to about 060°. Anchor about 1 mile 315° from Tawas Light in about 22 feet of water with sand and clay bottom.

Dangers

(182) A submerged object about 2 feet below the surface of the water was reported in 44°13'48"N., 83°28'36"W., about 2.1 miles southwest of Tawas Light.

(183) **Tawas City, MI**, is on the northwest side of Tawas Bay at the mouth of the **Tawas River**. A water tank in the city is prominent. In 2000, the reported controlling depth across the bar at the river mouth was 2 feet. A private 326° lighted range marks the entrance to the river. A **slow-no wake speed** is enforced on the Tawas River. There are limited facilities for small craft in the lower part of the river.

(184) **East Tawas, MI**, is on the north shore of Tawas Bay about 2 miles northeast of Tawas City. The Michigan State Waterways Commission dock provides transient berths, gasoline, diesel fuel, water, electricity, sewage pump-out, launch ramp, and harbor master services. The harbor master monitors VHF-FM channels 16 and 9. The northeasternmost arm of the dock has reported depths of 12 feet alongside. The dock is protected by a breakwater extension that should not be approached closely because of stone riprap. The breakwater extension is marked at the northeast end by a light.

(185) A dredged channel leads north around the end of the breakwater to a triangular shaped basin off the end of the Michigan State Waterways Commission dock. In 2007, the controlling depth was 11.1 feet in the entrance channel to the basin with depths of 9 to 10 feet in the basin.

Coast Guard Station

(186) **Tawas Coast Guard Station** is on Tawas Point 0.7 mile northeast of Tawas Light.

(187) A marina on the west side of the inner end of Tawas Point provides transient berths, gasoline, water, ice, electricity, sewage pump-out, marine supplies, and a launching ramp. A 15-ton lift is available for hull and engine repairs. The entrance to the marina is marked by private daybeacons and a private 128° lighted range. In 2000, the reported controlling depths were 5 feet in the entrance channel and basin. A yacht club basin marked

Structures across Au Sable River						
Name•Description•Type	Location	Miles*	Clear Width of Draw or Span Opening (feet)	Clear Height above Low Water Datum (feet)	Information	
1 U.S. Route 23 Bridge (fixed)	44°24'26"N., 83°19'29"W.	0.42	77	23		
2 Overhead power cable	44°24'27"N., 83°19'30"W.	0.44		44		
3 Overhead television cable	44°24'31"N., 83°19'38"W.	0.58		28		
4 Overhead cable	44°24'34"N., 83°19'40"W.	0.64		24		
5 Overhead cable	44°24'54"N., 83°19'51"W.	1.06		28		
6 Overhead telephone cable	44°24'55"N., 83°19'51"W.	1.08		28		
7 Mill Street Bridge (fixed)	44°24'56"N., 83°19'51"W.	1.09	48	12		
8 Adams Avenue Bridge (fixed)	44°25'16"N., 83°20'26"W.	1.76	35	9		

* Miles above North Pierhead Light

by a private 165° lighted range is just southwest of the marina.

(188) From Tawas Point to **Au Sable Point** (44°20'N., 83°20'W.), about 8 miles northeast, shoals and submerged net stakes extend about 1.3 miles offshore. Shoals with depths to 14 feet extend off the same distance around Au Sable Point. A lighted buoy is 2.7 miles east-southeast of the point.

(189) From Au Sable Point north for 5 miles to the mouth of Au Sable River, the shore is low with no prominent landmarks. Along this stretch, shoals with depths of 9 to 15 feet extend as much as 2.1 miles offshore. In 1987, a sunken wreck was reported about 1.7 miles eastward of Au Sable Point.

(190) **Au Sable Harbor**, also known as **Oscoda**, is a harbor of refuge used mainly by pleasure craft at the mouth of the **Au Sable River**. The towns of **Au Sable, MI**, and **Oscoda, MI**, front the west and east sides of the river, respectively. A prominent black water tank is 1.2 miles northwest of the mouth of the river; the tank is lighted.

Channels

(191) A dredged entrance channel enters the river from Lake Huron between parallel piers and leads upstream for about 0.2 mile to the U.S. Route 23 highway bridge. The outer ends of the piers are marked by lights; a fog signal is at the north light. In 2010, the controlling depth was 9 feet in the entrance channel to the bridge.

(192) Depths of about 2 to 3 feet can be carried for about 1 mile above the dredged channel.

Currents

(193) There is normally only a slight current through Au Sable Harbor, but strong currents prevail in the harbor when the dam a short distance above the harbor is being used for power generation.

(194) A **slow-no wake speed** is enforced on the Au Sable River.

Small-craft facilities

(195) Marinas above the Route 23 bridge provide transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, marine supplies, and a launching ramp.

Charts 14863, 14864

(196) From the mouth of Au Sable River to Sturgeon Point, 21 miles north, shoals with depths less than 18 feet, and with numerous rocky patches of 12 to 16 feet near the outer limits, extend as much as 2.7 miles offshore. Deep-draft vessels should give this stretch a berth of 3 miles. The outermost danger is a boulder, covered 16 feet, 10.5 miles north-northeast of Au Sable River mouth. The shore in this reach is low for about 13 miles north of Au Sable to just north of the village of **Greenbush, MI**, where high bluffs begin a short distance back from shore and continue north past Sturgeon Point.

(197) **Caution.**—A special use airspace is bounded by the following coordinates:

(198) 45°17'00"N., 83°00'00"W.;

(199) 45°20'24"N., 82°31'18"W.;

(200) 44°31'00"N., 82°19'54"W.;

(201) 44°27'42"N., 82°47'08"W.,

(202) The area is used periodically for air to air gunnery practice from the surface to an altitude of 45,000 feet from sunrise to sunset. The using agency is the Commander, Permanent Field Training Site Detachment, Phelps-Collins ANGB, Alpena, MI, and the controlling agency is Minneapolis ARTC Center, Federal Aviation Administration.

Chart 14864

(203) **Harrisville Harbor**, about 17 miles north of the Au Sable River, serves the town of **Harrisville, MI**, and affords the only safe refuge for light-draft vessels between Au Sable and Alpena, MI The harbor provides adequate protection from all winds, but northeast storms cause

large swells in the harbor. A silver water tank on high ground about 0.7 mile west of the harbor is prominent.

Channels

(204) A dredged entrance channel leads southwest from Lake Huron between two breakwaters to a harbor basin. The outer ends of the breakwaters are marked by lights.

(205) In 2007, the controlling depth was 7 feet in the entrance channel to the basin (except for shoaling to 3½ feet extending into the west half of the channel near the outer end of the west breakwater), thence depths of 8 to 10 feet available in the north part of the basin. The remainder of the basin is maintained by private interests.

Small-craft facilities

(206) A public dock in the southwest part of the harbor, operated by the Michigan State Waterways Commission and the city of Harrisville, provides transient berths, gasoline, diesel fuel, water, electricity, pump-out, launching ramp, and harbormaster services. The harbormaster monitors VHF-FM channels 16 and 9. Minor engine repairs are available nearby.

(207) **Sturgeon Point**, marked by a light, is 26 miles north of Au Sable Point and 3.8 miles north of Harrisville Harbor. A shoal with a depth of 8 feet near its outer end extends 1.5 miles northeast from the point.

(208) From Sturgeon Point, the shoreline trends north for 12 miles to South Point, the south entrance point to Thunder Bay. This stretch should be given a berth of 3 miles to avoid numerous submerged rocks inshore, and off-lying shoals with depths of 12 to 20 feet. The outermost shoal, 5 miles north of Sturgeon Point, extends 2.5 miles offshore. Off the mouth of **Black River**, 4.5 miles south of South Point, foul ground with submerged rocks and depths less than 8 feet extends 1.4 miles east and 2 miles northeast, beyond **Black River Island**. Two sunken wrecks and a reported obstruction are about 2.5 miles east of the river mouth.

(209) **Thunder Bay** is a large bight on the west side of Lake Huron; the mouth of the bay is 10 miles wide between **North Point** and **South Point**. **Thunder Bay Traffic Lighted Bell Buoy**, 3 miles south of North Point, marks the entrance to the bay. The bay provides shelter in all but southeast weather with good holding ground generally near the shores. The north shore from North Point to **Whitefish Point** provides a good lee in northeast gales with good holding ground close to shore in depths of 25 to 30 feet, clay and sand bottom. Submerged net stakes and two wrecks obstruct this area.

(210) The south part of Thunder Bay, from South Point Wnorthwest to **Devils River**, is filled with shoals and submerged rocks extending 2.5 miles offshore. **Scarecrow Island**, 2 miles north of South Point, is near the outer edge of the shoal area.

(211) The **Thunder Bay National Marine Sanctuary** was established to protect and preserve a nationally significant collection of approximately 100 shipwrecks,

spanning over a century of Great Lakes shipping and maritime history. Many of these wrecks are equipped with seasonal mooring buoys (April-October) to facilitate diver access. The sanctuary encompasses 448 square nautical miles of northwest Lake Huron and includes Thunder Bay. (See **15 CFR 922**, chapter 2 for limits and regulations.)

(212) **Ossineke**, on the southwest side of Thunder Bay, is just above the mouth of Devils River. The mouth of the river is partially protected by a breakwater. In 1981, the controlling depth in the river was reported to be less than 4 feet; the river is subject to shoaling and should not be entered without local knowledge. A pier about 1,000 feet inside the mouth can provide fuel for small craft.

(213) From about 1 mile north of Devils River north to the vicinity of Sulfur Island, depths of 17 feet are within 0.5 mile of shore. A sandy flat with depths less than 12 feet connects the mainland and **Sulphur Island**, off the mouth of **Squaw Bay**. A rocky ledge with a depth of 1 foot near its outer end extends about 1 mile north from Sulphur Island to abreast **Partridge Point**, the north entrance point to Squaw Bay. Detached shoals with depths of 6 to 11 feet are 1 mile east and 1.5 miles southeast of Sulphur Island. From Partridge Point north for 3.5 miles to the mouth of Thunder Bay River, numerous detached shoals extend 2 miles offshore. A 4-foot spot and an 8-foot spot are 1.5 and 2.5 miles north-northeast of Partridge Point, respectively. Numerous submerged net stakes are in deep water within 2 miles northeast and east of Partridge Point. Between Partridge Point and **Bare Point**, the bay is very shallow and foul.

(214) **Isaacson Bay** is a shallow bight about 2 miles east of the mouth of Thunder Bay River. From Whitefish Point, on the east side of Isaacson Bay, southeast for 5 miles to North Point, there is deep water within 1 mile of shore. However, this reach has numerous submerged net stakes and several obstructions. A wreck covered 21 feet and a 22-foot spot are 1.7 and 2.9 miles south of Whitefish Point, respectively. An obstruction, with unknown depth over it, is about 1.9 miles south-southwest of the point. A shoal with a least depth of 5 feet near its outer end extends 1.5 miles southeast from North Point. The outer end of the shoal is marked by a buoy.

(215) **Alpena Harbor**, serving the city of **Alpena, MI**, is on the northwest shore of Thunder Bay at the mouth of **Thunder Bay River**. Commerce at the port is mainly salt, coal, gasoline, and bulk cement. Prominent are stacks, tanks, and a spire in town, and stacks at the cement plant east of town.

(216) **Alpena Light** (45°03'37"N., 83°25'23"W.), 44 feet above the water, is shown from a red skeleton tower with upper part enclosed on the north side of the river mouth. A mariner radio activated sound signal at the light is initiated by keying the microphone five times on VHF-FM channel 83A. Because of protective riprap, the light should not be passed close aboard even by vessels of shallow draft.

Channels

(217) A dredged entrance channel, marked by buoys, leads northwest from deep water in Thunder Bay through the mouth of Thunder Bay River to a turning basin 0.7 mile above the mouth. The channel enters the river on the north side of a pier that extends from the south side of the mouth. In 2009, the controlling depths were 16 feet in the entrance and through the mouth of the river to the Second Avenue bridge; thence in 2002, 17½ feet to the turning basin with 13 to 15 feet available in the basin, thence 11½ feet just past the turning basin to the head of the project.

(218) From near the outer end of the dredged entrance channel, about 1.5 miles southeast of the river mouth, a privately dredged channel extends 1.3 miles Nnorthwest to a basin at the Lafarge Corp. The channel is marked by a private **344°** lighted range and by private buoys placed 50 feet outside the channel limits. In 2002, the channel and basin had a reported controlling depth of 22 feet.

(219) About 0.6 mile southeast of the river mouth, another privately dredged channel extends 0.6 mile north to the west facility of Lafarge Corp. The channel is marked by a private **358°** lighted range. In 2002, the reported controlling depth in the channel was 22 feet.

Bridges

(220) The Second Avenue highway bridge crossing the river 0.4 mile above the mouth has a bascule span with a clearance of 12 feet. (See **33 CFR 117.1 through 117.59 and 117.655**, chapter 2, for drawbridge regulations.) A pedestrian bridge with a reported clearance of 8½ feet and a width of 16 feet is 0.8 mile above the river mouth; an overhead power cable adjacent to the bridge has a clearance of 29 feet. The Ninth Avenue fixed highway bridge 1 mile above the mouth has a clearance of 12 feet.

Fluctuations of water level

(221) The annual range of fluctuation in Thunder Bay River is about 3½ feet. Day-to-day variations caused by wind and barometric pressure changes may amount to more than 1 foot. Strong north or south winds will occasionally cause considerable change within a few hours.

Weather, Alpena and vicinity

(222) Alpena, MI, located on the southwest shore of Lake Huron and in the northeastern part of the state, is at the head of Thunder Bay. Thunder Bay opens on Lake Huron in a southeasterly direction. The location averages about six days each year with maximum temperatures in excess of 90°F (32.2°C). July is the warmest month with an average high of 80°F (26.7°C) and an average minimum of 54°F (12.2°C). January is the coolest month with an average high of 27°F (-2.8°C) and an average minimum of 9°F (-12.8°C). The highest temperature on record for Alpena is 103°F (39.4°C) recorded in June 1995 and the lowest temperature on record is -37°F (-38.3°C) recorded in February 1979. About 177 days

each year experience temperatures below 32°F (0°C) and an average 35 days each year records temperatures below 5°F (-15°C). Every month has seen temperatures below 35°F (1.7°C) and every month except July (extreme minimum of 34°F (1.1°C) recorded in July 1965) has recorded temperatures below freezing (0°C).

(223) The average annual precipitation for Alpena is 28.75 inches (730 mm) which is fairly evenly distributed throughout the year. Precipitation falls on about 231 days each year. The wettest month is August with 3.45 inches (88 mm) and the driest, February, averages only 1.24 inches (31.5 mm). An average of 30 thunderstorm days occur each year with July and August being the most likely months. Snow falls on about 116 days each year and averages about 86 inches (2184 mm) each year. January averages nearly 22 inches (559 mm) per year and December, nearly 20 inches (508 mm). Fifteen inch (381 mm) snowfalls in a 24-hour period have occurred in each month November, December, January, and March. About 18 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 rather evenly distributed throughout the year with a slight minimum during the winter season and a slight maximum during August.

(224) The prevailing wind direction in Alpena is the west-northwest. Late winter through spring is the windiest period but a maximum gust of 52 knots occurred in August 1988.

(225) (See Appendix B for **Alpena climatological table.**)

(226) Alpena is a **customs station.**

Quarantine, customs, immigration, and agricultural quarantine

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

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

Harbor Regulations

(229) A **slow-no wake speed** is enforced in Alpena Harbor. The Chief of Police, who acts as **harbormaster**, enforces the harbor regulations. Copies of the regulations may be obtained from Chief of Police, Public Safety Building, E. Chisholm St., Alpena, MI 49707.

Towage

(230) Tugs are available from Sault Ste. Marie. (See Towage under Sault Ste. Marie.)

Wharves

(231) Alpena has three active deep-draft facilities. The alongside depths for the facilities described are reported depths. (For information on the latest depths, contact the operators.)

(232) **Lafarge Corp. Wharf:** in basin 1 mile east-northeast of the mouth of Thunder Bay River; 1,000-foot wharf on east side of basin; two 500-foot wharves at north end of basin; 23 feet alongside; deck heights, 7 feet; open storage for 350,000 tons of coal; silo storage for 200,000 tons of cement; loading spouts at east wharf, maximum rate 6,000 tons per hour; receipt of coal, shipment of bulk cement; owned and operated by Lafarge Corp.

(233) **Louisiana-Pacific Corp. Wharf:** north side of mouth of Thunder Bay River; vessels usually lay in channel and tie up to bollards along 300-foot face; 16 to 22 feet alongside; open storage for 40,000 tons of coal; receipt of coal; owned and operated by Louisiana-Pacific Corp.

(234) **Alpena Oil Co. Wharf:** south side of mouth of Thunder Bay River; about 700-foot face; 17 feet alongside; deck height, 3½ feet; open storage for 25,000 tons of salt; pipeline connection at dock; receipt of salt and gasoline; owned and operated by Alpena Oil Co.

Small-craft facilities

(235) A marina developed by the Michigan State Waterways Commission is entered from the south side of the main channel at the mouth of Thunder Bay River. The entrance is marked by private lights. In 2002, the reported controlling depth was 9 feet in the entrance and the basin. Gasoline, berths, diesel fuel, water, electricity, sewage pump-out facilities, marine supplies, launching ramp, and harbormaster services are available. The harbormaster monitors VHF-FM channels 16 and 9. A 25-ton hoist is available for hull and engine repairs.

Charts 14864, 14869

(236) From North Point, the broken shoreline, low and wooded, stretches generally north-northwest for 25 miles to Presque Isle. This stretch has numerous off-lying islands and detached shoals.

(237) **Thunder Bay Island**, 3 miles east-northeast of North Point, is the outermost of a group of islands connected to shore by a shallow bank with numerous rocks, submerged and awash. **Thunder Bay Island Light** (45°02'14"N., 83°11'39"W.), 63 feet above the water, is shown from a white conical tower with attached dwelling on the southeast shore of the island. A shoal with depths of 2 feet extends 0.2 mile southeast from the island. Deep-draft vessels should not pass inside Thunder Bay Island. The east side of the island is deep-to. A wreck, covered 43 feet, is 13.6 miles east-southeast of Thunder Bay Island Light.

(238) **Sugar Island**, just west of Thunder Bay Island, is 2 miles northeast of North Point. **Gull Island** is just north of Sugar Island. The passage between Sugar Island and North Point should only be used by small craft with local knowledge, because a rocky ledge makes out from the north side of the point almost to the island.

(239) Between Sugar Island and Thunder Bay Island is a small area of shelter from northwest, northeast, and

east winds with good holding ground in 6 to 10 feet. Entrance to this area is from south; it is unsafe to enter from north because of a shoal and small islet between the northwest end of Thunder Bay Island and Gull Island. The holding ground south of Sugar Island and southwest of Thunder Bay Island is not good, rock and stone bottom.

(240) **Misery Bay** is a bight between the north side of North Point and **Potter Point** (45°05'30"N., 83°18'00"W.), 3 miles north-northwest. The bay is extremely shoal and filled with rocks and islands.

(241) From Potter Point north-northwest for 7 miles to abreast Middle Island, the shoreline is irregular and shallow water extends generally less than 0.7 mile offshore. A boulder, covered 13 feet, is about 1 mile east of Potter Point. Submerged net stakes are 1 to 2 miles offshore. **Stonycroft Point**, 1 mile north of Potter Point, is marked by a private light. Three piers and a launching ramp are on the south side of the point.

(242) A large boulder bank with least depths of 22 to 24 feet is from 3 to 7.7 miles northeast of Potter Point. The shoal is in the path of through traffic and is a danger to deep-draft vessels, especially during heavy weather. Submerged wrecks are near the northeast extremity of the bank. A lighted buoy with a racon 0.2 mile east-southeast of the wreck marks the northeast extremity of the bank.

(243) **Middle Island** is about 1.5 miles offshore about 6.5 miles north of Potter Point. **Middle Island Light** (45°11'35"N., 83°19'16"W.), 78 feet above the water, is shown from a white conical tower, orange bands in middle, with detached dwelling on the east side of the island. The island is surrounded on all but the northeast side by flats with depths less than 6 feet that extend about 0.2 mile off. A 5-foot shoal is about midway between the island and the mainland, and there are other patches with depths 9 to 12 feet. Passage through this area is not recommended without local knowledge. A small ledge with rocks that uncover is 0.6 mile southeast of Middle Island. A lighted buoy is off the east side of the ledge and marks the east extent of the shallows surrounding Middle Island.

(244) There is anchorage southwest of Middle Island with protection from south through west to northeast winds in fair holding ground, clay and boulder bottom. Northwest of the island there is protection from southeast winds in good holding ground, mud and sand bottom. When using these anchorages, give the island sufficient berth to avoid the surrounding flats.

(245) **Rockport, MI**, about 2.4 miles west-northwest of Middle Island, is a small private harbor used primarily by sport fishermen. A small point of land protects the harbor on the east. The submerged remains of a former sand and gravel breakwater extend 500 feet north from the point. The area is very shoal and should be avoided. The pier and detached cribs of a former limestone loading dock are in the harbor. The inner crib is marked by a private light. The outer crib is in ruins and submerged.

A basin southeast of the pier has a natural launching ramp.

(246) **False Presque Isle Harbor**, 3 miles north of Rockport, is a secure harbor protected on the north by **False Presque Isle** (45°16'N., 83°24'W.), a nearly detached body of land that projects east from shore. The harbor provides protection from southwest through north to northeast winds with fair anchorage in depths of 20 to 30 feet. The south side of the harbor is bordered by shoals with depths of 7 to 10 feet that extend 1.2 miles offshore. An 18-foot shoal is 0.9 mile southeast of False Presque Isle in the center of the harbor approach. A boulder, covered 15 feet, is 0.5 mile southeast of the 18-foot shoal.

(247) From False Presque Isle, the shoreline extends northwest for about 6 miles to Presque Isle. Along this stretch deep water is within 0.4 mile of shore except in the shallow bight on the northwest side of **South Albany Point** (45°19'06"N., 83°27'12"W.).

(248) **Stoneport, MI**, about 2 miles northwest of False Presque Isle, is a private harbor operated by the Lafarge Corp. for the shipment of limestone. An L-shaped breakwater extends from shore 1,000 feet northeast, thence 1,200 feet southeast. A 928-foot dock with a deck height of 12 feet is along the inner side of the southeast arm of the breakwater. The facility has open storage for 60,000 tons of limestone, and a conveyor system can load vessels at 5,500 tons per hour. In 2002, the reported controlling depth alongside was 23.5 feet. **Stoneport Light** (45°17'48"N., 83°25'06"W.), 55 feet above the water, is a seasonal, private aid shown from a white cylindrical structure on the outer end of the dock. Private buoys mark the southwest limit of the deep water in the dock area.

(249) **Presque Isle**, about 25 miles north-northwest of North Point, is a peninsula almost completely detached from the mainland. **Presque Isle Light** (45°21'23"N., 83°29'32"W.), 123 feet above the water, is shown from a white conical tower with attached dwelling on the north end of Presque Isle. The light marks the turning point for vessels bound for the Straits of Mackinac. The tower of an abandoned lighthouse is on the south end of Presque Isle.

(250) **Presque Isle Harbor**, entered between Presque Isle on the north and **North Albany Point** on the south, is a safe but limited harbor and anchorage for small craft. The entrance to the harbor is marked by a 274° lighted range. A bar across the entrance limits the draft of vessels entering the harbor, but vessels can carry a depth of about 10 feet on the range line. Inside the bar, the harbor has central depths of 13 to 18 feet.

(251) The range should be followed closely when entering the harbor. Shoals extend north off North Albany Point, and a shoal with depths of 5 feet at its outer end extends 0.6 mile east from the south end of Presque Isle. A lighted bell buoy is off the southeast side of the 5-foot shoal.

(252) To anchor in Presque Isle Harbor, enter on the lighted range, and when the abandoned lighthouse on Presque Isle bears north-northeast, haul up a short distance north or south of the range line and anchor. In 2002, shoaling to 5 feet was reported on the range line about 1,200 feet east of the front light.

Small-craft facilities

(253) A marina developed by the Michigan State Waterways Commission is on the north side of Presque Isle Harbor. The entrance to the marina is marked by private buoys and lights. Gasoline, diesel fuel, water, electricity, sewage pump-out facilities, launching ramp and harbormaster services are available. The harbormaster monitors VHF-FM channels 16 and 9.

(254) **North Bay**, the indentation formed on the west side of Presque Isle, provides anchorage with shelter from east and south winds, but the bottom is rock. Enter the bay on a course of 157½° using Presque Isle Harbor Range Rear Light, which shows across North Bay, as a guide. The bay has central depths of about 20 feet. The east shore should be given a berth of 0.3 mile and the west shore 0.25 mile. A 14-foot shoal extends from the west shore to near the middle of the bay.

Charts 14864, 14880

(255) The trend of the shoreline from Presque Isle is west-northwest for 12 miles to **Adams Point** (45°24'53"N., 83°43'00"W.), thence west for 4.7 miles to Rogers City, and thence northwest for 6.6 miles to Forty Mile Point (45°29'N., 83°55'W.).

(256) **Black Point**, 2 miles west of Presque Isle, has deep water within 0.25 mile. About 2 miles east-southeast of Adams Point, a detached 17-foot shoal is 1.2 miles offshore. As foul ground extends from shore to within 0.4 mile of this shoal, coasting vessels should take care to pass outside the detached shoal. From Adams Point to **Forty Mile Point**, deep water is generally within 0.5 mile of shore.

(257) **Calcite, MI**, 3.3 miles west of Adams Point, is a private harbor owned and operated by Carmeuse Lime and Stone for shipping limestone. The harbor is protected on the northwest and north by a point and breakwater and to the southeast by **Quarry Point**. The harbor affords no shelter from north to east winds except for small craft, which can enter the tug basin on an emergency only basis.

(258) **Calcite Light**, a private 8-foot-diameter neon light at the inner end of the loading slip in Calcite, is prominent.

Channels

(259) A privately dredged entrance channel leads from deep water in Lake Huron southwest for 0.3 mile. At the inner end of the channel, a loading slip extends southwest and a dredged area along the dock face extends

southeast. A dredged tug basin protected by a breakwater arm is on the northwest side of the entrance channel. The harbor approach is marked by a private light on the outer end of the breakwater which protects the harbor; a private sound signal is at the light. The channel is marked by two private lighted ranges. A **236°** range of red lights for incoming vessels marks an alinement along the south side of the channel. A range of green lights for outbound vessels leads **056°** at about mid-channel. In 2002, the reported controlling depth was 24 feet in the entrance channel and loading slip except for shoaling to 16 feet at the southwest end of the slip, thence depths of 10 to 20 feet in the dredged area along the southeast dock face except for shoaling to 6 feet at the southeast end of the area. In 2002, reported depths of 11 to 22 feet were available in the tug basin with shoaling to 7 feet along the extreme northwest edge.

Fluctuations of water level

- (260) The harbor is subject to fluctuations of water level, and vessels drawing over 17 feet should obtain information from the harbor tugs before entering the harbor. Depth information and harbor blueprints can be obtained at the dock office on the south side of the loading slip. A water gauge on the southwest corner of the tug basin, lighted at night, shows the maximum depth to which vessels may be loaded and should be checked by vessel masters.

Towage

- (261) Tugs are available from the Great Lakes Towing Co. docks in Sault Ste. Marie, at 800-321-3663.

Wharves

- (262) The wharves on the north and south sides of the loading slip have lengths of 938 and 866 feet, respectively, with deck heights of 8 feet. There is open storage for over 200,000 tons of limestone. Conveyor systems can load vessels at 5,000 and 3,000 tons per hour at the north and south wharves, respectively.

- (263) **Rogers City, MI**, is 4.6 miles west of Adams Point and 6.6 miles southeast of Forty Mile Point. It is a center for the mining, processing, and transportation of limestone. The port is an open roadstead with no natural harbor, but two artificial basins provide protection for small craft. A blue water tank about 0.6 mile southwest of the municipal basin is prominent.

- (264) An entrance channel marked by private, seasonal buoys leads southwest from deep water in Lake Huron to the municipal small-craft basin, which is formed by breakwaters and entered at the southeast corner. The basin entrance is marked on either side by private lights. In 2001, the entrance channel and basin had a reported depth of 8 feet. On the northwest side of the municipal basin, commercial fishermen use a small basin formed by breakwaters. The entrance to the basin, from northeast, has depths of 3 feet and is difficult in severe storms.

- (265) Rogers City is a **customs station**.

- (266) Transient berths, gasoline, diesel fuel, water, electricity, sewage pump-out, launching ramp, and harbor-master services are available in the municipal basin, which was developed by the Michigan State Waterways Commission. The harbormaster monitors VHF-FM channels 16 and 9.

Charts 14864, 14880, 14881

- (267) **Forty Mile Point** is a rounding projection 6.6 miles northwest of Rogers City and about 29 miles east-southeast of Cheboygan. **Forty Mile Point Light** (45°29'10"N., 83°54'49"W.), 66 feet above the water, is shown from a square white brick tower on a dwelling on the point.

Charts 14880, 14881

- (268) The northwest part of Lake Huron forms the approach to, and the east part of, the **Straits of Mackinac**. At its extreme northwest end, the lake narrows abruptly to a width of 4 miles between **Old Mackinac Point** and **Point St. Ignace**, the narrowest part of the Straits of Mackinac. The northwest end of the lake is obstructed by shoals, Reynolds Reef and Spectacle Reef near mid-lake and Martin Reef off the north shore, and by several islands, Bois Blanc Island the largest. The two main shipping channels through this area lead north and south of Bois Blanc Island.

- (269) From Forty Mile Point, the shoreline trends west for 6 miles to the east point of Hammond Bay. A 15-foot spot is 0.7 mile offshore 1.2 miles northwest of Forty Mile Point Light. Along the rest of the stretch, deep water is within 0.5 mile of shore. At the east point of Hammond Bay a 10-foot shoal extends 0.5 mile northwest.

- (270) **Hammond Bay**, an open bight 8.5 miles west of Forty Mile Point, provides shelter in winds from southeast through south to northwest. Shoals and numerous submerged net stakes extend 1 mile offshore around the bay. Fair anchorage is in the south part of the bay off the mouth of **Ocqueoc River**.

- (271) Rocky ledges extend as much as 0.8 mile offshore from Hammond Bay northwest for 7 miles to **Ninemile Point**, thence 6 miles Wnorthwest to Cordwood Point.

- (272) **Hammond Bay Harbor** is a harbor of refuge about 3 miles northwest of Hammond Bay and 4 miles southeast of Ninemile Point. The harbor basin, protected by two detached breakwaters, is entered through a dredged channel from the northwest. In 2009, the controlling depth was 10 feet in the entrance channel (except 8 feet along the southwest edge of the channel in about 45°35'35"N., 84°09'45"W.), thence depths of 7 to 10 feet were available in the basin. A mooring area maintained by the State of Michigan on the south side of the basin had a controlling depth of 3 feet in 2001 (except for shoaling to 1 foot in the southwest corner.)

- (273) Transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out facilities, a launching ramp, and harbormaster services are available. The harbormaster monitors VHF-FM channels 16 and 9. No other services are available because of the isolated location of the harbor.
- (274) At **Cordwood Point** (45°39'48"N., 84°19'45"W.), a lighted buoy marks the outer end of a reef with depths of 20 to 24 feet that extends 1.8 miles northeast. During stormy weather with heavy seas, the reef is a danger to vessels transiting South Channel of the Straits of Mackinac.
- (275) The **Straits of Mackinac, South Channel** passes between the lower peninsula mainland shore and the south side of Bois Blanc Island. The east entrance is between Cordwood Point and Poe Reef, which is the southeast extremity of a shoal area off the southeast shore of Bois Blanc Island.
- (276) South Channel is a **regulated navigation area**. (See **33 CFR 165.1 through 165.13, and 165.901 (a) and (c)**, chapter 2, for limits and regulations.)
- (277) Between Cordwood Point and **Cheboygan Point**, 4.5 miles west, the shore is low except that a high bluff is within 1 mile of the shoreline in the east part of the reach. A lighted mast on the bluff, 1.2 miles southwest of Cordwood Point, is prominent. The shoreline in this reach should be given a berth of 1 mile. A shoal with a depth of 13 feet at its outer end extends 0.8 mile northeast from Cheboygan Point.
- (278) **Duncan Bay** indents the shoreline between Cheboygan Point and the mouth of the Cheboygan River, 2 miles southwest. A narrow navigable channel leads southeast from South Channel into Duncan Bay. Pilings from former lumber docks project from shore into the west side of Duncan Bay. A privately dredged entrance channel, with a reported depth of 8 feet, leads to a boat basin and marina on the west side of the bay. The marina can provide transient berths, electricity, water and a pump-out station. A lighted buoy just southeast of the entrance channel marks a sunken wreck.
- (279) Several shoals border the south side of South Channel in the approach to the Cheboygan River. **Fourteen Foot Shoal**, 0.9 mile northwest of Cheboygan Point, is a hard gravel ledge with depths of 16 to 19 feet. **Fourteen Foot Shoal Light** (45°40'48"N., 84°26'04"W.), 51 feet above the water, is shown from a white conical tower, square structure on a concrete crib in the center of the shoal; a sound signal is at the light. Because of protective riprap, the light structure should not be passed close aboard even by shallow-draft vessels. A buoy is on the northwest edge of the shoal. A shoal with a depth of 19 feet at its outer end extends 2.2 miles north from the mouth of Cheboygan River and is marked by a buoy 1.9 miles northwest of Cheboygan Point. The shoal has depths of 22 to 30 feet that extend 1.5 miles northwest from the buoy and 1.5 miles offshore.
- Small-craft facilities**
- (280) A small-craft channel, marked by lights, lighted and unlighted buoys, leads to a boat basin and marina on the west side of Duncan Bay. The channel has reported depths of 8 feet and the marina provides berths, electricity, pump-out, water, ice and monitors VHF-FM channels 9 and 16.
- (281) Aside from the above shoals, the shoreline is clear from the Cheboygan River northwest for 15 miles to Mackinaw City, with deep water no more than 0.7 mile offshore.
- (282) **Poe Reef**, with a least depth of 17 feet, is a detached shoal on the north side of South Channel, 2.7 miles southeast of Bois Blanc Island with shoals between. **Poe Reef Light** (45°41'41"N., 84°21'44"W.), 71 feet above the water, is shown from a square tower with white and black bands on a concrete crib; a sound signal and racon are at the light. Because of protective riprap, the light structure should not be passed close aboard even by shallow-draft vessels. A buoy marks the south side of Poe Reef.
- (283) **Bois Blanc Island**, forming the north side of South Channel, is a wooded island 11.5 miles long with a maximum width of 6 miles. Shoal water with depths of about 7 to 24 feet extends from the southeast side of the island almost to Poe Reef. Shoals extend about 0.7 mile off the south side of the island. A 15-foot spot is 0.7 mile south-southwest of **Packard Point** (45°43'18"N., 84°25'12"W.). A Michigan State Waterways Commission facility is behind a breakwater on the south side of the island midway between Packard Point and **Points aux Pins**. The outer end of the breakwater is marked by a private light. Water and electricity are available.
- (284) **Zela Shoal**, with depths of 6 feet near its outer end and rocks awash near its midpoint, extends about 2 miles west-northwest from **Zela Point**, on the southwest side of Bois Blanc Island 3 miles northwest of Points aux Pins. The outer end of the shoal is marked by a buoy. The remainder of the southwest shore of Bois Blanc Island between Points aux Pins and **Lime Kiln Point** has deep water within 0.4 mile.
- (285) Because of the shoals off Cordwood Point and Cheboygan Point, the recommended course through South Channel is from a point 0.6 mile north-northeast of the lighted buoy marking the shoals off Cordwood Point **270°** to a point 2,200 feet south of Poe Reef Light, thence **281°** to the lighted midchannel buoy 1.9 miles south-southeast of Points aux Pins, leaving the buoy to port, thence **302°** to the turning point 0.5 mile east of the center of the main towers of Mackinac Bridge, with Old Mackinac Point abandoned lighthouse bearing **198°**.

Charts 14880, 14881, 14886

- (286) **Cheboygan Harbor**, serving the city of **Cheboygan, MI**, is 2.5 miles southwest of Cheboygan Point in the

lower part of the **Cheboygan River**. The harbor is a base for commercial fishermen and pleasure craft. The principal commodities handled in the port are petroleum products and coal.

Prominent features

- (287) Three tanks and a stack in Cheboygan are prominent.

Channels

- (288) The harbor is entered through a dredged entrance channel extending southwest from deep water in the Straits of Mackinac South Channel to the mouth of Cheboygan River and thence upstream for about 1.6 miles. (See Notice to Mariners and the latest edition of the chart for controlling depths.) The entrance channel is marked by lighted and unlighted buoys, a light, and a **212.5°** lighted range. A turning basin is on the southeast side of the channel just inside the mouth of the river.

Fluctuations of water level

- (289) The annual fluctuation of the water level of the Cheboygan River is about 3 feet. Day-to-day level changes due to wind and barometric pressure sometimes are 1 foot or more. Occasionally a considerable oscillation may take place within 1 or 2 hours, amounting to 1½ feet or more.

Harbor Regulations

- (290) The city of Cheboygan has established harbor regulations, which the **harbormaster** enforces. Copies of the regulations may be obtained from the City Manager. The harbormaster monitors VHF-FM channels 9 and 16. A **slow-no wake speed** is enforced.

Wharves

- (291) Cheboygan has four deep-draft facilities. The alongside depths given for these facilities are reported depths. (For information on the latest depths, contact the operators.)

- (292) **Ryba Marine Construction Terminal:** west side of the river immediately below the State Street bridge; two 300-foot sections; 21 feet alongside; deck height, 3 feet; open storage for 40,000 tons of coal; receipt of coal; owned and operated by Ryba Marine Construction.

- (293) **U.S. Oil Co. Wharf:** east side of the river 0.65 mile above the mouth; 290 feet of berthing space along dolphins; 21 feet alongside; deck height, 7½ feet; pipelines extend to tank storage, capacity 171,000 barrels; receipt of gasoline and fuel oil; owned and operated by U.S. Oil Co.

Small-craft facilities

- (294) The city of Cheboygan and the Michigan State Waterways Commission provide berthing space for small craft on the west side of the river just above the State

Street bridge. The Cheboygan County Marina is on the west side of the river just inside the mouth and a full service marina is just below the State Street bridge. These marinas can provide transient berths, gasoline, diesel fuel, water, electricity, pump-out facilities, launching ramps and a 75-ton travel lift.

Ferry

- (295) A U.S. Mail boat and ferry operates from the west side of Cheboygan River above the State Street bridge to the breakwater on the south side of Bois Blanc Island. The ferry operates from about April to December depending on ice conditions. The ferry carries passengers and cargo, and autos on a reservation only basis.

Lock

- (296) At the upper end of the dredged channel, a lock connects Cheboygan Harbor and the Inland Route. The lock is 75 feet long and 18 feet wide with a lift of about 13½ feet. The depth over the lower miter sill is about 5 feet at Lake Huron stage of Low Water Datum, and the depth over the upper miter sill is about 8½ feet when the upper pool is level with the crest of the dam. The Michigan State Waterways Commission operates the lock and prescribes regulations and fees governing the use of the lock. The Waterways Commission maintains a small dock, about 50 feet long with a least depth of 5 feet alongside, immediately downstream of the lock entrance.

- (297) Boaters proceeding upstream to use the lock are cautioned to anticipate water discharged at right angles to the stream at the powerhouse adjacent to the Great Lakes Tissue Company. This current commences just after a bend in the river channel to the southeast and is sufficient to force a boat proceeding at reduced speed into the opposite bank.

Michigan State Waterways Commission Cheboygan River Navigation Lock Regulations

- (298) 1. When approaching the lock for passage, either upbound or downbound, boatmen shall signal the lock operator with one long and two short blasts of the vessel's horn, siren, or whistle.

- (299) 2. Vessels shall not approach closer than 50 feet of the lock structure before signaling the lock operator and, upon signaling, shall maintain that distance until advised otherwise by the lock operator.

- (300) 3. All tolls must be settled before passing the lock. The toll shall be assessed upon the length of the vessel as indicated on satisfactorily documented evidence produced by the vessel owner or captain.

- (301) 4. All persons using or navigating the lock or canal will be held responsible for any damages they may cause to either, or to the works or structures at the entrance to the canal.

- (302) 5. No boat, float, watercraft, vessel, or material of any kind will be allowed to be moored or to remain in the lock or canal, or to obstruct the entrance to either,

without the permission of the Commission or for a longer time than may be allowed by it or its agents; and in case of any violation of this regulation, the Commission may, at its option, remove such obstruction and charge the owner with the expense of the removal and care thereof, which must be fully paid or settled before such boat, watercraft, or material shall be permitted to pass the lock.

Operation Schedule

- (303) 1. From April 15, to and including Memorial Day, and from September 15, to and including October 31, the lock will be operated only between the hours of 9 a.m. and 5 p.m. on application at the Department of Natural Resources office located at 120 A Street, Cheboygan, MI; telephone, 616-627-9011 or 9841.
- (304) 2. From the day after Memorial Day to and including June 14, and from the first Monday following Labor Day, to and including September 14, the lock will be operated only between the hours of 9 a.m. and 5 p.m. on application to the lock operator.
- (305) 3. From June 15, to and including the first Sunday following Labor Day, the lock will be operated only between the hours of 9 a.m. and 9 p.m. on application to the lock operator.

Chart 14886

(306) **Inland Route** is a series of connecting waters, comprising the Cheboygan River, Mullett Lake, Indian River, Burt Lake, Crooked River, and Crooked Lake, in all, about 36 miles long. The waterway extends from Cheboygan to Conway, MI, about 2 miles inland from the head of Little Traverse Bay in Lake Michigan. The waterway also includes Pickerel Lake, which is connected by a short channel to Crooked Lake.

(307) The **Cheboygan River** is the outlet of Mullett Lake and other waters of the Inland Route, navigable by tugs, launches, and flat scows. **Cheboygan River Lock** separates the upper part of the river from the lower harbor. Above the lock, the Cheboygan River is generally wide and deep for 2.8 miles to its junction with the Black River. Above this junction, the river outside the channel is foul with stumps and snags for the remaining 2.5 miles to Mullett Lake. The channel above the junction is marked by daybeacons. In 1993, the controlling depth was 3 feet from the mouth of the river to Mullett Lake, but greater depths were available with local knowledge. The channel south of the river's confluence with Mullett Lake to natural deeper water in Mullett Lake had depths of 3 feet in the east half and 4 feet in the west half.

(308) A **slow-no wake speed** is enforced on the Cheboygan River.

(309) The **Black River** extends southeast from its junction with Cheboygan River for about 10 miles to **Black Lake**. The river is wide and deep for its lower 2.5 miles. Above this point, the foul ground along shore widens,

and even shallow draft boats must use care to traverse the remaining 2.8 miles to **Alverno Dam**. A marine railway, maintained by the Consumers Power Co., provides access to the pool above the dam. The waters above the pool are uncharted, and rapids in the river make navigation hazardous.

Chart Datum, Inland Route

(310) Depths and vertical clearances under overhead cables and bridges are referred to Low Water Datum (LWD), which for Lake Huron is 175.8 feet (176.0 meters); for Mullett Lake is 592.5 feet (180.6 meters); for Burt Lake is 593.8 feet (181.0 meters); for Pickeral and Crooked Lakes is 595.4 feet (181.5 meters); for Lake Michigan is 577.5 feet (176.0 feet) and for the connecting rivers, it is the sloping surface of the river when the adjoining lakes are at LWD. 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.)

(311) A **slow-no wake speed** is enforced on the Black River.

(312) **Mullett Lake**, drained at its north end by the Cheboygan River, is about 10 miles long and 3 miles wide. The lake is generally deep, with depths over 100 feet in the south central part. The entrance to the Cheboygan River at the north end of the lake is marked by a buoy and a light. A detached 4-foot shoal marked by a lighted buoy is about 1.7 miles south-southwest of the Cheboygan River entrance. A 2-foot shoal extends 0.6 mile off the west shore of the lake at the south end. A small-craft basin protected by jetties is at Aloha State Park on the east side of the lake. The outer ends of the jetties are marked by private lights.

(313) **Indian River** flows northeast from Burt Lake and empties into the south end of Mullett Lake. The lower 2 miles of the river is about 0.7 mile wide, but is filled with marsh, stumps, and snags. The upper part of the river is narrow and curving. A narrow winding dredged channel, well marked by daybeacons, leads through the river. A lighted buoy marks the entrance from Mullett Lake. Parallel jetties protect the Burt Lake entrance; a light marks the outer end of the north jetty.

(314) In Indian River, operation of vessels at high speed or towing water skis or similar contrivances is prohibited between daybeacons 25 and 40 and between daybeacons 57 and 63. A **slow-no wake speed** is enforced between daybeacons 40 and 57 and between daybeacon 63 and the head of the river.

(315) **Burt Lake** is about 10 miles long north and south and has a maximum width near its center of 4 miles. It has depths up to 50 feet and no detached shoals. The mouth of the Crooked River, marked by a light, is near the center of its west side.

(316) The **Crooked River** extends southwest from Burt Lake for about 5 miles through marshy ground to the

Structures across the Inland Route						
Name-Description-Type	Location	Miles*	Clear Width of Draw or Span Opening (feet)	Clear Height above Low Water Datum (feet)	Information	
Cheboygan River						
1	State Street (U.S. Route 23) Bridge (bascule)	45°38'45"N., 84°28'22"W.	0.92	60	9	Note 1
2	Cheboygan pedestrian bridge (fixed)	45°38'35"N., 84°28'34"W.	1.20	60	23	
2	Overhead power cable	45°38'27"N., 84°28'46"W.	1.39		47	
3	Overhead power cable	45°38'17"N., 84°28'47"W.	1.59		44	
Cheboygan River Lock						
4	Overhead cables	45°38'15"N., 84°28'47"W.	1.65		38	Cables span the lock
5	Overhead power cable	45°38'11"N., 84°28'48"W.	1.74		37	
6	Overhead cable	45°38'03"N., 84°28'56"W.	1.93		26	
7	Lincoln Avenue Bridge (fixed)	45°38'02"N., 84°28'56"W.	1.93	50	9	
8	Overhead cable	45°38'02"N., 84°28'56"W.	1.93		26	
9	Overhead cable	45°36'46"N., 84°28'19"W.	3.60	N/A	N/A	Data not available
10	Overhead power cable	45°36'44"N., 84°28'17"W.	3.64		40	
11	Route 33 Bridge (fixed)	45°35'43"N., 84°28'27"W.	5.25	58	16	
12	Overhead power/telephone cables	45°35'43"N., 84°28'28"W.	5.27		20	
13	Detroit and Mackinac Railroad Bridge (fixed)	45°35'44"N., 84°28'32"W.	5.33	110	21	
14	Overhead power cable	45°35'11"N., 84°28'57"W.	6.11		40	
15	Overhead cables	45°35'05"N., 84°29'01"W.	6.24	N/A	N/A	Data not available
16	Overhead power cable	45°34'43"N., 84°29'12"W.	6.71		38	
Indian River						
17	I-75 Bridge (fixed)	45°25'20"N., 84°36'09"W.	19.67	53	15	
18	Overhead cable	45°25'04"N., 84°36'16"W.	20.01		40	
19	Conrail Bridge (fixed)	45°24'48"N., 84°36'40"W.	20.52	79	17	
20	Route 27 Bridge (fixed)	45°24'48"N., 84°36'41"W.	20.53	84	15	
Crooked River						
21	Overhead power/telephone cables	45°28'21"N., 84°45'04"W.	29.93		41	
22	Route 68 Bridge (fixed)	45°26'37"N., 84°47'04"W.	32.75	64	18	
23	Overhead cable	45°26'36"N., 84°47'05"W.	32.77		20	
24	Alanson Bridge (swing)	45°26'25"N., 84°47'07"W.	32.99	21	5	Note 2
Crooked River Lock						

* Miles above Lake Huron

Note 1 – See 33 CFR 117.1 through 117.59 and 117.627, chapter 2, for drawbridge regulations.

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

northeast end of Crooked Lake. The channel through the lower part of the river is marked by daybeacons. **Alanson, MI**, is on the river about 0.7 mile below Crooked Lake. The Crooked Lake entrance to the river is marked by a light.

(317) **Crooked River Lock**, 0.3 mile below Crooked Lake, is usable by vessels to 60 feet long and 16 feet wide. The vertical clearance through the lock is 15 feet when the upper pool (Mullet Lake) is at Low Water Datum. The depth over the sill is 6 feet when the lower pool (Lake Huron) is at Low Water Datum. (See **33 CFR 207.476**, chapter 2, for lock regulations.)

(318) **Crooked Lake**, roughly triangular, is 4 miles long and about 2 miles wide at its center. **Oden Island**, just

east of the center, extends almost across the lake leaving a narrow channel along its north side. The channel through Crooked Lake is marked by buoys and daybeacons. The village of **Oden, MI**, is on the north shore of the lake, northwest of Oden Island.

Overland Trailer Service

(319) Completing the inland route between Lake Huron and Lake Michigan, a portage service is available at the Windjammer Marina about 1 mile west of the village of Oden. Transportation in either direction can be arranged for trailerable craft to 25 feet long and less than 5,000 pounds gross weight between Crooked Lake and Little Traverse Bay on Lake Michigan, a distance of about

8 miles. An advance notice of 24 hours is requested. Information on fees and reservations may be obtained by telephone or by writing to: Windjammer Marina, Inc., Oden, MI 49764; telephone, 616-347-3918.

- (320) **Conway, MI**, a small community at the west end of Crooked Lake, is the limit of navigation through the Inland Route. There is no navigable water for any type of small craft between Conway and Little Traverse Bay. **Pickerel Channel** leads from the southeast side of Crooked Lake for about 0.5 mile to **Pickerel Lake**. The entrance to the channel is marked by a light.

Channels

- (321) In 1998, the controlling depths in the Inland Route were 3 feet in Indian River between Mullet Lake and Burt Lake (greater depths may be available with local knowledge), thence 2½ feet in Crooked River from Burt Lake to Alanson, thence in 1976, ½ foot from Alanson to Crooked Lake. In 1972, the controlling depth in Pickerel Channel was 3 feet.

Small-craft facilities

- (322) There are marinas on the upper Cheboygan River, near the north end of Mullett Lake, on the Indian River, on Burt Lake, at Alanson, and near Oden on the north shore of Crooked Lake. Most small-craft facilities are available at these marinas.

Charts 14880, 14881

- (323) **Mackinaw City, MI**, is a town on **Old Mackinac Point**, the northernmost point of the lower peninsula of Michigan. A water tank, a radio tower, and the abandoned lighthouse on Old Mackinac Point are prominent.

Channels

- (324) A harbor basin on the east side of Old Mackinac Point is enclosed by a railroad pier with a breakwater extending north from its outer end and by a combination breakwater and dock extending from shore on the north side of the basin. In 2012, the controlling depth was 8 feet. Lights mark the ends of the breakwaters at the entrance.

Wharves

- (325) Passenger ferries operate to Mackinac Island from the State Dock and from a private dock, 800 and 2,700 feet south of the railroad pier, respectively.

Small-craft facilities

- (326) A private marina is in the harbor basin and a marina developed by the Michigan State Waterways Commission is in the basin on the north side of the State Dock. Services available at the marinas include transient berths, gasoline, diesel fuel, water, ice, electricity, pump-out facilities, and launching ramps. A 12-ton

hoist for hull and engine repairs is available at the marina in the harbor basin. The harbormaster monitors VHF-FM channels 16 and 9.

- (327) The **Straits of Mackinac** connect Lake Huron and Lake Michigan. From the north side of Bois Blanc Island, the straits lead west through Round Island Passage between Round Island and Mackinac Island, thence between Old Mackinac Point on the lower peninsula and Point St. Ignace on the upper peninsula to Lake Michigan.

- (328) **Spectacle Reef**, with a least depth of 5 feet, is in the approach to the Straits of Mackinac, 10.5 miles east of Bois Blanc Island. **Spectacle Reef Light** (45°46'23"N., 84°08'17"W.), 86 feet above the water, is shown from a gray conical tower on a square concrete pier on the northwest side of the shoal.

- (329) **Raynolds Reef**, with a least depth of 11 feet, is 6 miles east of Bois Blanc Island. A buoy marks each end of the reef, 1.5 miles long east and west.

- (330) From **Lafayette Point**, the northeast point of Bois Blanc Island, the north shore of the island is generally deep-to for 7.5 miles to **Point Detachee**. **Lighthouse Point** juts about 2 miles north from midlength of this reach. A shoal with depths of 12 to 15 feet extends 0.6 mile northwest from the point. **Bois Blanc Light** (45°48'41"N., 84°25'15"W.), 32 feet above the water, is shown from a white cylindrical tower on Lighthouse Point. From Point Detachee to the west end of Bois Blanc Island, the shoal border increases to a width of about 1 mile.

- (331) **Round Island**, small and hilly, is just off the northwest end of Bois Blanc Island, separated from it by very shallow water with submerged rocks. Buoys on the south side of Round Island Passage mark shoal water extending North from Round Island. **Old Round Island Point Light** (45°50'12"N., 84°37'00"W.), 53 feet above the water, shown from a red and white conical tower, is privately maintained and is on the northwest tip of the island.

- (332) **Round Island Passage**, the dredged channel between Round Island and Mackinac Island, has a Federal project depth of 30 feet (See Local Notice to Mariners for controlling depths.) The south edge of the channel is marked by two lighted buoys. The north side of the passage is marked by a lighted bell buoy off the southeast end of Mackinac Island and by Round Island Passage Light. **Round Island Passage Light** (45°50'35"N., 84°36'55"W.), 71 feet above the water, is shown from a lighthouse on the north side of the passage. A racon and a mariner radio activated sound signal at the light is initiated by keying the microphone five times on VHF-FM channel 83A..

- (333) **Mackinac Island**, 0.6 mile northwest of Round Island, is about 3 miles long and 1.8 miles wide. The island is very bold, and its shores are generally rocky and deep-to. A lighted bell buoy marks the extent of shoals off the southeast corner of the island. A detached shoal with a

least depth of 15 feet is 1.4 miles off the east shore of the island, at about its midlength.

(334) A **regulated navigation area** is between the west side of Mackinac Island and the mainland. (See **33 CFR 165.1 through 165.13, and 165.901 (a) and (c)**, chapter 2, for limits and regulations.)

(335) **Mackinac Island, MI**, is a resort village and small-craft harbor on the shores of the semicircular bay at the southeast end of Mackinac Island. The bay opens toward the southeast between **Biddle Point** on the west and **Mission Point** on the east. A church spire north of the harbor entrance is prominent. The harbor is partially protected by a breakwater extending south from Mission Point and by a detached breakwater extending southeast from off Biddle Point. The outer ends of the breakwaters are marked by lights. While also protected by Mackinac Island and Round Island from north and south winds, respectively, the harbor is subjected to heavy seas through the Straits when the wind is east or west.

(336) On the northwest side of the harbor, Union Terminal Piers, Inc. operates a 700-foot passenger pier and a 400-foot coal pier, each marked at the outer end by a private light. In 1969, depths at the outer end of the piers were 13 and 11 feet, respectively.

Ferries

(337) Passenger ferries operate between Mackinac Island and Mackinaw City from May to October and between Mackinac Island and St. Ignace from April to December, ice conditions permitting.

Small-craft facilities

(338) A total of 76 slips, available through reservation only, and harbormaster services are available at the Michigan State Waterway Commission pier on the north side of the harbor. The harbormaster monitors VHF-FM channel 9. In 2002, depths of 7 to 8 feet were reported alongside. Gasoline is available at the coal dock.

(339) **Majors Shoal**, a dangerous rocky ledge with a least depth of 10 feet, is 2.4 miles west-southwest of Round Island. The ledge, 0.7 mile long east and west, is marked by a buoy and a lighted buoy on the east and west ends, respectively. The ledge is on the south side of the vessel passage between Round Island Passage and Mackinac Bridge.

(340) A wreck, covered 32 feet is 2.1 miles south of Majors Shoal, close south of the vessel route through Straits of Mackinac South Channel.

(341) **Graham Point** (45°51'00"N., 84°42'12"W.) is the southeast extremity of Point St. Ignace on the north side of the Straits of Mackinac. **South Graham Shoal**, with a least depth of 2 feet, and **North Graham Shoal**, with a least depth of 4 feet, are 1.5 miles south and 1 mile southeast of the point, respectively. South Graham Shoal is marked on the south side by a buoy and North Graham Shoal is marked on the east side by a lighted bell buoy. Currents in the vicinity of the Graham Shoals

and the Straits of Mackinac are often strong and irregular.

(342) **Mackinac Bridge** spans the Straits of Mackinac between Old Mackinac Point and Graham Point. The center suspension span of the bridge has a clearance of 148 feet at the center decreasing to 135 feet at each end. The main navigation channel through this span is marked by lighted buoys. (The bridge is more fully described in chapter 11, Lake Michigan.)

(343) **St. Ignace, MI**, is a resort community and ferry terminal in **East Moran Bay** on the north side of Graham Point.

Coast Guard Station

(344) **St. Ignace Coast Guard Station** is on the east side of Graham Point. The Coast Guard station is marked by a light.

Wharves

(345) On the east side of Graham Point, the State of Michigan has constructed two 460-foot docks. The slips on the north side of the south dock and on the south side of the north dock have been dredged to 22 feet and 27 feet, respectively. The slip on the outside of each dock has been dredged to 20 feet.

Ferries

(346) Several ferry companies operate from St. Ignace. Several docks in East Moran Bay have passenger ferries to Mackinac Island.

Small-craft facilities

(347) A municipal marina and small-craft basin operated by the city of St. Ignace has 140 berths available for small craft between the Mackinac Transportation Co. dock and the State Dock to the north. The marina provides transient dockage, gasoline, diesel fuel, electricity, pump-out, ice and harbormaster services. The entrance is near the north side of the Mackinac Transportation Co. dock and is best approached from the northeast.

(348) **Rabbit Back Peak** is a bold headland jutting east about 4.5 miles north of Graham Point. Shoals with submerged rocks extend 0.5 mile southeast from the point. The bight on the south side of the point has shoals to 0.8 mile offshore. The bay between Rabbit Back Peak and **Grosse Point** (45°58'30"N., 84°41'12"W.), 4 miles north, has shoals extending 1 mile offshore in the north part. Grosse Point should be a berth of 0.5 mile.

(349) **St. Martin Bay**, 7 miles north of Mackinac Island, is formed between Grosse Point on the west and **St. Martin Point** (45°58'06"N., 84°31'42"W.) on the east. St. Martin Island and Big St. Martin Island divide the mouth of the bay into three deep passages. The bay has depths of 24 feet to within 1 mile of shore except in the northwest and northeast corners where the sandy flats extend 1.5 miles offshore.

(350) **Big St. Martin Island**, 2 miles east of Grosse Point, has deep water within 0.5 mile of its shores. **St. Martin**

Island, 1.5 miles east of Big St. Martin Island, has deep water within 0.3 mile of shore except on the south side where shoals with small islets and rocks, awash and submerged, extend about 1 mile south.

- (351) A small islet is 0.6 mile south of St. Martin Point with shoals between and extending about 0.3 mile south and southeast from the islet. **Search Bay** is between St. Martin Point and **Brulee Point**, about 3 miles east. The bay has deep water to within 1 mile of its head except for a 16-foot spot in the middle of the entrance.

Charts 14881, 14885

- (352) **Goose Island**, 3.3 miles southeast of Brulee Point, is 1.3 miles long northwest and southeast and 1,000 feet wide or less. The island is on a very shallow bank that extends about 0.5 mile offshore around the island. The bank is covered with numerous small islets and rocks, submerged and awash. The south end of the bank is marked by a buoy. **Goose Island Shoal**, with a least depth of 2 feet, is 3 miles southwest of Goose Island. The shoal is marked on the southeast side by a buoy and on the west side by a lighted buoy.

Charts 14880, 14881, 14885

- (353) **Les Cheneaux Islands** are an extensive island group bordering the shore for about 15 miles east from Brulee Point. The islands and their neighboring shoals, as well as the numerous points jutting among them from the adjacent shoreline, have a characteristic trend from northwest to southeast. The many inlets and channels formed between the islands and points have considerable deep water, but are so obstructed by banks and detached shoals as to be navigable only by small craft.

Channels

- (354) A small-craft channel, marked by lighted and unlighted buoys, leads from Brulee Point on the west generally between the north side of the islands and the mainland to the east entrance through **Scammons Harbor**, about 8 miles east of Brulee Point. The channel is dredged along the north sides of **Marquette Island** and **La Salle Island**, the largest islands in the group. Another dredged channel leads through **Middle Entrance** between Marquette Island and **Little La Salle Island**. In 2008, the controlling depths were 3 feet in the channel along the north side of Marquette Island (except for a 2-foot shoal along the west side of the channel in about 45°59'25"N., 84°24'08"W.), and 4 feet in the channel to the west and north of La Salle Island. The controlling depth was 6½ feet in the Middle Entrance channel. In 1999, a large rock was reported to be in Les Cheneaux Channel about 250 feet southeast of Buoy 15 in about 45°59'34"N., 84°23'55"W.

- (355) Numerous private buoys and several private lights mark small-craft hazards, such as rocks and shoals,

throughout the island group. Several private buoys also mark secondary channels used by local boatmen.

- (356) **Hessel, MI**, is a town 3 miles northeast of Brulee Point opposite the northwest end of Marquette Island. A public docking facility developed by the Michigan State Waterways Commission behind a breakwater just south of the Post Office provides water, transient berths, gasoline, electricity, sewage pump-out facilities, a launching ramp and harbormaster services. The harbormaster monitors VHF-FM channels 16 and 9. Marinas to the east and west provide gasoline, diesel fuel, and marine supplies. A 25-ton hoist is available for hull and engine repairs.

- (357) **Cedarville, MI**, is 3.3 miles east of Hessel, opposite the north end of La Salle Island. A marina 0.8 mile south of the town provides transient berths, water, electricity, sewage pump-out, and marine supplies. A 50-ton lift can handle 60-foot boats for hull and engine repairs.

- (358) **Port Dolomite, MI**, on the northeast side of the entrance to **McKay Bay** about 4 miles east of Cedarville, is a private dock of the Michigan Limestone Operations, Cedarville Plant. A privately dredged approach channel, marked by a private **309°** lighted range, leads to the southwest side of the dock where vessels berth. In 2004, the controlling depth alongside the dock was 23 feet. A lighted buoy just south of the dock marks the north end of a shoal with a least depth of 16 feet.

- (359) There are several dangers in the approach to Port Dolomite. **Crow Island**, 2 miles southeast of Port Dolomite, is marked by a light. Shoals extend 0.1 mile north and 0.5 mile southeast from the island. A shoal, 0.4 mile southwest of Crow Island, has a least depth of 10 feet and is marked off the southeast side by a lighted buoy. **Surveyors Reef**, 1 mile southeast of Crow Island, has several bare spots and is marked on the northwest end by a lighted buoy. **Tobin Reef**, with several bare spots, is marked at the northwest end by a buoy 1.3 miles southeast of Surveyors Reef. A 16-foot shoal is 0.6 mile west of Tobin Reef. **Pomeroy Reef**, with a least depth of 12 feet, is 0.9 mile south of Tobin Reef. A lighted gong buoy off the west end of the reef marks the turning point for vessels bound for Port Dolomite.

Charts 14880, 14881, 14882

- (360) **Martin Reef**, with a least depth of 1 foot, is about 1.5 miles east of Pomeroy Reef. It is at the east end of Les Cheneaux Islands and is the outermost danger in this stretch, lying near the vessel route between De Tour Passage and the Straits of Mackinac. **Martin Reef Light** (45°54'47"N., 84°08'55"W.), 65 feet above the water, is shown from a white square tower on a concrete crib on the southeast part of the reef; a seasonal sound signal is at the light. The light should not be passed close aboard even by shallow-draft vessels, because of protective riprap.

(361) From **Beaver Tail Point** (45°58'00"N., 84°10'18"W.) east for 12.5 miles to Point De Tour, the shoreline continues irregular with numerous off-lying shoals and small islands, and should be given a berth of 1.3 miles. **Beaver Tail Reef**, with a least depth of 5 feet and submerged rocks, is 1 mile southeast of Beaver Tail Point. **St. Vital Point** (45°57'N., 84°00'W.), about 8 miles east of Beaver Tail Point, forms the west side of **St. Vital Bay**. Shoals extend about 0.7 mile east from the tip of the point, and shoals extend about 1 mile southeast from shore on the northeast side of the bay. Between these two banks, there is deep water to within 0.5 mile of the head of the bay. A detached 15-foot shoal is 1.7 miles east of St. Vital Point.

(362) **Point De Tour** (45°57'24"N., 83°54'53"W.) is on the west side of the entrance to De Tour Passage, the entrance to St. Marys River. (The passage is described in chapter 12, St. Marys River.) **De Tour Reef**, with a least depth of 12 feet, extends about 0.7 mile southeast from the point. **De Tour Reef Light** (45°56'57"N., 83°54'11"W.), 74 feet above the water is on the southeast end of the reef and marks the west side of the entrance to De Tour Passage. A mariner radio activated sound signal at the light is initiated by keying the microphone five times on VHF-FM channel 83A.

(363) **Crab Island Shoal**, with rocks nearly awash, is 0.3 mile south of **Crab Island**, which is connected to **Barbed Point** at the west end of Drummond Island. A lighted bell buoy at the west end of the shoal marks the east side of the channel through De Tour Passage.

Charts 14880, *2251, 14882

(364) **Drummond Island**, MI, the easternmost part of the upper peninsula of Michigan, extends from De Tour Passage 20 miles east to False Detour Channel and has a maximum width of about 12 miles north and south. The south shore of the island fronts on Lake Huron, the northeast shore on North Channel, and the northwest shore is indented by Potagannissing Bay.

(365) From Barbed Point north for 3 miles to **Black Rock Point** (46°00'36"N., 83°51'54"W.), the west shore of Drummond Island fronts De Tour Passage. Osborne Materials Company operates a dock for the shipment of dolomite 1.3 miles north of Barbed Point. The 800-foot dock has a deck height of 10 feet and depths of 23 feet reported alongside. A conveyor system can load vessels at 4,000 tons per hour. When approaching or leaving the dock, avoid the shoals marked by buoys north and south of the dock.

(366) **Potagannissing Bay**, a deep, wide passageway between the northwest side of Drummond Island and St. Joseph Island, connects the west end of North Channel with the St. Marys River immediately north of De Tour Passage. However, the bay is obstructed by numerous islands and by many shoals which make up abruptly from deep water. A channel marked by lights and lighted

and unlighted buoys leads through the northwest part of the bay.

(367) Potagannissing Bay indents the northwest shore of Drummond Island between **Dix Point** (46°01'30"N., 83°50'37"W.) and **Chippewa Point** (46°05'56"N., 83°43'12"W.). **Drummond, MI**, a town on the south side of the indentation 4.5 miles east of Dix Point, has a sawmill and limestone quarries. A marina at the town provides gasoline, diesel fuel, water, electricity, sewage pump-out, marine supplies, and a launching ramp. A 75-ton hoist can handle craft to 90 feet for hull and engine repairs.

(368) A **custom station** is at Drummond.

(369) The north shore of Drummond Island, from Chippewa Point to **Raynolds Point** 6.5 miles east, is deep-to. From Raynolds Point southeast for 8.8 miles to Marble Head, the shore continues deep-to except in the vicinity of **Shoal Point** (46°03'30"N., 83°33'18"W.). **Humphrey Rock**, covered 9 feet, is 0.9 mile east, and **Lindsay Bank**, with a least depth of 6 feet, is 1.2 miles south. A 14-foot spot is 1.1 miles north-northeast of Shoal Point. **Marble Head** (45°59'N., 83°29'W.), the highest point on Drummond Island, is on the west side of the entrance to False Detour Channel from North Channel. Two indentations on the northwest side of Marble Head, **Glen Cove** and **Sitgreaves Bay**, provide protection from south and west winds with good anchorage in depths of 24 feet and more, mud and clay bottom.

(370) From Marble Head south-southwest for 5.5 miles, the shore of Drummond Island fronting False Detour Channel is generally deep-to. The south shore of the island is broken, with numerous indentations and many off-lying shoals and islands. The largest bays, from west to east, are Whitney Bay, Island Harbor, Huron Bay, and Big Shoal Cove. These natural harbors have depths of 24 to 40 feet, but because of numerous obstructions, they should not be entered in foggy weather or without local knowledge.

(371) **Whitney Bay**, on the east side of Barbed Point, is separated from the lake by several islands with two deep channels, marked by private buoys, leading into the bay. Outside the islands in the approach to the bay, several shoals rise abruptly from deep water. The outermost is a rock, covered 7 feet, 0.9 mile south of **Bellevue Island** and marked on the southwest side by a buoy. From the buoy a shoal bank extends 0.6 mile east. A 12-foot and a 14-foot spot are 0.5 and 0.8 mile northwest of the buoy, respectively. A reef with rocks awash and a reef with rocks just below the surface are 0.4 mile south and southeast of Bellevue Island, respectively.

(372) A marina, about 1.2 miles north of Bellevue Island on the north side of Whitney Bay, had reported depths of 8 feet in the entrance and 6 feet alongside the berths in 2001. The marina provides transient berths, gasoline, diesel fuel, water, electricity, marine supplies, a launching ramp, a 5-ton hoist, and hull and engine repairs.

(373) **Island Harbor**, 3 miles southeast of Barbed Point, is separated from Whitney Bay by **Point Anderson**.

Espanore Island, 0.8 mile southeast of Point Anderson, encloses Island Harbor on the southwest. A 1-foot reef with scattered boulders is 0.8 mile northwest of the southwest end of Espanore Island with a 13-foot shoal between. A rocky ledge extends 0.7 mile south from the island, and a ledge with rocks awash that extends 0.4 mile east from the island narrows the entrance to Island Harbor to about 0.25 mile.

(374) **Huron Bay**, 2.5 miles east of Island Harbor, has a deep entrance about 0.4 mile wide on the east side of **Gravel Island**. A ledge with rocks awash extends 0.7 mile south from the east side of the bay. A rocky ledge with depths of 1 to 4 feet extends 0.7 mile south from Gravel Island.

(375) From Huron Bay east for 7 miles to Big Shoal Cove, the shore is bordered by shoals extending about 0.5 mile off. **Holdridge Shoal**, a detached shoal with a least depth of 5 feet, is 2 miles southeast of Gravel Island.

(376) **Scammon Cove**, just northwest of Big Shoal Cove, is enclosed between **Meade Island** on the west and **Scammon Point** on the southeast. **Horseshoe Reef**, awash, is 1.3 miles southwest of Meade Island. A large shoal with a least depth of 8 feet is between Meade Island and Horseshoe Reef.

(377) **Big Shoal Cove**, on the east side of Scammon Point, provides good anchorage in 24 to 30 feet, clay bottom. Detached 4-foot and 6-foot shoals, 0.4 mile southeast and 0.65 mile east-southeast of Scammon Point,

respectively, are dangerous obstructions in the entrance to the cove. A rocky ledge, with some rocks uncovered, extends 1.5 miles south-southwest from the east side of the cove entrance. **Big Shoal**, the outer end of the ledge, expands to a width of 1.2 miles. The southwest end of the ledge is marked by a buoy.

(378) From Big Shoal Cove east for 4 miles to False Detour Channel, the shore of Drummond Island should be given a berth of 1.5 miles.

Canadian Waters

(379) The **International boundary** between the United States and Canada passes through False Detour Channel, around the north side of Drummond Island, MI, through North Channel, and around the south side of St. Joseph Island, ON, into the St. Marys River.

(380) **False Detour Channel**, a deep wide passage, leads between the east end of Drummond Island, MI, and the west end of **Cockburn Island, ON** from Lake Huron to North Channel. A rock, covered 9 feet (2.7 meters), 0.7 statute mile (0.6 nm) southwest of the southeast point of Drummond Island should be avoided in approaching the passage.

(381) For a description of the east and north shores of Lake Huron, see **Canadian Sailing Directions CEN305**. Descriptions of Georgian Bay and North Channel are contained in **CEN306** and **CEN307**, respectively.

