Formerly LS 966, 1st Ed., Aug. 1901 KAPP 1538

SOUNDINGS IN FEET

THE NATION'S CHARTMAKER SINCE 1807

UNITED STATES - GREAT LAKES

LAKE SUPERIOR - MINNESOTA - WISCONSIN

DULUTH - SUPERIOR HARBOR

Polyconic Projection
Scale 1:15,000
North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET

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

PLANE OF REFERENCE OF THIS CHART (Low Water Datum) . . . . 601.1 ft. Referred to mean water level at Rimouski, Quebec, International Great Lakes Datum (1985).

SAILING DIRECTIONS. Bearings of sailing courses are true and distances given thereon are in statute miles between points of departure.

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

SYMBOLS AND ABBREVIATIONS. For a complete list of symbols and abbreviations, see Chart No. 1.

BRIDGE AND OVERHEAD CABLE CLEARANCES. When the water surface is above low Water Datum, bridge and overhead clearances are reduced correspondingly. For clearances see U.S. Coast Pilot 6.

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

SUPPLEMENTAL INFORMATION
Consult U. S. Coast Pilot 6 for important supplemental information.

Sailing courses and limits indicated in magenta are recommended by the Lake Carriers Association and the Canadian Shipowners Association.

CAUTION
POTABLE WATER INTAKE (PWI)
Vessels operating in fresh water lakes or rivers shall not discharge sewage, or ballast, or bilge water within such areas adjacent to domestic water intakes as are designated by the Commissioner of Food and Drugs (21 CFR 1250.93). Consult U. S. Coast Pilot 6 for important supplemental information.

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

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

DULUTH HARBOR
TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO NOV 2015

NAME OF CHANNEL	LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH LWD (FEET)
CONTROLLING DEPTHS FROM SEAWARD IN FEET AT GREAT LAKES LOW WATER DATUM (LWD)						PROJECT DIMENSIONS		
DULUTH ENTRY	A	A	A	A				
1	31	32	31	30	11-2015	245-1000	.13	32
2	27	34	33	32	11-2015	245	.08	31
3	28	32	32	33	11-2015	245	.07	30
4	32	31	31	32	11-2015	245	.07	29
5	30	33	33	28	11-2015	245-480	.07	28
DULUTH HARBOR BASIN								
NORTHERN SECTION	25	27	27	27	11-2015	1100-2700	.64	28
SOUTHERN SECTION	24	25	27	25	11-2015	1200-2700	.91	27
EAST GATE BASIN (NORTH)	26	26	26	25	11-2015	1500-3300	.33	27
WEST GATE BASIN	23	27	27	24B	11-2015	400-850	.66	27
HOWARDS BAY	21	23	24	22	11-2015	100-750	.99	27
NORTH CHANNEL								
EASTERN SECTION	19	20	22	12C	10,11-2015	400	1.66	27
WESTERN SECTION	19	21	20	19	11-2015	400	.59	21
21ST AVE WEST CHANNEL	7	11	19	20	8-2011	200	.33	20
SOUTH CHANNEL								
EASTERN SECTION	22	23	23	26	11-2015	400-800	.74	27
WESTERN SECTION	21	23	23	23	10,11-2015	400	.83	23
CROSS CHANNEL	21	27	27	21	10,11-2015	1300	.33	27
UPPER CHANNEL	20	24	21	20	10-2015	500	1.00	23
MINNESOTA CHANNEL								
EASTERN SECTION	7	22	19	13	10-2015	600	.95	23
WESTERN SECTION	8D	14	10	7E	10-2015	200	2.39	20

A. CHANNEL DIVIDED INTO QUARTERS WHEN ENTERING FROM LAKE.
B. SHOALING TO 18 FT AT 46°45'00.2"N - 92°06'06.5"W
C. SHOALING TO 3 FT IN THE OUTSIDE HALF OF THE QUARTER FROM 46°45'02.4"N - 92°06'10.0"W TO 46°45'07.2"N - 92°06'19.8"W
D. SHOALING TO 5 FT IN THE OUTSIDE HALF OF THE QUARTER FROM 46°43'13.3"N - 92°08'32.9"W TO 46°43'12.6"N - 92°08'35.5"W
E. SHOALING TO 5 FT IN THE OUTSIDE HALF OF THE QUARTER

NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION.

LAKE SUPERIOR

Average levels (2004-2013)
Extreme Levels (period of record)

Low Water Datum, which is the plane of reference for the levels shown on the above hydrograph, is also the plane of reference for the charted depths. If the lake level is above or below Low Water Datum, the existing depths are correspondingly greater or lesser than the charted depths.

SCALE 1:15,000

SOURCE DIAGRAM
The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.

SOURCE		
B1 1990-2004	NOS Surveys	partial bottom coverage
B2 1970-1989	NOS Surveys	partial bottom coverage
j Pre-1974	Lake Survey Surveys	partial bottom coverage

Ⓟ Pump-out facilities

CAUTION
SUBMARINE PIPELINES AND CABLES
Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:
Pipeline Area — Cable Area

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

Covered wells may be marked by lighted or unlighted buoys.

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

CAUTION
Due to periodic high water conditions in the Great Lakes, some features charted as visible at Low Water Datum may be submerged, particularly in the near shore areas. Mariners should proceed with caution.

NOTE A
Navigation regulations are published in Chapter 2, U.S. Coast Pilot 6. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 9th Coast Guard District in Cleveland, Ohio or at the Office of the District Engineer, Corps of Engineers in Detroit, Michigan.
Refer to charted regulation section numbers.

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

HORIZONTAL DATUM
The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83) and is considered equivalent to the World Geodetic System 1984 (WGS 1984) for practical plotting purposes. Positions referred to the North American Datum of 1927 must be moved 0.214" southward and 0.688" westward to agree with this chart.

UPPER ST. LOUIS RIVER
KAPP 1539
SCALE 1 : 30,000
SOUNDINGS IN FEET

CAUTION
Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117. Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.
Station positions are shown thus:
⊙(Accurate location) ○(Approximate location)

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

CAUTION
Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

SUPERIOR HARBOR
TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO NOV 2015

NAME OF CHANNEL	LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH LWD (FEET)
CONTROLLING DEPTHS FROM SEAWARD IN FEET AT GREAT LAKES LOW WATER DATUM (LWD)						PROJECT DIMENSIONS		
SUPERIOR ENTRY	A	A	A	A				
1	28 B	32	32	29 C	11-15	600-1100	.18	31
2	31	31	32	29	11-15	415-1100	.15	30
3	27	30	31	30	11-15	415	.08	29
4	24	30	30	23	11-15	415-430	.08	28
5	29	30	30	27	11-15	430-840	.08	27
SUPERIOR HARBOR BASIN	21	24	23	21	11-15	600-2000	1.21	27
ALLOUEZ BAY CHANNEL	19	22	21	22	11-15	400-900	.44	27
SUPERIOR FRONT CHANNEL	25	26	27	26	11-15	600	2.32	27
EAST GATE BASIN (SOUTH)	26	27	27	27	11-15	600-3200	.57	27

A. CHANNEL DIVIDED INTO QUARTERS WHEN ENTERING FROM LAKE.
B. SHOALING TO 25 FEET AT 46°42'33.2"N 092°00'26.3"W
C. SHOALING TO 24 FEET AT 46°42'41.9"N 092°00'27.8"W

NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

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Last Correction: 3/7/2016. Cleared through:
LNM: 4616 (11/15/2016), NM: 4616 (11/12/2016), CHS: 1016 (10/28/2016)

CAUTION
This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).
If the line does not measure six inches (152 millimeters), this copy is not certified safe for navigation.

NOAA encourages users to submit inquiries, discrepancies or comments about this chart at http://www.nauticalcharts.noaa.gov/staff/contact.htm.

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U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

FATHOMS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
FEET	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102