SCALE 1:40,000
Nautical Miles
Yards
Meters

SOUNDINGS IN FEET

18504

Formerly C&GS 6185, 1st Ed., Aug. 1891 C-1942-575 KAPP 1734

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

WILLAPA RIVER CHANNEL DEPTHS

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO JUN 2004

CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW)					PROJECT DIMENSIONS		
NAME OF CHANNEL	LEFT OUTSIDE QUARTER	MIDDLE HALF OF CHANNEL	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH MLLW (FEET)
LIGHT 56 TO NORTH FORK	A10.1	12.4	14.1	1,2-86;6-04	300-250	2.1	24
NORTH FORK TO 700 FEET BELOW HIGHWAY BRIDGE	B10.1	14.7	4.2	8-55;3-83	200-150	0.4	24
SOUTH FORK TO 500 FEET NORTH OF N.P. RY. BRIDGE	13.1	5.2	4.0	1,2-86	150	0.3	24

A. SHOALING TO 6.4 FEET AT 46°40'44.3" N 123°46'02.7" W.
B. THE CHANNEL HAS SHOALED ALONG THE EDGE; A DEPTH OF 16.1 FEET WAS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.
NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

HORIZONTAL DATUM
The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.644" southward and 4.590" westward to agree with this chart.

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

UNITED STATES - WEST COAST
WASHINGTON

WILLAPA BAY

Mercator Projection
Scale 1:40,000 at Lat. 46°34'

North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

TIDAL INFORMATION

Place		Height referred to datum of soundings (MLLW)			
Name	(LAT/LONG)	Mean Higher High Water	Mean High Water	Mean Low Water	Extreme Low Water
		feet	feet	feet	feet
Nahcotta	(46°30'N/124°02'W)	10.0	9.3	1.4	-4.0
Toke Point	(46°43'N/123°58'W)	8.9	8.2	1.4	----
Raymond	(46°41'N/123°45'W)	10.0	9.3	1.4	----
Long Island	(46°28'N/123°57'W)	10.2	9.4	1.4	----
Naselle River	(46°23'N/123°50'W)	10.8	10.0	1.3	----
Bay Center	(46°37'N/123°57'W)	9.2	8.5	1.4	----
South Bend	(46°40'N/123°48'W)	9.8	9.1	1.4	----

(Jun 2006)

PLANE COORDINATE GRID
Local grid system, U.S. Corps of Engineers, is indicated by dashed tick marks at 20,000 foot intervals.

SCALE 1:40,000

ABBREVIATIONS (For complete list of Symbols and Abbreviations, see Chart No. 1.)
Aids to Navigation (lights are white unless otherwise indicated):
AERO aeronautical; Al alternating; B black; Bn beacon; C can; DIA diaphone; F fixed; Fl flashing; G green; IQ interrupted quick; Iso isophase; LT HO lighthouse; M nautical mile; m minutes; MICRO TR microwave tower; Mkr marker; Mo morse code; N nun; OBSC obscured; Oc occulting; Or orange; Q quick; R red; Ra Ref radar reflector; R Bn radiobeacon; R TR radio tower; Rot rotating; s seconds; SEC sector; St M statute miles; VQ very quick; W white; WHIS whistle; Y yellow
Bottom characteristics:
Blds boulders; bk broken; Cy clay; Co coral; G gravel; Grs grass; gy gray; h hard; M mud; Oys oysters; Rk rock; S sand; so soft; Sh shells; sy sticky
Miscellaneous:
AUTH authorized; ED existence doubtful; Obstn obstruction; PA position approximate; PD position doubtful; Rep reported; Subm submerged
(21) Wreck, rock, obstruction, or shoal swept clear to the depth indicated.
(2) Rocks that cover and uncover, with heights in feet above datum of soundings.
COLREGS: International Regulations for Preventing Collisions at Sea, 1972.
Demarcation lines are shown thus: — — — —

HEIGHTS
Heights in feet above Mean High Water.

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

SUPPLEMENTAL INFORMATION
Consult U.S. Coast Pilot 7 for important supplemental information.

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

CAUTION
Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

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.

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).

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

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) o(Approximate location)

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.

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			
B3	1940-1969	NOS Surveys	partial bottom coverage
B4	1900-1939	NOS Surveys	partial bottom coverage
B5	Pre-1900	NOS Surveys	partial bottom coverage

NOAA WEATHER RADIO BROADCASTS
The NOAA Weather Radio stations listed below provide continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.

Astoria, OR	KEC-91	162.40 MHz
Astoria, OR	WWF-94	162.425 MHz
Olympia, WA	WXM-62	162.475 MHz

NOTE S
Regulations for Ocean Dumping Sites are contained in 40 CFR, Parts 220-229. Additional information concerning the regulations and requirements for use of the sites may be obtained from the Environmental Protection Agency (EPA). See U.S. Coast Pilots appendix for addresses of EPA offices. Dumping subsequent to the survey dates may have reduced the depths shown.

18504

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.

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.

SOUNDINGS IN FEET

Published at Washington, D.C.
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

Willapa Bay
SOUNDINGS IN FEET - SCALE 1:40,000

18504

66th Ed., Jul. 2006. Last Correction: 12/7/2016. Cleared through:
LNM: 4916 (12/6/2016), NM: 5016 (12/10/2016), CHS: 1116 (11/25/2016)

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.

This chart was distributed as a PDF (Portable Document Format). Printing PDFs may alter the chart scale, color, or legibility that may impact suitability for navigation. Printed charts provided by NOAA certified Print on Demand (POD) providers fulfill a vessel's requirement to carry a navigational chart "published by the National Ocean Service" in accordance with federal regulations, including but not limited to 33 C.F.R. 164.33(a), 33 C.F.R. 164.72(b), and 46 C.F.R. 28.225(a). POD charts meet stringent print standards and can be recognized by an official certification of authenticity printed on the chart. A list of POD providers can be found at: nauticalcharts.noaa.gov/pod