BookletChart™

Lake Washington Ship Canal and Lake Washington
NOAA Chart 18447

A reduced-scale NOAA nautical chart for small boaters
When possible, use the full-size NOAA chart for navigation.

- Complete, reduced-scale nautical chart
- Print at home for free
- Convenient size
- Up-to-date with Notices to Mariners
- Compiled by NOAA’s Office of Coast Survey, the nation’s chartmaker

Included Area
Published by the National Oceanic and Atmospheric Administration National Ocean Service Office of Coast Survey www.NauticalCharts.NOAA.gov 888-990-NOAA

What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial vessels, and are widely carried by recreational boaters.

What is a BookletChart™?

This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at http://www.NauticalCharts.NOAA.gov.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.


(Selected Excerpts from Coast Pilot)

Shilshole Bay is between Meadow Point and West Point. It is an open bight from which the Lake Washington Ship Canal is entered, and is the site of the largest marina in the Seattle area. Shilshole Bay Marina, the small-craft basin just N of the canal entrance, is administered by the Port of Seattle. A 4,400-foot breakwater, marked at each end by a light, protects the basin.

Elliott Bay indents the E shore of Puget Sound just N of Duwamish Head. The entrance is between West Point on the N and Alki Point 5 miles S. The bay proper, lying E of a line between Magnolia Bluff and Duwamish Head, has a width of about 2 miles and extends SE for nearly the same distance. The bay is deep throughout most of its area.

A speed limit of 4 knots is enforced within the guide piers of the Hiram M. Chittenden Locks. A speed limit of 7 knots is enforced elsewhere in the Lake Washington Ship Canal, except in an area marked by four private buoys in the N part of Lake Union.

The Hiram M. Chittenden Locks, a double lock, and a fixed dam are at the narrows of the entrance to Salmon Bay, 1.2 miles in from the sound. The large lock, a two-chamber structure, has a clear length of 760 feet, width of 80 feet, lift of 26 feet, and depth over the lower miter sill of 29 feet. The small lock has a clear length of 123 feet, width of 28 feet, lift of 26 feet, and depth over the lower sill of 16 feet. Passage time is less than 30 minutes for large vessels and 5 to 10 minutes for small vessels. The lock tenders monitor VHF-FM channel 13, and can be contacted at 206-783-7000 for additional information.

A saltwater barrier extends across the E end of the E chamber of the large lock to reduce the intrusion of saltwater into Lake Washington and to conserve water. (See 207.750, chapter 2, for navigation regulations for Lake Washington Ship Canal, the Hiram M. Chittenden Locks, and the saltwater barrier.)

Salmon Bay extends for about 0.8 mile from the E end of the locks to the Ballard (15th Avenue) Bridge. There are numerous piers and floats with extensive small-craft facilities on the bay. Fisherman’s Terminal, operated by the Port of Seattle, is immediately W of the Ballard Bridge. The terminal is the home port of a large commercial fishing fleet. Depths of 14 to 28 feet are alongside the piers.

From Salmon Bay the canal leads SE to Lake Union, which is about 1 mile long in a N-S direction and about 0.5 mile wide. Depths in the lake range generally from 37 to 41 feet. There is an 11-foot shoal about 200 yards offshore from the SW end of the lake; it is marked by a buoy. Four private buoys in the N part of Lake Union mark an unrestricted speed zone, which is used by boat builders around the lake as a testing area. The buoys are frequently repositioned; caution is advised when transiting the area.

Lake Washington Ship Canal is crossed by five bascule bridges and two fixed bridges. Clearances of the drawspans are 14 to 43 feet. (See 117.1 through 117.59 and 117.1051, chapter 2, for drawbridge regulations.) The bridgetenders of the drawbridges monitor VHF-FM channel 16 and 13, and work on channel 13. The call signs are as follows: Burlington Northern Railroad, KCE-201; Ballard (15th Avenue), KJA-445; Fremont Avenue, KJA-442; University, KJA-441; Montlake, KJA-438. The fixed bridges have a least clearance of 127 feet. Cables crossing the canal have a least clearance of 155 feet.

State Route 520 pontoon bridge crossing the lake between Seattle and Evergreen Point has a fixed span at the E and W ends. The clearances are 57 feet at the E end and 44 feet at the W end. The floating drawspans at the center of the bridge provide an opening 100 feet wide. (See 117.1 through 117.59 and 117.1049, chapter 2, for drawbridge regulations.) The Interstate Route 90 pontoon bridges between Seattle and East Seattle, on the N end of Mercer Island, have fixed spans at the E and W ends with clearances of 29 feet. The underwater remains of the E and W piers of a former fixed bridge are just SE of the Interstate Route 90 bridge. Mariners should use caution when outside the main navigation channel.

U.S. Coast Guard Rescue Coordination Center 24 hour Regional Contact for Emergencies

RCC Seattle Commander 13th CG District (206) 220-7001 Seattle, WA
NOAA's navigation managers serve as ambassadors to the maritime community. They help identify navigational challenges facing professional and recreational mariners, and provide NOAA resources and information for safe navigation.

For additional information, please visit nauticalcharts.noaa.gov/service/navmanagers.

To make suggestions or ask questions online, go to nauticalcharts.noaa.gov/inquiry.
To report a chart discrepancy, please use ocsdata.ncd.noaa.gov/idrs/discrepancy.aspx.

Lateral System As Seen Entering From Seaward on navigable waters except Western Rivers

For more information on aids to navigation, including those on Western Rivers, please consult the latest USCG Light List for your area. These volumes are available online at http://www.navcen.uscg.gov
HIGHLIGHTS
Vertical clearances above the locks are referenced to Mean Water Level of the lakes which is 21 feet above MLLW.

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 7 for important supplemental information.

CAUTION
This chart has been corrected from the Notice to Mariners (NMM) 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 Notices to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

HORIZONTAL DATUM
The horizontal reference system 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 0.045' southward and 4.450' westward to agree with this chart.

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

MERCATOR PROJECTION AT SCALE 1:10,000 & 1:25,000
SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER below the locks AND AT LOW WATER OF LAKE which is 20 FEET above the plane of MLLW in Puget Sound.

North American Datum of 1983
(World Geodetic System 1994)

Joins page 15
Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on those aids has been omitted from this chart.

**Radar Reflectors**

**CAUTION**

Small craft should stay clear of large commercial and government vessels even if small craft have the right-of-way.

All craft should avoid areas where the skin divers flag, a red square with a diagonal white stripe, is displayed.

**CAUTION**

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

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

**CAUTION**

Mariners are warned to stay clear of the protective framework surrounding navigational light structure shown thus.

**Height**

Vertical clearance above the locks are referenced to Mean Water Level of the lakes which is 81 feet above M.L.W.

Vertical clearances for the bridge and cable at the Burlington Northern R.R. bridge (41°44'0", 122°0'3") are referenced to M.W.
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.

DETERMINATION OF WIND SPEED FROM SEA CONDITION

<table>
<thead>
<tr>
<th>Wind Speed (Winds)</th>
<th>Wind Description</th>
<th>Sea Conditions</th>
<th>Wind Zone (Beaufort)</th>
<th>Probable Wave Height (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>Calm</td>
<td>Sea smooth and mirror-like.</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>1-3</td>
<td>Light air</td>
<td>Small waves without foam crests.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4-6</td>
<td>Light breeze</td>
<td>Small waves; crests have a glassy appearance and do not break.</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>7-10</td>
<td>Gentle breeze</td>
<td>Large waves; some crests begin to break; foam of glassy appearance.</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>11-16</td>
<td>Moderate breeze</td>
<td>Occasional white foam crests.</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>17-21</td>
<td>Fresh breeze</td>
<td>Moderate waves, long and rolling; white foam crests.</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>22-27</td>
<td>Strong breeze</td>
<td>Large waves, white foam crests.</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>28-33</td>
<td>Near gale</td>
<td>Sea hoars up and white foam from breaking waves begin to be blown in streaks along the direction of the wind.</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>34-40</td>
<td>Gale</td>
<td>Moderately high waves of greater length; edges of crests break into spray; foam is blown in well-marked streaks along the direction of the wind.</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

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 150).

NOAA encourages mariners to submit inquiries, discrepancies, or comments about this chart at https://www.nauticalcharts.noaa.gov/staff/contact-nm.

COUREGS. 331.1301 (see note A)
International Regulations for Preventing Collisions at Sea, 1972.
The entire area of this chart falls seaward of the COUREGS Demarcation Line.
VHF Marine Radio channels for use on the waterways:
Channel 6 — Inter-ship safety communications.
Channel 9 — Communications between boats and ship-to-coast.
Channel 13 — Navigation purposes at bridges, locks, and harbors.
Channel 16 — Emergency, distress and safety calls to Coast Guard and others, and to initiate calls to other vessels. Contact the other vessel, agree to another channel, and then switch.
Channel 22A — Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.
Channels 68, 69, 71, 72 and 78A — Recreational boat channels.

Getting and Giving Help — Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.
http://www.nws.noaa.gov/nwr/

Quick References
- Nautical chart related products and information — http://www.nauticalcharts.noaa.gov
- Interactive chart catalog — http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml
- Coast Pilot online — http://www.nauticalcharts.noaa.gov/mcd/updates/LNM_NM.html
- Tides and Currents — http://tidesandcurrents.noaa.gov
- National Data Buoy Center — http://www.ndbc.noaa.gov/
- NowCoast web portal for coastal conditions — http://www.nowcoast.noaa.gov/
- National Hurricane Center — http://www.nhc.noaa.gov/
- Pacific Tsunami Warning Center — http://ptwc.weather.gov/
- Contact Us — http://www.nauticalcharts.noaa.gov/staff/contact.htm

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This Booklet chart has been designed for duplex printing (printed on front and back of one sheet). If a duplex option is not available on your printer, you may print each sheet and arrange them back-to-back to allow for the proper layout when viewing.