

COLUMBIA RIVER

TO CORRECT TIME OF HIGH OR LOW WATERS FOR PORTS
GIVEN BELOW, ADD OR SUBTRACT FROM
ASTORIA (TONGUE POINT) DISTRICT TIDE TABLES.

	HIGH	LOW
ENTRANCE (NORTH JETTY)	-0:44	-1:00
ILWACO BAKER BAY, WA.....	-0:13	+0:01
CHINOOK BAKER BAY, WA.....	-0:30	-0:52
POINT ADAMS, OR	-0:25	-0:38
SKIPANON RIVER, OR	-0:13	-0:19
ASTORIA PORT DOCKS.....	-0:08	-0:03
ASTORIA (TONGUE PT), OR	00:00	00:00
HARRINGTON PT, WA	+0:21	+0:52
SKAMOKAWA, WA	+0:56	+1:45
WAUNA, OR	+1:17	+2:19
EAGLE CLIFF, WA	+1:43	+3:01
LONGVIEW, WA.....	+2:27	+4:14
KALAMA, WA	+2:54	+4:55
ST HELENS, OR	+3:31	+5:44
KELLEY PT, OR	+5:26	+7:16
VANCOUVER, WA	+5:45	+7:38

WASHINGTON - OREGON COAST

	HIGH	FT. HIGH
WEDDERBURN	-1:38	-1.8
PORT ORFORD	-1:40	-1.2
BANDON.....	-1:24	-1.5
EMPIRE	-0:35	-1.8
COOS BAY (PORT).....	+0:14	-1.1
UMPQUA RIVER, ENTRANCE	-1:07	-1.5
GARDINER.....	-0:16	-1.7
SIUSLAW RIVER, ENTRANCE	-1:18	-1.1
WALDPORT.....	-0:51	-0.8
NEWPORT.....	-1:03	-0.5
YAQUINA	-0:52	-0.3
TOLEDO	-0:18	-0.4
NESTUCCA BAY, ENTRANCE	-0:52	-0.9
GARIBALDI	-0:33	-0.7
NEHALEM.....	-0:30	-1.3
LONG BEACH	-1:06	-0.3
NAHCOTTA	+1:09	+1.6
SOUTH BEND	-0:05	+1.3
WILLAPA BAY	+0:12	-0.3
WESTPORT.....	-1:06	0.0
ABERDEEN	-0:01	+1.6
NEAH BAY	-0:38	-0.7

COVER PHOTO BY CAPTAIN MITCH ALLGOWER
WHILE TRANSITING TO O DOCK ABOVE THE BROADWAY BRIDGE
IN THE WILLAMETTE RIVER

JANUARY 2024

TONGUE POINT PACIFIC STANDARD TIME

ASTORIA TIDES

Date	time	ht.	time	ht.	time	ht.	time	ht.	time	ht.	
1 Mon	0505	H	7.8	L	1044	L	3.4	H	1613	L	1.1
2 Tue	0539	H	7.9	L	1136	L	3.2	H	1707	L	1.7
3 Wed	0614	H	8.0	L	1236	L	3.0	H	1814	H	...
4 Thu	0007	L	2.3	H	0652	H	8.2	L	1343	L	5.9
5 Fri	0058	L	3.0	H	0735	H	8.4	L	1449	L	5.9
6 Sat	0159	L	3.6	H	0821	H	8.7	L	1550	L	6.3
7 Sun	0304	L	4.0	H	0910	H	9.0	L	1644	L	6.8
8 Mon	0406	L	4.2	H	1001	H	9.4	L	1735	L	0.0
9 Tue	0013	H	7.2	L	0504	L	4.3	H	1052	H	...
10 Wed	0100	H	7.6	L	0559	L	4.1	H	1142	H	...
11 Thu	0144	H	7.9	L	0651	L	3.8	H	1232	H	...
12 Fri	0225	H	8.2	L	0742	L	3.4	H	1322	H	...
13 Sat	0306	H	8.4	L	0832	L	3.0	H	1412	H	...
14 Sun	0345	H	8.6	L	0923	L	2.5	H	1504	H	...
15 Mon	0425	H	8.8	L	1016	L	2.2	H	1600	H	...

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Date	time	ht.	time	ht.	time	ht.	time	ht.	time	ht.	
16 Tue	0506	H	9.0	L	1113	L	1.9	H	1700	L	0.7
17 Wed	0549	H	9.1	L	1218	L	1.7	H	1809	H	...
18 Thu	0002	L	1.7	H	0635	H	9.2	L	1329	L	6.6
19 Fri	0057	L	2.6	H	0727	H	9.2	L	1442	L	6.4
20 Sat	0202	L	3.4	H	0822	H	9.2	L	1551	L	6.7
21 Sun	0311	L	3.9	H	0920	H	9.2	L	1652	L	7.1
22 Mon	0416	L	4.1	H	1017	H	9.2	L	1745	L	...
23 Tue	0011	H	7.5	L	0516	L	4.0	H	1109	H	...
24 Wed	0056	H	7.8	L	0609	L	3.9	H	1156	H	...
25 Thu	0137	H	8.0	L	0656	L	3.6	H	1239	H	...
26 Fri	0214	H	8.1	L	0739	L	3.3	H	1320	H	...
27 Sat	0247	H	8.1	L	0819	L	3.1	H	1358	H	...
28 Sun	0317	H	8.2	L	0857	L	2.8	H	1435	H	...
29 Mon	0345	H	8.2	L	0934	L	2.6	H	1513	H	...
30 Tue	0410	H	8.3	L	1011	L	2.4	H	1553	H	...
31 Wed	0435	H	8.4	L	1052	L	2.3	H	1640	H	...

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"When you reach the end of your rope, tie a knot and hang on"

— Abraham Lincoln

● -new Moon ○ -first quarter ○ -full Moon ● -last quarter

FEBRUARY 2024

TONGUE POINT PACIFIC STANDARD TIME

Date	time	ht.	time	ht.	time	ht.	time	ht.	time	ht.		
1 Thu	0503	H	8.5	1140	L	2.2	1738	H	6.3	2309	L	2.6
2 Fri	0536	H	8.5	1240	L	2.0	1855	H	5.8	2353	L	3.3
3 Sat	0620	H	8.6	1353	L	1.8	2027	H	5.7	....	....	...
4 Sun	0056	L	4.0	0715	H	8.7	1509	L	1.3	2153	H	6.0
5 Mon	0219	L	4.5	0820	H	8.8	1615	L	0.7	2300	H	6.6
6 Tue	0338	L	4.5	0929	H	9.1	1712	L	0.0	2352	H	7.1
7 Wed	0446	L	4.2	1033	H	9.5	1803	L	-0.6	....	....	...
8 Thu	0037	H	7.6	0545	L	3.6	1131	H	9.9	1849	L	-1.1
9 Fri	0117	H	8.0	0639	L	3.0	1226	H	10.1	1931	L	-1.4
10 Sat	0155	H	8.4	0730	L	2.3	1317	H	10.1	2011	L	-1.3
11 Sun	0232	H	8.8	0820	L	1.6	1409	H	9.8	2049	L	-1.0
12 Mon	0308	H	9.2	0909	L	1.1	1500	H	9.3	2126	L	-0.4
13 Tue	0345	H	9.4	1000	L	0.8	1554	H	8.5	2204	L	0.4
14 Wed	0423	H	9.5	1053	L	0.7	1652	H	7.7	2243	L	1.3
15 Thu	0503	H	9.4	1152	L	0.8	1758	H	6.9	2327	L	2.3



Date	time	ht.	time	ht.	time	ht.	time	ht.	time	ht.		
16 Fri	0548	H	9.2	1300	L	0.9	1915	H	6.4	....	....	...
17 Sat	0022	L	3.3	0641	H	8.8	1416	L	0.9	2040	H	6.3
18 Sun	0134	L	4.0	0745	H	8.5	1531	L	0.8	2200	H	6.6
19 Mon	0255	L	4.2	0856	H	8.4	1635	L	0.5	2303	H	7.0
20 Tue	0407	L	4.1	1003	H	8.4	1728	L	0.2	2352	H	7.4
21 Wed	0507	L	3.7	1100	H	8.5	1811	L	-0.1	....	....	...
22 Thu	0032	H	7.8	0558	L	3.2	1148	H	8.6	1849	L	-0.2
23 Fri	0108	H	8.0	0642	L	2.8	1230	H	8.6	1921	L	-0.1
24 Sat	0139	H	8.1	0722	L	2.3	1309	H	8.5	1950	L	0.0
25 Sun	0208	H	8.2	0800	L	2.0	1347	H	8.3	2017	L	0.3
26 Mon	0233	H	8.3	0835	L	1.6	1423	H	8.0	2042	L	0.6
27 Tue	0255	H	8.4	0908	L	1.4	1500	H	7.7	2105	L	1.1
28 Wed	0316	H	8.6	0941	L	1.2	1540	H	7.3	2130	L	1.6
29 Thu	0338	H	8.7	1015	L	1.2	1624	H	6.8	2157	L	2.2



"Do what you can, with what you have, where you are."

— Theodore Roosevelt

MARCH 2024

ASTORIA TIDES

TONGUE POINT PACIFIC STANDARD TIME

Date	time	ht.	time	ht.	time	ht.	time	ht.	time	ht.
1 Fri	0405	H 8.8	1056	L 1.2	1718	H 6.3	2230	L 2.9		
2 Sat	0440	H 8.8	1149	L 1.3	1830	H 5.9	2314	L 3.6		
3 Sun	0526	H 8.6	1303	L 1.3	2000	H 5.7	....	...
4 Mon	0019	L 4.2	0628	H 8.5	1429	L 1.1	2126	H 6.0		
5 Tue	0154	L 4.5	0747	H 8.4	1544	L 0.6	2231	H 6.5		
6 Wed	0323	L 4.2	0909	H 8.6	1644	L 0.0	2321	H 7.1		
7 Thu	0432	L 3.5	1020	H 9.0	1734	L -0.6	....	...
8 Fri	0002	H 7.7	0531	L 2.6	1122	H 9.3	1819	L -0.9		
9 Sat	0040	H 8.3	0625	L 1.7	1218	H 9.5	1901	L -1.0		
10 Sun	0117	H 8.8	0816	L 0.8	1410	H 9.5	2040	L -0.7		
Daylight Saving Begins 0200										
11 Mon	0252	H 9.2	0905	L 0.1	1502	H 9.2	2118	L -0.3		
12 Tue	0328	H 9.6	0953	L -0.3	1554	H 8.7	2156	L 0.4		
13 Wed	0403	H 9.7	1041	L -0.4	1648	H 8.1	2234	L 1.2		
14 Thu	0440	H 9.6	1131	L -0.3	1745	H 7.4	2314	L 2.1		
15 Fri	0520	H 9.3	1226	L 0.1	1849	H 6.8	....	...

Date	time	ht.	time	ht.	time	ht.	time	ht.	time	ht.
16 Sat	0000	L 3.0	0606	H 8.8	1330	L 0.6	2002	H 6.4		
17 Sun	0059	L 3.7	0702	H 8.2	1445	L 0.9	2121	H 6.3		
18 Mon	0218	L 4.1	0813	H 7.7	1601	L 0.9	2236	H 6.6		
19 Tue	0343	L 4.1	0934	H 7.5	1705	L 0.7	2334	H 7.0		
20 Wed	0455	L 3.6	1046	H 7.6	1756	L 0.5	....	...
21 Thu	0019	H 7.4	0552	L 3.0	1145	H 7.8	1837	L 0.3		
22 Fri	0056	H 7.7	0640	L 2.4	1233	H 7.9	1912	L 0.3		
23 Sat	0128	H 8.0	0722	L 1.8	1316	H 7.9	1943	L 0.4		
24 Sun	0156	H 8.2	0801	L 1.3	1356	H 7.9	2012	L 0.6		
25 Mon	0221	H 8.4	0837	L 0.8	1435	H 7.8	2039	L 1.0		
26 Tue	0244	H 8.5	0911	L 0.5	1513	H 7.6	2106	L 1.4		
27 Wed	0306	H 8.7	0943	L 0.3	1552	H 7.4	2133	L 1.9		
28 Thu	0327	H 8.8	1015	L 0.2	1633	H 7.1	2200	L 2.4		
29 Fri	0353	H 8.9	1048	L 0.2	1718	H 6.7	2231	L 2.9		
30 Sat	0424	H 9.0	1128	L 0.4	1812	H 6.4	2308	L 3.4		
31 Sun	0503	H 8.8	1220	L 0.6	1920	H 6.0	2357	L 3.9		

"It's never too late to be what you might've been."

— George Eliot

● -new Moon ○ -first quarter ○ -full Moon ● -last quarter

APRIL 2024

ASTORIA TIDES

TONGUE POINT DAYLIGHT SAVING TIME

Date	time	ht.	time	ht.	time	ht.	time	ht.
1 Mon	0554	H 8.5	1331	L 0.8	2039	H 6.0	....	ht. ...
2 Tue	0111	L 4.2	0703	H 8.2	1454	L 0.7	2153	H 6.2
3 Wed	0248	L 4.1	0829	H 8.0	1608	L 0.4	2252	H 6.7
4 Thu	0411	L 3.4	0955	H 8.0	1707	L 0.0	2339	H 7.4
5 Fri	0519	L 2.5	1108	H 8.3	1757	L -0.2	....	...
6 Sat	0020	H 8.1	0616	L 1.4	1211	H 8.6	1842	L -0.3
7 Sun	0058	H 8.7	0709	L 0.4	1308	H 8.7	1925	L 0.0
8 Mon	0135	H 9.2	0759	L -0.4	1402	H 8.6	2006	L 0.4
9 Tue	0211	H 9.6	0848	L -1.0	1455	H 8.4	2047	L 0.9
10 Wed	0247	H 9.8	0935	L -1.2	1548	H 8.1	2127	L 1.6
11 Thu	0324	H 9.8	1022	L -1.1	1642	H 7.7	2209	L 2.2
12 Fri	0403	H 9.5	1110	L -0.8	1738	H 7.3	2253	L 2.9
13 Sat	0444	H 9.0	1201	L -0.2	1838	H 6.9	2343	L 3.5
14 Sun	0531	H 8.4	1300	L 0.4	1944	H 6.6	....	...
15 Mon	0045	L 3.9	0629	H 7.7	1408	L 0.8	2053	H 6.6



Date	time	ht.	time	ht.	time	ht.	time	ht.
16 Tue	0203	L 4.0	0743	H 7.1	1517	L 1.0	2156	H 6.8
17 Wed	0323	L 3.7	0905	H 6.8	1618	L 1.0	2249	H 7.1
18 Thu	0432	L 3.1	1019	H 6.8	1707	L 0.9	2332	H 7.5
19 Fri	0528	L 2.3	1120	H 7.0	1747	L 0.9	....	...
20 Sat	0008	H 7.8	0615	L 1.6	1212	H 7.1	1823	L 1.1
21 Sun	0039	H 8.1	0657	L 0.9	1258	H 7.2	1857	L 1.3
22 Mon	0106	H 8.4	0736	L 0.4	1341	H 7.3	1929	L 1.6
23 Tue	0132	H 8.6	0812	L 0.0	1423	H 7.3	2001	L 2.0
24 Wed	0156	H 8.7	0847	L -0.3	1505	H 7.3	2033	L 2.4
25 Thu	0221	H 8.9	0921	L -0.4	1547	H 7.2	2106	L 2.8
26 Fri	0248	H 9.0	0956	L -0.5	1631	H 7.0	2140	L 3.2
27 Sat	0320	H 9.1	1033	L -0.4	1718	H 6.8	2217	L 3.5
28 Sun	0358	H 9.0	1116	L -0.3	1811	H 6.6	2302	L 3.7
29 Mon	0444	H 8.8	1208	L 0.0	1911	H 6.4	....	...
30 Tue	0000	L 3.9	0541	H 8.4	1311	L 0.2	2013	H 6.5



"Quality is not an act, it is a habit."

— Aristotle

● -new Moon ○ -first quarter ○ -full Moon ● -last quarter

Date	time	ht.	time	ht.	time	ht.	time	ht.
1 Wed	0117	L	0653	H	7.9	L	1421	L
2 Thu	0242	L	0818	H	7.5	L	1526	L
3 Fri	0359	L	0942	H	7.4	L	1624	L
4 Sat	0504	L	1056	H	7.5	L	1715	L
5 Sun	0601	L	1201	H	7.7	L	1802	L
6 Mon	0016	H	0654	L	-0.6	H	1300	H
7 Tue	0054	H	0744	L	-1.2	H	1356	H
8 Wed	0133	H	0832	L	-1.5	H	1449	H
9 Thu	0212	H	0919	L	-1.6	H	1542	H
10 Fri	0252	H	1005	L	-1.3	H	1635	H
11 Sat	0333	H	1052	L	-0.9	H	1728	H
12 Sun	0417	H	1139	L	-0.4	H	1822	H
13 Mon	0505	H	1229	L	0.2	H	1917	H
14 Tue	0029	L	0602	H	7.4	L	1323	L
15 Wed	0138	L	0710	H	6.8	L	1419	L

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Date	time	ht.	time	ht.	time	ht.	time	ht.
16 Thu	0251	L	0826	H	6.3	L	1514	L
17 Fri	0358	L	0941	H	6.2	L	1603	L
18 Sat	0455	L	1048	H	6.2	L	1647	L
19 Sun	0543	L	1146	H	6.4	L	1728	L
20 Mon	0627	L	1238	H	6.6	L	1808	L
21 Tue	0014	H	0708	L	-0.1	H	1326	H
22 Wed	0043	H	0748	L	-0.5	H	1412	H
23 Thu	0114	H	0827	L	-0.7	H	1457	H
24 Fri	0146	H	0905	L	-0.9	H	1542	H
25 Sat	0222	H	0945	L	-1.0	H	1627	H
26 Sun	0302	H	1026	L	-1.0	H	1713	H
27 Mon	0347	H	1110	L	-0.9	H	1801	H
28 Tue	0439	H	1157	L	-0.6	H	1850	H
29 Wed	0004	L	0539	H	8.2	L	1249	L
30 Thu	0115	L	0649	H	7.6	L	1345	L
31 Fri	0231	L	0809	H	7.0	L	1443	L

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"Our greatest weakness lies in giving up. The most certain way to succeed is always to try just one more time."

JUNE 2024

TONGUE POINT DAYLIGHT SAVING TIME

ASTORIA TIDES

Date	time	ht.	time	ht.	time	ht.	time	ht.	time	ht.
1 Sat	0343	L 1.6	0930	H 6.8	1539	L 1.0	2208	H 8.5		
2 Sun	0447	L 0.6	1046	H 6.8	1633	L 1.4	2253	H 9.1		
3 Mon	0546	L -0.3	1153	H 6.9	1725	L 1.9	2337	H 9.4		
4 Tue	0640	L -1.0	1255	H 7.1	1816	L 2.3	....	...
5 Wed	0020	H 9.7	0731	L -1.4	1351	H 7.3	1907	L 2.7		
6 Thu ●	0103	H 9.7	0819	L -1.6	1444	H 7.4	1957	L 3.0		
7 Fri	0146	H 9.5	0906	L -1.5	1534	H 7.5	2047	L 3.2		
8 Sat	0230	H 9.3	0951	L -1.2	1623	H 7.4	2135	L 3.3		
9 Sun	0313	H 8.9	1033	L -0.9	1709	H 7.3	2223	L 3.3		
10 Mon	0358	H 8.4	1114	L -0.5	1754	H 7.2	2312	L 3.3		
11 Tue	0444	H 7.8	1153	L 0.0	1838	H 7.1	....	...
12 Wed	0004	L 3.2	0535	H 7.2	1233	L 0.4	1921	H 7.1		
13 Thu	0103	L 3.0	0634	H 6.5	1316	L 0.9	2004	H 7.2		
14 Fri ●	0207	L 2.7	0743	H 6.0	1401	L 1.4	2046	H 7.4		
15 Sat	0312	L 2.2	0858	H 5.7	1451	L 1.9	2126	H 7.6		

Date	time	ht.	time	ht.	time	ht.	time	ht.
16 Sun	0413	L 1.6	1012	H 5.6	1541	L 2.4	2206	H 7.9
17 Mon	0507	L 0.9	1119	H 5.8	1632	L 2.8	2244	H 8.2
18 Tue	0556	L 0.3	1219	H 6.2	1721	L 3.1	2323	H 8.5
19 Wed	0642	L -0.3	1311	H 6.5	1810	L 3.4	....	...
20 Thu	0002	H 8.8	0726	L -0.7	1400	H 6.8	1859	L 3.5
21 Fri	0042	H 9.0	0809	L -1.0	1446	H 7.0	1947	L 3.5
22 Sat ○	0124	H 9.2	0852	L -1.3	1530	H 7.1	2034	L 3.4
23 Sun	0209	H 9.3	0933	L -1.4	1612	H 7.2	2121	L 3.2
24 Mon	0255	H 9.2	1014	L -1.5	1654	H 7.3	2210	L 3.0
25 Tue	0345	H 9.0	1055	L -1.3	1735	H 7.4	2302	L 2.6
26 Wed	0438	H 8.6	1137	L -1.0	1817	H 7.6	2359	L 2.3
27 Thu	0537	H 7.9	1221	L -0.5	1900	H 7.9	....	...
28 Fri ●	0103	L 1.9	0644	H 7.2	1308	L 0.2	1946	H 8.2
29 Sat	0213	L 1.4	0800	H 6.5	1401	L 1.0	2034	H 8.5
30 Sun	0324	L 0.8	0920	H 6.2	1458	L 1.7	2124	H 8.8

"Wrinkles will only go where the smiles have been."

— Jimmy Buffet

● -new Moon ○ -first quarter ○ -full Moon ● -last quarter

Date	time	ht.	time	ht.	time	ht.	time	ht.
1 Mon	0431	L 0.1	1039	H 6.2	1558	L 2.3	2216	H 9.0
2 Tue	0532	L -0.6	1149	H 6.4	1658	L 2.8	2307	H 9.2
3 Wed	0628	L -1.0	1251	H 6.8	1757	L 3.0	2357	H 9.2
4 Thu	0720	L -1.3	1345	H 7.0	1852	L 3.1	....	...
5 Fri	0045	H 9.2	0808	L -1.4	1434	H 7.2	1945	L 3.1
6 Sat	0132	H 9.0	0852	L -1.3	1519	H 7.3	2035	L 3.0
7 Sun	0217	H 8.8	0933	L -1.2	1601	H 7.4	2121	L 2.9
8 Mon	0300	H 8.5	1009	L -0.9	1640	H 7.3	2205	L 2.7
9 Tue	0342	H 8.1	1042	L -0.6	1715	H 7.3	2248	L 2.5
10 Wed	0425	H 7.5	1113	L -0.2	1749	H 7.3	2333	L 2.4
11 Thu	0510	H 7.0	1143	L 0.3	1822	H 7.3	....	...
12 Fri	0021	L 2.2	0600	H 6.3	1215	L 0.9	1855	H 7.4
13 Sat	0115	L 2.0	0701	H 5.7	1252	L 1.6	1930	H 7.5
14 Sun	0217	L 1.8	0815	H 5.3	1338	L 2.3	2010	H 7.6
15 Mon	0323	L 1.4	0936	H 5.2	1435	L 2.9	2056	H 7.8

Date	time	ht.	time	ht.	time	ht.	time	ht.
16 Tue	0426	L 0.8	1054	H 5.4	1540	L 3.4	2146	H 8.0
17 Wed	0524	L 0.3	1159	H 5.9	1644	L 3.6	2239	H 8.3
18 Thu	0616	L -0.3	1254	H 6.3	1743	L 3.6	2331	H 8.6
19 Fri	0705	L -0.8	1342	H 6.7	1839	L 3.4	....	...
20 Sat	0022	H 8.9	0750	L -1.3	1425	H 7.0	1931	L 3.1
21 Sun	0113	H 9.2	0833	L -1.6	1505	H 7.2	2021	L 2.7
22 Mon	0202	H 9.3	0914	L -1.8	1544	H 7.5	2110	L 2.2
23 Tue	0252	H 9.2	0953	L -1.8	1621	H 7.7	2159	L 1.7
24 Wed	0342	H 8.8	1031	L -1.5	1658	H 8.0	2250	L 1.3
25 Thu	0435	H 8.3	1109	L -0.9	1736	H 8.2	2344	L 0.9
26 Fri	0533	H 7.5	1149	L -0.2	1816	H 8.4	....	...
27 Sat	0043	L 0.7	0638	H 6.7	1233	L 0.7	1900	H 8.5
28 Sun	0150	L 0.5	0752	H 6.1	1324	L 1.7	1950	H 8.5
29 Mon	0303	L 0.2	0913	H 5.8	1426	L 2.5	2046	H 8.5
30 Tue	0415	L -0.1	1034	H 5.9	1536	L 3.0	2147	H 8.5
31 Wed	0521	L -0.5	1145	H 6.2	1646	L 3.2	2249	H 8.5

"Don't cry because it's over. Smile because it happened."

— Dr. Seuss

AUGUST 2024

TONGUE POINT DAYLIGHT SAVING TIME

Date	time	ht.	time	ht.	time	ht.	time	ht.
1 Thu	0618	L -0.8	1243	H 6.7	1749	L 3.1	2346	H 8.6
2 Fri	0708	L -1.1	1331	H 7.0	1845	L 2.9	....	...
3 Sat	0038	H 8.6	0753	L -1.2	1414	H 7.2	1936	L 2.6
4 Sun	0124	H 8.5	0832	L -1.1	1453	H 7.3	2021	L 2.3
5 Mon	0207	H 8.3	0907	L -1.0	1527	H 7.4	2104	L 2.0
6 Tue	0248	H 8.1	0937	L -0.7	1559	H 7.4	2143	L 1.7
7 Wed	0327	H 7.7	1005	L -0.4	1627	H 7.4	2221	L 1.5
8 Thu	0406	H 7.2	1031	L 0.1	1653	H 7.5	2258	L 1.4
9 Fri	0447	H 6.7	1056	L 0.6	1717	H 7.5	2337	L 1.3
10 Sat	0533	H 6.2	1124	L 1.2	1744	H 7.6	....	...
11 Sun	0022	L 1.2	0628	H 5.6	1156	L 1.9	1816	H 7.6
12 Mon	0117	L 1.2	0739	H 5.2	1239	L 2.7	1857	H 7.6
13 Tue	0227	L 1.1	0905	H 5.1	1339	L 3.3	1950	H 7.6
14 Wed	0343	L 0.8	1029	H 5.3	1459	L 3.7	2056	H 7.7
15 Thu	0451	L 0.3	1137	H 5.7	1619	L 3.7	2206	H 7.9

Date	time	ht.	time	ht.	time	ht.	time	ht.
16 Fri	0549	L -0.3	1230	H 6.2	1726	L 3.4	2312	H 8.3
17 Sat	0640	L -0.9	1313	H 6.7	1823	L 2.8	....	...
18 Sun	0010	H 8.7	0725	L -1.4	1352	H 7.1	1916	L 2.2
19 Mon	0104	H 9.0	0807	L -1.7	1429	H 7.5	2006	L 1.5
20 Tue	0155	H 9.1	0846	L -1.7	1459	H 7.9	2055	L 0.8
21 Wed	0246	H 8.9	0924	L -1.5	1540	H 8.3	2143	L 0.2
22 Thu	0337	H 8.5	1001	L -1.0	1615	H 8.6	2233	L -0.2
23 Fri	0430	H 7.9	1038	L -0.3	1652	H 8.8	2324	L -0.3
24 Sat	0527	H 7.2	1118	L 0.6	1732	H 8.8	....	...
25 Sun	0021	L -0.2	0631	H 6.5	1202	L 1.6	1817	H 8.6
26 Mon	0126	L 0.0	0745	H 5.9	1256	L 2.5	1910	H 8.3
27 Tue	0240	L 0.1	0906	H 5.8	1407	L 3.1	2015	H 7.9
28 Wed	0357	L 0.0	1026	H 6.0	1528	L 3.4	2128	H 7.7
29 Thur	0505	L -0.2	1132	H 6.4	1642	L 3.2	2239	H 7.8
30 Fri	0601	L -0.5	1224	H 6.8	1745	L 2.8	2340	H 7.9
31 Sat	0648	L -0.7	1307	H 7.2	1837	L 2.2	....	...

"It takes half your life before you discover life is a do-it-yourself project."

— Napoleon Hill

OCTOBER 2024

ASTORIA TIDES

TONGUE POINT DAYLIGHT SAVING TIME

Date	time	ht.	time	ht.	time	ht.	time	ht.	time	ht.		
1 Tue	0102	H	7.6	0722	L	0.2	1333	H	8.0	1943	L	0.5
2 Wed	0143	H	7.5	0752	L	0.5	1359	H	8.1	2019	L	0.2
3 Thu	0222	H	7.4	0820	L	0.9	1422	H	8.2	2053	L	-0.1
4 Fri	0301	H	7.2	0848	L	1.4	1444	H	8.3	2125	L	-0.2
5 Sat	0340	H	7.0	0915	L	1.9	1505	H	8.4	2157	L	-0.2
6 Sun	0421	H	6.8	0943	L	2.4	1529	H	8.5	2229	L	-0.1
7 Mon	0505	H	6.4	1014	L	2.9	1559	H	8.4	2306	L	0.1
8 Tue	0557	H	6.1	1050	L	3.3	1636	H	8.3	2353	L	0.4
9 Wed	0701	H	5.8	1138	L	3.8	1725	H	8.0	....	....	....
10 Thu	0058	L	0.6	0815	H	5.8	1249	L	4.0	1830	H	7.6
11 Fri	0220	L	0.7	0927	H	6.0	1425	L	3.9	1957	H	7.3
12 Sat	0335	L	0.4	1025	H	6.5	1549	L	3.3	2127	H	7.4
13 Sun	0436	L	0.1	1112	H	7.1	1656	L	2.3	2243	H	7.7
14 Mon	0527	L	-0.1	1152	H	7.8	1752	L	1.2	2347	H	8.0
15 Tue	0612	L	-0.2	1228	H	8.5	1844	L	0.1	....	....	....

Date	time	ht.	time	ht.	time	ht.	time	ht.	time	ht.		
16 Wed	0044	H	8.3	0655	L	0.0	1304	H	9.1	1933	L	-0.8
17 Thu	0138	H	8.3	0736	L	0.4	1340	H	9.6	2021	L	-1.4
18 Fri	0231	H	8.3	0818	L	1.0	1417	H	9.8	2108	L	-1.7
19 Sat	0324	H	8.0	0900	L	1.6	1455	H	9.8	2156	L	-1.6
20 Sun	0418	H	7.7	0944	L	2.2	1535	H	9.6	2245	L	-1.3
21 Mon	0515	H	7.3	1030	L	2.8	1618	H	9.1	2337	L	-0.7
22 Tue	0615	H	7.0	1122	L	3.3	1707	H	8.5	....	....	....
23 Wed	0035	L	-0.1	0720	H	6.8	1226	L	3.7	1807	H	7.7
24 Thu	0141	L	0.5	0828	H	6.7	1344	L	3.8	1922	H	7.1
25 Fri	0251	L	0.8	0931	H	6.9	1505	L	3.5	2046	H	6.7
26 Sat	0353	L	0.9	1025	H	7.2	1616	L	2.8	2202	H	6.7
27 Sun	0444	L	0.9	1109	H	7.6	1713	L	2.0	2306	H	6.9
28 Mon	0527	L	1.0	1146	H	8.0	1800	L	1.3	2359	H	7.0
29 Tue	0604	L	1.2	1218	H	8.3	1842	L	0.6	....	....	....
30 Wed	0046	H	7.2	0638	L	1.5	1246	H	8.5	1920	L	0.1
31 Thu	0129	H	7.3	0711	L	1.8	1312	H	8.7	1956	L	-0.2

"To give anything less than your best, is to sacrifice the gift."

● -new Moon ○ -first quarter ○ -full Moon ● -last quarter

— Steve Prefontaine

NOVEMBER 2024

TONGUE POINT DAYLIGHT SAVING TIME

Date	time	ht.	time	ht.	time	ht.	time	ht.
1 Fri	● 0211	H 7.3	0743	L 2.3	1336	H 8.8	2031	L -0.4
2 Sat	0252	H 7.3	0816	L 2.7	1401	H 8.9	2104	L -0.5
3 Sun	0234	H 7.2	0748	L 3.1	1327	H 9.0	2038	L -0.4
Daylight Saving Time Ends 0200								
4 Mon	0316	H 7.1	0822	L 3.4	1357	H 9.0	2113	L -0.3
5 Tue	0401	H 6.9	0859	L 3.7	1433	H 8.9	2152	L -0.2
6 Wed	0450	H 6.7	0941	L 3.9	1515	H 8.7	2238	L 0.1
7 Thu	0545	H 6.6	1035	L 4.1	1608	H 8.3	2335	L 0.3
8 Fri	0645	H 6.6	1147	L 4.0	1716	H 7.7	....	...
9 Sat	● 0041	L 0.6	0743	H 6.9	1313	L 3.7	1841	H 7.3
10 Sun	0148	L 0.7	0836	H 7.4	1432	L 2.8	2009	H 7.2
11 Mon	0249	L 0.8	0923	H 8.0	1538	L 1.7	2128	H 7.3
12 Tue	0342	L 0.9	1005	H 8.7	1635	L 0.6	2236	H 7.6
13 Wed	0431	L 1.2	1045	H 9.4	1728	L -0.4	2336	H 7.8
14 Thu	0518	L 1.6	1125	H 9.9	1818	L -1.2	....	...
15 Fri	○ 0033	H 8.0	0605	L 2.0	1205	H 10.3	1907	L -1.6

Date	time	ht.	time	ht.	time	ht.	time	ht.
16 Sat	0127	H 8.1	0651	L 2.5	1245	H 10.3	1955	L -1.7
17 Sun	0219	H 8.1	0739	L 2.9	1327	H 10.2	2042	L -1.5
18 Mon	0312	H 7.9	0827	L 3.2	1410	H 9.8	2129	L -1.1
19 Tue	0405	H 7.8	0917	L 3.5	1456	H 9.2	2217	L -0.5
20 Wed	0458	H 7.6	1010	L 3.7	1546	H 8.6	2307	L 0.1
21 Thu	0553	H 7.4	1110	L 3.8	1642	H 7.8	2359	L 0.7
22 Fri	0648	H 7.4	1218	L 3.8	1750	H 7.1	....	...
23 Sat	● 0054	L 1.2	0741	H 7.5	1332	L 3.4	1907	H 6.6
24 Sun	0149	L 1.6	0830	H 7.7	1442	L 2.8	2025	H 6.3
25 Mon	0241	L 1.9	0913	H 8.0	1541	L 2.0	2135	H 6.4
26 Tue	0328	L 2.2	0951	H 8.3	1631	L 1.3	2236	H 6.6
27 Wed	0411	L 2.5	1026	H 8.6	1715	L 0.6	2329	H 6.9
28 Thu	0452	L 2.9	1057	H 8.9	1756	L 0.1	....	...
29 Fri	0017	H 7.2	0532	L 3.2	1128	H 9.1	1835	L -0.2
30 Sat	0102	H 7.4	0612	L 3.5	1158	H 9.3	1912	L -0.4

“Love and compassion are necessities, not luxuries. Without them humanity cannot survive.”

— Dalai Lama

DECEMBER 2024

ASTORIA TIDES

TONGUE POINT PACIFIC STANDARD TIME

Date	time	ht.	time	ht.	time	ht.	time	ht.	time	ht.
1 Sun	● 0145	H 7.5	0652	L 3.8	1230	H 9.4	1949	L -0.5		
2 Mon	0228	H 7.6	0732	L 4.0	1304	H 9.5	2026	L -0.6		
3 Tue	0310	H 7.5	0812	L 4.0	1341	H 9.4	2104	L -0.5		
4 Wed	0352	H 7.5	0854	L 4.0	1423	H 9.3	2143	L -0.4		
5 Thu	0435	H 7.4	0941	L 4.0	1510	H 9.0	2226	L -0.2		
6 Fri	0520	H 7.5	1035	L 3.8	1605	H 8.5	2312	L 0.1		
7 Sat	0606	H 7.6	1140	L 3.5	1710	H 7.9	....	...
8 Sun	● 0004	L 0.6	0655	H 7.9	1255	L 3.0	1828	H 7.3		
9 Mon	0100	L 1.1	0744	H 8.4	1410	L 2.2	1954	H 6.9		
10 Tue	0159	L 1.6	0832	H 8.9	1518	L 1.3	2115	H 6.9		
11 Wed	0257	L 2.1	0920	H 9.5	1619	L 0.3	2228	H 7.2		
12 Thu	0354	L 2.6	1007	H 9.9	1715	L -0.5	2332	H 7.5		
13 Fri	0448	L 3.0	1053	H 10.3	1807	L -1.1	....	...
14 Sat	0029	H 7.8	0542	L 3.3	1139	H 10.4	1857	L -1.3		
15 Sun	○ 0122	H 8.1	0634	L 3.5	1225	H 10.4	1945	L -1.4		

Date	time	ht.	time	ht.	time	ht.	time	ht.
16 Mon	0213	H 8.2	0726	L 3.6	1310	H 10.1	2030	L -1.2
17 Tue	0301	H 8.2	0816	L 3.6	1356	H 9.8	2113	L -0.8
18 Wed	0347	H 8.1	0905	L 3.6	1442	H 9.2	2154	L -0.4
19 Thu	0431	H 8.0	0954	L 3.6	1529	H 8.6	2233	L 0.2
20 Fri	0514	H 7.9	1045	L 3.5	1619	H 7.9	2312	L 0.8
21 Sat	0556	H 7.9	1142	L 3.4	1715	H 7.1	2352	L 1.4
22 Sun	● 0638	H 7.9	1246	L 3.2	1822	H 6.5	....	...
23 Mon	0035	L 2.0	0721	H 8.0	1353	L 2.7	1939	H 6.1
24 Tue	0125	L 2.7	0803	H 8.2	1458	L 2.2	2058	H 6.0
25 Wed	0219	L 3.2	0845	H 8.4	1555	L 1.5	2210	H 6.3
26 Thu	0314	L 3.7	0927	H 8.7	1646	L 0.9	2312	H 6.7
27 Fri	0408	L 4.0	1008	H 8.9	1732	L 0.4	....	...
28 Sat	0004	H 7.1	0459	L 4.2	1049	H 9.2	1815	L 0.0
29 Sun	0051	H 7.4	0548	L 4.3	1130	H 9.4	1856	L -0.3
30 Mon	● 0134	H 7.7	0635	L 4.2	1211	H 9.6	1936	L -0.6
31 Tue	0214	H 7.8	0720	L 4.1	1253	H 9.7	2013	L -0.8

Merry Christmas and a Happy New Year from the Columbia River Pilots.

SUNRISE AND SUNSETASTORIA, OREGON
LOCAL TIME

DATE	RISE	SET	DATE	RISE	SET
JANUARY			JULY		
01	0758	1640	01	0528	2110
06	0758	1645	06	0532	2109
11	0756	1651	11	0536	2106
16	0753	1657	16	0540	2102
21	0750	1704	21	0545	2058
26	0745	1711	26	0551	2052
FEBRUARY			AUGUST		
01	0739	1720	01	0558	2044
06	0732	1727	06	0604	2037
11	0725	1735	11	0610	2030
16	0717	1742	16	0617	2021
21	0709	1750	21	0623	2013
26	0700	1757	26	0629	2004
MARCH			SEPTEMBER		
01	0653	1803	01	0637	1953
06	0644	1810	06	0643	1943
11	0734	1917	11	0649	1933
16	0725	1923	16	0656	1923
21	0715	1930	21	0702	1914
26	0705	1937	26	0708	1904
APRIL			OCTOBER		
01	0654	1945	01	0715	1854
06	0644	1952	06	0721	1844
11	0635	1958	11	0728	1835
16	0626	2005	16	0735	1826
21	0617	2012	21	0742	1817
26	0609	2018	26	0749	1809
MAY			NOVEMBER		
01	0601	2025	01	0757	1800
06	0553	2031	06	0704	1653
11	0547	2038	11	0712	1647
16	0541	2044	16	0719	1641
21	0535	2049	21	0726	1637
26	0531	2055	26	0732	1633
JUNE			DECEMBER		
01	0527	2100	01	0738	1631
06	0525	2104	06	0744	1630
11	0523	2107	11	0749	1629
16	0523	2109	16	0752	1630
21	0524	2111	21	0755	1632
26	0526	2111	26	0757	1635

MOON RISE AND MOON SETASTORIA, OREGON
LOCAL TIME

DATE	RISE	SET	DATE	RISE	SET
JANUARY			JULY		
01	2237	1118	01	0053	1618
06	0303	1241	06	0449	2122
11	0844	1700	11	1033	2301
16	1056	2354	16	1609	0011
21	1306	0458	21	2049	0436
26	1813	0845	26	2236	1127
FEBRUARY			AUGUST		
01		1024	01	0132	1841
06	0532	1316	06	0715	2052
11	0839	2012	11	1242	2212
16	1029	0135	16	1805	0055
21	1454	0621	21	2021	0746
26	2024	0800	26	2236	1433
MARCH			SEPTEMBER		
01		0908	01	0356	1842
06	0507	1319	06	0924	1958
11	0719	2028	11	1500	2238
16	0944	0149	16	1803	0349
21	1500	0518	21	1955	1056
26	2026	0637	26		1600
APRIL			OCTOBER		
01	0209	0949	01	0506	1735
06	0501	1630	06	1038	1910
11	0657	2329	11	1511	2357
16	1141	0257	16	1703	0530
21	1711	0429	21	2007	1223
26	2258	0611	26	0046	1513
MAY			NOVEMBER		
01	0216	1123	01	0719	1649
06	0402	1812	06	1232	2028
11	0710		11	1446	0140
16	1250	0205	16	1658	0842
21	1821	0323	21	2232	1257
26	2341	0640	26	0255	1418
JUNE			DECEMBER		
01	0147	1431	01	0834	1626
06	0402	2106	06	1210	2208
11	0929		11	1348	0323
16	1456	0110	16	1742	0942
21	2044	0329	21	2339	1154
26	2335	0942	26	0401	1318

NOTE: BLANK SPACES IN THE TABLE INDICATE THAT A RISING OR A SETTING DID NOT OCCUR DURING THAT 24-HR INTERVAL.

USEFUL MARINER'S MEASURES

- 1 FOOT = 0.3048 METERS
 1 METER = 3.28 FEET
 1 FATHOM = 6 FEET
 1 SHACKLE OR SHOT = 15 FATHOMS
 1 CABLE (INTERNATIONAL) = 1/10 NAUTICAL MILE
 1/10 NM = 608 FEET
 1 NM = 10 CABLES
 1 STATUE MILE = 5,280 FEET
 1 NAUTICAL MILE = 6076 FEET
 60 NAUTICAL MILES = 1 DEGREE OF LATITUDE
 1 COMPASS POINT = 11.25 DEGREES
 32 POINTS = 360 DEGREES

NAUTICAL MILES X 1.15 = STATUTE MILES

STATUTE MILES X .87 = NAUTICAL MILES

1 KNOT = SPEED OF 1 NAUTICAL MILE PER HOUR

1 KNOT = 1.15 MILES PER HOUR

1 KILOGRAM = 2.2046 POUNDS

1 FOOT PER SEC = 0.592 KNOTS

FAHRENHEIT & CENTIGRADE CONVERSION

$$F = (C \times 1.8) + 32$$

$$C = (F - 32) \times .55$$

$$\text{TIME IN MINUTES} = \frac{\text{DISTANCE IN NAUTICAL MILES}}{\text{SPEED IN KNOTS}} \times 60$$

$$\text{SPEED IN KNOTS} = \frac{\text{DISTANCE IN NAUTICAL MILES}}{\text{TIME IN MINUTES}} \times 60$$

$$\text{DISTANCE IN NM} = \frac{\text{SPEED IN KNOTS} \times \text{TIME IN MINUTES}}{60}$$

BEAUFORT WIND SCALE

BEAUFORT NO.	INDICATION	MILES PER HR
0	CALM	LESS THAN 1
1	LIGHT AIR	1 - 3
2	LIGHT BREEZE	4 - 7
3	GENTLE BREEZE	8 - 12
4	MODERATE BREEZE	13 - 18
5	FRESH BREEZE	19 - 24
6	STRONG BREEZE	25 - 31
7	MODERATE GALE	32 - 38
8	FRESH GALE	39 - 46
9	STRONG GALE	47 - 54
10	WHOLE GALE	55 - 63
11	STORM	64 - 72
12 - 17	HURRICANE	73 - 136

WIND CHILL TABLE

WHEN THE WIND BLOWS AT THE M.P.H. BELOW, IT REDUCES TEMPERATURE TO:

	CALM	5	10	15	20	25	30	35	40
+50	50	48	40	36	32	30	28	27	26
+40	40	37	28	22	18	16	13	11	10
+30	30	27	16	9	4	0	-2	-4	-6
+20	20	16	4	-5	-10	-15	-18	-20	-21
+10	10	6	-9	-18	-25	-29	-33	-35	-37
0	0	-5	-21	-36	-39	-44	-48	-49	-53
-10	-10	-15	-33	-45	-53	-59	-63	-67	-69
-20	-20	-26	-46	-58	-67	-74	-79	-82	-85
-30	-30	-36	-58	-72	-82	-88	-94	-98	-100
-40	-40	-47	-70	-88	-96	-104	-109	-113	-116
-50	-50	-57	-85	-99	-110	-118	-125	-129	-132
-60	-60	-68	-95	-112	-124	-133	-140	-145	-148

THERMOMETER READING

TO MEASURE SPEED OF WIND WITHOUT INSTRUMENTS:
 WHEN CALM — SMOKE RISES VERTICALLY; 1-12 MPH — JUST FEEL WIND ON FACE, LEAVES IN MOTION; 13-24 MPH — RAISES DUST OR LOOSE PAPER; SMALL BRANCHES MOVE, WIRES WHISTLE; 30-40 MPH — WHOLE TREES IN MOTION, HARD TO WALK AGAINST.

NAUTICAL MILES

NM	FEET
.01	61'
.03	122'
.05	304'
.07	425'
.08	486'
.09	547'
.10	608'
.11	668'
.12	729'
.13	790'
.14	851'
.15	911'
.16	972'
.17	1033'
.18	1093'
.19	1154'
.20	1215'
.21	1276'
.22	1337'
.23	1397'
.24	1458'
.25	1519'
.26	1580'
.27	1641'
.28	1701'
.29	1762'
.30	1823'
.32	1920'
.34	2040'
.35	2100'
.40	2340'
.45	2734'
.50	3038'
.70	4200'
.75	4557'
1	6076'

ASTORIA PILOT STATION

2.6	TONGUE POINT
5.2	2.6 | BEACON 52
8.7	6.1 | 3.5 | MILLER SANDS DIKE LT. 11
11	8.4 | 5.8 | 2.3 | PILLAR ROCK 17
13.9	11.3 | 8.7 | 5.2 | 2.9 | THREE TREE POINT
16.5	13.9 | 11.3 | 7.8 | 5.5 | 2.6 | SKAKOKAWA CREEK 33
18.2	15.6 | 13 | 9.5 | 7.2 | 4.3 | 1.7 | STEAMBOAT SLOUGH 37
19.2	16.6 | 14 | 10.5 | 8.2 | 5.3 | 2.7 | 1 | HUNTING ISLAND 39
22	19.4 | 16.8 | 13.3 | 11 | 8.1 | 5.5 | 3.8 | 2.8 | BUGBY HOLE 48
23.5	20.9 | 18.3 | 14.8 | 12.5 | 9.6 | 7 | 5.3 | 4.3 | 1.5 | WAUNA DOCK LOWER
25	22.4 | 19.8 | 16.3 | 14 | 11.1 | 8.5 | 6.8 | 5.8 | 3 | 1.5 | WESTPORT 58
30	27.4 | 24.8 | 21.3 | 19 | 16.1 | 13.5 | 11.8 | 10.8 | 8 | 6.5 | 5 | WATERFORD 69
34	31.4 | 28.8 | 25.3 | 23 | 20.1 | 17.5 | 15.8 | 14.8 | 12 | 10.5 | 9 | 4 | OAK PT/BEAVER DOCK
36.5	33.9 | 31.3 | 27.8 | 25.5 | 22.6 | 20 | 18.3 | 17.3 | 14.5 | 13 | 11.5 | 6.5 | 2.5 | STELLA RANGE FRONT LIGHT
39	36.4 | 33.8 | 30.3 | 28 | 25.1 | 22.5 | 20.8 | 19.8 | 17 | 15.5 | 14 | 9 | 5 | 2.5 | FISHER ISLAND 5
41.7	39.1 | 36.3 | 33 | 30.7 | 27.8 | 25.2 | 23.5 | 22.5 | 19.7 | 18.2 | 16.7 | 11.7 | 7.7 | 5.2 | 2.7 | LORD ISLAND TOWERS
45	42.4 | 39.8 | 36.3 | 34 | 31.1 | 28.5 | 26.8 | 25.8 | 23 | 21.5 | 20 | 15 | 11 | 8.5 | 6 | 3.3 | LONGVIEW BRIDGE
47.8	45.2 | 42.6 | 39.1 | 36.8 | 33.9 | 31.3 | 29.6 | 28.6 | 25.8 | 24.3 | 22.8 | 17.8 | 13.8 | 11.3 | 8.8 | 6.1 | 2.8 | COTTONWOOD ISLAND 33
51	48.4 | 45.6 | 42.3 | 40 | 37.1 | 34.5 | 32.8 | 31.8 | 29 | 27.5 | 26 | 21 | 17 | 14.5 | 12 | 9.3 | 6 | 3.2 | COFFIN ROCK
56.3	53.7 | 51.1 | 47.6 | 45.3 | 42.4 | 39.8 | 38.1 | 37.1 | 34.3 | 32.8 | 31.3 | 26.3 | 22.3 | 19.8 | 17.3 | 14.6 | 11.3 | 8.5 | 5.3 | MARTIN ISLAND LOWER RANGE FRONT LT.
60.2	57.6 | 55 | 51.5 | 49.2 | 46.3 | 43.7 | 42 | 41 | 38.2 | 36.7 | 35.2 | 30.2 | 26.2 | 23.7 | 21.2 | 18.5 | 15.2 | 12.4 | 9.2 | 3.9 | COLUMBIA CITY 76
63	60.4 | 57.8 | 54.3 | 52 | 49.1 | 46.5 | 44.8 | 43.8 | 41 | 39.5 | 38 | 33 | 29 | 26.5 | 24 | 21.3 | 18 | 15.2 | 12 | 6.7 | 2.8 | WARRIOR ROCK
67.4	64.8 | 62.2 | 58.7 | 56.4 | 53.5 | 50.9 | 48.2 | 48.2 | 45.4 | 43.9 | 42.4 | 37.4 | 33.4 | 30.9 | 28.4 | 25.7 | 22.4 | 19.6 | 16.4 | 11.1 | 7.2 | 4.4 | FALES 17
71	68.4 | 66.8 | 62.3 | 60 | 57.1 | 54.5 | 52.8 | 51.8 | 49 | 47.5 | 46 | 41 | 37 | 34.5 | 32 | 28.3 | 26 | 23.2 | 20 | 14.7 | 10.8 | 8 | 3.8 | WILLOW BAR 26
75	72.4 | 69.8 | 66.3 | 64 | 61.1 | 58.5 | 56.8 | 55.8 | 53 | 51.5 | 50 | 45 | 41 | 38.5 | 36 | 33.3 | 30 | 27.2 | 24 | 18.7 | 14.8 | 12 | 7.6 | 4 | KELLEY POINT

COLUMBIA RIVER MILEAGE

METERS TO FEET / INCH CONVERSION TABLE

METERS	FEET	INCHES	METERS	FEET	INCHES	METERS	FEET	INCHES	METERS	FEET	INCHES
1	3	3	46	150	11	91	298	7	136	446	2
2	6	7	47	154	2	92	301	10	137	449	6
3	9	10	48	157	6	93	305	1	138	452	9
4	13	1	49	160	9	94	308	5	139	456	0
5	16	5	50	164	0	95	311	8	140	459	4
6	19	8	51	167	4	96	315	0	141	462	7
7	23	0	52	170	7	97	318	3	142	465	11
8	26	3	53	173	11	98	321	6	143	469	2
9	29	6	54	177	2	99	324	10	144	472	5
10	32	10	55	180	5	100	328	1	145	475	9
11	36	1	56	183	9	101	331	4	146	479	0
12	39	4	57	187	0	102	334	8	147	482	3
13	42	8	58	190	3	103	337	11	148	485	7
14	45	11	59	193	7	104	341	2	149	488	10
15	49	3	60	196	10	105	344	6	150	492	1
16	52	6	61	200	2	106	347	9	151	495	5
17	55	9	62	203	5	107	351	1	152	498	8
18	59	1	63	206	8	108	354	4	153	502	0
19	62	4	64	210	0	109	357	7	154	505	3
20	65	7	65	213	3	110	360	11	155	508	6
21	68	11	66	216	6	111	364	2	156	511	10
22	72	2	67	219	10	112	367	5	157	515	1
23	75	6	68	223	1	113	370	9	158	518	4
24	78	9	69	226	5	114	374	0	159	521	8
25	82	0	70	229	8	115	377	4	160	524	11
26	85	4	71	232	11	116	380	7	161	526	3
27	88	7	72	236	3	117	383	10	162	531	6
28	91	10	73	239	6	118	387	2	163	534	9
29	95	2	74	242	9	119	390	5	164	538	1
30	98	5	75	246	0	120	393	8	165	541	4
31	101	8	76	249	4	121	397	0	166	544	7
32	105	0	77	252	7	122	400	3	167	547	11
33	108	3	78	255	11	123	403	7	168	551	2
34	111	7	79	259	2	124	406	7	169	554	6
35	114	10	80	262	6	125	410	1	170	557	9
36	118	1	81	265	9	126	413	5	171	561	0
37	121	5	82	269	0	127	416	8	172	564	4
38	124	8	83	272	4	128	419	11	173	567	7
39	127	11	84	275	7	129	423	3	174	570	10
40	131	3	85	278	10	130	426	6	175	574	2
41	134	6	86	282	2	131	429	9	176	577	5
42	137	10	87	285	5	132	433	1	177	580	8
43	141	1	88	288	9	133	436	4	178	584	0
44	144	4	89	292	0	134	439	8	179	587	3
45	147	8	90	295	3	135	442	11	180	590	7

METERS TO FEET / INCH CONVERSION TABLE

METERS	FEET	INCHES	METERS	FEET	INCHES	METERS	FEET	INCHES	METERS	FEET	INCHES
181	593	10	226	741	6	271	889	1	316	1036	9
182	597	1	227	744	9	272	892	5	317	1040	0
183	600	5	228	748	0	273	895	8	318	1043	4
184	603	8	229	751	4	274	898	11	319	1046	7
185	606	11	230	754	7	275	902	3	320	1049	10
186	610	3	231	757	10	276	905	6	321	1053	2
187	613	6	232	761	2	277	908	9	322	1056	5
188	616	10	233	764	5	278	912	1	323	1059	9
189	620	1	234	767	9	279	915	4	324	1063	0
190	623	4	235	771	0	280	918	8	325	1066	3
191	626	8	236	774	3	281	921	11	326	1069	7
192	629	11	237	777	7	282	925	2	327	1072	10
193	633	2	238	780	10	283	928	6	328	1076	1
194	636	6	239	784	1	284	931	9	329	1079	5
195	639	9	240	787	5	285	935	0	330	1082	8
196	643	0	241	790	8	286	938	4	331	1085	11
197	646	4	242	794	0	287	941	7	332	1089	3
198	649	7	243	797	3	288	944	11	333	1092	6
199	652	11	244	800	6	289	948	2	334	1095	10
200	656	2	245	803	10	290	951	5	335	1099	1
201	659	5	246	807	1	291	954	9	336	1102	4
202	662	9	247	810	4	292	958	0	337	1105	8
203	666	0	248	813	8	293	961	3	338	1108	11
204	669	3	249	816	11	294	964	7	339	1112	2
205	672	7	250	820	2	295	967	10	340	1115	6
206	675	10	251	823	6	296	971	2	341	1118	9
207	679	2	252	826	9	297	974	5	342	1122	1
208	682	5	253	830	0	298	977	8	343	1125	4
209	685	8	254	833	4	299	981	0	344	1128	7
210	689	0	255	836	7	300	984	3	345	1131	11
211	692	3	256	839	11	301	987	6	346	1135	2
212	695	6	257	843	2	302	990	10	347	1138	5
213	698	10	258	846	5	303	994	1	348	1141	9
214	702	1	259	849	9	304	997	4	349	1145	0
215	705	5	260	853	0	305	1000	8	350	1148	3
216	708	8	261	856	4	306	1003	11	351	1151	7
217	711	11	262	859	7	307	1007	3	352	1154	10
218	715	3	263	862	10	308	1010	6	352	1158	2
219	718	6	264	866	2	309	1013	9	354	1161	5
220	721	9	265	869	5	310	1017	1	355	1164	8
221	725	1	266	872	8	311	1020	4	356	1168	0
222	728	4	267	876	0	312	1023	7	357	1171	3
223	731	8	268	879	3	313	1026	11	358	1174	6
224	734	1	269	882	7	314	1030	2	359	1177	10
225	738	2	270	885	10	315	1033	6	360	1181	1

CONVERTING TABLE FEET INTO METERS

1 FT = 0.3048 M 1 IN = 0.0254 M

200M = 656 FT 250M = 850 FT 300M = 984 FT

	00	01	02	03	04	05
10	3.05	3.07	3.10	3.12	3.15	3.18
11	3.35	3.38	3.40	3.43	3.45	3.48
12	3.66	3.68	3.71	3.73	3.76	3.78
13	3.96	3.99	4.01	4.04	4.06	4.09
14	4.27	4.29	4.32	4.34	4.37	4.39
15	4.57	4.60	4.62	4.65	4.67	4.70
16	4.88	4.90	4.93	4.95	4.98	5.00
17	5.18	5.21	5.23	5.26	5.28	5.31
18	5.49	5.51	5.54	5.56	5.59	5.61
19	5.79	5.82	5.84	5.87	5.89	5.92
20	6.10	6.12	6.15	6.17	6.20	6.23
21	6.40	6.43	6.45	6.48	6.50	6.53
22	6.71	6.73	6.76	6.78	6.81	6.83
23	7.01	7.04	7.06	7.09	7.11	7.14
24	7.32	7.34	7.37	7.39	7.42	7.44
25	7.62	7.65	7.67	7.70	7.72	7.75
26	7.92	7.95	7.98	8.00	8.03	8.05
27	8.23	8.26	8.28	8.31	8.33	8.36
28	8.53	8.56	8.59	8.61	8.64	8.66
29	8.84	8.86	8.89	8.92	8.94	8.97
30	9.14	9.17	9.19	9.22	9.25	9.27
31	9.45	9.47	9.50	9.53	9.55	9.58
32	9.75	9.78	9.80	9.83	9.86	9.88
33	10.06	10.08	10.11	10.13	10.16	10.19
34	10.36	10.39	10.41	10.44	10.46	10.49
35	10.67	10.69	10.72	10.74	10.77	10.80
36	10.97	11.00	11.02	11.05	11.07	11.10
37	11.28	11.30	11.33	11.35	11.38	11.40
38	11.58	11.61	11.63	11.66	11.68	11.71
39	11.89	11.91	11.94	11.96	11.99	12.01
40	12.19	12.22	12.24	12.27	12.29	12.32
41	12.50	12.52	12.55	12.57	12.60	12.62
42	12.80	12.83	12.85	12.88	12.90	12.93
43	13.11	13.13	13.16	13.18	13.21	13.23
44	13.41	13.44	13.46	13.49	13.51	13.54
45	13.72	13.74	13.77	13.79	13.82	13.84
46	14.02	14.05	14.07	14.10	14.12	14.15
47	14.33	14.35	14.38	14.40	14.43	14.45
48	14.63	14.66	14.68	14.71	14.73	14.76
49	14.94	14.96	14.99	15.01	15.04	15.06

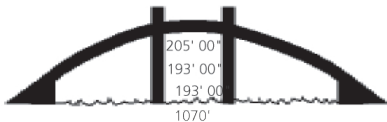
CONVERTING TABLE FEET INTO METERS

1 FT = 0.3048 M 1 IN = 0.0254 M

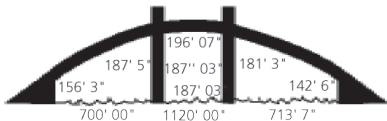
200M = 656 FT 250M = 850 FT 300M = 984 FT

	06	07	08	09	10	11
10	3.20	3.23	3.25	3.28	3.30	3.33
11	3.51	3.53	3.56	3.58	3.61	3.63
12	3.81	3.84	3.86	3.89	3.91	3.94
13	4.11	4.14	4.17	4.19	4.22	4.24
14	4.42	4.45	4.47	4.50	4.52	4.55
15	4.72	4.75	4.78	4.80	4.83	4.85
16	5.03	5.05	5.08	5.11	5.13	5.16
17	5.33	5.36	5.38	5.41	5.44	5.46
18	5.64	5.66	5.69	5.72	5.74	5.77
19	5.94	5.97	5.99	6.02	6.05	6.07
20	6.25	6.27	6.30	6.32	6.35	6.38
21	6.55	6.58	6.60	6.63	6.65	6.68
22	6.86	6.88	6.91	6.93	6.96	6.99
23	7.16	7.19	7.21	7.24	7.26	7.29
24	7.47	7.49	7.52	7.54	7.57	7.59
25	7.77	7.80	7.82	7.85	7.87	7.90
26	8.08	8.10	8.13	8.15	8.18	8.20
27	8.38	8.41	8.43	8.46	8.48	8.51
28	8.69	8.71	8.74	8.76	8.79	8.81
29	8.99	9.02	9.04	9.07	9.09	9.12
30	9.30	9.32	9.35	9.37	9.40	9.42
31	9.60	9.63	9.65	9.68	9.70	9.73
32	9.91	9.93	9.96	9.98	10.01	10.03
33	10.21	10.24	10.26	10.29	10.31	10.34
34	10.52	10.54	10.57	10.59	10.62	10.64
35	10.82	10.85	10.87	10.90	10.92	10.95
36	11.13	11.15	11.18	11.20	11.23	11.25
37	11.43	11.46	11.48	11.51	11.53	11.56
38	11.73	11.76	11.79	11.81	11.84	11.86
39	12.04	12.07	12.09	12.12	12.14	12.17
40	12.34	12.37	12.40	12.42	12.45	12.47
41	12.65	12.67	12.70	12.73	12.75	12.78
42	12.95	12.98	13.00	13.03	13.06	13.08
43	13.26	13.28	13.31	13.34	13.36	13.39
44	13.56	13.59	13.61	13.64	13.67	13.69
45	13.87	13.89	13.92	13.94	13.97	14.00
46	14.17	14.20	14.22	14.25	14.27	14.30
47	14.48	14.50	14.53	14.55	14.58	14.61
48	14.78	14.81	14.83	14.86	14.88	14.91
49	15.09	15.11	15.14	15.16	15.19	15.21

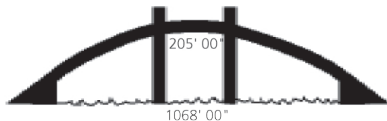
BRIDGE CLEARANCES



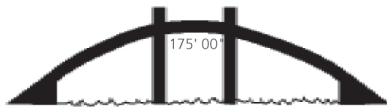
ASTORIA MEGLER BRIDGE



LONGVIEW BRIDGE



ST. JOHNS FIXED BRIDGE



FREMONT FIXED BRIDGE

ST. JOHNS RR BRIDGE..... K.Q. 9050	503-241-4492
VANCOUVER RR BRIDGEK.Q. 9049	360-418-6320
INTERSTATE VANCOUVER.. K.B.M.	360-693-6451
BROADWAY BRIDGE..... K.L.U. 724	503-988-3455
STEEL BRIDGE	K.Q.U. 534
BURNSIDE BRIDGE.....K.T.D. 520	503-988-3454
MORRISON BRIDGE.....K.T.D. 522	503-988-3453
HAWTHORNE BRIDGE.....K.T.D. 522	503-988-3452

VERTICAL CLEARANCE:

BUGBY HOLE OVERHEAD POWER CABLES.....	221 FT
LORD ISLAND OVERHEAD POWER CABLES.....	216 FT
RIVER GATE OVERHEAD POWER CABLES	230 FT
VANCOUVER POWER LINE CABLES	220 FT

BRIDGE WHISTLES

BRIDGES GUARD VHF CHANNEL 13

LEWIS & CLARK RIVER

LEWIS & CLARK HWY BRIDGE1 LONG, 4 SHORT

YOUNGS RIVER

YOUNGS RIVER HWY BRIDGE...2 LONG, 2 SHORT

YOUNGS RIVER BRIDGE.....2 LONG, 1 SHORT

WILLAMETTE RIVER

ST. JOHNS BRIDGE.....1 LONG, 1 SHORT

BROADWAY BRIDGE.....2 LONG, 1 SHORT

STEEL BRIDGE

BURNSIDE BRIDGE.....1 LONG, 2 SHORT

MORRISON BRIDGE.....1 LONG, 3 SHORT

HAWTHORNE BRIDGE.....1 LONG, 4 SHORT

COLUMBIA RIVER

INTERSTATE RR BRIDGE, VAN....1 LONG, 1 SHORT

INTERSTATE BRIDGE, VAN.....2 LONG, 1 SHORT

PORTLAND BRIDGES CLOSED 0700-0900 AND 1600-1800 EXCEPT SATURDAY, SUNDAY AND HOLIDAYS. ONE HOUR NOTICE REQUIRED TO HAWTHORNE BRIDGE FOR BROADWAY, BURNSIDE AND MORRISON BRIDGES DURING DAY M-F 0700-1500. TWO HOUR NOTICE REQUIRED TO HAWTHORNE BRIDGE FOR BROADWAY, BURNSIDE AND MORRISON BRIDGES AFTER 1500 M-F AND ON WEEKENDS AND HOLIDAYS. FOR STEEL BRIDGE ONE HOUR AND TWO HOUR NOTICE AS ABOVE TO THE STEEL BRIDGE.

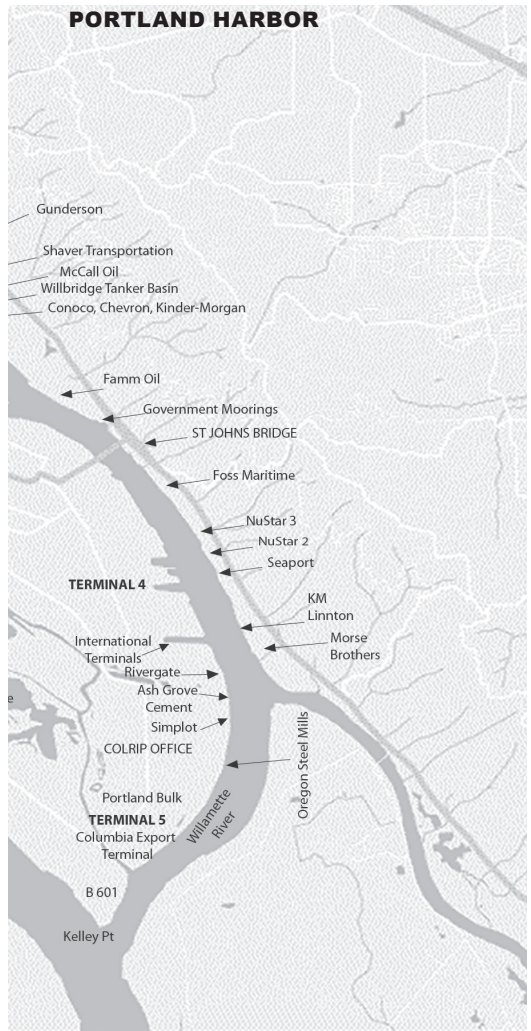
BRIDGE HEIGHTS

AT 0' COLUMBIA RIVER DATUM, MLLW

	HOR.	VERT.
ASTORIA-MEGLER	1070'	205'
LONGVIEW.....	1120' ...	187' 03"
	196' 07"	120' CTR
ST. JOHNS HWY.....	1068'	205'
ST. JOHNS RR	499'	54'
		200' UP
FREMONT	928'	175'
BROADWAY	251'	90'
STEEL	205'	26'
		161' UP
BURNSIDE	205'	64'
MORRISON	209'	69'
HAWTHORNE	200'	49'
		159' UP
MARQUAM	350'	102'
	220' CTR	120'
TILIKUM CROSSING.....	780'	77.5'
ROSS ISLAND	490'	120'
VAN R/R.....	200'	39'
I-5 INTERSTATE	263'	39'
		178' UP
WIDE SPAN	511'	46'
		58' CTR
HIGH SPAN	260'	72'

—36—

—37—



PORTLAND, OREGON (EAST)

	LENGTH	DEG.	HGT.
TERMINAL NO. 6			
BERTH 601	450'	136°	28.4'
BERTH 602-603-604-605	2,917'	136°	28.4'
BERTH 607	417'	136°	17.5'
	304' CATWALK		

TERMINAL NO. 5

COLUMBIA EXPORT (501)	928'	230°/050°	31.1'
ALCATEL (502)	280'	230°	34.0'
	312' CATWALK		
PORTLAND BULK TERMINAL (503)	800'	230°	
	75' CATWALK		
OREGON STEEL MILL	340'	202°	26.0'
SIMPLOT	1,072'	187°	33.9'
ASHGROVE		DOLPHINS	
INTERNATIONAL TERMINALS (SLIP)	1,620'	090°	26.3'
BERTH 4	40'	154°	25.0'
	(FACE) + BREAST & TIE DOLPHINS		
BERTH 5	150'	154°	8.0'
	(LAY) + BREAST & TIE DOLPHINS		

TERMINAL NO. 4

BERTH 401	690'	154°/334°	35.9'
BERTH 405	550'	091°	35.1'
BERTH 408	780'	091°	35.1'
BERTH 411	1,333'	098°/278°	34.1'
BERTH 414-415	947'	149°/329°	28.6'
	440' CATWALK		
BERTH 416	16'	149°/329°	17.0'
	555' CATWALK		

SWAN ISLAND

BERTH 301	850'	105°	32.0'
BERTH 302-303-304-305	2,500'	128°	32.0'
BERTH 306-307-308	1,500'	128°	32.0'
BERTH 309	1,141'	105°	32.0'
	(OFFSHORE END OF PIER)	616'	105° 32.0'
	(INSHORE END OF PIER)	525'	105° 43.0'
BERTH 310	514'	105°	43.0'
BERTH 311	415'	132°	26.9'
BERTH 312-313-314	3,016'	127°	29.1'
ASHGROVE	103'	149°	28.0'
	624' CATWALK		
GLACIER	415'	130°	30.0'
TEMCO	355'	146°	34.0'
	516' CATWALK		
O'DOCK	327'	133°	30.0'
	451' CATWALK		

PORTLAND, OREGON (WEST)

	LENGTH	DEG.	HGT.
HGT.			
MORSE BROS. (X-G.P. CHIP)	668'	156°	28.8'
KM LINNTON	900'	157°	28.0'
SEAPORT	590'	149°	32.0'
NUSTAR 2	329'	146°	34.0'
	458' CATWALK		
NUSTAR 3	279'	151°	30.5'
FAMM OIL	327'	118°	29.3'
KINDER MORGAN WILLBRIDGE			
UPPER & LOWER	650'	229°	32.0'
APPROX 245 FT BETWEEN KM AND CHEVRON			
CHEVRON			
UPPER & LOWER	650'	229°	32.0'
APPROX 240 FT BETWEEN CHEVRON AND CONOCO			
CONOCO PHILLIPS			
UPPER & LOWER	650'	229°	32.0'
MCCALL OIL	924'	136°	30.1'
SHELL OIL	575'	120°	32.0'
GUNDERSON	1,017'	120°	30.8'

TERMINAL NO. 2

BERTH 203 BARGE SLIP	400'	213°	30.0'
BERTHS 204-205-206	2,290'	130°	30.0'
SULZER-BINGHAM (X-WISCO)	1,350'	140°	30.0'

TERMINAL NO. 1

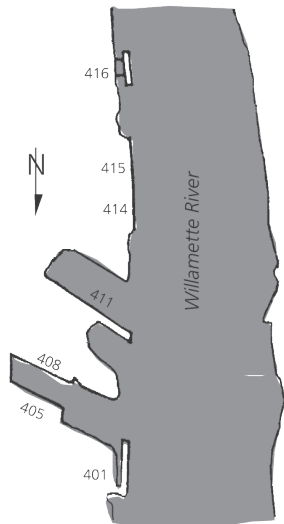
UPPER HARBOR SEAWALL	5,000'		31.0'
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MISCELLANEOUS BERTHS BELOW PORTLAND

GEORGIA PACIFIC (WAUNA)			
BARGE FACILITY	2950'	137°	16.0'
PORT WESTWARD (BEAVER)	1,200'	064°	
DIXIELINE LUMBER FACE	310'	157°	30.0'
	(COLUMBIA CITY)		

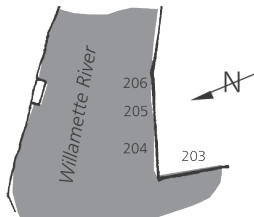
TERMINAL NO. 4

	LENGTH	DEG.	HGT.
BERTH 401	690'	154°	35.9'
BERTH 405	550'	091°	35.1'
BERTH 408	780'	091°	35.1'
BERTH 411	1,333'	098°/278°	34.1'
BERTH 414-415	947'	149°	28.6'
.....	440' CATWALK		
BERTH 416	416'	149°	17.0'
.....	555' CATWALK		



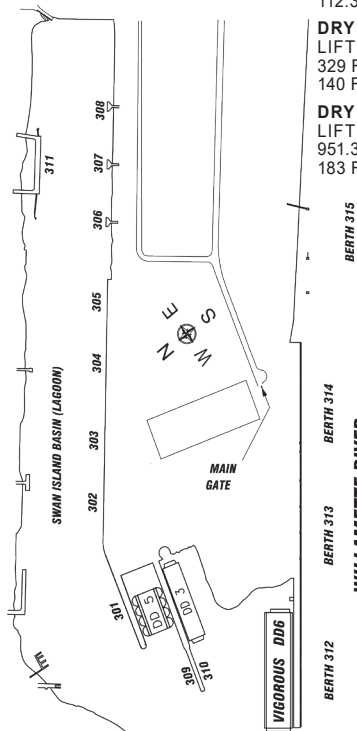
TERMINAL NO. 2

	LENGTH	DEG.	HGT.
BERTH 203 BARGE SLIP	400'	213°	30.0'
BERTH 204-205-206	2,290'	130°	30.0'



SWAN ISLAND

	LENGTH	DEG.	HGT.
BERTH 301	850'	105°	32.0'
BERTH 302-303-304-305	2,500'	128°	32.0'
BERTH 306-307-308	1,500'	128°	32.0'
BERTH 309	1,141'	105°	32.0'
(OFFSHORE END OF PIER)	616'	105°	32.0'
(INSHORE END OF PIER)	525'	105°	32.0'
BERTH 310	514'	105°	32.0'
BERTH 311	415'	132°	26.9'
BERTH 312-313-314	3,016'	127°	29.1'
BERTH 315 (DOLPHINS)	1,200'		



DRY DOCK 3

LIFT CAPACITY 24,270 LT.
630.5 FT. LONG
112.3 FT. WIDE

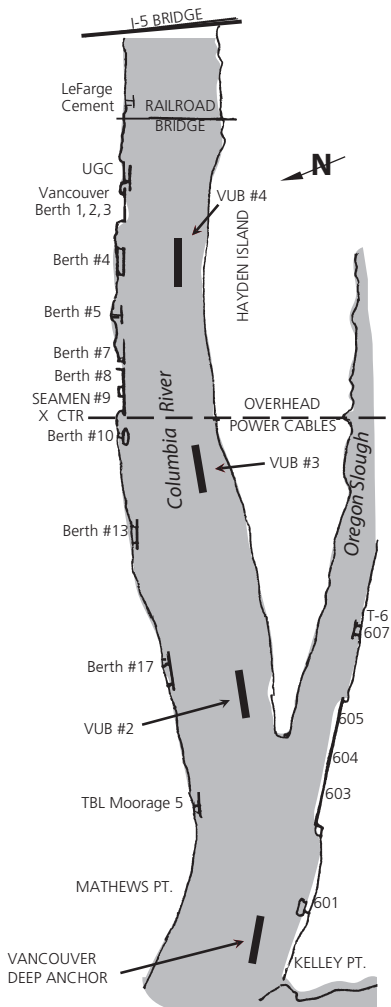
DRY DOCK 5

LIFT CAPACITY 15,000 LT.
329 FT. LONG
140 FT. WIDE

DRY DOCK 6

LIFT CAPACITY 80,000 LT.
951.3 FT. LONG
183 FT. WIDE

PORT OF VANCOUVER & T6



PORT OF VANCOUVER, WASHINGTON (USA)

	LENGTH	DEG.	HGT.
TERMINAL NO. 1.....	500'	122°	30.0'
(PARTIAL FOATING)			
LE FARGE CEMENT	621'	130°	29.8'
(CATWALK & DOLPHINS)			
UGC	715'	128°	34.5'
(WITH DOLPHINS)			

TERMINAL NO. 2

BERTH 1,2,3	1,750'	128°/308°	30.8'
BERTH 4 (RO-RO).....	280'	128°	15.0'
BERTH 5 (NUSTAR, TESORO).....	84'	128°	30.9'
BERTH 7	70'	122°	30.0'
.....530' CATWALK			
(HEAD DOLPHIN)			

TERMINAL NO. 3

BERTH 8 & 9.....	1,250'	122°	30.5'
(CATWALK & DOLPHINS)			
(126' BULLARD ARE 60' APART)			

TERMINAL NO. 4

BERTH 10 (AUTO).....	1040'	118°/298°	15.0'
BERTH 13 & 14	1,360'	115°	30.0'

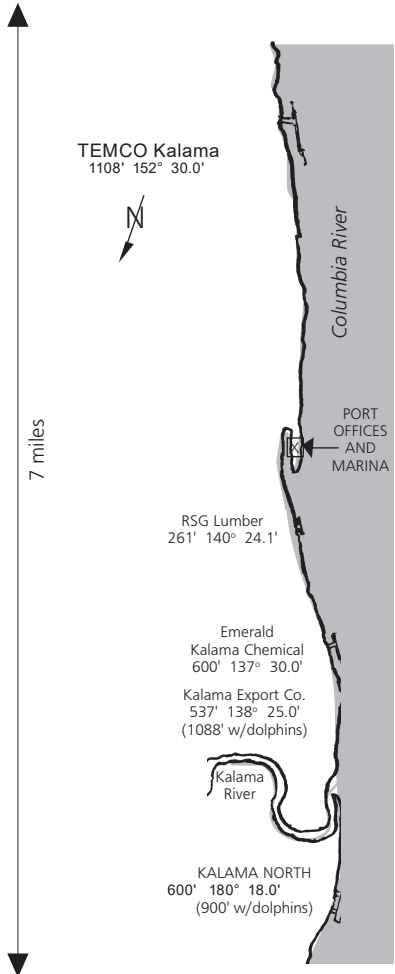
TERMINAL NO. 5

BERTH 17	450'	116°	26.0'
(CATWALK & DOLPHINS)			
TIDEWATER BARGE LINES.....	336'	111°	24.0'
(MOORAGE "5")			

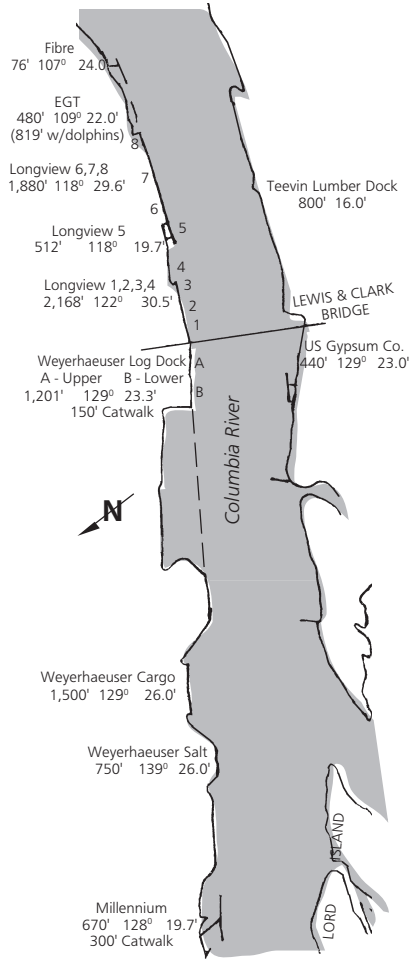
COLUMBIA RIVER ANCHOR BUOY DESIGNATIONS

- VUB4 VANCOUVER ANCHOR BUOY
- VUB3 VANCOUVER ANCHOR BUOY
- VUB2 VANCOUVER ANCHOR BUOY
- VLB1 VANCOUVER ANCHOR BUOY, BELOW MOUTH
- KAB2 KALAMA ANCHOR BUOY, AT SANDY ISLAND
- KAB1 KALAMA ANCHOR BUOY, AT PRESCOTT
- RAB2 RAINIER ANCHOR BUOY
- RAB1 RAINIER ANCHOR BUOY

KALAMA

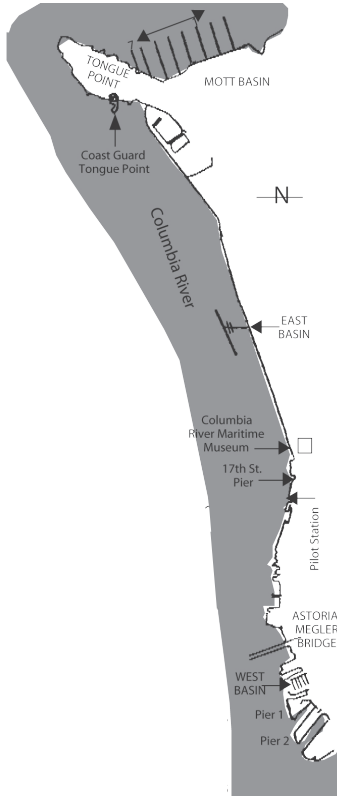


LONGVIEW / RAINIER



ASTORIA

	LENGTH	DEG.	HGT.
WILCOX AND FLEGEL.....	200'	097°	16.0'
FACE PIER 1	650'	075°	16.0'
PIER 1	1,100'	137°	16.0'
PIER 2 EAST	1,307'	137°	16.0'
PIER 2 FACE	425'	075°	16.0'
PIER 2 WEST	1,446'	129°	16.0'
MCCALL OIL (IN SHORE P-2 W).....		129°	16.0'
FACE DOCK PIER 2	450'		
DISTANCE BETWEEN PIER 1 & 2	450'		
DISTANCE BETWEEN PIER 2 & 3	325'		



PORTLAND NUMBERS

COLUMBIA RIVER PILOTS	503-289-9922
JONES STEVEDORING	503-228-6601
MERCHANTS EXCHANGE	503-228-4361
PORTLAND HARBOR MASTER	503-209-8109
PORTLAND LINES BUREAU	503-612-0895
PORTLAND SEAFARERS MISSION	503-283-8203
STEVEDORING SERVICE OF AMERICA	503-248-0848
WILLAMETTE RIVER LEVEL VIA BRIDGE	503-988-3452

ASTORIA NUMBERS

ASTORIA PORT DOCKS	503-325-4521
COLUMBIA RIVER BAR PILOTS	503-325-2641
CLATSOP COUNTY DISPATCH	503-325-2061
FOSS MARITIME (CONNOR FOSS)	503-325-8527
LINES (SHIP) NIGHTS	503-325-2271
PORT DOCKS SECURITY NIGHT	503-791-7735
WCT MARINE (TUG VOYAGER)	360-904-9684

TUGBOAT COMPANIES

BERNERT BARGE LINES	503-656-8288
BRUSCO TUG	360-636-3341
CAFFALL MARINE SERVICES	360-921-4304
FOSS MARITIME CO.	503-285-0511
FRED DIVINE SALVAGE	503-283-5285
OLYMPIC TUG & BARGE	503-737-0124
SHAVER TRANSPORTATION CO	503-228-8847
	888-228-8850
SAUSE BROTHERS	503-222-1811
SALMON BAY BARGE LINES	206-762-0730
TIDEWATER BARGE LINES	360-693-1491

LAUNCH AND TAXI SERVICE

ANCHORAGE LAUNCH SERVICE	
ASTORIA TRIUMPH 2	503-793-1644
LONGVIEW/KALAMA TRIUMPH 3	503-793-1646
PORTLAND TRIUMPH 4	503-793-1645
COLUMBIA RIVER LAUNCH SERVICE	360-703-7721
(RELIEF/MULE/SUPPORT)	
GSB MARINE SERVICES TAXI 24/7 DISPATCH ..	360-601-6843
KIWI'S WATER TAXI ASTORIA	503-791-9045
SHIP TO SHORE (TOKITAE)	971-888-0225
BROADWAY CAB	503-227-1234
RADIO CAB	503-227-1212
ROYAL CAB (ASTORIA)	503-325-5818
UPTOWN TAXI (LONGVIEW)	360-577-8294

EMERGENCY NUMBERS

COLUMBIA CO SHERIFF DISPATCH	503-397-1521
COWLITZ COUNTY SHERIFF	360-577-3092
LIFE FLIGHT	503-413-2940
MULTNOMAH COUNTY HARBOR PATROL	503-988-6788

FACILITY/SECURITY NUMBERS

PORTLAND

ASHGROVE CEMENT	503-285-4621
CHEVRON OPERATIONS	503-221-7866
COLUMBIA EXPORT	503-286-9681
SECURITY 24-HR	503-519-7707
CONOCO PHILLIPS	503-248-1565
SECURITY	503-849-9605
FAMM OIL	503-286-5321
GLACIER NORTHWEST (X-LONESTAR)	503-335-2600
INTERNATIONAL TERMINALS	503-286-5771
KINDER MORGAN B411	503-285-2990
SECURITY	503-285-2990 EXT 14
KINDER MORGAN LINNTON	503-209-4390
KINDER MORGAN WILLBRIDGE 24 HR	503-224-0319
O'DOCK ELEV	503-232-0127
SECURITY 24-HR	503-519-6753
MCCALL OIL	503-219-0982
NUSTAR 2/3 24-HR	503-969-4555
PORTLAND BULK	503-285-4200
SECURITY	503-849-9087
PORT OF PORTLAND	
TERMINAL 2 SECURITY	503-240-2102
TERMINAL 4 SECURITY	503-240-2104
TERMINAL 6 SECURITY	503-240-2230
SEAPORT 24-HR	503-915-5947
SHELL OIL (X-TEXACO)	503-294-1160
SIMPLOT CONTROL ROOM	503-247-7978
TEMCO PORTLAND	503-281-9177
SECURITY 24-HR	503-281-5645

VANCOUVER

NUSTAR OFFCE VAN 5	360-694-8591
PORT OF VANCOUVER SECURITY	360-992-1120
TESORO OFFCE VAN 5	360-696-2390
UNITED GRAIN ELEVATOR	503-289-2570
VANCOUVER SEAFARER'S CENTER	360-694-9300

KALAMA

KALAMA CHEMICAL SECURITY 24-HR	360-673-0317
KALAMA CHEMICAL CONTROL RM 24-HR	360-673-0223
KALAMA EXPORT	360-673-3900
TEMCO KALAMA 24-HR	651-355-3939

LONGVIEW

EGT SHIP DESK 24-HR	360-747-5020
PORT OF LONGVIEW SECURITY	360-430-3079
WEYERHAEUSER SECURITY	360-636-6595

RAINIER

TEEVIN	503-556-0410
US GYPSUM 24-HR SECURITY	503-556-4949

PORT WESTWARD

COLUMBIA PACIFC CONTROL ROOM 24-HR ..	503-728-7014
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OIL SPILL/POLLUTION CONTROL

BURLINGTON ENVIRONMENTAL	503-283-1150
PACIFIC COAST ENVIRONMENTAL, INC	503-283-6747
PACIFIC COAST EQUIPMENT, INC	503-283-3357
PERATROVICH, NOTTINGHAM & DRAGE, INC.	360-624-1387
TIDEWATER ENVIRONMENTAL SVCS, INC	503-284-2850

SHIP REPAIRS

DIVERSIFIED MARINE	503-289-2669
JT MARINE	360-750-1300
VIGOR MARINE	503-247-1777
DRY DOCK MASTER KEN SWINGLE	503-702-2292
DRY DOCK MASTER TIM MCENTARFFER ...	503-706-3224

SHIP CHANDLERS

CASH AND CARRY DIVINA MERCADO	971-409-0676
PACIFIC MARINE DISTRIBUTORS	503-243-2258
PACIFIC SHIP SUPPLY	503-274-2289
SAN PEDRO HARBOR SHIP SUPPLY	503-288-1900
TRANSPACIFIC MYRNA LORENJO	971-533-0636
WEST COAST SHIP SUPPLY	503-224-9950

VESSEL AGENTS

ACGI SHIPPING CO	360-735-9083
BLUE WATER SHIPPING	503-274-8944
CASCADE MARINE AGENCIES	503-226-4018
CROWLEY MARITIME CORP	800-248-8632
FUJTRANS USA INC	503-222-1598
GENERAL STEAMSHIP CORP	503-228-7214
INCHCAPE SHIPPING CO	503-226-3093
INTERPORT PNW	360-448-8326
NORTON LILLY INTERNATIONAL	360-693-9125
SOUTHPORT AGENCIES	360-737-0185
STREAMLINE USA	503-593-2701
TALON MARINE	503-679-6166
TRANSMARINE NAVIGATION	360-553-3920
TRANSVERSAL SHIPPING CO	503-247-3611
WILHELMSSEN SHIPS SERVICE	503-222-1561

U.S. GOVERNMENT

RIVER FORECAST/NATIONAL WX	503-261-9246
US COAST GUARD (24 HR)	503-861-6211
US CUSTOMS	503-326-2875
US CUSTOMS ASTORIA	503-325-5541

SHIP ASSIST TUGS BOLLARD PULL

	AHEAD SHORT TONS	ASTERN SHORT TONS	L X B (FEET)
SHAVER			
SAMANTHA S	100.80	100.80	112 X 45
SHAVER	70	70	80 X 38
SOMMER S	63.06	61.35	80 X 38
PORTLAND	50.92	47.36	107 X 37
DESCHUTES	45.11	41.65	93 X 36
WILLAMETTE	42.94	39.50	93 X 36
WASHINGTON	42.70	42.72	92 X 28
CLEARWATER	41.16	24.82	98 X 30
VANCOUVER	40.91	36.98	76 X 28
CASCADES	35.58	22.95	102 X 30
COLUMBIA	31.87	24.31	87 X 28
FOSS			
SARAH BRUSCO	67.35	61.50	78 X 29
CAROLYN DOROTHY	58.72	56.86	78 X 34
PETER J BRIX	54.30	52.37	78 X 31
ARTHUR FOSS	48.00	54.66	107 X 41
PJ BRIX	33.75	29.50	75 X 32
BETSY L	23.00	18.00	76 X 26

TUG CLASS RATINGS

CLASS	AHEAD	ASTERN
A MAX	160,000 / 80.OT	144,000 / 72.OT
A+	110,000 / 55.OT	100,000 / 50.OT
A	80,000 / 40.OT	70,000 / 35.OT
B OR B (+)	60,000 / 30.OT	45,000 / 22.5T
C	35,000 / 17.5T	25,000 / 12.5T
D	20,000 / 10.OT	10,000 / 5.OT

A-MAX, A+, A AND B+ CLASS BOATS
MUST BE TRACTOR TUGS.

MEASURE CONVERSIONS

1 KIP = 1000 POUNDS

1 SHORT TON= 2000 POUNDS

1 METRIC TON =2205 POUNDS

1 LONG TON = 2240 POUNDS

1 POUND = .0005 SHORT TONS

1 KILONEWTON = .1124 SHORT TONS

1 METRIC TON = 1.102 SHORT TONS

1 LONG TON = 1.12 SHORT TONS

1 KILOWATT = 1.34 HORSEPOWER

AS OF OCTOBER 2023, THE BOLLARD PULL CAPABILITIES OF NAMED TUGS STATED IS INFORMATION THAT HAS BEEN PROVIDED BY THIRD PARTIES. IT HAS NOT BEEN SEPARATELY CONFIRMED BY THE COLUMBIA RIVER PILOTS, WHICH CANNOT AND DOES NOT GUARANTEE THE ACCURACY OF INFORMATION PROVIDED BY OTHERS.

FOR INFORMATION ON THE COLUMBIA RIVER PILOTS' VESSEL MOVEMENT GUIDELINES GO TO WWW.COLRIP.COM

EMERGENCY SHIP BERTHING SIGNALS IN THE EVENT OF VHF RADIO FAILURE

FORWARD AND/OR AFT TUGS:

- **DANGER SIGNAL:** IF YOU STILL HAVE RADIO CONTACT, THE PILOT WILL TELL YOU THE REASON FOR THE SIGNAL. IF YOU HAVE NOT HEARD INSTRUCTIONS, IMMEDIATELY CHECK YOUR RADIOS AND BRING YOUR ENGINES TO IDLE. IF YOU WERE PUSHING, STOP AND MOVE QUICKLY TO A TIGHT LINE. IF YOU WERE BACKING, HOLD A TIGHT LINE.

LISTEN CAREFULLY FOR INSTRUCTIONS THAT WILL FOLLOW ON CHANNEL 13 AND/OR THE SHIP'S WHISTLE. ANY WHISTLE NOT FOLLOWED BY COMMUNICATIONS FROM THE PILOT SHOULD PROMPT AN IMMEDIATE RADIO CHECK.

FORWARD TUG(S):

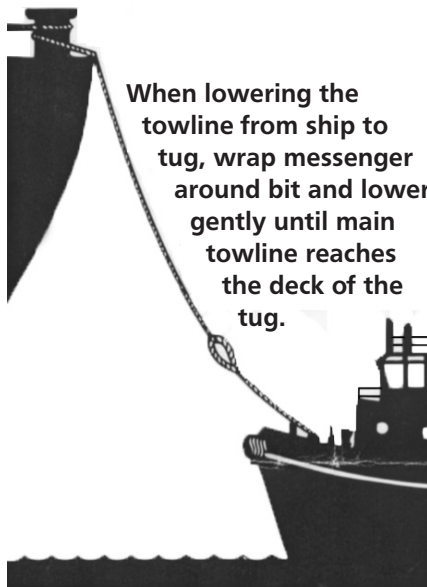
- **PUSH FULL**
- • **PULL FULL**
- **STOP**

AFT TUG(S):

- **PUSH FULL**
- — **PULL FULL**
- **STOP**

NOTE: IN THE CASE OF A BOW THRUSTER, AND THE AFT TUG IS THE ONLY TUG, THE SHORTER, FORWARD TUG SIGNALS APPLY. TUGS SHOULD FIRST PERFORM THE COMMAND GIVEN, THEN ANSWER THE COMMAND WITH A MATCHING WHISTLE BLAST.

Towline Instructions



SAFETY FIRST!

**COLUMBIA RIVER BAR PILOTS
OFFICE 503-325-2641**

ACKERMAN, S.
BLACK, W.P.
BRADY, J.J.
CHRISTIAN, N
FARRELL, C.J.
HAILS, M.
HILL, D.
JORDAN, D.S.

JULIEN, C.J.
MATTEO, P.A.
NEHRING, C.G.
SOHLBERG, J.C.
TOLLEY, M.J.
VALENTINE, J.D.
WODEHOUSE, K.H.

ADMINISTRATION

FELICIA EBY

PILOT BOAT OPERATORS

DAVID FASTABEND
JASON HUGHES
MIKE HUGHES
BROCK JOHNSON
REESE JOHNSON
FRANK SHUCKA

LAUNCH OPERATORS

JIM DAVIS
BILL DAVIS
BEN HARTLEY
LEROY (SPLASH) SCHLECHT

ASTORIA DISPATCHERS

SAMANTHA STEERMAN
ERICK WISTI

POINTS OF INTEREST

THE COLUMBIA RIVER IS ABOUT 1,400 MILES LONG, ORIGINATING ON THE WESTERN SLOPES OF THE CANADIAN ROCKIES IN BRITISH COLUMBIA. THE RIVER DRAINS AN AREA OF ABOUT 250,000 SQUARE MILES. THE COLUMBIA RIVER IS NAVIGABLE FOR DEEP-DRAFT OCEAN VESSELS TO PORTLAND, OR AND VANCOUVER, WA, A DISTANCE OF ABOUT 100 MILES ABOVE THE MOUTH OF THE RIVER AND BY LIGHTER DRAFT VESSELS TO 14 FEET TO LEWISTON, ID, VIA THE SNAKE RIVER FROM PASCO, WA, FOR A TOTAL DISTANCE OF 425 MILES INTO THE GREAT INLAND EMPIRE.

ON A CLEAR DAY YOU CAN SEE:

MT. SAINT HELENS 8,400 FT. ELEVATION
MT. JEFFERSON 10,497 FT. ELEVATION
MT. HOOD 11,245 FT. ELEVATION
MT. ADAMS 12,307 FT. ELEVATION
MT. RAINIER 14,410 FT. ELEVATION

POPULATION

ASTORIA 10,321
LONGVIEW 38,052
RAINIER 1,915
KALAMA 3,083
VANCOUVER (CITY) 196,739
PORTLAND (CITY) 666,249

FEDERAL HOLIDAYS 2024

MONDAY, JANUARY 1 NEW YEAR'S DAY
MONDAY, JANUARY 15 MARTIN LUTHER KING JR. DAY
MONDAY, FEBRUARY 19 PRESIDENT'S DAY
MONDAY, MAY 27 MEMORIAL DAY
WEDNESDAY, JUNE 19 JUNETEENTH DAY
THURSDAY, JULY 4 INDEPENDENCE DAY
MONDAY, SEPTEMBER 2 LABOR DAY
MONDAY, OCTOBER 14 COLUMBUS DAY
MONDAY, NOVEMBER 11 VETERANS DAY
THURSDAY, NOVEMBER 28 THANKSGIVING DAY
WEDNESDAY, DECEMBER 25 CHRISTMAS DAY

2024

JANUARY							JULY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6		1	2	3	4	5	6
7	8	9	10	11	12	13	7	8	9	10	11	12	13
14	15	16	17	18	19	20	14	15	16	17	18	19	20
21	22	23	24	25	26	27	21	22	23	24	25	26	27
28	29	30	31				28	29	30	31			
FEBRUARY							AUGUST						
			1	2	3					1	2	3	
4	5	6	7	8	9	10	4	5	6	7	8	9	10
11	12	13	14	15	16	17	11	12	13	14	15	16	17
18	19	20	21	22	23	24	18	19	20	21	22	23	24
25	26	27	28	29			25	26	27	28	29	30	31
MARCH							SEPTEMBER						
				1	2								
3	4	5	6	7	8	9	1	2	3	4	5	6	7
10	11	12	13	14	15	16	8	9	10	11	12	13	14
17	18	19	20	21	22	23	15	16	17	18	19	20	21
24	25	26	27	28	29	30	22	23	24	25	26	27	28
31							29	30					
APRIL							OCTOBER						
	1	2	3	4	5	6		1	2	3	4	5	
7	8	9	10	11	12	13	6	7	8	9	10	11	12
14	15	16	17	18	19	20	13	14	15	16	17	18	19
21	22	23	24	25	26	27	20	21	22	23	24	25	26
28	29	30					27	28	29	30	31		
MAY							NOVEMBER						
		1	2	3	4						1	2	
5	6	7	8	9	10	11	3	4	5	6	7	8	9
12	13	14	15	16	17	18	10	11	12	13	14	15	16
19	20	21	22	23	24	25	17	18	19	20	21	22	23
26	27	28	29	30	31		24	25	26	27	28	29	30
JUNE							DECEMBER						
						1							
2	3	4	5	6	7	8	1	2	3	4	5	6	7
9	10	11	12	13	14	15	8	9	10	11	12	13	14
16	17	18	19	20	21	22	15	16	17	18	19	20	21
23	24	25	26	27	28	29	22	23	24	25	26	27	28
30							29	30	31				

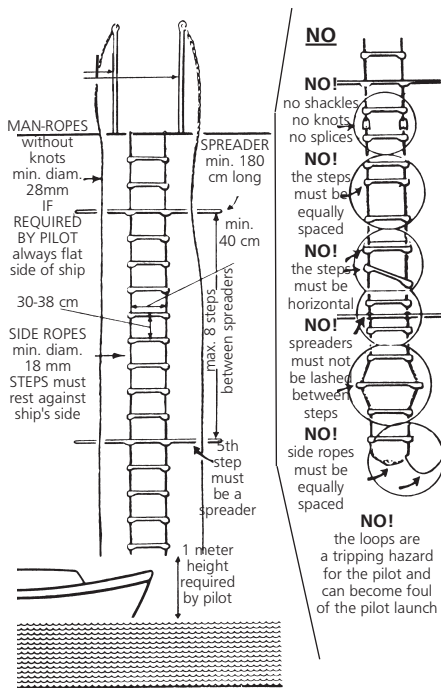
2025

JANUARY							JULY									
S	M	T	W	T	F	S	S	M	T	W	T	F	S			
				1	2	3	4				1	2	3	4	5	
5	6	7	8	9	10	11	6	7	8	9	10	11	12			
12	13	14	15	16	17	18	13	14	15	16	17	18	19			
19	20	21	22	23	24	25	20	21	22	23	24	25	26			
26	27	28	29	30	31		27	28	29	30	31					
FEBRUARY							AUGUST									
						1							1	2		
2	3	4	5	6	7	8	3	4	5	6	7	8	9			
9	10	11	12	13	14	15	10	11	12	13	14	15	16			
16	17	18	19	20	21	22	17	18	19	20	21	22	23			
23	24	25	26	27	28		24	25	26	27	28	29	30			
						31										
MARCH							SEPTEMBER									
						1					1	2	3	4	5	6
2	3	4	5	6	7	8	7	8	9	10	11	12	13			
9	10	11	12	13	14	15	14	15	16	17	18	19	20			
16	17	18	19	20	21	22	21	22	23	24	25	26	27			
23	24	25	26	27	28	29	28	29	30							
30	31															
APRIL							OCTOBER									
		1	2	3	4	5					1	2	3	4		
6	7	8	9	10	11	12	5	6	7	8	9	10	11			
13	14	15	16	17	18	19	12	13	14	15	16	17	18			
20	21	22	23	24	25	26	19	20	21	22	23	24	25			
27	28	29	30				26	27	28	29	30	31				
MAY							NOVEMBER									
			1	2	3									1		
4	5	6	7	8	9	10	2	3	4	5	6	7	8			
11	12	13	14	15	16	17	9	10	11	12	13	14	15			
18	19	20	21	22	23	24	16	17	18	19	20	21	22			
25	26	27	28	29	30	31	23	24	25	26	27	28	29			
JUNE							DECEMBER									
1	2	3	4	5	6	7	1	2	3	4	5	6	7			
8	9	10	11	12	13	14	8	9	10	11	12	13	14			
15	16	17	18	19	20	21	15	16	17	18	19	20	21			
22	23	24	25	26	27	28	22	23	24	25	26	27	28			
29	30						29	30	31							

REQUIRED BOARDING ARRANGEMENTS FOR COLUMBIA RIVER PILOTS RIGGING FOR FREEBOARDS OF 9 METERS OR LESS PORTSIDE IS PREFERRED SIDE

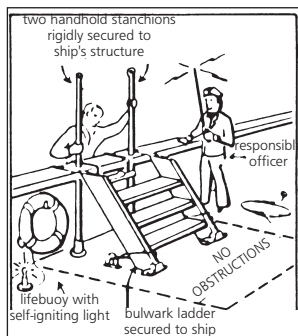
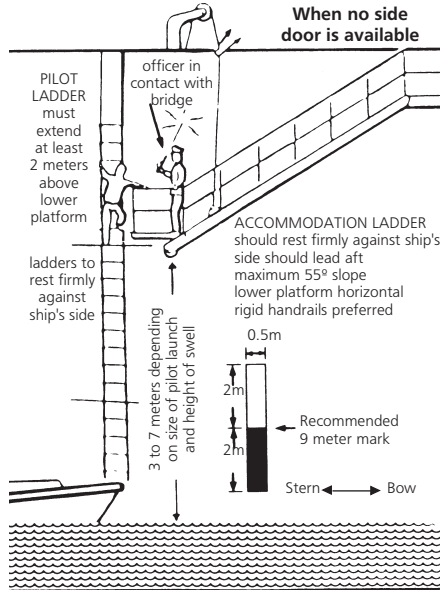
HANDHOLD STANCHIONS

min. diam. 32 mm
120 cm above bulwark
min. 70 cm
max. 80 cm apart



LADDER AMIDSHIPS

REQUIRED BOARDING ARRANGEMENTS FOR COLUMBIA RIVER PILOTS SHIPS WITH HIGH FREEBOARD MORE THAN 9 METERS





ORDERING A COLUMBIA RIVER PILOT

503-289-9922
DISPATCHERS@COLRIP.COM

ORDERS FOR A COLUMBIA RIVER PILOT WILL BE ACCEPTED
ONLY BETWEEN THE
HOURS OF 0700 AND 1600.

SPECIAL ARRANGEMENTS CAN BE MADE FOR
TENTATIVE ORDERS DURING THE NIGHT, BUT SUCH
ARRANGEMENTS MUST BE MADE PRIOR TO 1600.

IN CASE OF EMERGENCY AFTER 1700 CALL: 503-289-9922

WHEN INCOMING FROM SEA (WITHOUT SERVICE
OF BAR PILOT) VESSELS OR AGENTS MUST GIVE
NOTICE BETWEEN THE HOURS OF 0800 AND 1600
AND AT LEAST 12 HOURS PRIOR TO ESTIMATED TIME
OF ARRIVAL AT ASTORIA. CALL MAY BE PLACED
WITH THE:

**ASTORIA OFFICE: 503-325-2641
**PORTLAND OFFICE: 503-289-9922
**BY RADIO TO COLRIP ASTORIA, OR

VESSELS MUST CONFIRM ETA ASTORIA AT LEAST
TWO HOURS BEFORE ARRIVAL BY CALLING ASTORIA
OFFICE 503-325-2641 (DAY) OR (NIGHT) OR BY RADIO
TO COLRIP ASTORIA, OR.

RIVER PILOT 1LONG,3SHORT
BAR PILOT 1 LONG, 2 SHORT, 1 LONG
LAUNCH 1LONG,2SHORT

SAILINGS & HARBOR MOVES REQUIRE:

- **3 HOURS NOTICE FOR JOBS IN PORTLAND AND
VANCOUVER HARBORS.
- **3 HOURS NOTICE FOR JOBS IN KALAMA AND
LONGVIEW HARBORS.
- **VESSELS ARRIVING FROM SEA AT THE
COLUMBIA RIVER BAR MUST GIVE AT LEAST 24
AND 12 HOURS NOTICE FOR BAR AND RIVER
PILOT.
- **ANY SAILING OR HARBOR MOVE OCCURRING
BETWEEN THE HOURS OF 1900 AND 0900 IS AN
AFTER-HOURS JOB.

PROCEDURE FOR ORDERING PILOTS ON AFTER-HOURS JOBS:

- 1) PLACE ORDER FOR PILOT WITH PILOT
DISPATCHER NO LATER THAN 1600 HOURS.
- 2) DETERMINE IF THE PILOT WILL REPORT FOR A
SET JOB OR A CALL JOB, AS FOLLOWS:
 - **SET JOB: FOR DEFINITE SAILING/SHIFTING
TIMES, PILOT WILL REPORT WITH NO
ADDITIONAL CALLS REQUIRED; REPORT
CHARGE BILLED IF PILOT ARRIVES AND JOB
CANCELS.
 - **CALL JOB: FOR TENTATIVE SAILING/
SHIFTING TIMES AFTER DISPATCH OFFICE
IS CLOSED; PILOT WILL NOT REPORT UNTIL
CALL JOB BECOMES SET JOB; NO CHARGE
FOR CANCELLING CALL JOB.
- 3) TO SET CALL JOB TIME, CALL MERCHANTS
EXCHANGE AT 503-228-4361 OR ON CHANNEL
16, CALL SIGN WHW-656, WITH THE
APPROPRIATE 3 HOUR NOTICE.

MERCHANTS EXCHANGE

24-HOUR VESSEL INFORMATION
CALL CHANNEL 16 WHW 656

OPERATING CHANNELS
ASTORIA TO PORTLAND
CHANNEL 18A, 11

US COAST GUARD REGULATION

47CFR-PART80.305 A3
REQUIRES MONITORING CHANNEL 16 AT ALL
TIMES WHILE TRANSITING INLAND WATERS

IN ALL EMERGENCIES CALL THE U.S. COAST GUARD

RADIO: VHF-FM CH. 16
PHONE: 503-861-6211
(ASTORIA COAST GUARD)

SEE US COAST PILOT 7 FOR INFORMATION
ON THE COLUMBIA RIVER BAR PILOTS

FOR INFORMATION ON THE
LOWER COLUMBIA REGION HARBOR SAFETY PLAN
GO TO WWW.LCRHSC.ORG

NOTES

NOTES



**COLUMBIA
RIVER
PILOTS**

PILOT CONTACT INFORMATION

**COLUMBIA RIVER PILOTS
13225 N COLUMBIA BLVD.
PORTLAND, OR 97203
FAX: (503) 289-9955**

STAFF CONTACT INFORMATION

**DISPATCH ONLY (0700-1600):
JIM HORNE – HOLLY ROBINSON – JEFF GERMANO
VESSEL MOVEMENT COORDINATORS
DISPATCHERS@COLRIP.COM
(503) 289-9922**

**KEN LAWRENSON
BUSINESS MANAGER
KLAWRENSON@COLRIP.COM
(503) 289-9925**

**GALE PUDLITZKE
ACCOUNTING MANAGER
ACCOUNTING@COLRIP.COM
(503) 289-8734**

**OFFICE ASSISTANTS
ADMIN@COLRIP.COM
503-289-2524**

WWW.COLRIP.COM