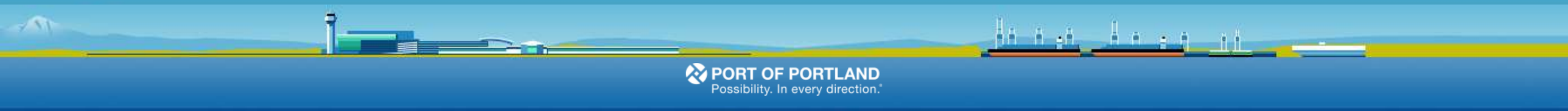
Port of Portland



Loadmax System

Richard Vincent, Waterways Program Manager

Columbia Basin Leadership Training (COBALT)

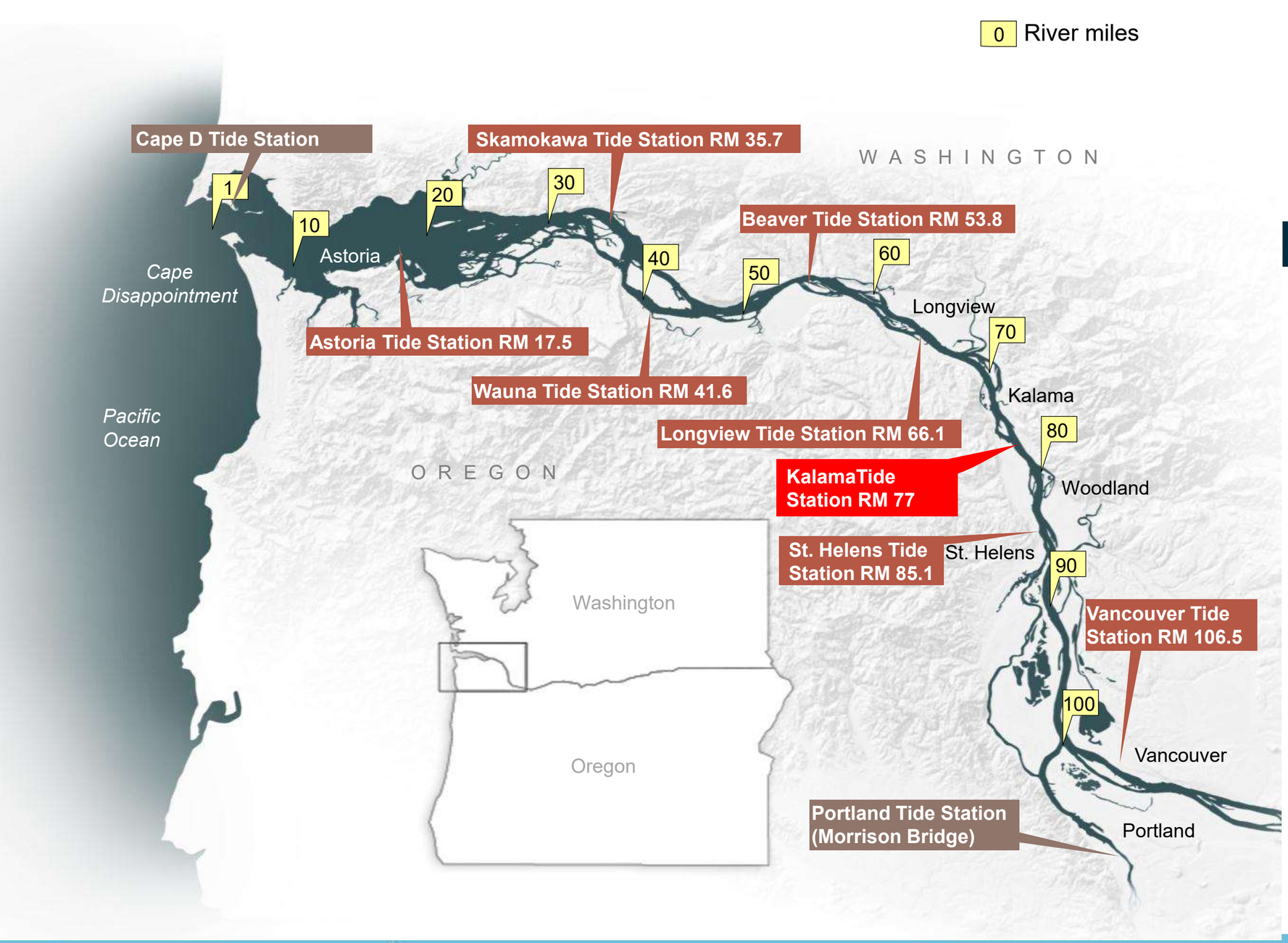
October 6, 2026

What is Loadmax?

- Loadmax provides the maritime industry with real-time and forecast river level data
- Data is used to assist in making vessel loading and sailing decisions
- Loadmax is a cooperative effort between Port of Portland, NW River Forecast Center & NOAA National Ocean Services

What is a foot of draft worth?

- One foot vessel draft equates to $1M or more of cargo
- The extra 3 feet = $3M to $6M of outbound cargo loaded per vessel
- The new USACE Dredged Material Management Plan (DMMP) will cost over $500M over 20 years

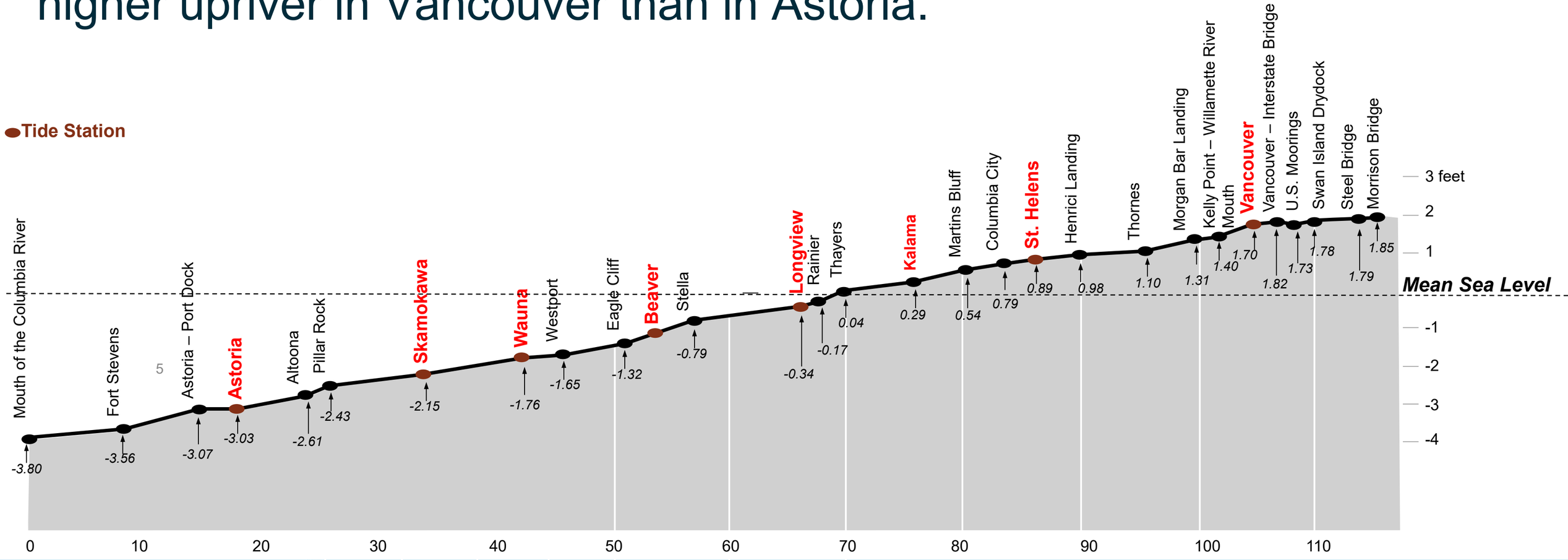


Columbia River Federal Navigation Channel

- 103.5 miles from mouth to Vancouver
- 43 ft deep
- 600 ft wide
- River only drops 5.5 feet

Columbia River Datum (CRD)

Columbia River Datum (CRD) represents the low water datum on the River. It is a slightly imperfect inclined plane that is approximately 5.5’ higher upriver in Vancouver than in Astoria.



Loadmax Output

PORT OF PORTLAND

In cooperation with the
Northwest River Forecast Center - Portland, OR

LOADMAX™

Columbia River Shipping Channel
Reporting and Forecasting

Printed: 12/4/2012 page: 1 of 11

Date	Hour	RIVER MILE 17 ASTORIA	25	35 SKAMOKAWA	45 WARRIOR	55 BEAVER	65	75 LONGVIEW	85 ST. HELENS	95	105 VANCOUVER
		Gauge Reading in Feet / Flow Velocity in Feet per Second									
[OBSERVED: Gauge Reading - beginning 07/23/2012 - hour 13]											
07/23/2012	13	2.13		1.28	2.32	3.82		6.44	7.93		8.93
07/23/2012	14	3.93		2.12	2.55	3.57		6.34	7.57		8.84
07/23/2012	15	5.87		4.08	3.91	3.79		5.96	7.41		8.76
07/23/2012	16	7.47		6.37	5.92	4.88		6.13	7.29		8.67
07/23/2012	17	8.28		7.60	7.58	6.52		6.98	7.29		8.60
07/23/2012	18	8.12		8.14	8.35	7.67		8.17	7.54		8.56
07/23/2012	19	7.04		7.70	8.22	7.96		8.85	8.08		8.66
07/23/2012	20	5.29		6.67	7.39	7.67		8.95	8.47		8.88
07/23/2012	21	3.55		5.42	6.37	7.00		8.65	8.59		9.14
07/23/2012	22	2.19		4.17	5.26	6.28		8.22	8.42		9.31
07/23/2012	23	1.36		3.16	4.32	5.55		7.73	8.44		9.38
07/24/2012	00	1.33		2.36	3.59	4.95		7.30	8.25		9.35
07/24/2012	01	2.23		1.94	3.02	4.46		6.94	8.09		9.28
07/24/2012	02	3.61		2.29	2.91	4.10		6.60	7.94		9.22
07/24/2012	03	5.14		3.52	3.65	4.05		6.36	7.78		9.13
07/24/2012	04	6.44		5.22	5.10	4.59		6.34	7.66		9.05
07/24/2012	05	7.21		6.47	6.47	5.70		6.74	7.60		8.96
07/24/2012	06	7.11		7.00	7.24	6.66		7.50	7.69		8.90
07/24/2012	07	6.11		6.60	7.11	7.02		8.11	7.95		8.91
07/24/2012	08	4.49		5.53	6.43	6.79		8.24	8.13		9.00
07/24/2012	09	2.78		4.63	5.58	6.30		8.04	8.31		9.09
07/24/2012	10	1.40		3.49	4.59	5.67		7.61	8.25		9.14
07/24/2012	11	0.54		2.55	3.75	5.02		7.24	8.12		9.14
07/24/2012	12	0.44		1.80	3.09	4.47		6.86	7.95		9.06
07/24/2012	13	1.17		1.35	2.49	3.99		6.53	7.78		8.92
07/24/2012	14	3.05		1.67	2.35	3.66		6.21	7.60		8.79
07/24/2012	15	4.92		3.11	3.11	3.59		5.96	7.42		8.65
07/24/2012	16	6.72		5.15	4.90	4.23		5.92	7.26		8.51
07/24/2012	17	8.00		7.00	6.87	5.70		6.37	7.13		8.39
07/24/2012	18	8.46		8.04	8.15	7.18		7.54	7.22		8.27
07/24/2012	19	7.97		8.23	8.58	7.99		8.57	7.63		8.23
07/24/2012	20	6.64		7.55	8.11	8.00		9.00	8.10		8.36
07/24/2012	21	4.82		6.43	7.19	7.48		8.86	8.38		8.61
07/24/2012	22	3.09		5.10	6.07	6.78		8.44	8.39		8.83
07/24/2012	23	1.79		3.88	4.95	5.98		7.96	8.28		8.91
07/25/2012	00	1.05		2.82	4.07	5.27		7.42	8.22		8.87
07/25/2012	01	1.11		2.09	3.30	4.68		6.98	7.87		8.77
07/25/2012	02	2.00		1.70	2.76	4.17		6.59	7.65		8.63
07/25/2012	03	3.28		2.06	2.68	3.84		6.24	7.46		8.49
07/25/2012	04	4.68		3.06	3.33	3.74		5.94	7.22		8.35
07/25/2012	05	5.91		4.39	4.62	4.23		5.93	7.07		8.20
07/25/2012	06	6.62		5.93	5.93	5.15		6.24	6.95		8.05
07/25/2012	07	6.56		6.37	6.59	6.06		6.88	7.00		7.91
07/25/2012	08	5.61		6.05	6.52	6.37		7.43	7.14		7.81
07/25/2012	09	4.16		5.23	5.92	6.19		7.54	7.34		7.81
07/25/2012	10	2.74		4.22	5.10	5.66		7.31	7.33		7.85
07/25/2012	11	1.65		3.19	4.15	5.07		6.93	7.27		7.88
07/25/2012	12	1.09		2.30	3.34	4.46		6.50	7.10		7.84

NO GO

GO

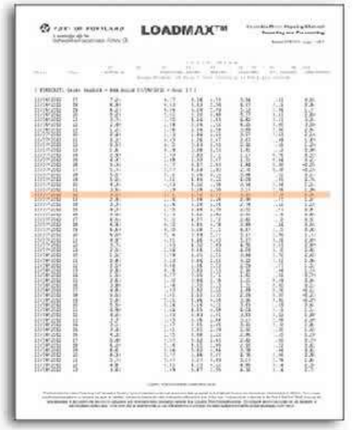
Caution: Unverified National Ocean Service Data

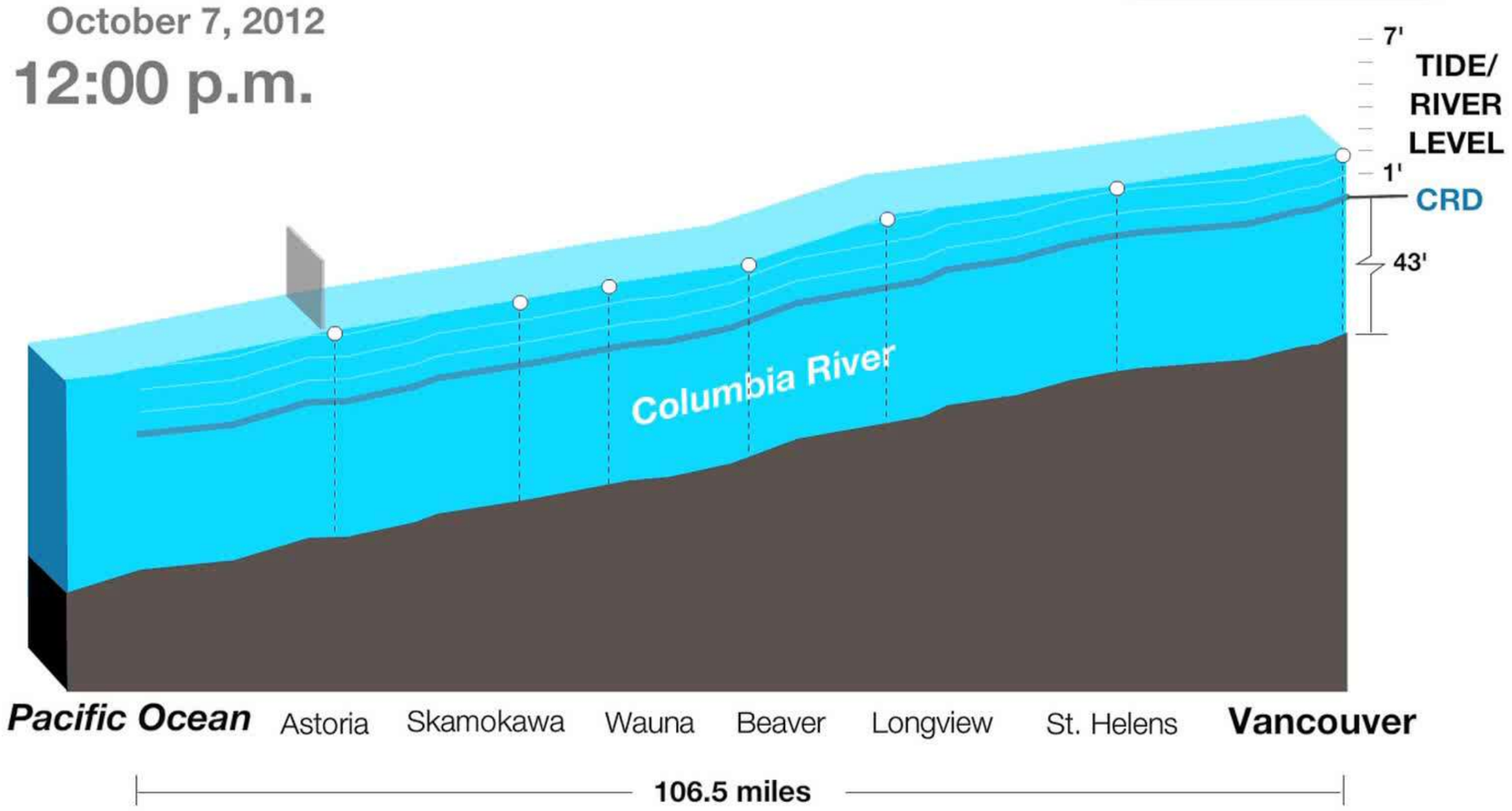
The Columbia River Level Reporting and Forecasting System ("system") is experimental and based upon data generated by the National Oceanic and Atmospheric Administration ("NOAA"). The forecast provided by the system is an estimate and must be used by a prudent navigator only after investigation of the actual state of the river. Only recipients authorized by the Port of Portland ("Port") may use the data generated by the system and then only in conjunction with other more timely information gathered by a Columbia River Pilot on the scene. The recipient agrees that it shall not sell, republish, or redistribute any system data. In the event that an agent provides a copy of this report to its principle, the agent shall ensure that this disclaimer appears on the report.

Ship Moving Downriver (low-water)

Departs Vancouver at 10 pm, Oct. 7

Minimum 2’ clearance

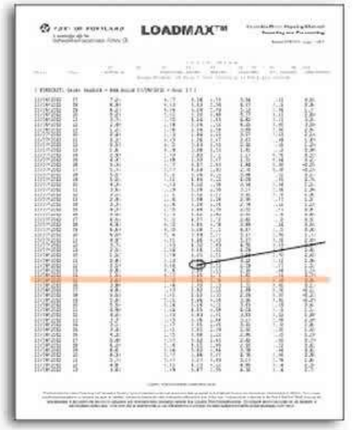


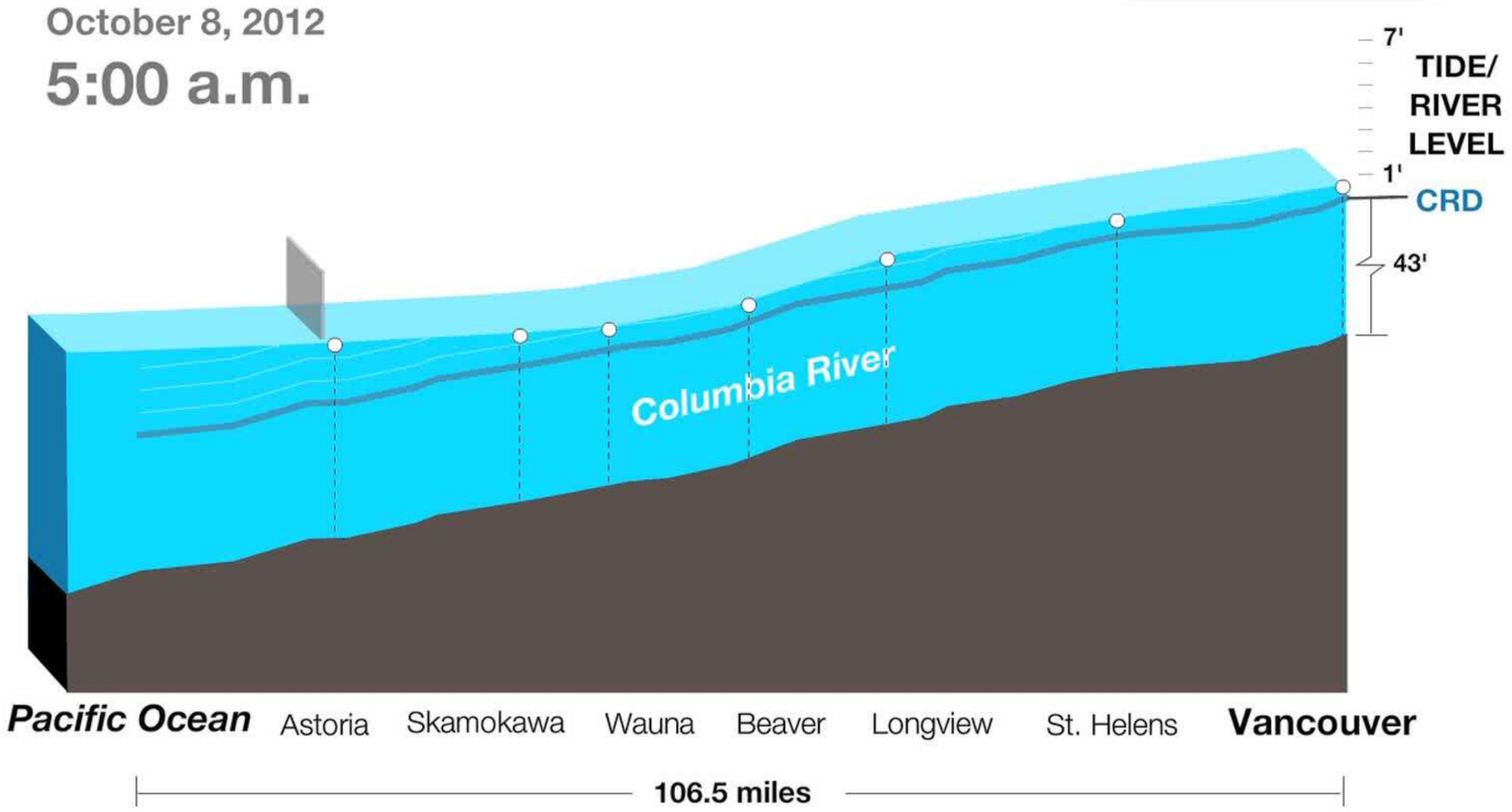


Ship Moving Downriver (low-water)

Departs Vancouver at 1 pm, Oct. 8

Minimum 2’ clearance





Trip Parameters

	Date	Start Time	Destination	Draft	Speed	
◉ U.S. ○ Metric	09/30/2025	1:23 PM	Inbound	41 feet	5 knots	Submit

https://www.portofportland.com/RiverDepthForecasting

Trip Parameters

U.S. / Metric

Date	Start Time	Destination	Draft	Speed	
09/30/2025	1:21 PM	Outbound	41 feet	12 knots	Submit

	Location	River Mile	Underkeel Clearance	Depth	Arrival Time	Arrival Day
10.	Tongue Point	17.5 mi	9.4 ft	50.4 ft	9/30/2025 7:47:41 PM	Tuesday
20.	Skamokawa	35.0 mi	8.6 ft	49.6 ft	9/30/2025 6:31:39 PM	Tuesday
30.	Wauna	41.5 mi	8.3 ft	49.3 ft	9/30/2025 6:03:25 PM	Tuesday
40.	Beaver Army Terminal	53.8 mi	6.7 ft	47.7 ft	9/30/2025 5:09:58 PM	Tuesday
50.	Longview	65.0 mi	5.5 ft	46.5 ft	9/30/2025 4:21:18 PM	Tuesday
55.	Kalama	77.0 mi	4.6 ft	45.6 ft	9/30/2025 3:29:10 PM	Tuesday
60.	St. Helens	86.0 mi	4.0 ft	45.0 ft	9/30/2025 2:50:04 PM	Tuesday
70.	Vancouver	106.5 mi	4.1 ft	45.1 ft	9/30/2025 1:21:00 PM	Tuesday

Questions

January 2022, Photo from Hayden Island showing Terminal 6 with four vessels at berth.