Port of Portland

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Possibility. In every direction.

Loadmax System

Richard Vincent, Waterways Planning Manager

Columbia Basin Leadership Training (COBALT)

October 23, 2024

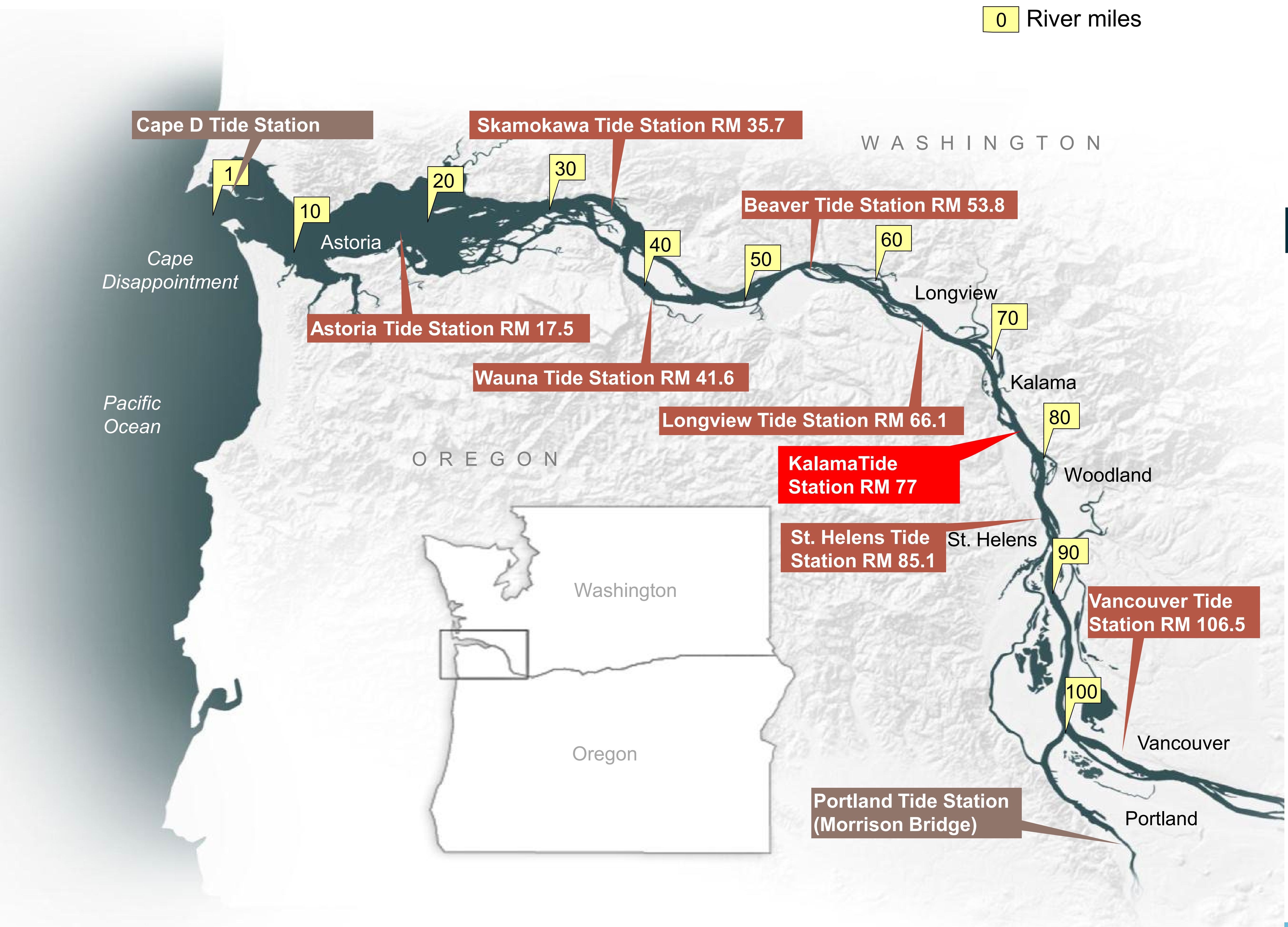
What is Loadmax?

- 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 = 2,000 tons of cargo; Value:
  - Wheat: $420K/foot
  - Corn: $350K/foot
  - Soybean: $710K/foot
- Investment in Columbia River Deepening was $66 million per foot
- The extra 3 feet = $1-2 M of outbound cargo loaded per vessel

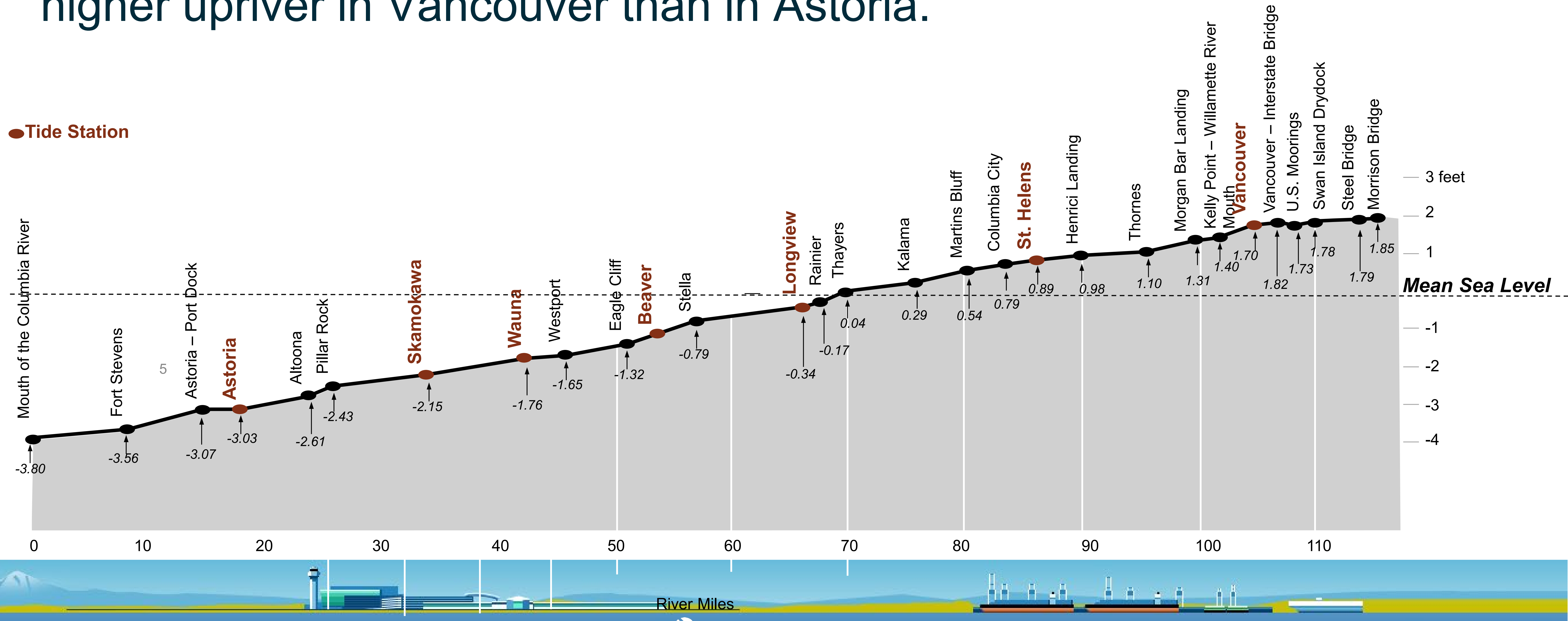
Columbia River Federal Navigation Channel



- 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

Gauge Reading in Feet / Flow Velocity in Feet per Second

Date	Hour	RIVER MILE 17 ASTORIA	35 SKAMOKOWA	45 WAUNA	55 BEAVER	65 / 75 LONGVIEW	85 ST. HELENS	105 VANCOUVER
[OBSERVED: Gauge Reading - beginning 07/23/2012 - hour 13]								
07/23/2012	13	2.13	1.28	2.32	3.82	6.44	7.73	8.93
07/23/2012	14	3.93	2.12	2.55	3.57	6.14	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	6.17	5.92	4.89	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	3.19	4.17	6.26	6.28	8.33	8.62	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	6.64	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	4.46	5.75	6.43	6.73	8.24	[illegible]	9.00
07/24/2012	09	2.78	4.63	5.59	6.30	8.04	8.31	9.09
07/24/2012	10	1.40	3.49	4.59	5.67	7.67	8.25	9.14
07/24/2012	11	0.54	2.55	3.75	4.02	7.24	8.12	9.14
07/24/2012	12	0.44	1.80	3.04	4.47	6.86	7.95	9.06
07/24/2012	13	1.37	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	8.16	7.18	7.54	7.32	8.27
07/24/2012	19	7.97	8.23	8.58	7.99	8.57	7.65	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	8.34	8.61
07/24/2012	22	3.09	5.10	6.07	6.78	8.44	8.39	8.81
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	8.08	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	3.82	6.24	7.46	8.49
07/25/2012	04	4.68	3.06	3.55	3.74	5.94	7.22	8.35
07/25/2012	05	5.93	4.49	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	5.63	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	7.37	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

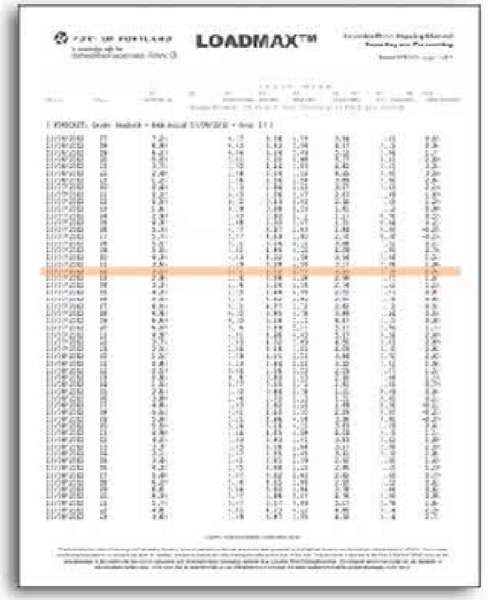
GO

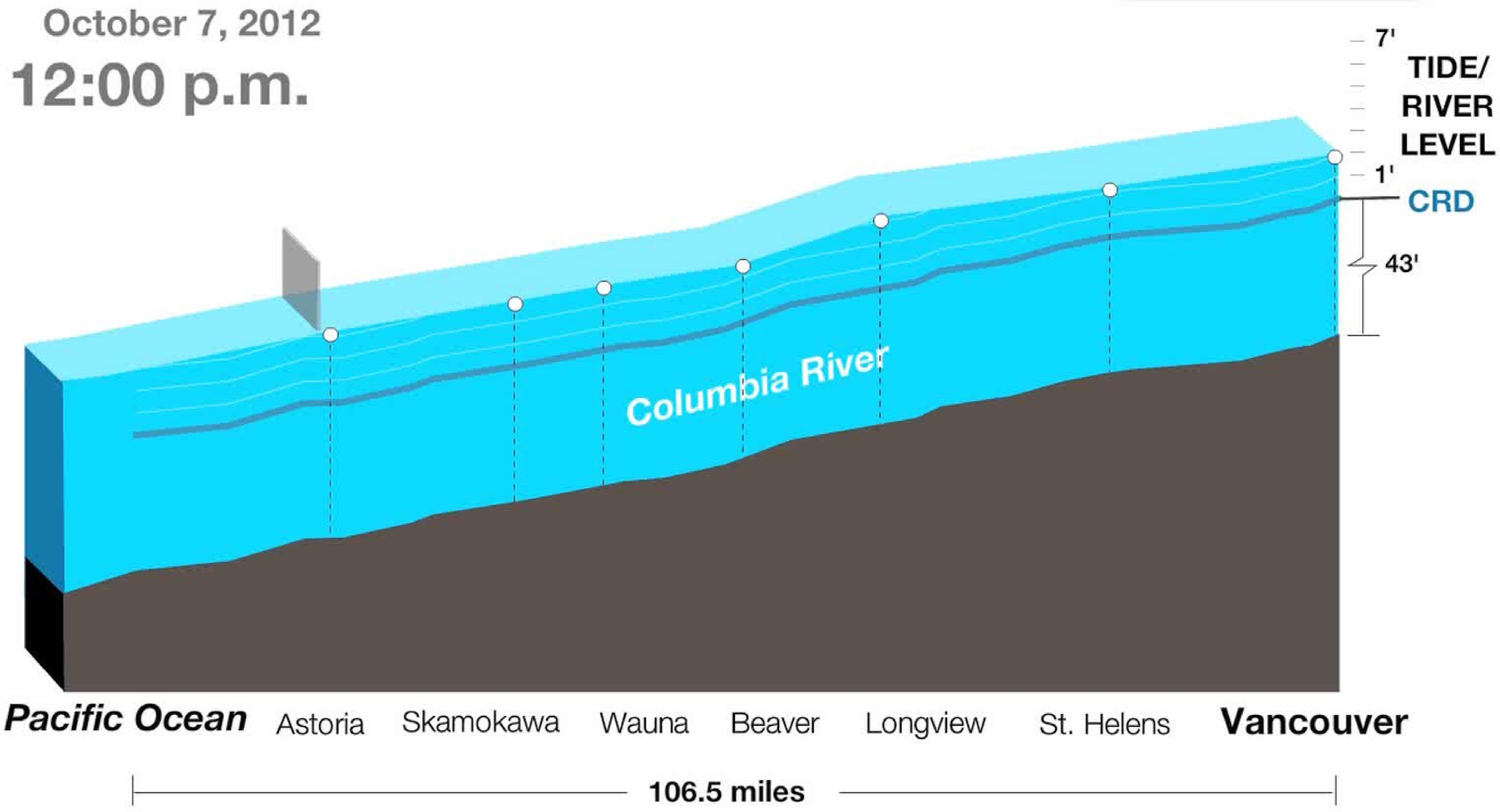
Caution: Unverified National Ocean Service Data

Ship Moving Downriver (low-water)

Departs Vancouver at 10 pm, Oct. 7

Minimum 2' clearance

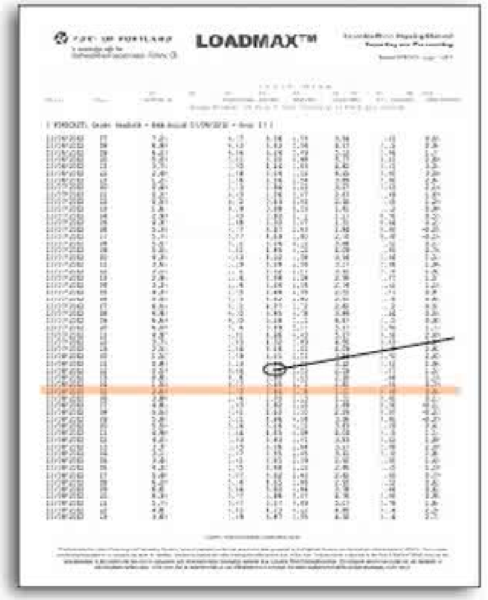


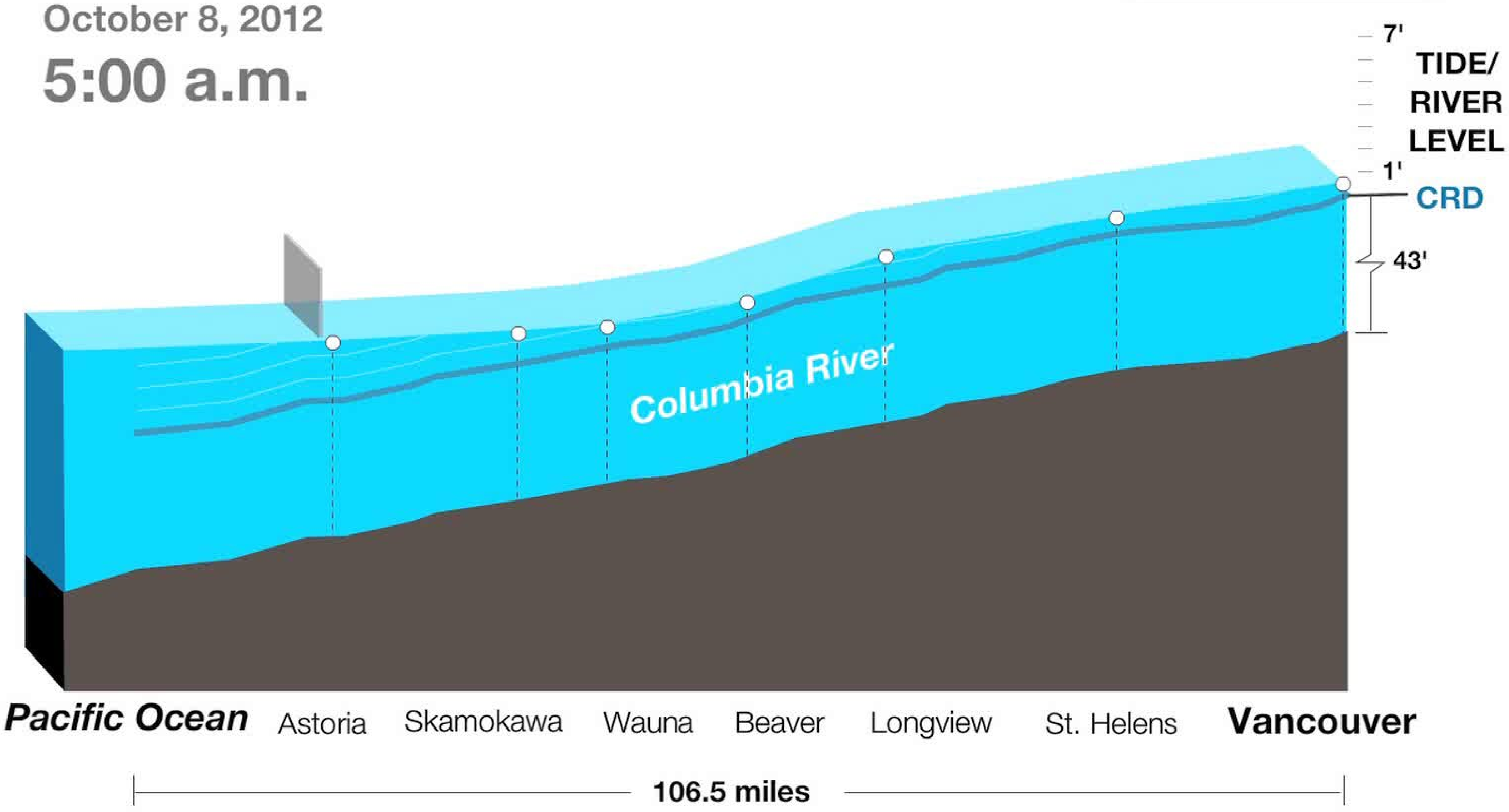


Ship Moving Downriver (low-water)

Departs Vancouver at 1 pm, Oct. 8

Minimum 2’ clearance





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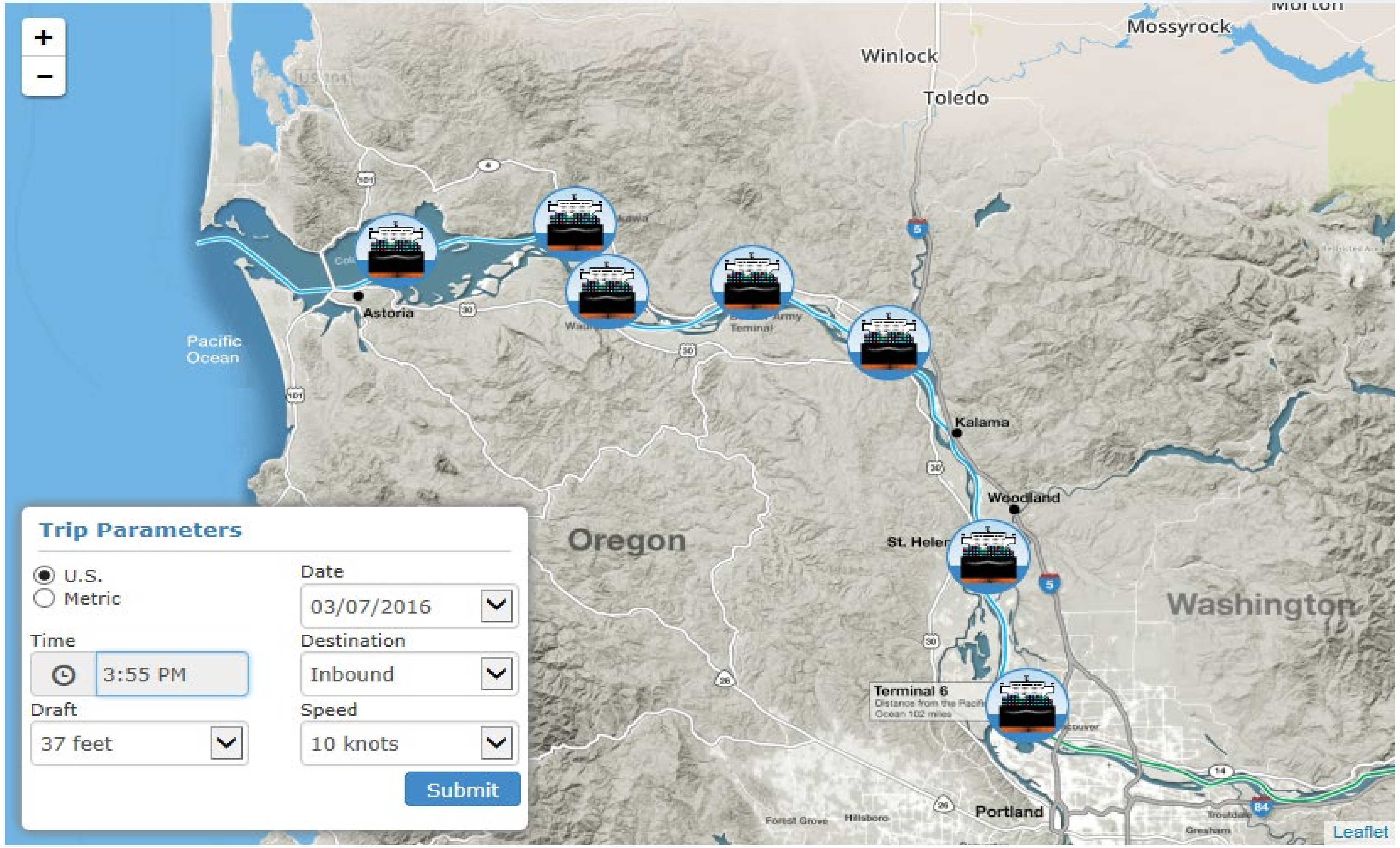
River Depth Forecasting



Trip Parameters

- U.S.
- Metric

Date: 03/07/2016

Time: 3:55 PM

Destination: Inbound

Draft: 37 feet

Speed: 10 knots

Submit

Click on the markers for more information.

Shipping Channel — Upper Columbia River System

https://www2.portofportland.com/Marine/RiverDepthForecasting

Questions

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