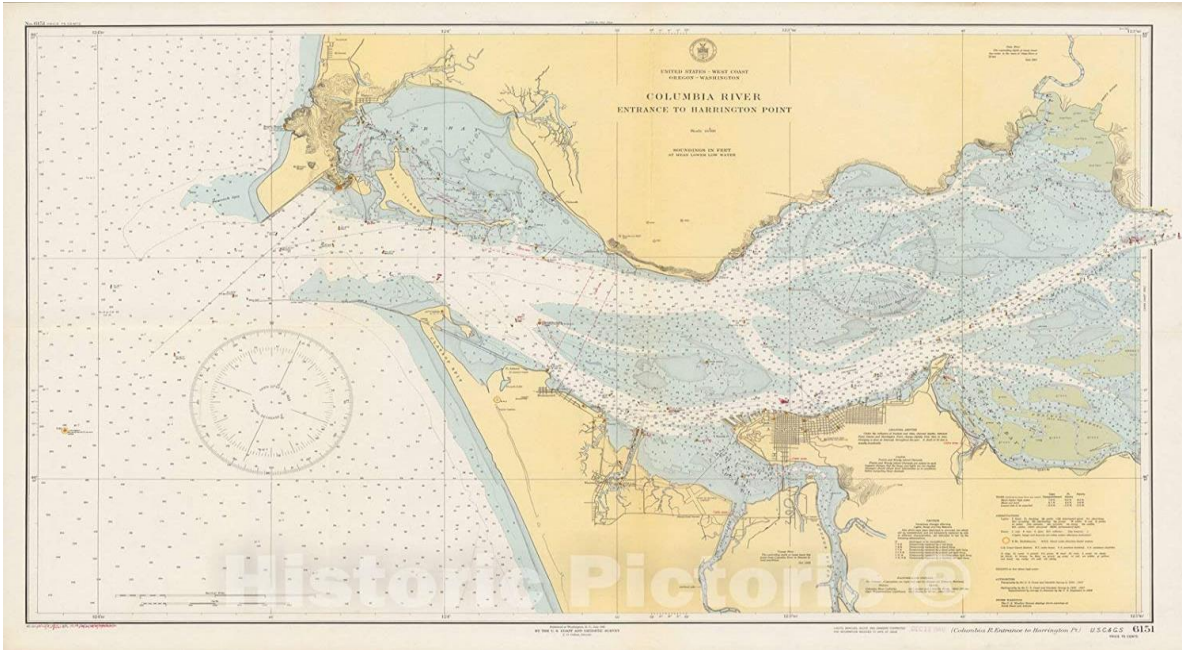


# Thirteenth Coast Guard District

## Waterways Analysis and Management System



Columbia River Entrance- 200100122178

Cape Disappointment

2021

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NEXT REVIEW: JUNE 2026

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4. [PAO notice to public](#)
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## I. Purpose.

The purpose of this Waterways Analysis Management System (WAMS) study is to serve as the primary tool for managing the Aids to Navigation (ATON) in our waterways in a systematic manner. As outlined in COMDTINST M16500.7 (series), WAMS reports ensure:

1. All aids are required as necessary elements of the ATON system.
2. Changes to augment and/or reduce aids are made when needed to meet changing needs in the waterway.
3. Aids conform to the system criteria in the Aids to Navigation Manual – Administration.
4. Aids and the ATON system provide their required operational characteristics; waterways are examined for the effectiveness of traffic management mechanics to assist the Program Manager in fulfilling waterways management responsibilities.

## II. Information Collection

This study encompasses the following bodies of water: Baker Bay, Cape Disappointment, Chinook Channel, Skipanon Channel, Lewis and Clark River & Youngs Bay. All federal and private ATON were included in this study.

Public comments were solicited through Local Notice to Mariners, local blogs, email distribution and phone conversations. The announcement in the Local Notice to Mariners included a link to the Coast Guard D13 WAMS website where the questionnaire was located. Questionnaires were also directly mailed or emailed to waterway users. A press release was published by D13 Public Affairs.

User rides were conducted with Station Cape Disappointment and National Motorlife Boat Schools on 19JUL21.

### Narrative Description:

*(US Army Corps of Engineers Operations (USACE Portland District)):*

The federal navigation channel at the mouth of the Columbia River is six miles long and lies between two jetties. It was first authorized in 1884.

The Corps operates and maintains three jetties and the navigation channel that serves as the border between Washington and Oregon. The north jetty, built from 1913 to 1917, is 2.5 miles long. Jetty “A” was built in 1939 and is 0.3 miles long. The north jetty and jetty “A” are on the Washington side of the mouth. South jetty, built between 1885 and 1895, is 6.6 miles long and on the Oregon side of the mouth.

Many areas of each structure have been severely damaged due to the extreme waves of the Pacific Ocean interacting with the Columbia River. The structures are routinely exposed to ocean waves ranging from 10 to 20 feet high. Increased storm activity and the loss of sand shoal material upon which they are built have taken a toll on the structural integrity of the jetties. The Corps is working to restore the system to acceptable levels of reliability.

Previously interim repairs were completed for the North and South Jetties from fiscal year 2005 to 2007. The North Jetty interim repair was completed in November 2005 with 58,000 tons of stone placed over 3,000 feet. The South Jetty interim repair was completed in September of 2007 with 168,000 tons placed over 5,300 feet. South Jetty Reach A was finished in 2006 with 82,000 tons of

stone placed over 2,200 feet and Reach B was completed in 2007 with 86,000 tons placed over 3,100 feet. Jetty A rehabilitation was completed in 2016.

The Corps completed the Columbia River Channel Improvements Project in November 2010. The project deepened the Columbia River by three feet, to 43 feet along a 103-mile stretch of river from the Pacific Ocean to Portland, Ore. The project took 20 years to complete and was a collaborative effort between the Corps and six lower Columbia River ports (Portland, Vancouver, Kalama, St. Helens, Longview and Woodland). The project improved navigation by deepening the channel to accommodate the current fleet of international bulk cargo and container ships and to improve the condition of the Columbia River estuary through the completion of other environmental restoration projects.

The navigation channel is important to the regional and national economy. The Port of Portland estimates more than 40,000 jobs along the lower Columbia River are dependent upon seaport activity. Seaport activity in the regions of the lower Columbia generates \$208 million in state and local tax revenue and contributes 10 percent toward the state of Oregon's gross product. About 1,000 firms export goods via the lower Columbia River and all of these goods must exit the Mouth of the Columbia River.

### Geographic Features

*(Coast Pilot 10, 3rd Edition)*

**Mouth of the Columbia River:** The Columbia River bar is the second-most treacherous in the world and the most treacherous in the United States. By maintaining the channel to its authorized depth, the work ensures safer passage for commercial and recreational vessels.

The project can only be dredged during the calmer weather between June and early November. Up to 5 feet of allowable over-depth dredging may be accomplished in order to ensure authorized project depth in between dredging cycles. In some locations 1-2 feet of additional depth may be removed or otherwise disturbed during the dredging process.

#### **Main Channel:**

Channel A (north reach) is 6 miles long, 2,000 feet wide and 55 feet deep.

Channel A (south reach) is 6 miles long, 640 feet wide and 48 feet deep.

#### **Jetties:**

North Jetty is 2.5 miles long.

South Jetty is 6.6 miles long.

Spur Jetty A is 0.3 miles long.

**MCR Jetties** is the ocean gateway for maritime navigation. The jetties serve as the opening point to the larger Columbia River/Snake River navigation system, carrying about 40 million tons of cargo annually with an estimated value of \$20 billion (ACOE).

**Jetty A** southeast of Cape Disappointment: The ebbing current combined with the deflected river current can reach 8 knots. Boats headed into Baker Bay west channel during an ebb tide make little headway against the swift current and risk being exposed to rough water or surf for long periods

of time. Small craft should avoid the shallow, sandy area when heavy seas are running because of the surf that breaks on the beach.

**Baker Bay** is a shallow body of water about 15 miles square, near the mouth of the Columbia River. The bay is separated from the river by Sand Island, a low-lying sand bar only a few feet above high tide level.

The bay houses wharves, floats, ramps, and berths, for fishing craft, barges and tow-boats. The small-boat basin and protecting breakwater provides moorings for numerous fishing and recreational craft year-round. The facilities are considered adequate for existing commerce.

West Channel

Channel is 2,000 feet long, 200 feet wide, 16 feet deep  
Thence A Channels is 2.5 miles long, 150 feet wide, 16 feet

East Channel

Channel is 4 miles long, 200 feet wide, 10 feet deep

**Cape Disappointment**, the rugged north point at the Columbia River entrance, is the first major headland along the 20 miles of sand beach north from Tillamook Head. It comprises a group of rounding hills covering an area 2.5 miles long and 1 mile wide, divided by a narrow valley extending north-northwest. The seaward faces of these hills are precipitous cliffs with jagged, rocky points and small strips of sand beach. Cape Disappointment Light (46°16'33"N., 124°03'08"W.), 220 feet above the water, is shown from a 53-foot white conical tower with white horizontal band at top and bottom, and black horizontal band in the middle, on the south point of the cape. Cape Disappointment Coast Guard Station is at Fort Canby on the east side of the cape.

**Skipanon Channel** is a tidal waterway extending south 2.7 miles from deep water in Columbia River. The channel enters the Columbia River about 10 miles above the Columbia River's entrance bar, and 4 miles below Astoria, Ore. The Skipanon Channel serves the city of Warrenton, Ore., which owns a 300-foot public wharf.

The channel from the Columbia River to the railroad bridge at Warrenton is 1.8 miles long, 200 feet wide, and 30 feet deep.

The turning basin is 30 feet deep.

The mooring basin is 12 feet deep.

Above the railroad bridge, the channel is 4,500 feet long, 40 feet wide (with increased widths at log dumps and terminals) and 6 feet deep.

**Youngs Bay** is a shoal body of water just west of Smith Point. It receives the waters of Youngs River and Lewis and Clark River. The docks of a marine repair yard are 0.5 mile above the Old Route 101 highway bridge crossing the Lewis and Clark River. The yard can handle vessels up to 350 tons for hull and engine repairs. Traffic on the two rivers is confined chiefly to tugs handling log rafts just above the highway bridges. Small tugs operate to the town of Olney on Youngs River at high tide.

**Desdemona Sands**, marked by a light near the west end, is a shoal area extending southeast for about 8 (9.2) miles from just inside the entrance to Columbia River. Desdemona Sands has the main river channel to the south and a secondary channel to the north. The southern section of Desdemona

Sands is composed of shifting sand shoals that dry at low water. Only shallow draft vessels should attempt to navigate Desdemona Shoals; mariners are urged to use caution in the area.

## Facilities

(Coast Pilot 10, 3rd Edition)

Facilities at Hammond, Warrenton and Astoria							
Name	Location	Berthing Space	Depths*	Deck Height	Mechanical Handling Facilities and Storage	Purpose	Owned/Operated
Point Adams Packing Co. Hammond Wharf	46°12'01"N., 123°56'26"W.	180	41	20	Two ½-ton mast-and-boom derricks	Receipt of seafood	California Shellfish, Inc.
Nygaard Brothers Logging Company Warrenton Wharf	46°11'29"N., 123°55'24"W.	460	40	15	• Open storage (80 acres) • One 200-ton crawler crane • Log stackers/loaders	Receipt of logs	City of Warrenton/ Nygaard Brothers Logging Co. and Warrenton Fiber Co.
Warrenton Fiber Company Wharf	46°11'25"N., 123°55'25"W.	470	12	20	• Open storage area • One loading lower and spout • Electric belt-conveyor	Shipment of wood chips	City of Warrenton/ Warrenton Fiber Co.
Pacific Coast Seafoods Warrenton Wharf	46°10'10"N., 123°54'52"W.	390	16	15	• Two ½-ton mast-and-boom derricks • Tank storage (475 barrels)	Receipt of seafood	Pacific Coast Seafood, Inc.
Port of Astoria Pier No. 2	46°11'21"N., 123°51'44"W.	425 (face) 1,307 (lower) 1,250 (upper)	35-40 35 22	16	• Tank storage (101,500 barrels) • Open storage (10.8 acres) • Covered storage (46,000 square feet) • One 250-ton mobile crane • One 50-ton crawler crane	• Receipt and shipment of conventional general cargo • Shipment of logs and lumber • Receipt of petroleum products	Port of Astoria/ Cavenham Forest Industries, McCall Oil and Chemical Co.; Marine Spill Response Corp.
Port of Astoria Pier No. 1 (West Side)	46°11'23"N., 123°51'34"W.	1,100	40	16	• Open storage (5 acres) • Cranes are available from reference No. 1	• Receipt and shipment of conventional general cargo and logs • Shipment of wood chips	Port of Astoria/ Cavenham Forest Industries
Port of Astoria Pier No. 1 (Face)	46°11'26"N., 123°51'31"W.	875	40	16	• Open storage (5 acres) • Cranes are available from reference No. 1	• Receipt and shipment of conventional general cargo and wood chips • Shipment of logs	Port of Astoria
Astoria Warehousing Wharf	46°11'35"N., 123°50'40"W.	320	40	16	• Covered storage (121,000 square feet) • Eleven 2½-ton forklifts	Receipt of canned salmon	Astoria Warehousing, Inc.
Fishhawk Fisheries Astoria Wharf	46°11'33"N., 123°50'18"W.	45	40	16	Two ¼-ton electric hoists	Receipt of seafood	Fishhawk Fisheries, Inc.
Ocean Foods of Astoria Wharf	46°11'30"N., 123°49'58"W.	260	30	15	One 2-ton derrick and two 1-ton derricks	Receipt of seafood	Ocean Foods of Astoria, Inc.
Tongue Point Piers 3, 4, and 5	46°12'00"N., 123°45'28"W.	2,300 (Pier 3) 2,300 (Pier 4) 2,300 (Pier 5)	12-24	15	Open storage (4.5 acres)	• Shipment of steel products • Mooring vessels for construction and shipbreaking	State of Oregon/ Cresmont Inc., Pacific Marine and Steel Inc., The Ogilvie Co.
James River Corp. Wauna Mill Transit Shed Dock	46°09'38"N., 123°24'20"W.	1,090	30	11	• Open storage (25,000) • Covered storage (120,000 square feet)	Shipment of paper products and wood pulp	James River Corp.
James River Corp. Wauna Mill Peco Wharf	46°09'25"N., 123°24'01"W.	762	20-40	15	• Open storage area • One electric crane • Belt-conveyor system	Receipt of wood chips and sawdust	James River Corp.
Dimensions are given in feet							
* The depths given above are reported. For information on the latest depths contact the port authorities or the private operators.							



### Regulated Navigation Areas (RNA)

(33 CFR § 165.1325)

Columbia River Bar, Wash.-Oreg.: From a point on the shoreline at 46°18'00" N., 124°04'39" W. thence westward to 46°18'00" N., 124°09'30" W. thence southward to 46°12'00" N., 124°09'30" W. thence eastward to a point on the shoreline at 46°12'00" N., 123°59'33" W. thence eastward to Tansy Point Range Front Light at 46°11'16" N., 123°55'05" W.; thence northward to Chinook Point at 46°15'08" N., 123°55'25" W. thence northwestward to the north end of Sand Island at 46°17'29" N., 124°01'25" W. thence southwestward to a point on the north shoreline of the harbor at 46°16'25" N., 124°02'28" W. thence northwestward and southwestward along the north shoreline of the harbor and northward along the seaward shoreline to the beginning.

### Bridge Projects

District 13 has no bridge projects on the entrance of the Columbia River.

### Anchorage

**General anchorages** are in the Columbia River. (See **33 CFR 110.1** and **110.228** chapter 2, for limits and regulations.)

Anchorage for small craft can be had almost anywhere in the bay outside the dredged channels and below the railroad bridge.

### Environmental Factors

(Coast Pilot 7, 33rd Edition)

The mouth of the Columbia River, frequently called the "Graveyard of the Pacific" due to its sudden and unpredictable changes in the currents. . It is one of the most formidable harbor entrances during periods of heavy sea and swell, in the world. The bar is about 3 miles wide and 6 miles long. It is reported that ebb currents on the north side of the bar attain velocities of 6 to 8 knots and that strong northwest winds sometimes cause currents that set north or against the wind in the area outside the jetties. In the entrance the currents are variable, and at times reach a velocity of over 5 knots on the ebb; on the flood they seldom exceed a velocity of 4 knots. The current velocity is 3.5 knots, but this tidal current is always modified both as to velocity and time of slack water by the river discharge. On the flood there is a dangerous set toward Clatsop Spit, its direction being approximately east-southeast, on the ebb the current sets along the line of buoys. Heavy breakers have been reported as far inside the entrance as Buoy 20, north of Clatsop Spit.

### Fishing

(fisheries.NOAA)

The Columbia River supports several species of anadromous fish that migrate between the Pacific Ocean and freshwater tributaries of the river. Sockeye salmon, Coho and Chinook (also known as "king") salmon, and steelhead, all of the genus *Oncorhynchus*, are ocean fish that migrate up the rivers at the end of their life cycles to spawn. White sturgeon, which take 15 to 25 years to mature, typically migrate between the ocean and the upstream habitat several times during their lives.

Fisheries from the mouth of the Columbia River up to Priest Rapids dam on the main stem, and spring fisheries in the mainstem Snake River up to the Washington/Idaho border, are managed by the states and tribes subject to the terms of the 2018–2027 [United States v. Oregon](#) Management

Agreement. *United States v. Oregon* establishes tribal harvest allocations and upholds the right of tribes to fish for salmon in their usual and accustomed fishing grounds.

Buoy 10 is a fishing estuary located 10 miles from the Columbia River entrance where it joins the Pacific Ocean. It is one of the largest salmon fisheries on the continent with a Chinook and Coho run from early August through September.

### Pilotage

*(Coast Pilot 10, 3rd Edition)*

Pilotage across the Columbia River bar and up or down the river is compulsory for U.S. vessels enrolled or sailing under Registry and all foreign vessels, except foreign recreational or fishing vessels not more than 100 feet in length or 250 gross tons international.

### Vessels

*(Columbia River User Data Report, 2012)*

Commercial tugs and tows have the greatest frequency of usage on the river and transit year-round. Air drafts for tugs and tows ranged from 28 to 61 feet, with an average air draft of 49 feet.

Recreational sailboats and powerboats typically use the river more frequently from April through October. The sailboats ranged in air draft from 50 to 90 feet, with an average of approximately 70 feet. The powerboats ranged from 20 to 25 feet and were the only users that reported transiting the Oregon Slough.

Marine contractors generally use the river on an as-needed basis all months of the year. Air drafts ranged from 20 feet to 143 feet (excluding two of Manson Construction cranes that are not expected to work on the Columbia River). The Port of Portland's Dredge Oregon has an air draft of 103 feet.

The Federal Government users include the U.S. Army Corps of Engineers (USACE) Hopper Dredge Yaquina with an air draft of 92 feet and Puget Sound Naval Shipyard nuclear transporters that include barges and escorts. The largest transport barge is Barge 40 with an air draft of 51.25 feet and the largest escort is the YTT 10 Battle Point with an air draft of 74 feet.

Marine industries ship products on an as-needed basis all months of the year. The air drafts ranged from 60 feet to 141 feet.

Passenger cruise vessels transit the river year-round, but somewhat more heavily in the summer months. The upriver motor vessels have air drafts that range from 42 to 65 feet. The Historical Seaport has two sailing vessels with air drafts of 81 and 90 feet that take passengers upstream typically once in May and June, and twice in October (Columbia River User Data Report).

### Commodities Carried

*(Coast Pilot 10, 3rd Edition)*

The Columbia/Snake River carries about 40 million tons of cargo on an annual basis, with an estimated value of \$20 billion.

Many ports along the Columbia and Snake Rivers rely on navigation access as part of their business. This traffic includes tug and barge traffic carrying bulk commodities such as grain, fuel, wood chips, sand and gravel, etc. as well as containerized and project cargo; excursion vessels; and pleasure crafts.



### Casualty History

Marine casualty information was pulled using Coast Guard Business Intelligence (CGBI) and the Marine Information for Safety and Law Enforcement (MISLE) database. This data encompassed in Enclosure (7) covers all groundings that occurred between 2016 and 2023. None of these incidences resulted in loss of life.

It is of note however, that the reporting source data captured in the USCG MISLE database is that of only which is reported to the USCG.

### Charts and Surveys:

The primary chart used for WAMS is 18521. United States Army Corps of Engineers (USACE) conducts various surveys of Columbia River. The last surveys USACE performed were on the following dates:

MCR Approaches	05/29/2014
MCR North Jetty Peacock Spit	10/17/2013

### Aids to Navigation

Please see “Assignment List” (ENC #2) for Aid Assignment list.

### Recent/Pending Projects:

**USACE Jetty Repair**-Rehabilitation of the jetty system at the mouth of the Columbia River- deterioration, ongoing storm activity and the continued loss of sand shoal material determined substantial repairs were necessary to maintain the location of the entrance. The work, completed back in 2019, included significant repairs to the head (seaward end) and trunk; rebuilding side slopes and bringing the crest (jetty top) back up to design elevation.

The Portland District of USACE is engaged in multiple active projects under a wide variety of programs and authorities. A few of their active and recently completed projects are listed below. For more information, please see: [Portland District, US Army Corps of Engineers](#).

## III. Previous WAMS Action Items

At the time of last WAMS report (26FEB04), there was 7 action items listed below.

1	As resources permit, replace all conventional lanterns on the Lower Columbia with LEDs	Nearly complete – ATON Order published for 1 light in side chanel
2	Notify the Army Corps of Engineers’ Portland office of the shoaling in the channel between Desdemona Sands buoys 12 and 20	Done
3	Notify the Army Corps of Engineers’ Portland office of the shoaling in the Chinook Channel	Done
4	Establish new aid in Chinook Channel to mark the rocks 275 yards north of daybeacon 6	(There is currently no Daybeacon 6 in Chinook Channel (since at least 2006). The numbering goes from Buoy 5 to Daybeacon 9. This channel is suffering from significant shoaling

		throughout. Last survey 2022 (attached)
5	Ensure that the trees and brush around Cape Disappointment Range are trimmed more frequently	Done - last discrepancy due to vegetation was 2008
6	Remove the RACON from the Astoria-Megler Bridge	Done
7	Replace and rebuild Chinook Channel Light 2 in the position of buoy 2T (46°15'47.8"N 123°57'40.6W)	There is currently no Buoy 2T onsite, that position is about 45 yards toward the channel, and is 12 yards into the channel Planned rebuild will put it closer to the channel but still outside by about 5 yards..

#### IV. Criticality Determination

The criticalities of the waterways within the Columbia River Entrance area are classified as Critical Environmental Navigation (CEN) and Militarily Critical (CM). By definition, a critical environmental navigation waterway poses higher environmental risk levels, where a degradation of the aids to navigation system would present an unacceptable level of risk to general public safety or to the environment. Militarily Critical includes those that serve military bases and/or provide important defense access or services by sea. These criticalities should remain.

#### V. User Input

Solicitation for public comments was submitted through Coast Guard District Thirteen (D13), Sector Columbia River, and other local Coast Guard units utilizing several different methods to include the Local Notice to Mariners (LNM), online surveys, user rides, and public out-reach. Columbia River Pilots, other state and government agencies, and key stakeholders. Enclosure (9) includes a compilation of all user input received.

Due to the COVID-19 pandemic, user rides were limited, and public meetings/town halls were prohibited. A request for public comments was first published April 14, 2021. The comment period closed on June 30, 2021 with the following public recommendations:

1. Master of the 21' passenger vessel commented that Bouy 10 Salmon Fishery can be a unsafe challenge. (Survey 1).
2. Columbia River Pilots association recommend continued enforcement of rule 9 and designated the entire federally maintained channel inland from buoy 10 as a narrow channel (Survey 2).
3. USCG National Motor Lifeboat School (NMLBS) Commanding Officer relayed that tides/currents are a problem from the Megler bridge west (Survey 3).
4. USCG Station Cape Disappointment describes the ranges are the most useful, followed by buoys. Day beacons are the least useful, and with the advent of more efficient LED lanterns, all day beacons should be changed to lights as they are serviced (Survey 4).
5. Master of various cargo vessels suggests that lower Columbia River be designated as a "Narrow Channel" to assist with small-vessel recreation fishing inside of the ship channel (Survey 5).
6. USCGC ELM Operations Officer suggests the following changes to the AToN System (Survey 6).

- a. Tansy Point Range is very useful, Tansy Point Range Buoys 35A & 35B/33 should be shifted AP for all to line up better visually with the Megler bridge spans.
  - b. Tansy Point 31 should be removed as it is off alignment with other greens. There are 4 green buoys within a 2-mile span leading up to the Megler bridge spans.
  - c. The 2SJ is useful for fishermen/small pleasure craft and points out that Desdemona 31 is not useful, Megler Bridge is tough due to the lack of space for 2 larger vessels.
  - d. Peacock Spit 7 should be removed due to present location in dredge dump area and sediment dumping due to ebb. Extreme mudding makes aid historically hard to pull.
7. Columbia River bar pilot recommends that we do not remove any physical navigation aids and to be proactive to keep offshore and far offshore weather buoys in operation (Survey 7).
8. USCGC ELM Commanding Officer suggests the following changes to the AToN System (Survey 8):
- a. Remove Tansy Point Range Buoys 35A & 35B (LLNRs 10045, 10090).
  - b. Relocate Desdemona Sands 29,31, Tansy Pt 33 & Astoria Crossing 37 to be aligned on the edge of the maintained channel or have them a consistent distance off the channel so they visually align.
  - c. Add Desdemona Sands Channel LB 26 to make a gated pair with 25 and ensure you are not getting pushed to the SW by the ebb.
  - d. Noted a lost anchor in the Desdemona Sands Channel should be recovered.
  - e. Suggested to standardize the naming conventions for the AToN instead of having a colloquial name for an aid that is not on the chart. AToN naming should either be standard from the CR Buoy all the way in or use clearly marked geographic references that are on the chart.
9. Master of 28' Sport F/V suggests the following changes to the AToN system (Survey 9):
- a. Noted that the recent replacement/relocation of fixed aids in Baker Bay West (Ilwaco Channel are appreciated and finds AIS aids (such as CR, 8 and 14) on CR Entrance LBB1, Desdemona Sands LB 29 are recommended.
  - b. Overall, the dangerous areas are well marked by the existing aids.
  - c. There is a problem shoal area in the Baker Bay West channel between day beacon 12 and light 23. Has witnessed several boats aground there.
  - d. There are more than necessary green buoys between Desdemona Sands LB 29 and Astoria Range LB29.
  - e. The unlighted buoys marking the bridge pier be replaced by shifting the nearest lighted buoys.
  - f. Desdemona Lower Sands Lighted Gong Buoy 31 does not have enough wave action to make a sound and should be removed.
  - g. Buoy 2SJ is not needed, it is so close to buoy 6.
10. The “controlling depths” table on the paper charts do not translate well to modern electronic chart plotters. The dredged channels do not have any soundings displayed so if a shoal has been found during a hydrographic survey, the plotter shows the length of the entire channel as a shoal. USCGC STEADFAST stated difficulty navigating the Sand Island range during periods of fog during inbound transits. Additionally, they noted difficulty transiting bar. They alleviate this by basing inbound and outbound

transits around the currents at Clatsop Spit to avoid crossing during the Ebb current. Notes that Red Buoy “40” is positioned further to the southwest than where it is charted (Survey 10).

## VI. Action Item Summary

	Approved	Not Approved
1. Move Lighted Buoy 37 20 yards to the north and line up with the 35A & B Buoys.	_____	_____
2. Remove Desdemona Lower Sands LGB 31 and move Tansy Point Range LB 33 0.5NM to the west to mark the point where the shoaling from the north makes its eastern approach to the channel	_____	_____
3. Remove Peacock Spit LB 7	_____	_____
4. Remove Tansy Point Range Buoys 35A & 35B (LLNRs 10045, 10090)	_____	_____
5. Add Desdemona Sands Channel LB 26 to make a gated pair with 25	_____	_____
6. Remove Buoy 2SJ	_____	_____
7. Remove RACON from Buoy CR	_____	_____