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February 16, 2025

Mr. Sean Sjostedt
PND Engineers, Inc.
9360 Glacier Highway, Suite 100
Juneau, AK 99801

Dear Mr. Sjostedt:

The Marine Exchange of Alaska (MXAK) conducted a comprehensive navigational study to assess the potential impacts of the construction of the proposed Huna Totem Dock (HTD) on other maritime operations within the Port of Juneau. The study considered various orientations of the dock extending from shore into the harbor to determine an optimal position for vessels' safe approach and departure, minimizing navigational risks and impacts to other maritime activities within the Port.

To support this analysis, MXAK used data from its Automatic Identification System (AIS) to review maritime traffic patterns within the port area and to identify potential navigational conflicts. Additionally, the study evaluated the routes of float planes operating in port waters in proximity to passenger launches/lifeboats as they transit to and from cruise ships positioned offshore in the anchorage area. MXAK also reviewed environmental data from the NOAA dock adjacent to the Coast Guard facility, and MXAK's weather sensors and tidal current sensors in the Port. The data for wind and current are of importance and these environmental factors can impact the safe operation of large cruise ships within the confined waters of the Port.

1. Overview: The Port of Juneau's maritime operations during the cruise season have expanded dramatically over the past 20 years. More vessels, comprised of very large cruise ships (several over 1,000 feet long) and increased activity with tour-related small passenger vessels, cruise ship shore launches, and floatplanes are now operating in the Port area. The waters available for vessels and aircraft to operate in the port complex have been reduced by the construction of larger docks that extend into Port waters to accommodate larger cruise ships as well as the use of the Port's anchorage area by cruise ships. The planned implementation of limiting five large cruise ships calling on Juneau in a single day, agreed to by the cruise industry and the City and Borough of Juneau, will stabilize or reduce port congestion. In lieu of cruise ships anchoring or positioning offshore, the proposed addition of the HTD to moor cruise ships is designed to enhance safety and efficiency. While docking of vessels will reduce emissions generated by the operation of shore launches and cruise ship generators, this report is focused on evaluating the navigational risks that need to be addressed in approving and for the orientation and building of the proposed HTD.

2. Maritime Safety: Based on AIS data, the most significant positive safety impact of constructing the HTD will be the reduction in the risk of a serious maritime incident between a floatplane and a vessel. This risk arises when a large cruise ship anchors or positions itself offshore and utilizes the vessel's shore launches and lifeboats to transfer passengers to and from the port.

When not moored to a dock, cruise ships' slow-moving lifeboats have been employed to transport thousands of passengers between vessels and shore. The cruise ships and their lifeboats navigate within the same confined waters where numerous floatplanes operate for passenger pickup and drop off near the Wharf area. Float planes are restricted in their ability to maneuver during high-speed takeoff and landing sequences. The risk of collision involving a floatplane and a cruise ship's lifeboat is elevated as their routes normally intersect at right angles to each other. Additionally, large cruise ships positioned offshore present blind spots that prevent floatplane pilots and lifeboat operators from seeing each other until lifeboats are clear of the cruise ship and likely in the float plane's path.

MXAK's data on this activity is limited as not all lifeboats, and no aircraft, are equipped with AIS. However, data generated from AIS equipped lifeboats and shore launches show thousands of transits in this area. Figure (7) is photo of a float plane and vessel collision in Vancouver, BC, in 2024. It shows accidents between float planes and boats have happened elsewhere.

The objective of Huna Totem's plans to construct an additional dock in Juneau is to provide all large cruise ships a mooring berth in lieu anchoring or dynamic positioning. This will eliminate both the need to transport passengers and crew to and from the Port with their boats and the risk of a float plane colliding with a cruise ship lifeboat or shore launch.

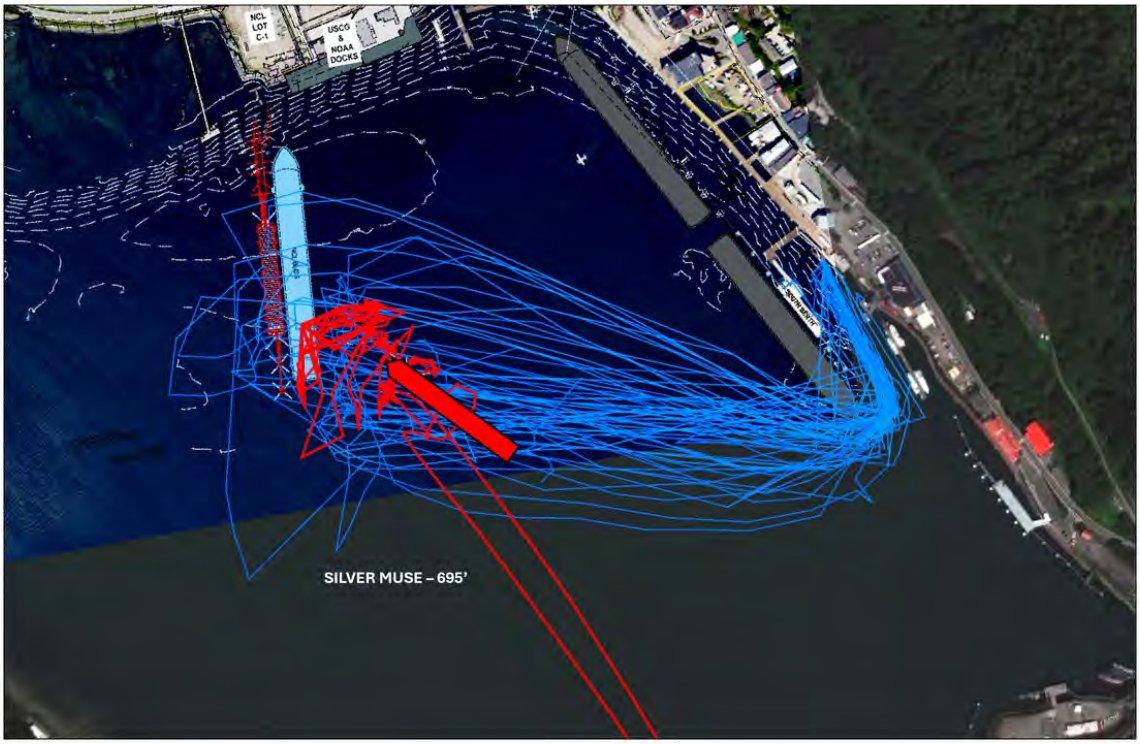

Figure (1). The 695-foot cruise ship SILVER MUSE is a smaller cruise ship with a capacity of 596 passengers. The solid red ship icon is based on the dimensions of the ship. The red lines are generated from the AIS/GPS location that is normally at the bridge of the vessel and show how the ship movements due to wind and currents. The transits of the vessel's shore launches (blue) show their routes when transporting passengers and crew to and from shore. Larger cruise ships have nearly 10 times as many passengers and transits to shore.

Figure (2). The track of a float plane to the Wharf that intersects with the lifeboat and shore launch with passengers and crew transits to and from shore.

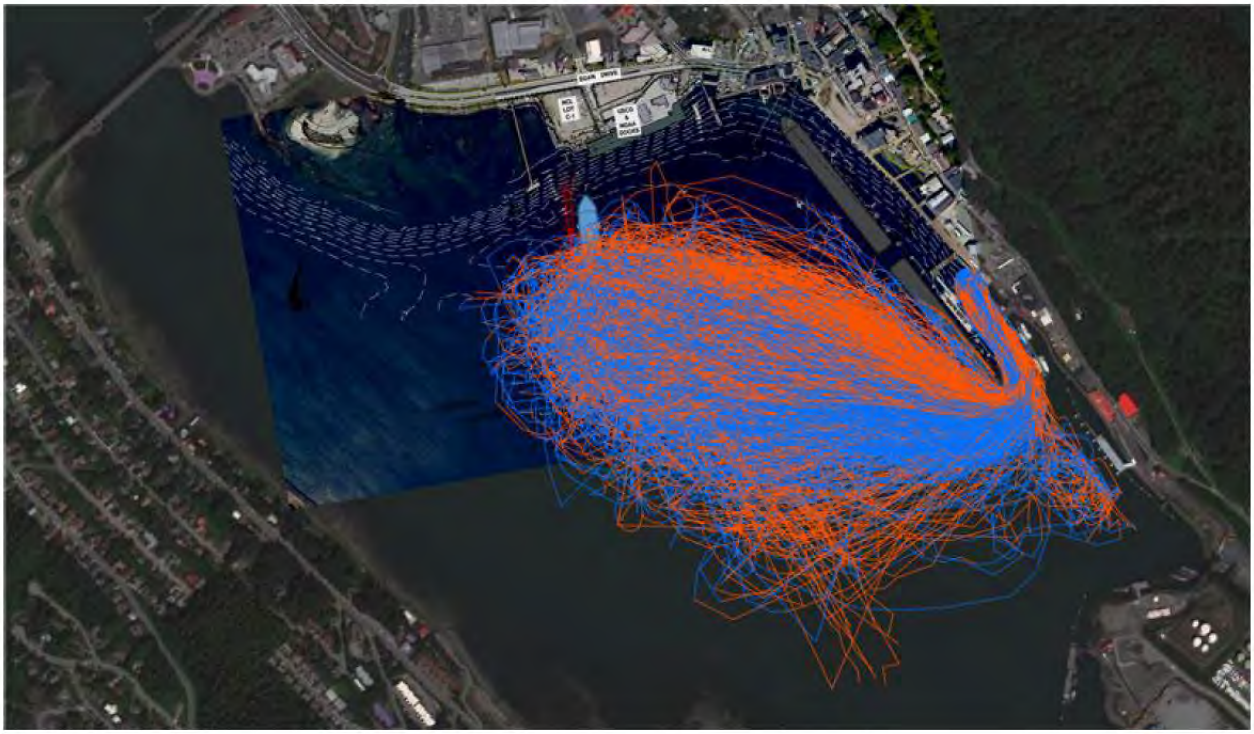

Figure (3). Cruise ship lifeboat transits, 900 eastbound (blue) and 900 westbound (orange), to and from port with passengers and crew in 2024. Transits cross the path of floatplanes landing and taking off.

Figure (4). A floatplane landing on its return to the Wharf behind a cruise ship positioned off the Coast Guard station.

Figure (5). Open water navigation is reduced when large cruise ships are anchored. Floatplanes arriving and departing to the Wharf area take off and land in the waters between the vessel in anchorage and the Port of Juneau's docks. Three shore launches/lifeboats are shown at the starboard side of the cruise ship.

Figure (6). A floatplane on final approach between a cruise ship at AJ dock, and a fishing boat. Photo captured from a sailboat operating in the area.

Figure (7). In August 2024, a floatplane taking off collided with a pleasure craft in Vancouver, BC, resulting in extensive damage and serious injuries.

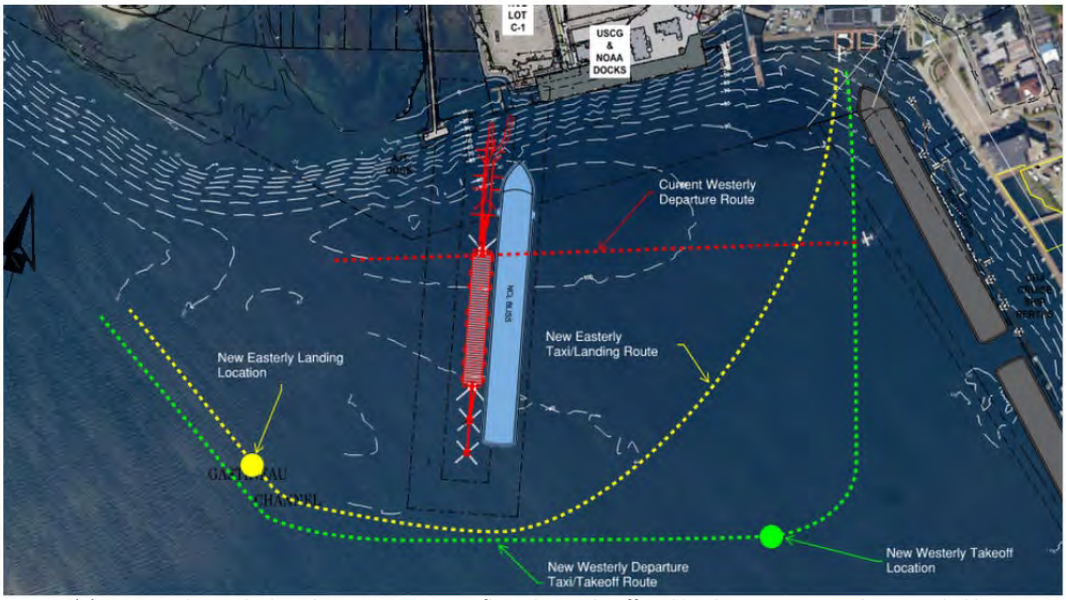

Figure (8). Proposed HTD dock and approximate new floatplane takeoff and landing routes. Graphic provided by Wings Airways.

3. Proposed Dock's Impact on Navigation of Cruise Ships: The substantial maritime activity in the Port during the cruise season presents navigational challenges to all vessels. Floatplanes that are not displayed on these graphics are also affected by vessels transiting, anchoring or operating in the port area. The current practice of accommodating all large cruise ships by anchoring or positioning a large cruise ship offshore, due to the lack of docks, interferes with other cruise ships' transits to and from a berth as this reduces the sea room available for other vessels to maneuver. The following graphics show the cumulative transits of cruise ships in the Port during the month of July 2024 as well as the transits of all vessels during that month.

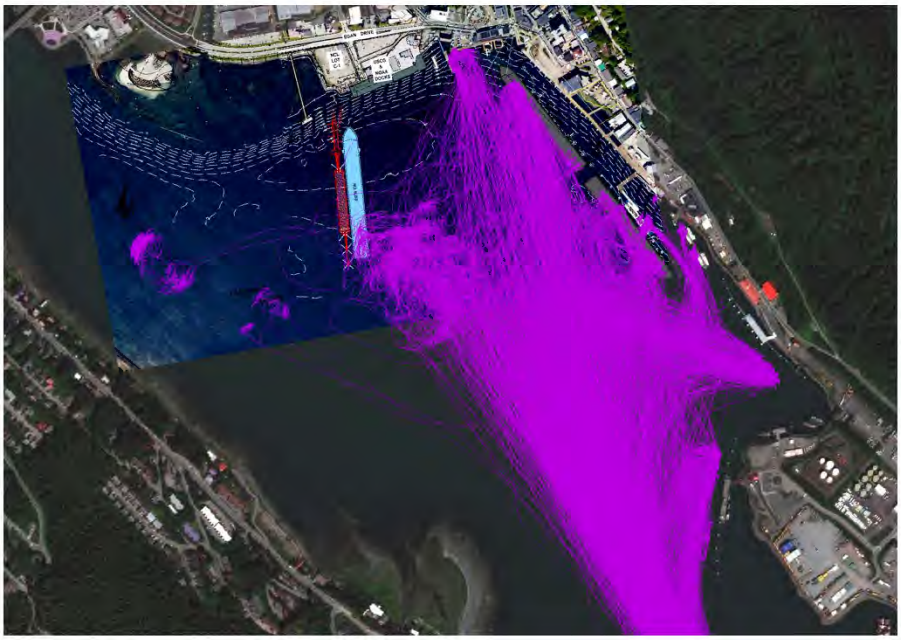

Figure (9). AIS tracks of all cruise ships operating in the port of Juneau during the July 2024 cruise season with the proposed HTD overlayed.

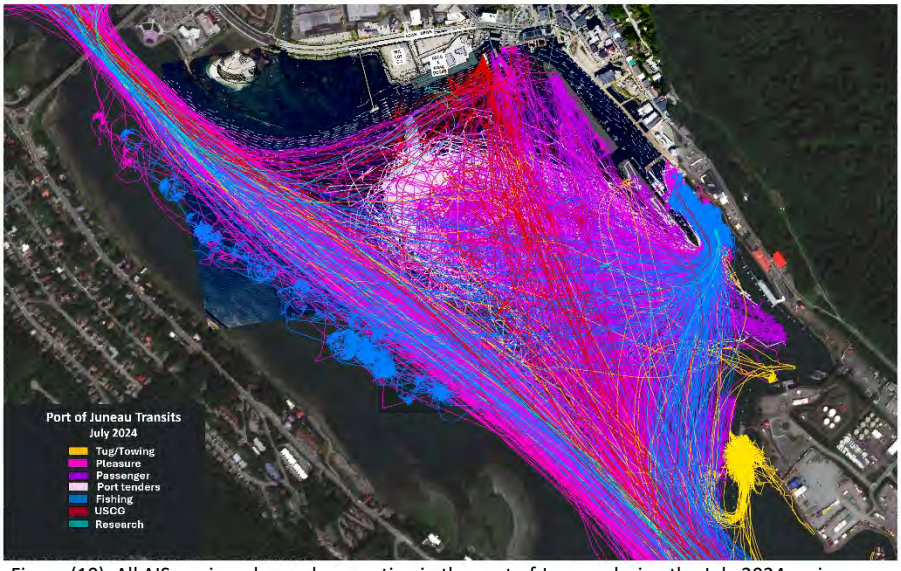

Figure (10). All AIS equipped vessels operating in the port of Juneau during the July 2024 cruise season with the proposed HTD overlayed.

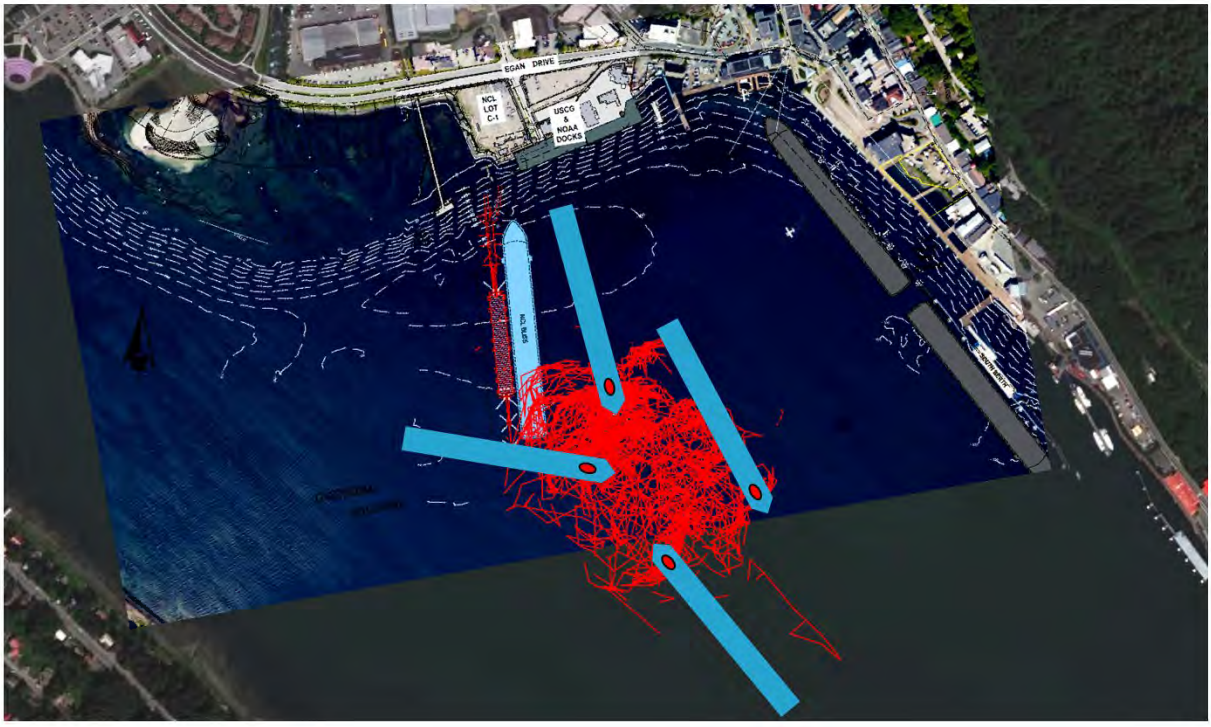

Figure (11). Positions of cruise ships stationed offshore with the proposed HTD overlayed. These cruise ships were positioned offshore 58 days of the 2024 cruise season. Ship icons represent entire vessels' profiles based on their dimensions and headings provided by AIS. The red dots indicate the location of the GPS/AIS antenna from which the entire vessel profiles are developed and graphically presented, which highlight that AIS tracks don't show the entire footprint of the vessel, only the bridge position.

The impact of vessels at anchor on the maneuvering of large cruise ships to and from berth is shown by the AIS generated graphics below. With the lack of tugs, the maneuvers to and from berth were done solely with the vessels' propellers and bow and stern thrusters. While anchored vessels and the proposed HTD both reduce open water for vessels to navigate, pilots and vessel captains have demonstrated they are able to do so without incident. However, when high winds and or currents are encountered, large cruise ships' maneuverability is affected and more sea room is needed to adjust to the elements. At times environmental factors increase the risk of operations to the point a Juneau arrival is cancelled, much like is done by Alaska Airlines.

It is evident that the proposed HTD will provide more open water for cruise ships to navigate to other facilities. Included are several figures that demonstrate how cruise ships navigated to and from docks when a ship was positioned offshore.

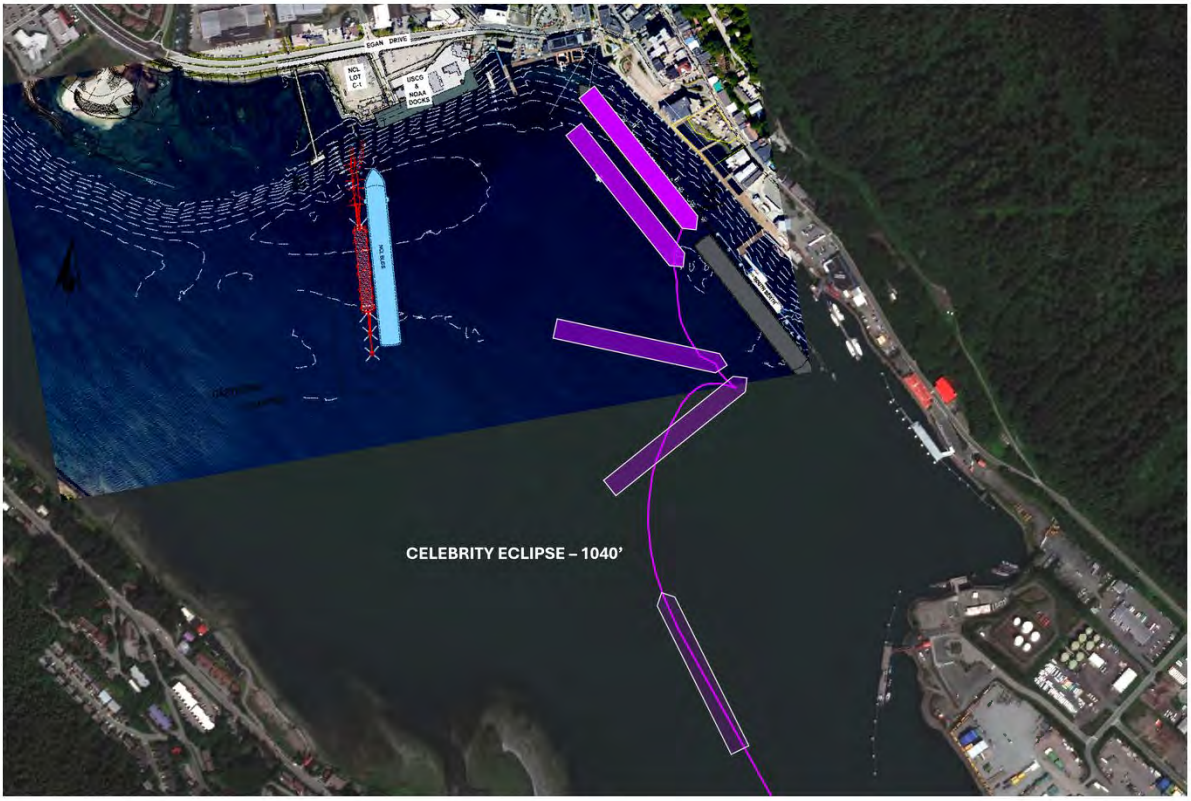

Figure (12). A maneuver by the 1,040-foot CELEBRITY ECLIPSE backing into the Port of Juneau's North Dock. The proposed HTD was superimposed to determine if the dock would interfere with the vessel's maneuver.

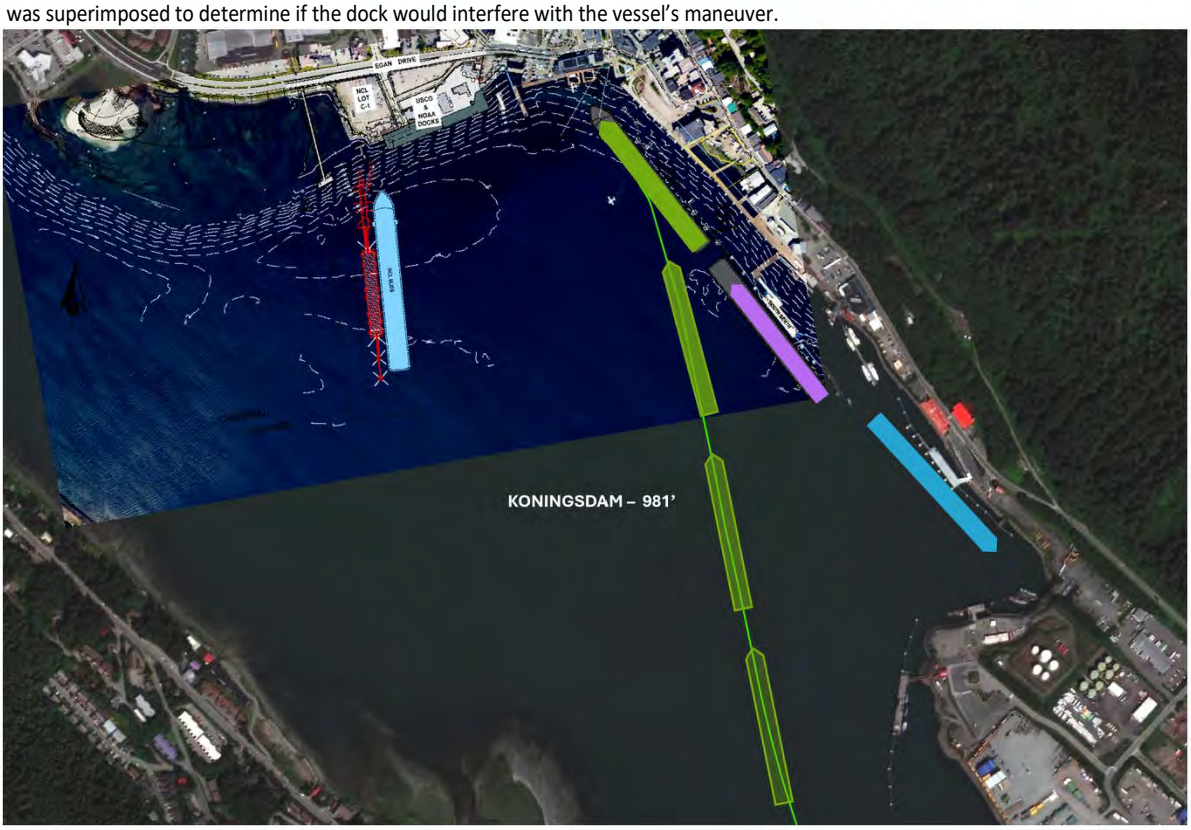

Figure (13). KONINGSDAM's approach to Port of Juneau's North Dock with overlay of the proposed HTD.

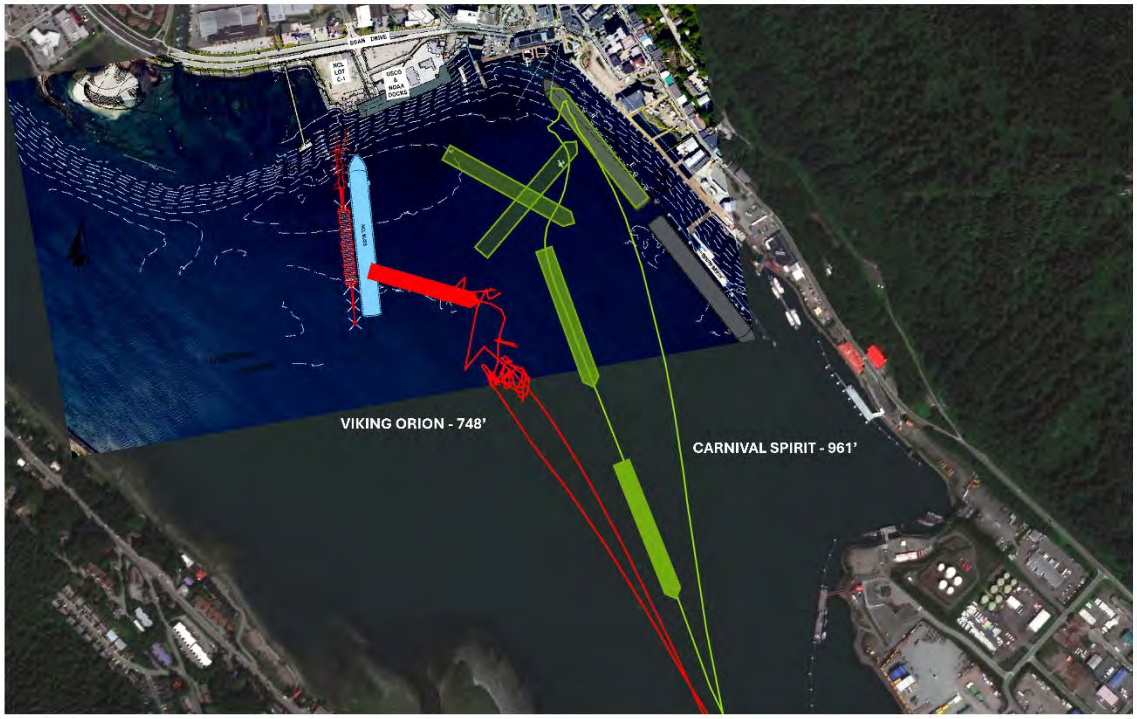

Figure (14). CARNIVAL SPIRIT departure from Port of Juneau, North Dock with VIKING ORION at anchor with overlay of the proposed HTD.

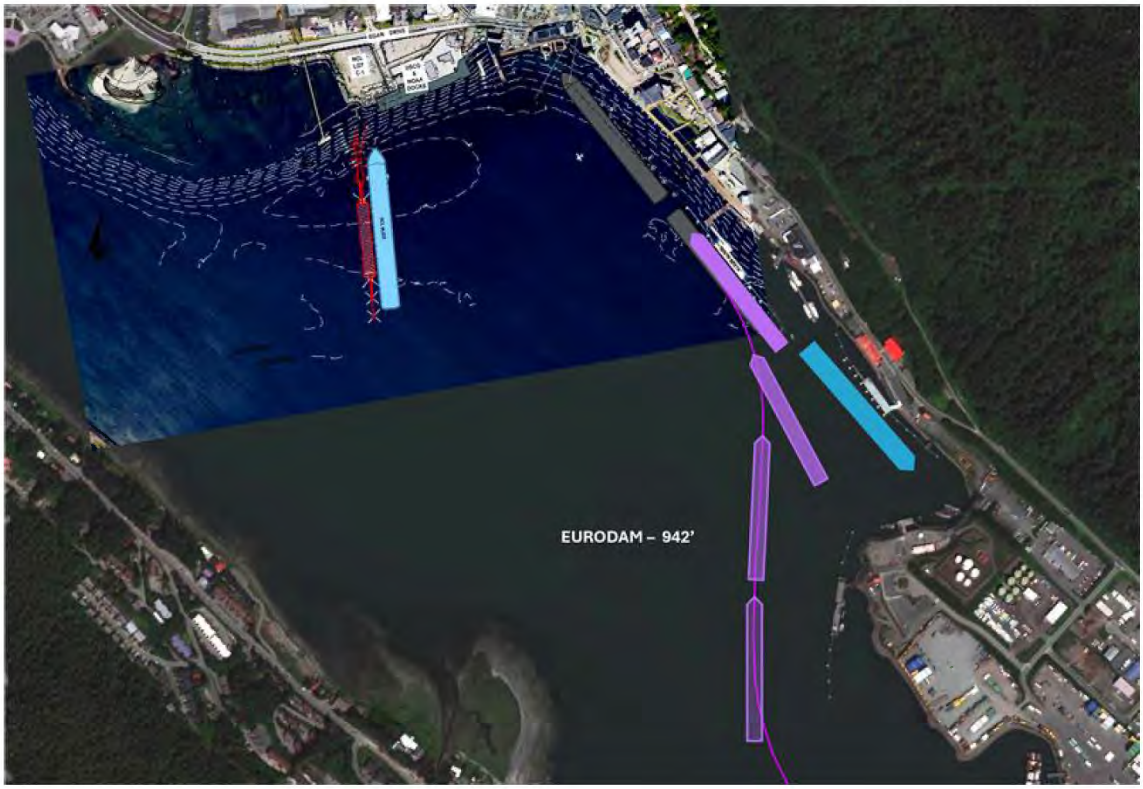

Figure (15). EURODAM arrival to Port of Juneau's South Dock with overlay of the proposed HTD.

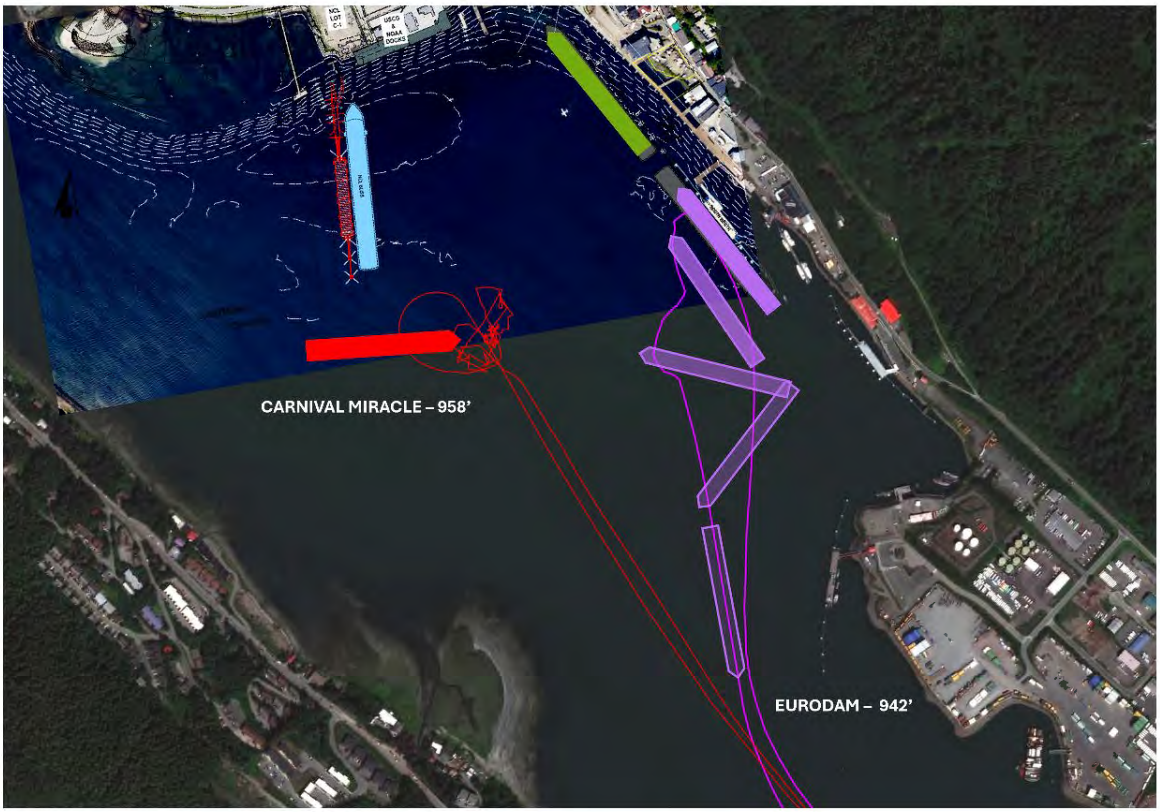

Figure (16). EURODAM departure from the South Dock with CARNIVAL MIRACLE at anchor with overlay of the proposed HTD.

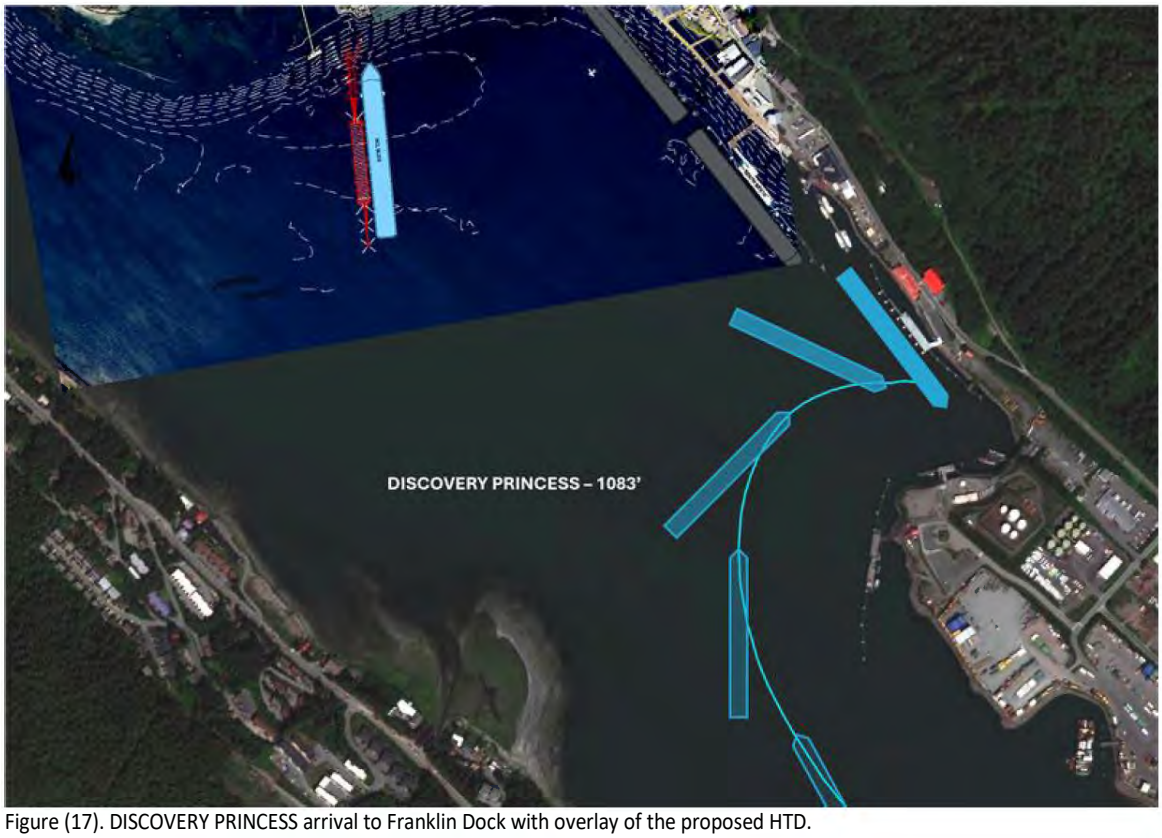

Figure (17). DISCOVERY PRINCESS arrival to Franklin Dock with overlay of the proposed HTD.

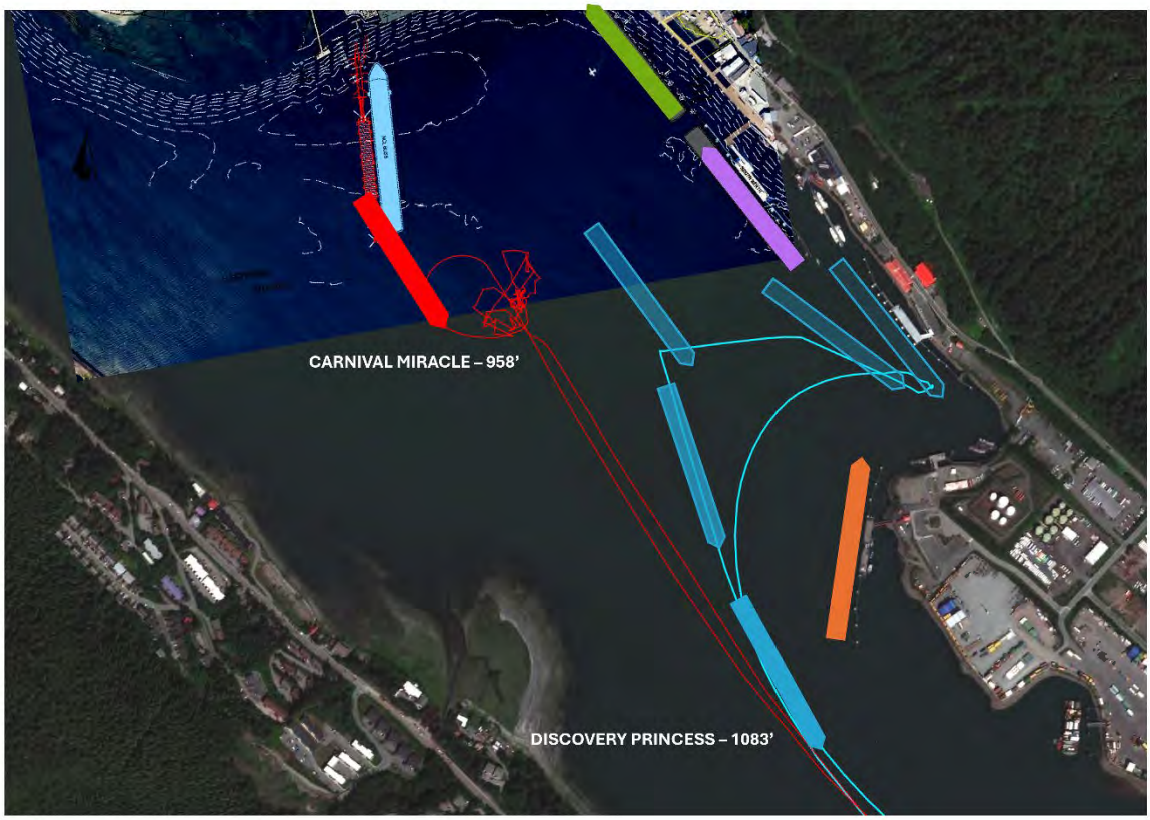

Figure (18). DISCOVERY PRINCESS departure from Franklin Dock with CARNIVAL MIRACLE at anchor, with 3 other cruise ships at berth, and an overlay of the proposed HTD.

4. Proposed Dock's Impact on Navigation of Other Vessels: A wide range of vessels other than cruise ships operate in the Port of Juneau. Some of the routes they take when transiting or operating in the Port will be impacted by the proposed HTD. In most cases these vessels would not need to adjust their routes to avoid the proposed HTD. However, these same vessels often need to maneuver to avoid colliding with anchored cruise ships, other vessels, and floatplanes. Large vessels at anchor cause blind spots that prevent a vessel underway behind the ship from sighting an approaching float plane. The blind spot also prevents a float plane pilot from seeing a vessel on a course that will intersect with the float plane's landing path early enough to adjust course or abort a landing. The following figures show the 2024 cruise season historical tracks of various types of boats equipped with an AIS transponder and how the proposed dock would require some vessels to change the routes they have previously taken to avoid impacting the dock and/or any vessel moored to it.

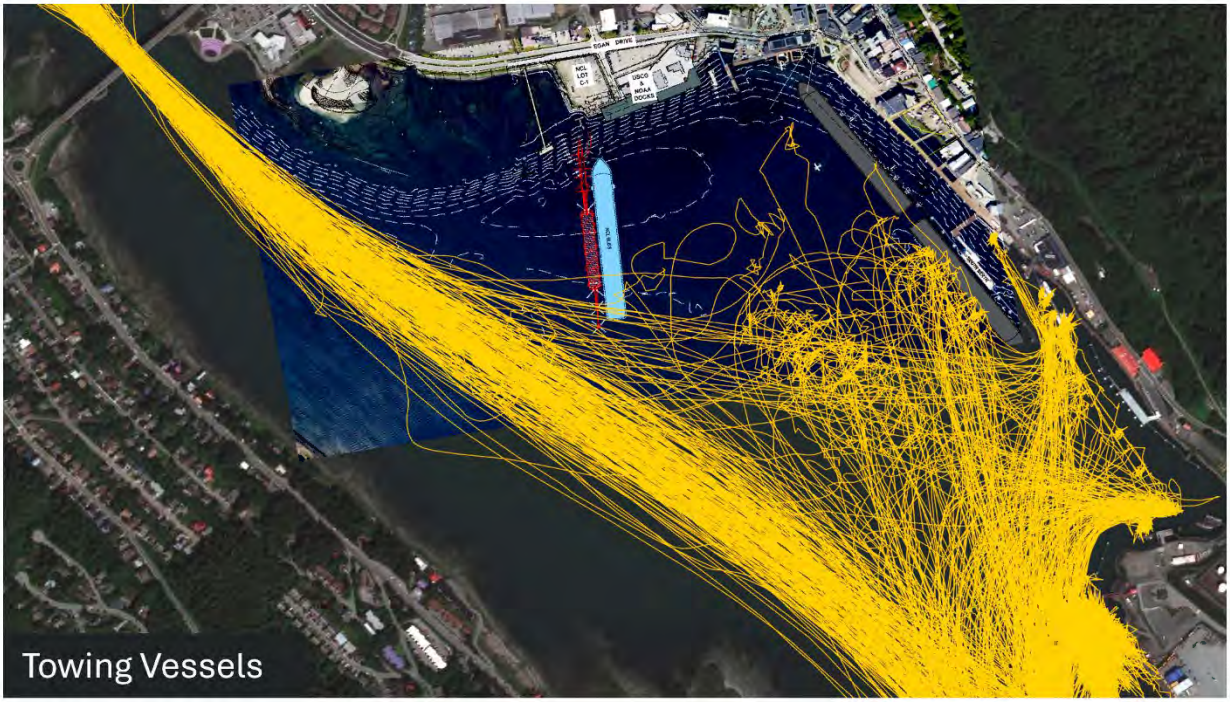

Figure (19). Tug routes when operating in the port when towing an oil barge to deliver fuel to Petro Marine Services, taking on fuel at the Petro Marine Dock, or while towing barges to and from facilities north of the Juneau Douglas Bridge, i.e. Samson Tug and Barge and Channel Construction. The graphic shows this traffic would not be substantially impacted. The proposed HTD is overlayed.

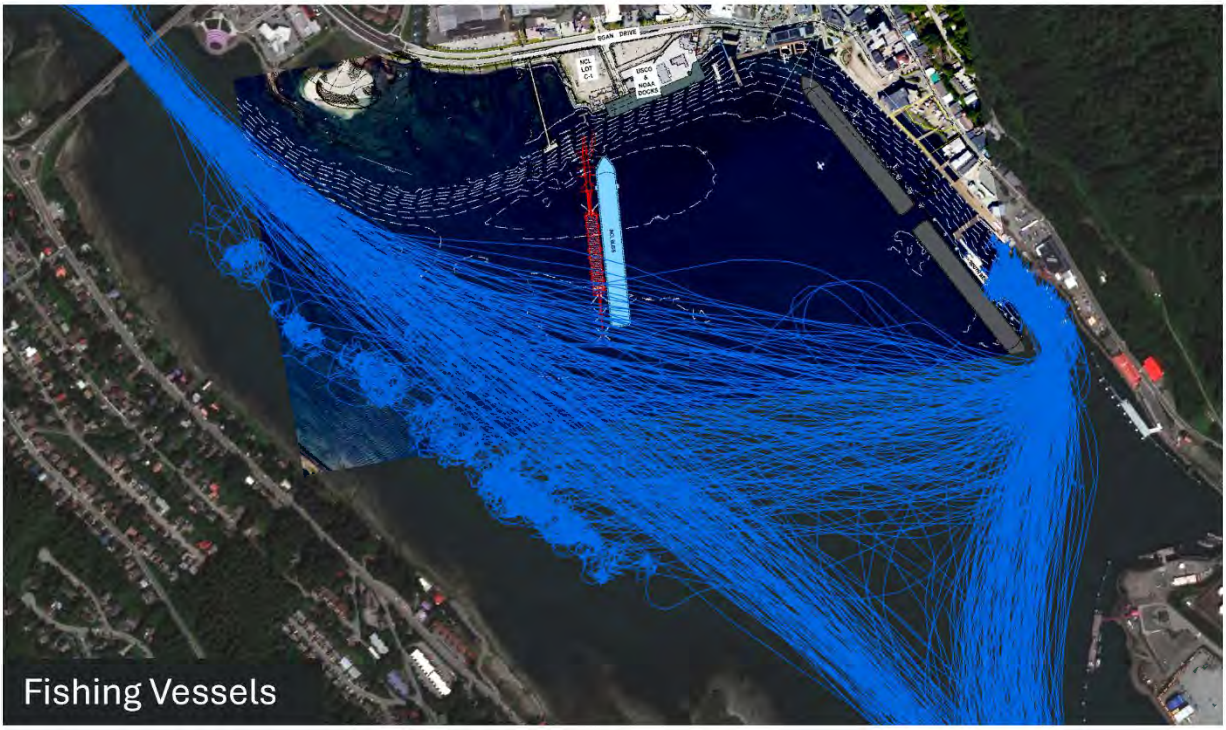

Figure (20). Routes fishing vessels equipped with AIS normally take when transiting to and from the Petro Marine fuel dock, DIPAC, Taku Fisheries or transiting to and from the port to go fishing. The graphic shows this traffic would not be substantially impacted. The proposed HTD is overlayed.

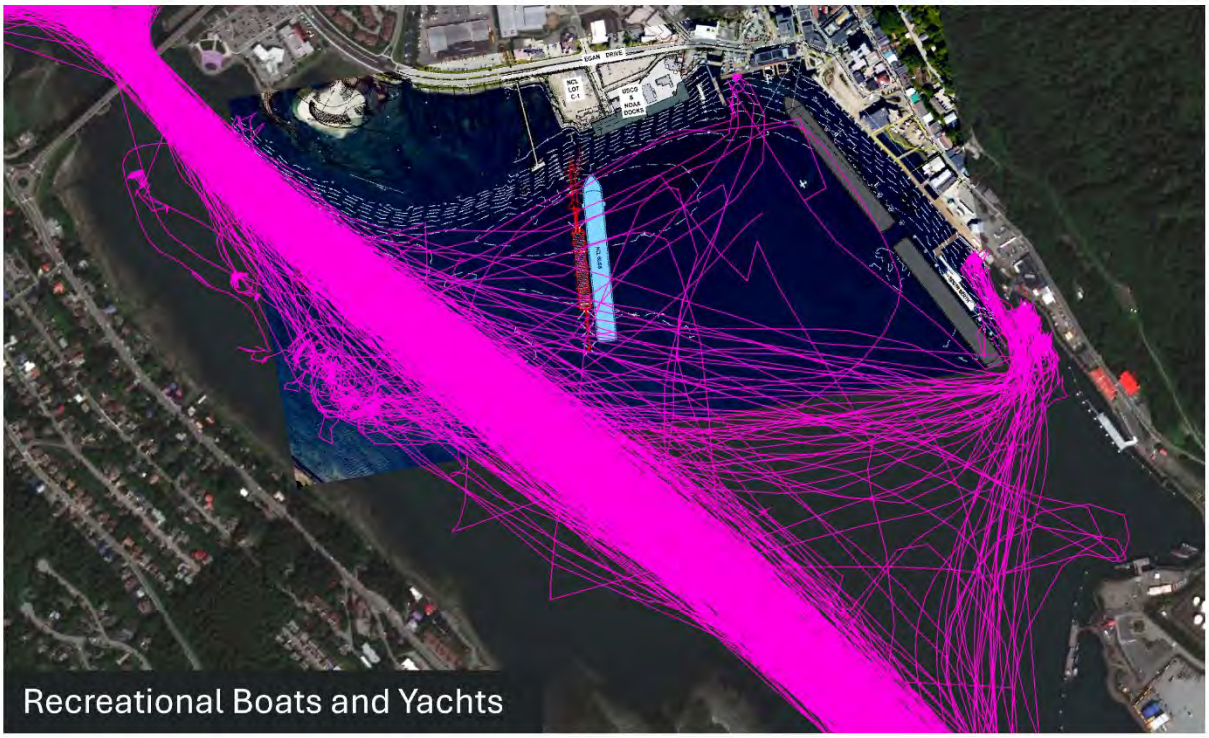

Figure (21). Routes of recreational/pleasure vessels equipped with AIS when transiting to and from the Taku Oil dock, yachts transiting to moor at the Port's dock, or heading into or out of port, with the proposed HTD overlayed.

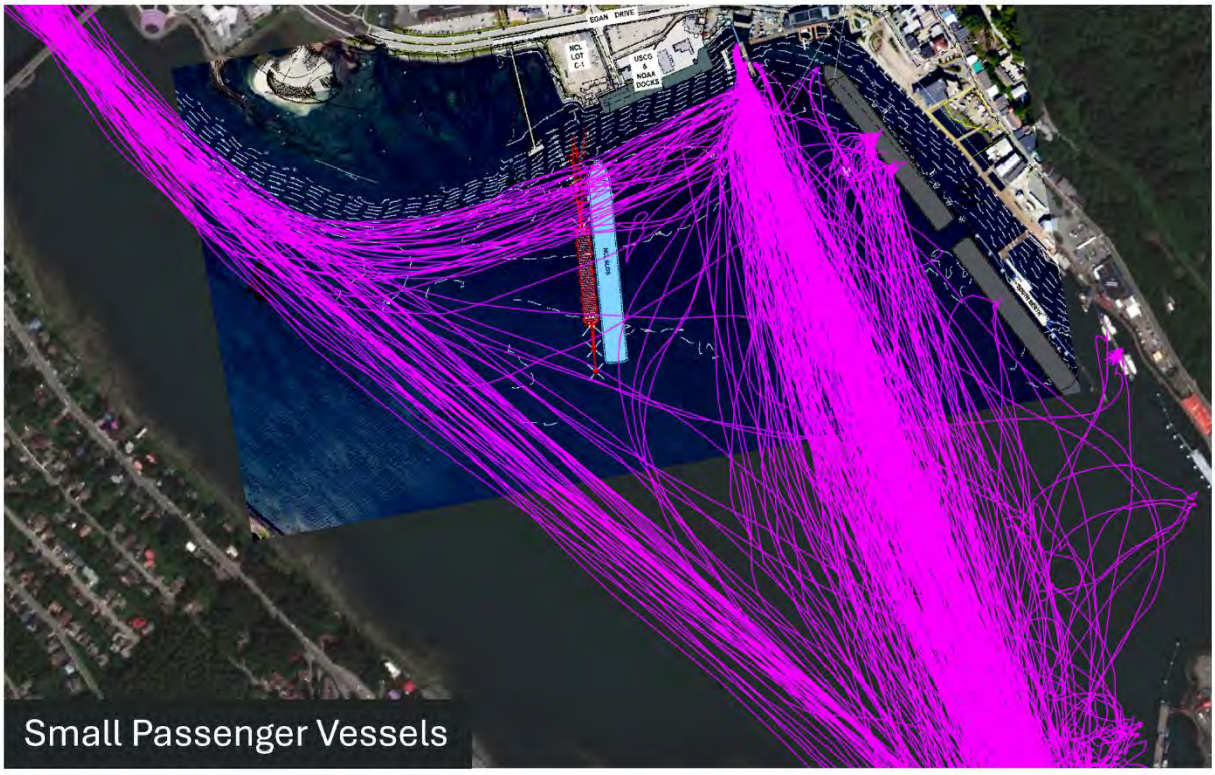

Figure (22). Routes of smaller passenger vessels (Allen Marine, UnCruise Adventures) equipped with AIS and able to sail under the Juneau Douglas Bridge. The routes they have taken to the Wharf area in the past will need to be adjusted to navigate further offshore to avoid striking the HTD and the vessel moored to it.

5. Proposed Dock's Impact on Coast Guard Vessels and the Coast Guard Dock: Depending on the Coast Guard's plans for refurbishing their dock and incorporating the adjacent NOAA dock, the proposed HTD could impact the arrival and departure of larger Coast Guard vessels. The HTD would present a barrier on the western side of the dock that could complicate mooring and departure of their larger vessels. However, larger Coast Guard vessels avoid the Coast Guard dock in favor of mooring at the Port of Juneau's docks. Additionally, Coast Guard vessels do not arrive and depart daily and larger cutters like the 420-foot HEALY often use tugs to assist in mooring. At times NOAA vessels have also moored at the Coast Guard's dock. Currently the Coast Guard is planning on stationing the 370-foot STORIS in Juneau. This vessel has dynamic positioning capabilities and thus is highly maneuverable. This ship should easily be able to maneuver to and from the Coast Guard dock with no assistance. The Coast Guard dock is also used by the Alaska based 225-foot buoy tenders and smaller patrol boats. The proposed HTD would not interfere with these vessels arrival and departure.

Figure (23). Coast Guard Cutters HEALY and STORIS.

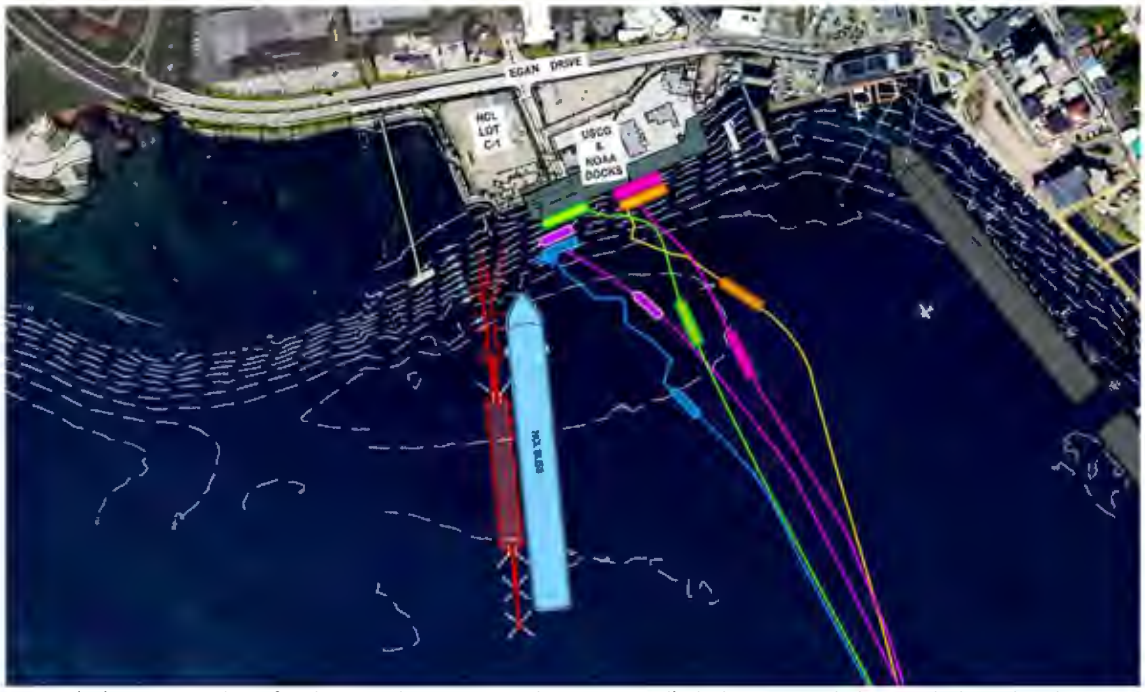

Figure (24). Coast Guard 225-foot buoy tenders arriving at the Coast Guard's dock in 2024 with the HTD dock overlayed.

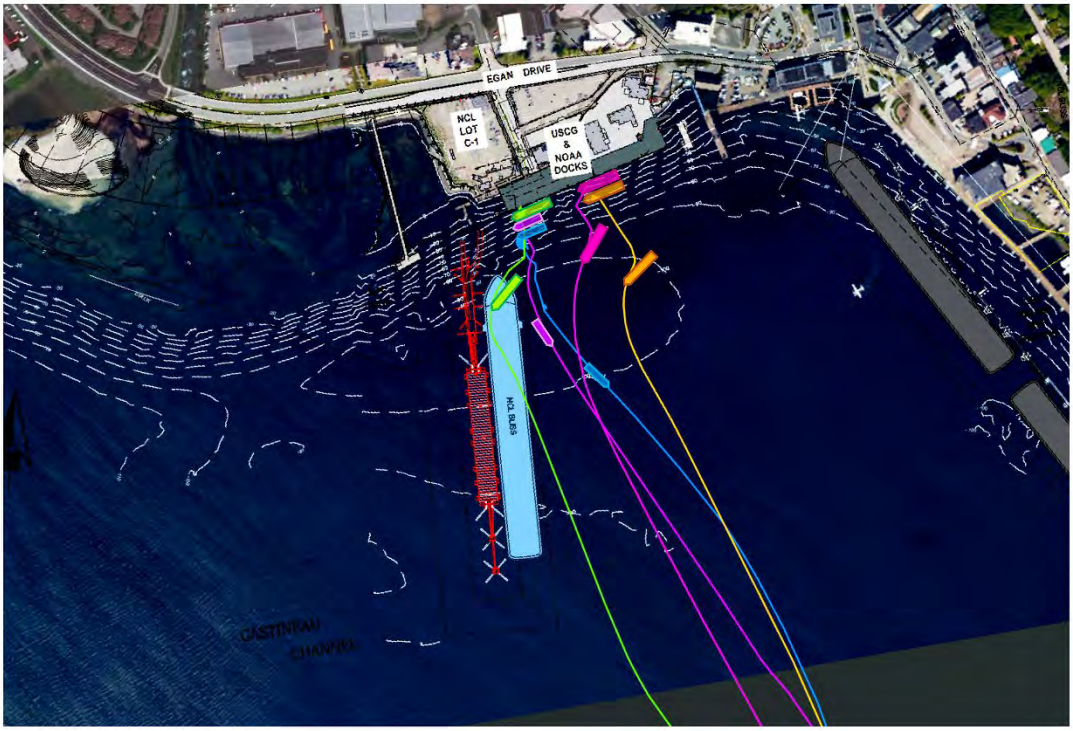

Figure (25). Maneuvers of Coast Guard 225-foot buoy tenders departing the Coast Guard's dock in 2024 with proposed HTD overlayed.

Figure (26). Maneuvers of Coast Guard 420-foot Coast Guard icebreaker HEALY to and from the Port of Juneau dock with two tugs assisting, with proposed HTD overlayed.

6. Winds and Currents to be Considered in Navigational Assessment: The Marine Exchange of Alaska (MXAK) has installed and operates five weather stations and three tidal current stations in the vicinity of the Port of Juneau funded by CBJ Docks and Harbors. The information from these sites assists vessel captains and pilots with safely maneuvering vessels to and from docks in the confined Port area. The historical records of wind and tidal current have been evaluated to help determine the positioning of the proposed HTD to minimize environmental factors that could incur risk that complicates maneuvers. In some cases, environmental factors may exceed safe operating parameters as determined by captains and pilots conducting docking and departure maneuvers. This could be evaluated using a ship navigation simulator by inputting high wind and current factors. Most docks have go/no-go thresholds based on extreme environmental factors.

MXAK does not have sensors that provide actual current data at the site of the proposed dock. The three MXAK maintained current sensors are installed at Taku Fisheries, the Port's South Dock and the AJ Dock. Review of tidal current data from these sensors indicates the currents rarely exceed 3 knots, however, it is possible currents are greater at times at the proposed HTD location. Due to a prominent choke point, tidal currents in the vicinity of the Juneau Douglas Bridge are considered by many as the strongest in the area and likely have some influence on the currents near the proposed HTD. A temporary tidal sensor could be deployed to obtain better information.

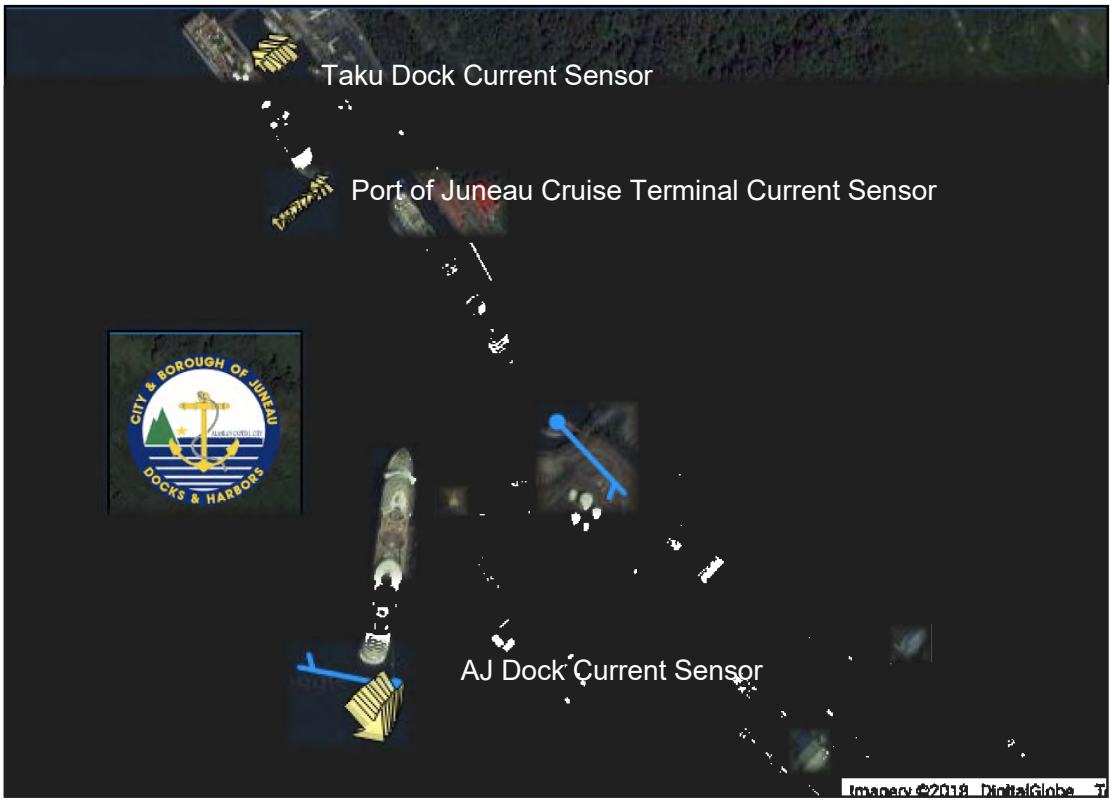

Figure (27). The location of the 3 current sensors in the Port area.

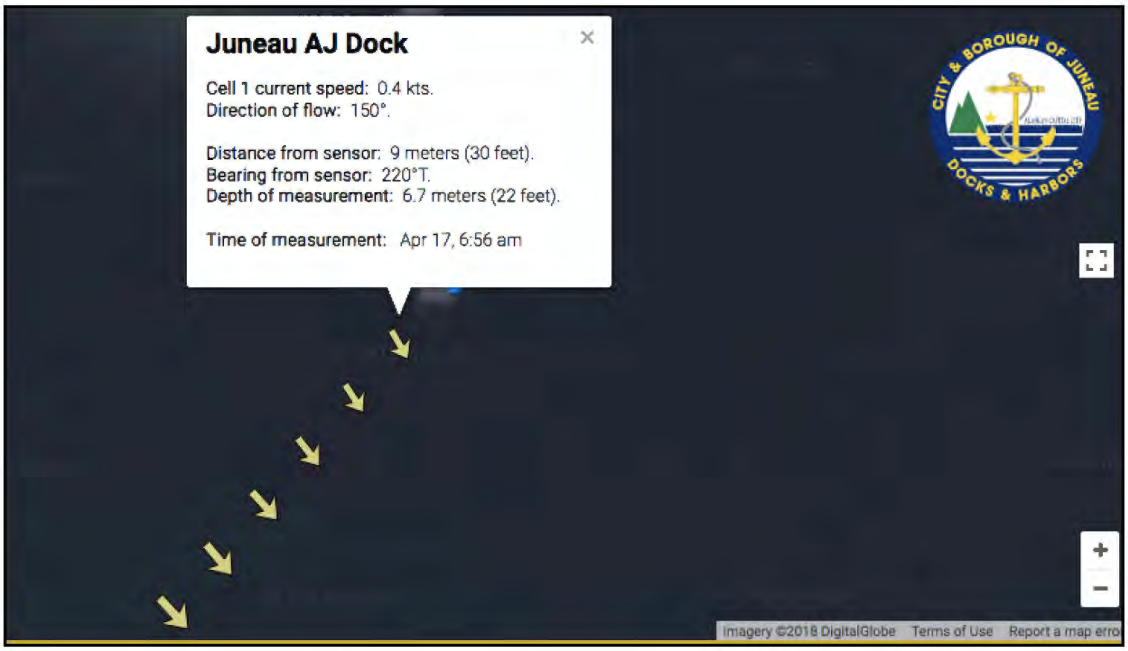

Figure (28). The graphical display of the tidal current data accessible to vessel operators.

TIMESTAMP	HDG	PITCH	ROLL	PRESS	TEMPC	CELL1_SPEED	CELL2	CELL3	CELL4	CELL5	CELL6	CELL7	CELL8	CELL9	CELL10	CELL11	CELL12	CELL1_DIR	CELL2_DIR	CELL3	CELL4	CELL5	CELL6	CELL7	CELL8	CELL9	CELL10	CELL11	CELL12
6/22/2024 12:00	237	1.2	1.5	8.041	8.23	0.8	0.76	1.08	1.02	0.78	0.3	1.49	0.86	0.26	0.8	1.85	2.05	120.9	129.8	137.8	138.9	130	284.6	297.6	295.5	309.1	92.4	102.2	103.5
6/22/2024 12:05	235	1.2	1.5	8.115	7.88	0.12	0.14	0.38	0.51	0.44	0.65	0.67	0.9	1.37	1.94	2.06	1.97	53.8	2.3	359.7	2.5	22	339.2	333.4	321.9	311.9	306.4	305.1	304.8
6/22/2024 12:15	236	1.3	1.5	8.297	7.83	0.1	0.14	0.3	0.48	0.48	0.59	0.74	1.07	1.58	1.92	2.2	2.26	293.9	304.3	318.2	324.2	321	318.7	317.4	310.9	307.1	304.6	301.3	299.5
6/24/2024 22:15	237	1.3	1.4	6.513	9.94	0.12	0.08	0.1	0.05	0.04	0.09	0.72	1.6	2.19	1.95	1.8	1.73	354.2	9.8	355.8	47.8	80.5	352	307.6	303.7	303.3	306.6	309.9	310.1
6/24/2024 22:20	237	1.3	1.5	6.534	9.95	0.36	0.72	1.29	2.04	2.09	1.88	1.07	0.36	0.61	0.9	1.12	1.3	108.3	116.5	120.1	117.2	115	114.1	107.4	76.2	326.7	328.1	327.3	327.6
6/25/2024 6:00	236	1.4	1.6	9.203	9.35	0.18	0.27	0.26	0.29	0.3	0.36	0.62	1.05	1.44	1.97	2.28	2.34	0.3	351.7	9.4	19.7	17.9	350.4	330.8	317.1	311.2	307.1	305.8	306.1
6/25/2024 13:40	236	1.4	1.5	7.662	8.48	0.52	0.67	0.91	1.03	1.15	1.26	1.51	1.65	1.89	2.22	2.34	2.44	26.4	17.2	1.9	357.1	355	351.4	346.9	344.4	342.9	342.5	341.4	340.9
7/15/2024 11:52	231	1	1.2	7.889	9.44	0.51	0.67	1.28	2.85	0.14	0.55	0.31	0.53	0.7	0.78	0.73	0.9	76.4	91.1	304.9	297.7	91.2	96.6	50	328.2	322.2	321.4	330.9	332.2
7/15/2024 11:57	237	0.4	1.4	7.853	9.81	0.46	0.25	0.25	0.36	0.32	0.57	1.02	1.66	2.05	2.42	2.44	2.19	292.5	304.1	308.6	310.1	323	317.6	305.2	304.2	303.9	304	302.3	299.4
7/15/2024 12:02	237	0.4	1.4	7.822	9.82	0.46	0.43	0.44	0.44	0.28	0.35	1.08	1.73	2.11	2.18	2.19	1.97	328.7	322.1	322.8	327.1	321	326.1	310.2	305.9	303.7	305.1	309.7	307
7/15/2024 12:07	237	0.4	1.4	7.787	9.85	0.32	0.34	0.67	0.76	0.67	0.66	0.9	1.84	2.8	2.82	2.14	2.55	311	312.1	328.9	338.8	356	30.4	359.1	323	311.3	308	297.6	311.4
7/18/2024 12:32	241	0.4	1.4	9.217	8.78	0.25	0.47	0.56	1.19	0.76	1.49	2.46	2.15	2.59	2.42	1.89	1.16	137.7	121.6	121.7	118.8	124	120.2	118.4	120.3	119.9	121.2	122.9	127.8
7/18/2024 12:37	240	0.4	1.4	9.208	8.79	0.4	0.57	0.74	1.17	1.8	1.95	1.71	2.36	3.11	3.09	3.35	3.63	166.4	162.7	157.6	142.3	134	133.6	138	132.8	127.5	129.8	128	124.8
7/18/2024 17:17	239	0.4	1.4	7.217	9.08	0.36	0.73	0.98	1.08	1.32	1.6	1.89	2.06	1.98	2.05	2.17	2.18	142.8	133.1	130.6	132	131	130.1	131.1	132.1	135.8	137.1	137.1	137.3
7/22/2024 11:57	236	0.6	1.3	7.578	8.2	0.16	0.29	0.4	0.24	0.4	0.16	0.77	1.63	2.11	2.27	2.18	1.95	340	346.1	347.6	54.5	97.4	93.1	301.1	298.6	300	298.8	298.3	298.1
7/22/2024 12:07	237	0.4	1.3	7.796	8.27	0.4	0.53	0.63	0.66	0.72	0.8	0.9	1.29	2.27	2.73	2.49	2.35	347.3	358.3	4.9	9.3	18.1	20.7	3.2	339.3	322.6	322.5	323.8	323.4
7/23/2024 12:17	237	0.4	1.4	7.204	8.68	0.33	0.29	0.23	0.18	0.18	0.13	0.58	1.97	2.78	2.86	2.6	2.62	34.2	33.9	35.3	40	81.2	60.3	303.3	301.9	302	303.6	306	307.8
7/23/2024 12:22	237	0.4	1.4	7.322	8.48	0.19	0.14	0.04	0.17	0.24	0.29	1	2.21	2.72	2.35	1.8	1.64	236.5	232.4	326	24.3	25.8	340.6	305	297.5	297.3	298.5	302.1	305.6
7/23/2024 22:47	237	0.4	1.4	6.296	9.95	0.25	0.2	0.12	0.09	0.1	0.1	0.13	0.65	1.9	2.55	2.79	2.63	267.6	253.6	257.4	285	302	321.2	305	302.3	299.6	299.4	300	299.6
7/23/2024 22:52	238	0.5	1.4	6.361	9.97	0.45	0.39	0.4	0.44	0.42	0.5	0.57	0.8	1.41	1.67	2.07	2.22	330.5	342.6	352.6	359.1	15.9	33	17.5	344.4	322.4	320.1	318.3	320.3
7/25/2024 12:37	239	0.4	1.4	6.14	9.07	0.18	0.24	0.28	0.43	0.78	0.9	0.77	0.71	1.32	2.03	2.61	2.74	179.9	202.8	224.4	260.7	286	291.4	294.3	295.6	296.8	295.9	295.4	295.3
7/29/2024 12:02	237	0.4	1.4	7.688	9.13	0.04	0.06	0.15	0.55	2.8	0.47	0.25	0.21	0.18	0.08	0.16	0.23	117.8	28.2	118.6	289.3	297	316.4	97.5	109.9	129.2	173.3	248.2	202.4

SOUTH_BERTH_OUT - 2024 greater than 2kts(in)

TIMESTAMP	PRESS	CELL1_SPEED	CELL10_	CELL11	CELL12	CELL10_DIR	CELL11_	CELL12_D
6/22/2024 12:00	8.041	0.8	0.8	1.85	2.05	92.4	102.2	103.5
6/22/2024 12:05	8.115	0.12	1.94	2.06	1.97	306.4	305.1	304.8
6/22/2024 12:15	8.297	0.1	1.92	2.2	2.26	304.6	301.3	299.5
6/24/2024 22:15	6.513	0.12	1.95	1.8	1.73	306.6	309.9	310.1
6/24/2024 22:20	6.534	0.36	0.9	1.12	1.3	328.1	327.3	327.6
6/25/2024 6:00	9.203	0.18	1.97	2.28	2.34	307.1	305.8	306.1
6/25/2024 13:40	7.662	0.52	2.22	2.34	2.44	342.5	341.4	340.9
7/15/2024 11:52	7.889	0.51	0.78	0.73	0.9	321.4	330.9	332.2
7/15/2024 11:57	7.853	0.46	2.42	2.44	2.19	304	302.3	299.4
7/15/2024 12:02	7.822	0.46	2.18	2.19	1.97	305.1	309.7	307
7/15/2024 12:07	7.787	0.32	2.82	2.14	2.55	308	297.6	311.4
7/18/2024 12:32	9.217	0.25	2.42	1.89	1.16	121.2	122.9	127.8
7/18/2024 12:37	9.208	0.4	3.09	3.35	3.63	129.8	128	124.8

Figure (29). Records of historical tidal current data, with speeds of each cell of the current sensor in the red boxes.

Currents vary due to several factors including but not limited to tides, winds, and precipitation runoff and are generally less than 2 knots. Higher velocity currents have been attributed to the maneuvering of vessels close to the sensors. Real time current sensors provide the best information for captains and pilots to consider when arriving and departing a dock.

Winds experienced in the Port area also vary substantially, but are generally not strong enough to interfere with safe navigation. Very localized wind patterns led the Port of Juneau to fund the previously mentioned weather stations in the harbor area. Based on historical wind data, the proposed HTD orientation minimizes prevailing winds from impacting ships arrivals and departures to the dock.

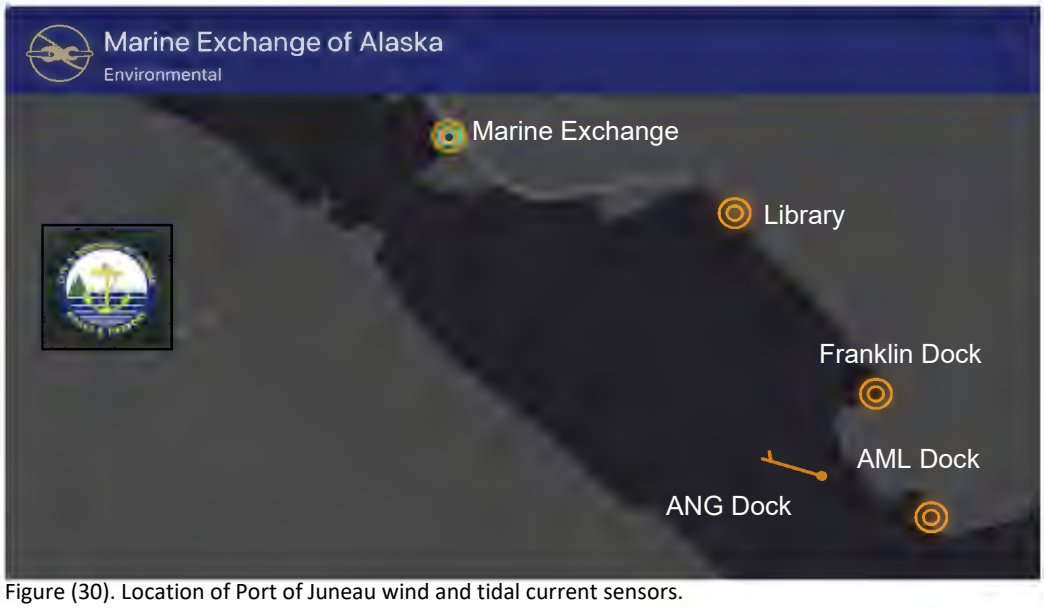

Figure (30). Location of Port of Juneau wind and tidal current sensors.

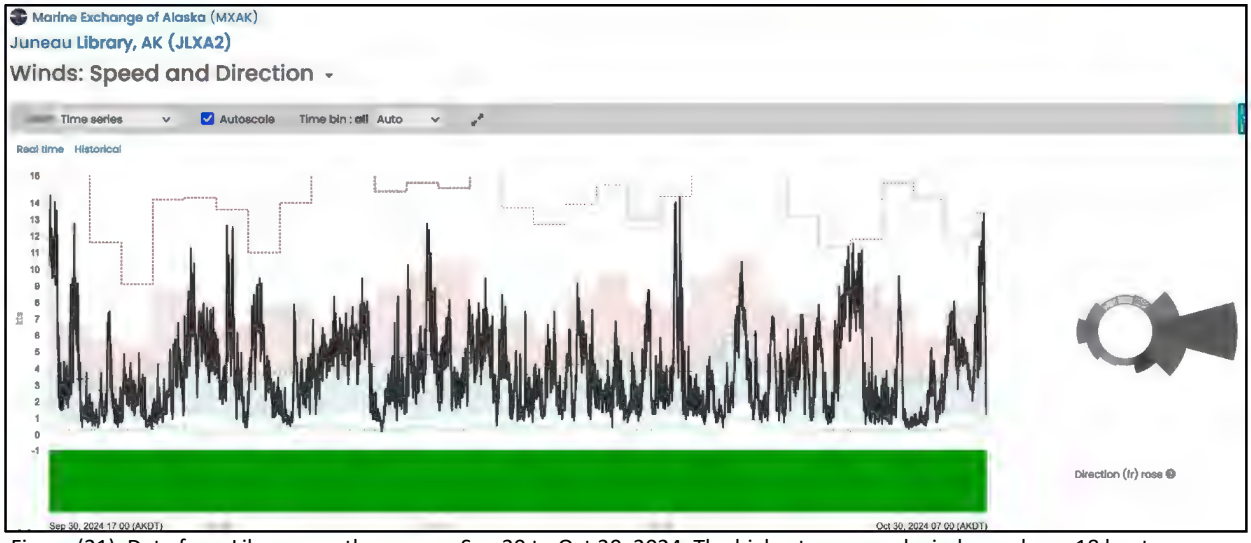

Figure (31). Data from Library weather sensor Sep 30 to Oct 30, 2024. The highest measured wind speed was 18 knots.

Figure (32). Location of NOAA facility wind sensor.

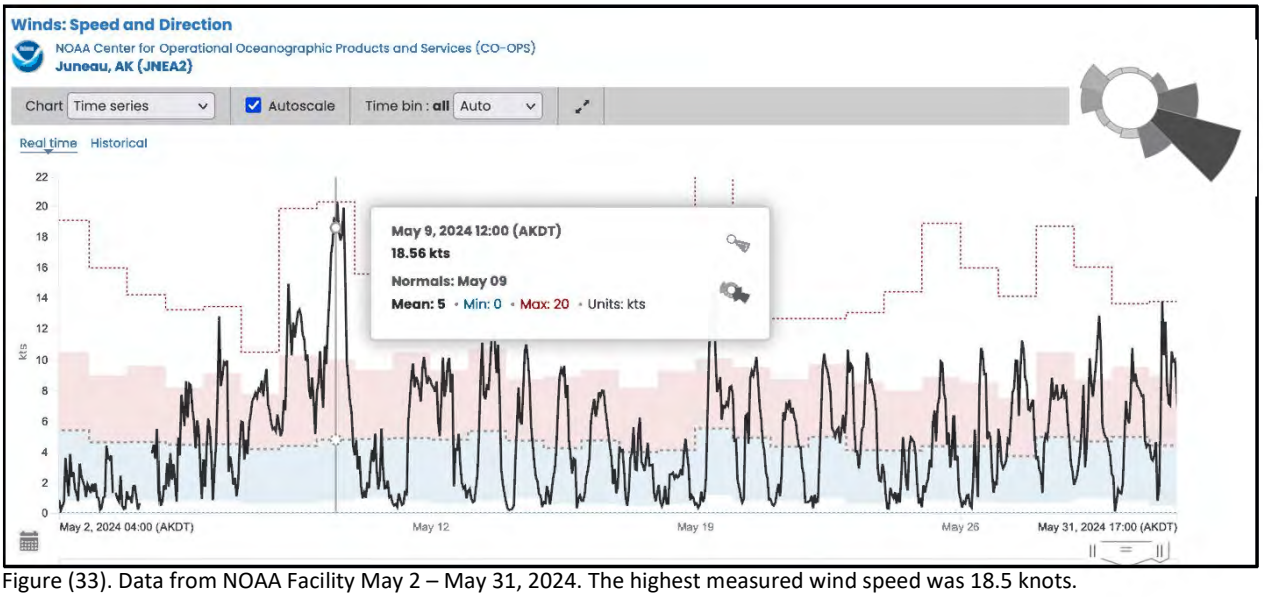

Figure (33). Data from NOAA Facility May 2 – May 31, 2024. The highest measured wind speed was 18.5 knots.

Figure (34). Location of AJ Dock wind sensor.

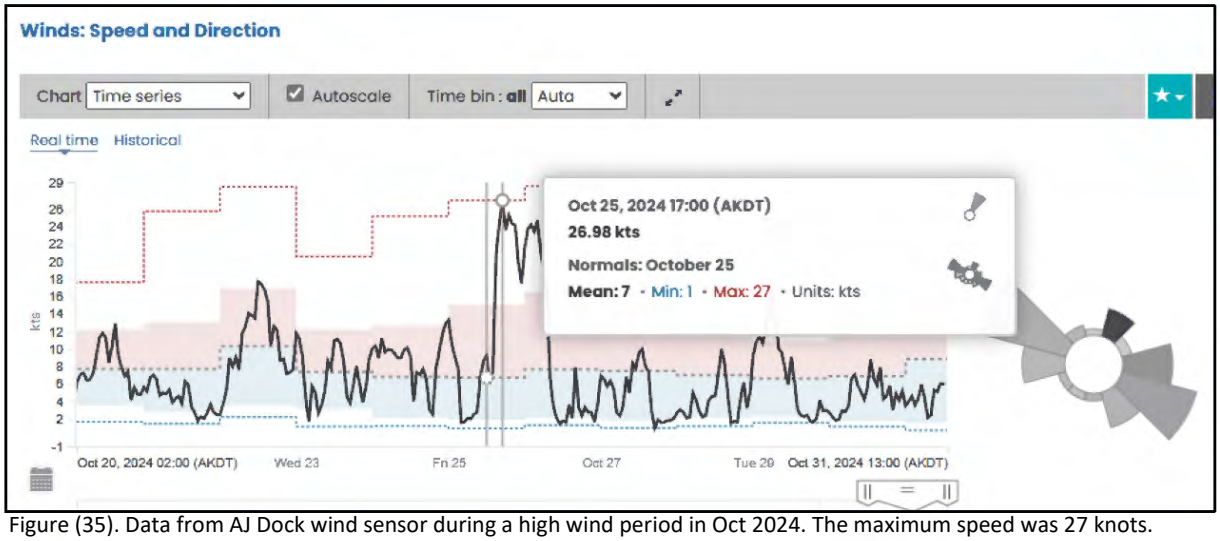

Figure (35). Data from AJ Dock wind sensor during a high wind period in Oct 2024. The maximum speed was 27 knots.

There are instances where environmental conditions interfere with safe navigation of vessels in the port including vessels that would be mooring at the proposed HTD. However, those events do not present an unmanageable risk to the safe navigation of cruise ships mooring or departing shoreside facilities including at the location of the proposed HTD. The installation of wind and current sensors at the proposed HTD would provide the most accurate and relevant real-time environmental conditions that will aid maneuvering decisions made by the captain and pilot.

7. Impacts on the Anchorage Area in the Port: Cruise ships, tugs with barges, large yachts and other vessels have anchored in the port area in the past. The area available to safely anchor a large vessel will be reduced by the HTD, however, the presence of the proposed HTD and the five ship a day limit will prevent the need to anchor large cruise ships offshore. A Coast Guard Safety Zone (see below) limits anchoring in the harbor. The restrictions in anchoring are also noted in the U.S. Coast Pilot. The Coast Guard in providing "permission" to vessels anchoring in the harbor, will likely take into consideration the HTD and limited area available for vessels to anchor.

§ 165.1702 Gastineau Channel, Juneau, Alaska—safety zone.

(a) The waters within the following boundaries are a safety zone: A line beginning at position 58°17.8' N., 134°24.9' W., in the direction of 140° True to Rock Dump Lighted Buoy 2A (LLNR 23685) at position 58°17.1' N., 134°23.8' W.; thence in the direction of 003° true to a point at position 58°17.4' N., 134°23. 8' W., on the north shore of Gastineau Channel; thence northwesterly along the north shore of Gastineau Channel to the point of origin.

(b) Special Regulations:

(1) All vessels may transit or navigate within the safety zone.

(2) No vessels, other than a large passenger vessel (including cruise ships and ferries) may anchor within the Safety zone without the express consent from the Captain of the Port, Southeast Alaska.

Figure (36). Information on the Safety Zone for the Gastineau Channel area of the Port of Juneau is addressed in 33 Code of Federal Regulations, Part 165.

(186)

Anchorages

(187) Anchorage is available off the wharves, northeast of the cable area, in 12 to 19 fathoms, soft bottom. Permission, however, must be obtained from the Coast Guard Captain of the Port prior to anchoring in this area from June through September due to extensive cruise ship traffic.

(188) The harbor area off the waterfront at Juneau is a **safety zone**. (See **33 CFR 165.1** through **165.9**, **165.20**, **165.23**, and **165.1702**, chapter 2, for limits and regulations.)

Figure (37). Federal Regulations, Part 165 The above information on the anchoring of vessels in the Port area is addressed in the U.S. Coast Pilot 9.

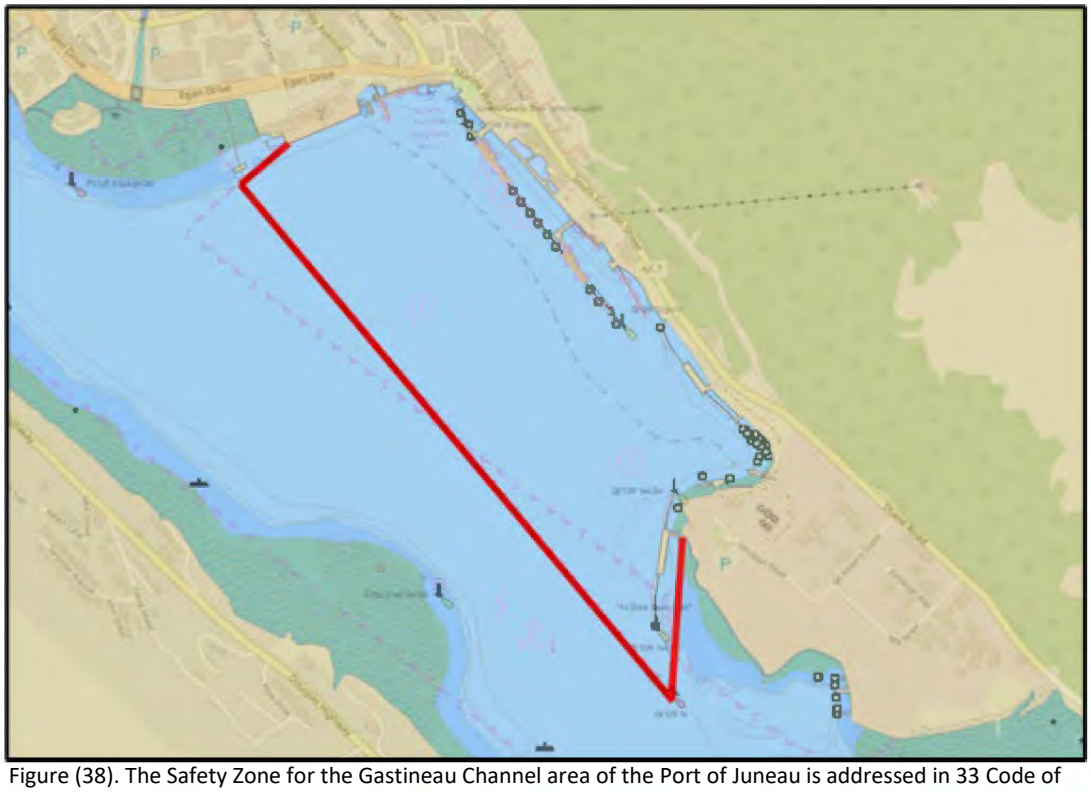

Figure (38). The Safety Zone for the Gastineau Channel area of the Port of Juneau is addressed in 33 Code of Federal Regulations, Part 165.

8. Summary: The information provided in this navigation study of the impacts of the proposed Huna Totem Dock identifies both positive and negative impacts on the navigation of vessels in the Port of Juneau for decision makers to consider when evaluating this project. Use of a navigation simulator with the environmental factors and physical details of the proposed HTD in the Port of Juneau is planned. The simulator will be operated by vessel pilots and masters who have navigated large cruise ships under various current and wind conditions and will assess the navigational challenges and go/no go parameters. The experience obtained will help inform the preferred orientation of the HTD, if built.