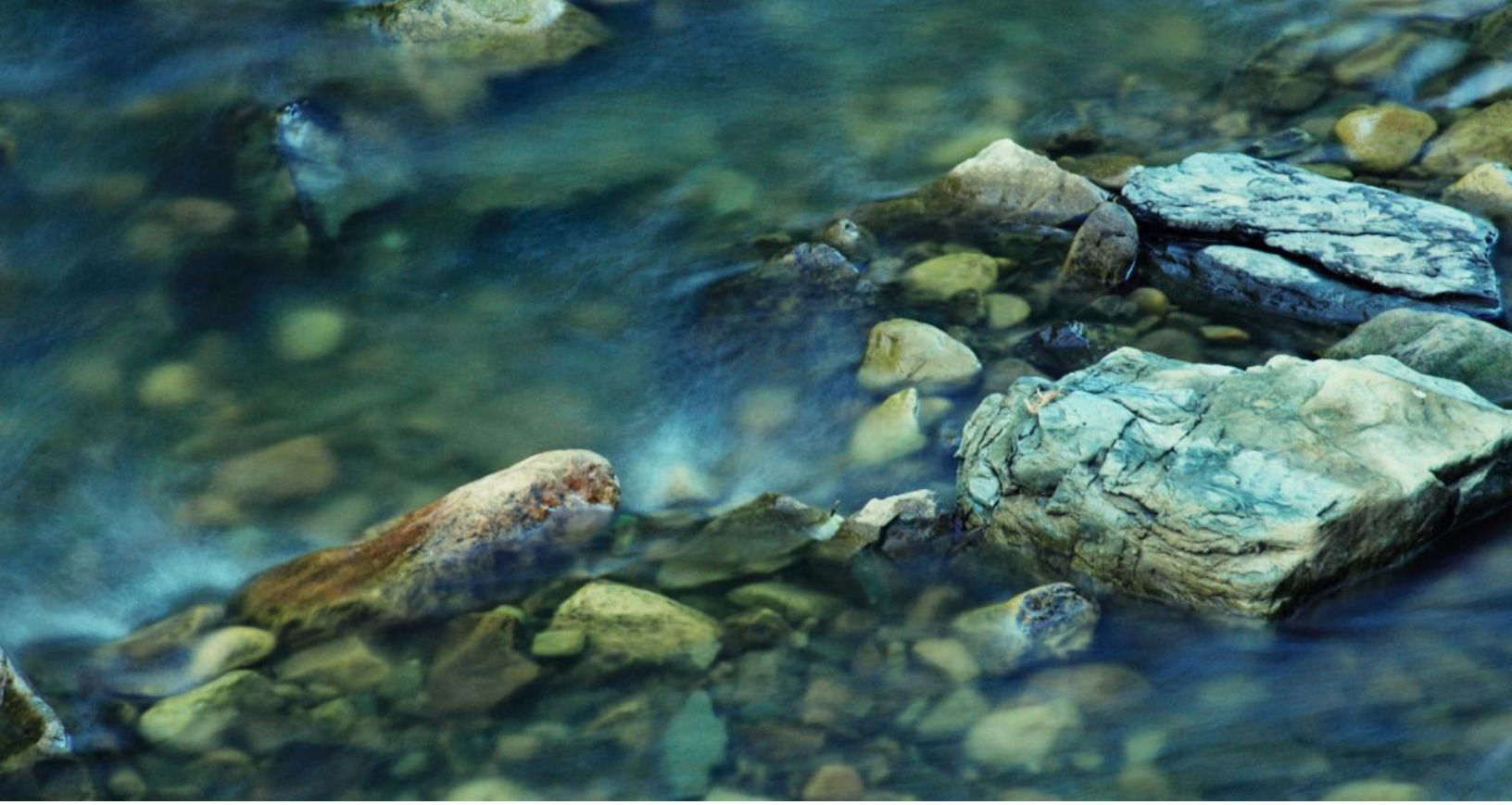
Attachment K
Vessel Traffic Technical Study



July 2023
Port of Grays Harbor Terminal 4 Expansion and Redevelopment Project

ANCHOR QEA

Vessel Traffic Technical Study

Prepared for Port of Grays Harbor and Ag Processing, Inc.

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Prepared for
Port of Grays Harbor
Ag Processing, Inc.

Prepared by
Anchor QEA, LLC

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ABBREVIATIONS

AGP	Ag Processing, Inc.
CFR	*Code of Federal Regulations*
km	kilometer
MLLW	mean lower low water
Port	Port of Grays Harbor
Proposed Project	The Port Project and AGP Project, together
RCW	Revised Code of Washington
RORO	roll-on/roll-off
T1	Terminal 1
T2	Terminal 2
T4	Terminal 4
USACE	U.S. Army Corps of Engineers
USC	United States Code
WDFW	Washington Department of Fish and Wildlife

1 Introduction

The Port of Grays Harbor (Port) is proposing the Terminal 4 (T4) Expansion and Redevelopment Project to increase rail and shipping capacity at T4 at the Port located in the cities of Hoquiam and Aberdeen, Washington, to accommodate growth of dry bulk, breakbulk, and roll-on/roll-off (RORO) cargos. This includes the rail upgrades and site improvements (rail upgrades), the Terminal 4A cargo yard relocation and expansion, and the T4 dock fender and stormwater upgrades. These project elements would be constructed by the Port and are referred to as the Port Project. The T4 Expansion and Redevelopment Project also includes a new export terminal by Ag Processing, Inc. (AGP), at T4. This project element is referred to as the AGP Project. Together, the Port Project and AGP Project are referred to as the Proposed Project.

This report serves as the basis for vessel traffic analysis that will support evaluation of the Proposed Project by local, state, and federal agencies. This includes those with a funding, jurisdictional, or permitting authority over the Proposed Project. At the time of writing this report, the information provided herein is the most up to date information available. Additional refinements will occur as design progresses but are not expected to result in substantive changes. Any major differences in the Proposed Project would be re-evaluated as appropriate.

2 Proposed Project and Alternatives

Two alternatives are evaluated in this study: the Proposed Project and a No Action Alternative. Additional details about these alternatives are documented in the *Project Description Technical Report* (Anchor QEA 2023). The alternatives include the following:

- **Alternative 1 (Proposed Project).** As noted in Section 1 and as further described in the *Project Description Technical Report* (Anchor QEA 2023), the Proposed Project consists of the Port Project and the AGP Project. The Port Project includes the following: 1) rail upgrades and site improvements; 2) Terminal 4 dock, fender, and stormwater upgrades; and 3) cargo yard relocation and expansion. In addition to these proposed upgrades at Terminal 4, AGP, an existing tenant of the Port, intends to upgrade Terminal 4B to include improved rail receiving facilities, a new shiploader, and a soybean meal storage structure (referred to as a surge silo). The primary elements of the Proposed Project are shown in Figure 1 and could be constructed in phases.

  No Action Alternative. The No Action Alternative represents the conditions anticipated without construction and operation of the Proposed Project over the course of the construction analysis period of 2024 to 2025 and the operations analysis period from 2025 to 2045. Although the Port would not complete the proposed infrastructure enhancements or redevelop the Terminal 4 cargo yard under the No Action Alternative, it is anticipated that the Port would pursue growth opportunities within the existing Port footprint. It is also assumed that AGP would not complete the proposed infrastructure enhancements at Terminal 4B, but AGP would maximize its operations at the existing Terminal 2 facility. However, under the No Action Alternative, the Port would continue to operate and maintain T4 as it exists under existing conditions and would continue to seek out new business. Because activity under the No Action Alternative would be limited to current port infrastructure and terminal capacity limits, the No Action Alternative is anticipated to result in operations similar to existing conditions.

Figure 1
Project Elements

3 Regulatory Context

3.1 Regulations

Table 1 presents the regulations, statutes, and guidelines that apply to vessel traffic.

Table 1
Federal, State, and Local Laws and Regulations Applicable to Vessel Traffic

Laws and Regulations	Description
Federal	
Forts & Waterways Safety Act of 1972 (31 USC 1221 et seq.)	Authorizes the U.S. Coast Guard to provide for navigation and vessel safety; protect the marine environment; and protect life, property, and structures in, on, or immediately adjacent to the navigable waters of the U.S.
Port & Tanker Safety Act of 1978 (33 USC 1221 et seq.)	Grants the U.S. Coast Guard authority to supervise and control all types of vessels, foreign and domestic, operating in U.S. navigable waters.
Navigation and Navigable Waters, Subchapter E: Inland Navigation Rules (33 CFR 83–90)	Applies to all vessels on the inland waters of the U.S. and complements the International Regulations for Preventing Collisions at Sea 1972, which are applicable in International Waters.
Federal Pilotage Requirements (46 CFR 15.610 and 15.812)	Identifies the type of vessels that require a federally licensed master or mate and identifies federal pilotage requirements for U.S.-inspected vessels on coastwise voyages.
State	
Washington State Pilotage Act (RCW 88.16)	Establishes requirements for compulsory pilotage provisions in certain waters of the state, which includes Grays Harbor.
Local	
No local laws or regulations apply to vessel traffic in the Project Area.	

3.2 Required Permits and Approvals

No required permits or approvals apply to vessel traffic.

4 Information Sources

4.1 Vessel Traffic Information

The following information sources were used to describe existing conditions and expected future conditions within the study area to support the impact analysis:

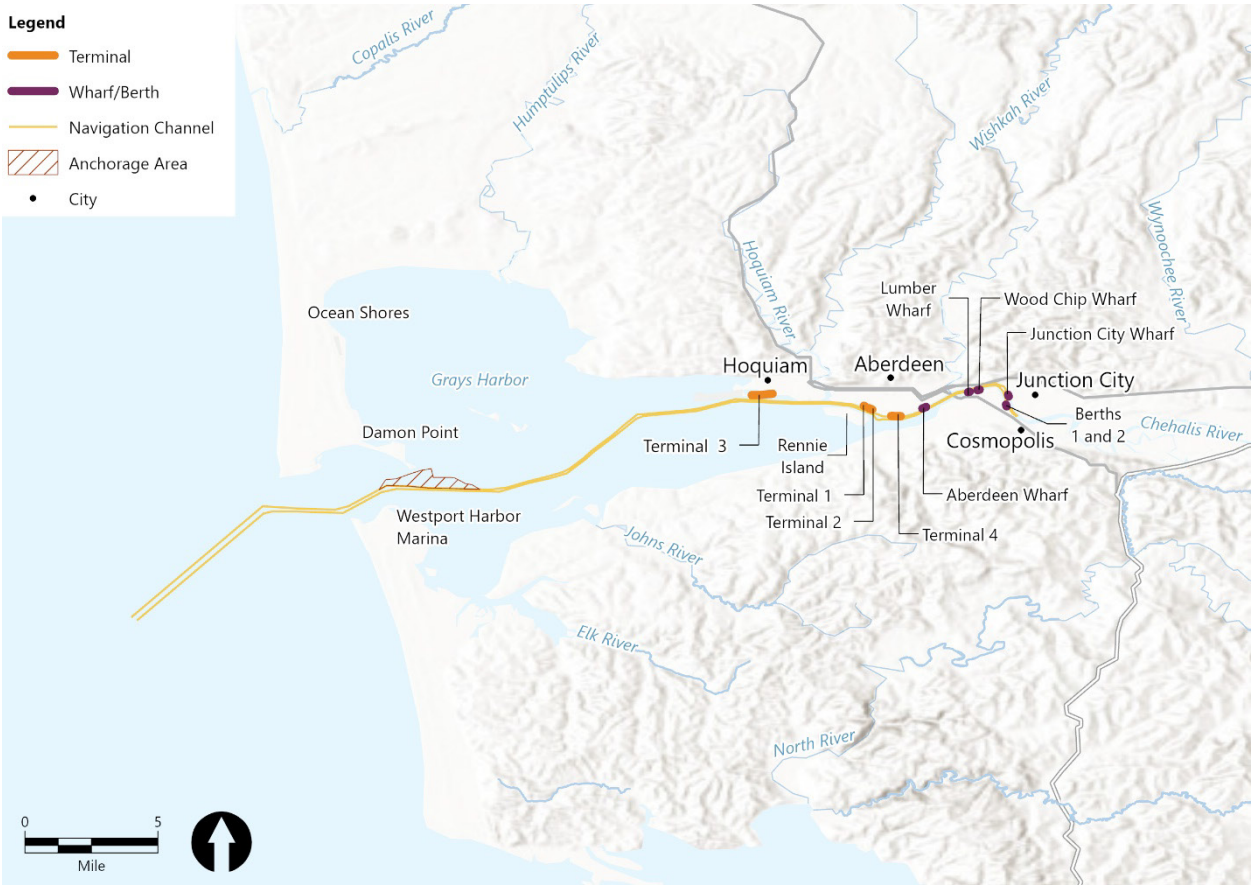
- Vessel Call Data – Port of Grays Harbor (1989-2022)
- U.S. Army Corps of Engineers' (USACE's) *Grays Harbor Navigation Improvement Project General Investigation Feasibility Study* (USACE 2014)
- Washington Department of Fish and Wildlife (WDFW) gillnet, Dungeness crab, and shellfishing regulation and fisheries data (WDFW 2023a, 2023b, 2023c)
- USACE Waterborne Commerce Statistics Center – Grays Harbor Port District 5-year Cargo and Trip Reports
- *Washington State 2014 Marine and Rail Oil Transportation Study* (Ecology 2015)
- NOAA Nautical Charts and Publications (NOAA 2014)
- NOAA U.S. Coast Pilot publications (NOAA 2023)
- Grays Harbor Safety Committee's *Grays Harbor Safety Plan* (2016)
- *Westway Expansion Project Final Environmental Impact Statement* (City of Hoquiam and Washington State Department of Ecology 2016)

5 Affected Environment

5.1 Study Area

The Port of Grays Harbor is located on the north shore of the Chehalis River in Aberdeen, Washington, just northeast of Rennie Island (see Figure 2). The study area considered for vessel traffic impacts is the entirety of Grays Harbor, including the transportation corridor encompassing the Chehalis River and Grays Harbor federal navigation channel from the Port property through Grays Harbor to the Pacific Ocean, up to 3 nautical miles offshore from the southern mouth of Grays Harbor. Vessels access the Port's four deepwater terminals via the Chehalis River and the Grays Harbor federal navigation channel, which runs east and west from the Pacific Ocean into the Port area.

Figure 2
Project Vicinity and Study Area Map



5.2 Background

Grays Harbor is an estuarine bay fed by multiple rivers and creeks, including the Chehalis River. The harbor is a highly sensitive environment with numerous natural and cultural resources (Ecology 2015). There are numerous economically, culturally, and ecologically important fish, wildlife, and invertebrate species that use Grays Harbor and its surrounding habitats (USACE 2014). Six species of salmon, green and white sturgeon, Dungeness crab, and many other species rely on the harbor. The Grays Harbor National Wildlife Refuge is one of the largest concentrations of shorebirds on the west coast. The intertidal flats, salt marshes, and open water in the harbor provide habitat for more than 278 bird species (USACE 2014; USFWS 2023).

The bay is approximately 27 kilometers (km) long and 19 km wide. The bay is separated from the Pacific Ocean by two low peninsulas, each with a jetty bordering a 3-km-wide entrance bar where boats navigate between the ocean and the bay. This entrance bar, along with strong currents, can make navigation into and out of the harbor difficult.

Vessel traffic in the study area includes a mixture of large commercial vessels, smaller fishing vessels (commercial, tribal, and recreational), and other recreational vessels. Traffic within the harbor varies in intensity throughout the year. While large commercial vessels are restricted to the federal navigation corridor, smaller vessels can navigate outside of the navigation channel. The Westport Marina is one of the largest coastal marinas in the Pacific Northwest; it provides moorage for charter and commercial fishing fleets, as well as a U.S. Coast Guard Station. Waterfront access is also available at the 28th Street Boat Launch, located near Fry Creek, and the Weyerhaeuser Boat Ramp in Cosmopolis (along the Chehalis River).

The federal navigation channel begins approximately 4 miles offshore and extends nearly 23 nautical miles to Cosmopolis near the mouth of the Chehalis River. Along the channel's predominantly east-west traverse, the channel passes Westport, Hoquiam, and Aberdeen before ending at Cosmopolis. The channel is constrained by shoals and flats, at points as narrow as 0.6 mile wide, and contains numerous turns where course changes are necessary (Ecology 2015).

USACE maintains the nearly 23-mile-long deep-draft federal navigational channel. The federal navigation channel is 350 feet wide, increasing to 1,000 feet wide over the bar east of Rennie Island, with depths ranging from 32 to 36 feet (USACE 2023). Between 2016 and 2018, USACE deepened the federal navigation deep-draft channel in the harbor from the previously maintained depth of -36 feet mean lower low water (MLLW)[1] to the fully authorized depth of -38 feet MLLW (USACE 2023). The deepening occurred from the South Reach upstream to Cow Point Reach where the Port's T4 is located.

[1] Mean lower low water is the average of the lower low water height of each tidal day during current National Tidal Datum Epoch.

5.2.1 Existing Vessel Operations and Volume

The study area presently includes a mix of large commercial vessels and smaller fishing and recreational vessels. The vessel traffic in the study area varies in terms of seasonality and geographic use.

5.2.1.1 Large Commercial Vessels

Destinations for large commercial vessels in the harbor include the Port and several privately owned wharves east of the Port. Besides the Port, there are several deep-draft facilities located in the Hoquiam, Aberdeen, and Cosmopolis areas of Grays Harbor, including the Aberdeen Wharf (Willis Enterprises), the Junction City Wharf (Sierra Pacific Industries), and several Weyerhaeuser Wharves (Figure 2). These facilities primarily ship timber and wood products.

There are two primary types of large commercial vessels in the Harbor: tank vessels and cargo vessels. Tank vessels carry bulk liquids, such as oil, methanol, and biodiesel. These vessels include self-propelled tankers and tank barges that require an escort tug. Cargo vessels are used to carry grain, wood, and other dry products. They include self-propelled cargo ships, cargo barges that require a tug, and RORO vessels that carry wheeled vehicles.

Except for cargo barges, large vessel navigation is restricted to the federal navigation channel and port berths because of their draft depths. Cargo barges, with their shallower drafts, can travel to locations within the Chehalis River.

5.2.1.1.1 Large Commercial Vessels at the Port

There are four terminals at the Port. Terminal 1 (T1) serves as the Port's liquid bulk terminal, and rail access to T1 is provided by the Puget Sound & Pacific Railroad rail line. Terminal 2 (T2) operates as a bulk loading facility. This terminal is served by the Port's loop track. It is currently the bulk grain terminal for AGP. Terminal 3, which is approximately 2.8 miles west of T2, is a currently unoccupied 150-acre industrial site with both rail and vessel access. T4 is the largest terminal and currently serves as the Port's primary general cargo terminal. This terminal has a storage and transfer facility with two deepwater berths and on-dock rail service.

Vessels approach the Port terminals from the east via the Chehalis River and from the west via the Grays Harbor Navigation Channel, which runs east and west from the Pacific Ocean into the Port docks. Entry into the harbor by large commercial vessels is scheduled by the Port and vessel pilots. Consideration of tides, weather, channel depth, and pier availability are all necessary when preparing to enter the port. It takes approximately 2 hours to travel the 3 nautical miles from the entrance of the harbor to T1 at the Port.

The depth of the navigation channel limits the ability of some deep-draft vessels to enter except during high tides (NOAA 2023). There are two daily high tides during which deep-draft vessels typically traverse the channel.

Vessels that need to wait to access the terminals can anchor in anchorage areas located just inside the harbor, north of Westport and southeast of Damon Point (NOAA 2023; Figure 2). Anchorage areas are frequently re-evaluated and assigned through a joint effort assessment by the pilots, the U.S. Coast Guard, and USACE. According to a recent environmental impact statement, the deep-draft vessel anchorage areas can safely accommodate three large deep-draft vessels (D'Angelo 2014, as cited in City of Hoquiam and Washington State Department of Ecology 2016). The Grays Harbor Safety Plan includes standards of care for anchorage operations (Grays Harbor Safety Committee 2016).

5.2.1.2 Fishing and Recreational Vessels Operating in Grays Harbor

Fishing and recreational vessels have shallower drafts and thus can navigate outside of the channel. Fishing in the harbor includes tribal, recreational, and commercial fishing. Commercial fishing includes gillnetting and crabbing. The State of Washington has strict rules and fishing schedules for commercial gillnet salmon fishing (WDFW 2023a). Commercial fishing for salmon is closed in the South Bay portion of the harbor. In contrast, crab fishing is allowed anywhere in the harbor. Dungeness and red rock crab have size and catch limits within the harbor, and the crabbing season extends year-round except for crab pots, which are only allowed from December 1 through September 15 (WDFW 2023b, 2023c).

The Westport Harbor Marina, located on the southern peninsula near the entrance to Grays Harbor, moors more than 200 commercial fishing vessels, tribal fishing boats, and recreational boats; the marina has a mooring capacity of more than 650 boats. As mentioned previously, boats also access the harbor via the 28th Street Boat Launch and the Weyerhaeuser Boat Ramp in Cosmopolis.

It was recently estimated that there may be 400 or more fishing vessels in the harbor during peak fishing times, with peak fishing occurring during the fall months (Scharpf 2015, as cited in City of Hoquiam and Washington State Department of Ecology 2016).

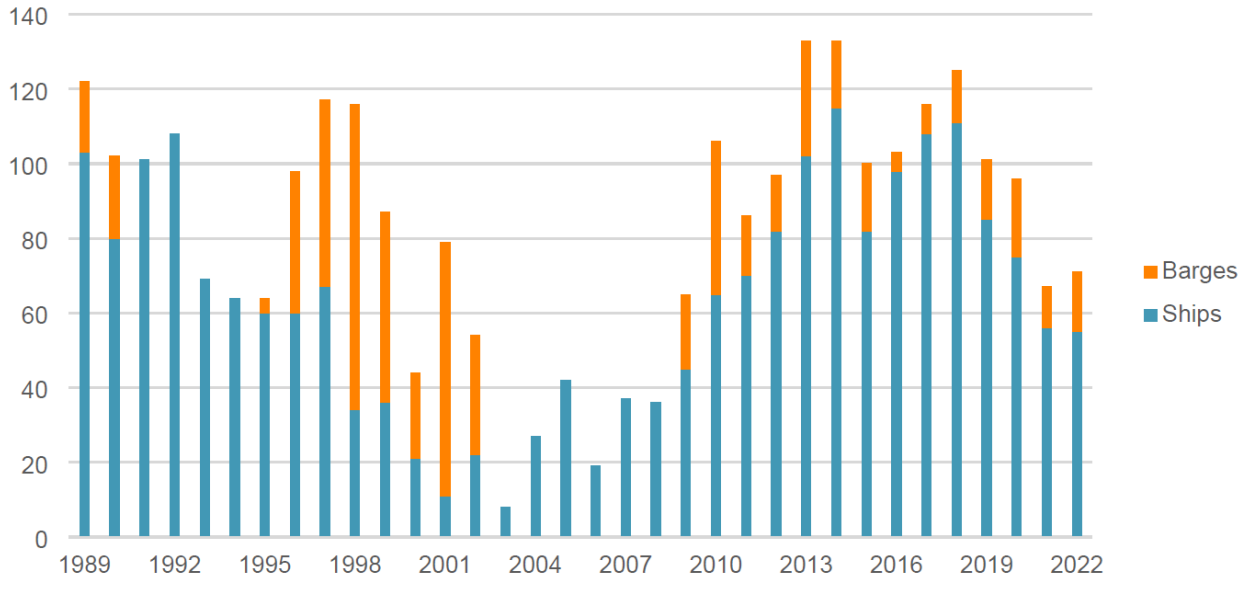
Inland Navigation Rules (33 *Code of Federal Regulations* [CFR] 83; Rules 9, 13, and 18) apply to boats in the federal navigation channel, and this confers the right-of-way to tankers and tank barges within the channel. Smaller vessels (under 20 meters in length), sailboats, and fishing boats cannot impede the passage of other vessels in a narrow channel or fairway.

5.2.1.2.1 Historical and Existing Vessel Traffic at the Port of Grays Harbor

Since 1989 (the first year of available data for vessels calling at Port of Grays Harbor), there have been 2,154 recorded ship calls (an average of 63.4 ships per year) and 639 recorded barge calls (an average of 18.8 barge calls per year) at the Port of Grays Harbor docks. Total vessel calls totaled 2,793, an average of 82.1 vessels per year. Further, the records reveal significant annual fluctuations in traffic volumes, with yearly vessel calls ranging from a minimum of 8 to a maximum of 133 at Port of Grays Harbor docks. However, the number of total vessels calling on all docks in the Harbor have

been as high as 304, with a total of 3,821 and annual average of almost 132 since 1989. Total vessel calls specific to the Port of Grays Harbor docks are shown in Figure 3.

Figure 3
Port of Grays Harbor Total Vessel Calls 1989 – 2022

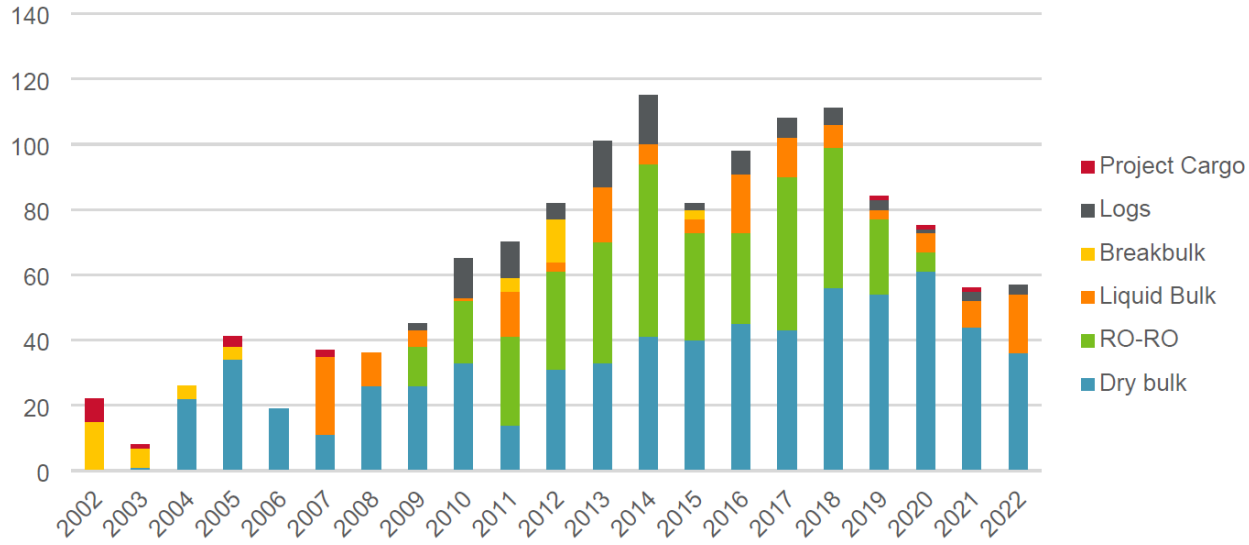


Focusing on the most recent years of 2013 to 2019, prior to years affected by the COVID-19 pandemic, the Port saw an annual average of 99.8 ship calls per year, with a peak of 115 ship calls in 2014. During the pandemic (2020 to 2022), ship call numbers at the Port dropped to an average of 62.7 ship calls per year. There was no significant change in average barge calls during the pandemic years, with an average of 15.7 calls per year from 2013 to 2019 and 16.0 calls per year from 2020 to 2022. As noted in the larger dataset, annual fluctuations in barge calls from 2013 to present remained significant with a minimum of 5 and a maximum of 31 calls.

For the purposes of this analysis, the baseline for comparison is 131 total vessel calls in the Port of Grays Harbor per year, including 100 ship calls and 31 barge calls.

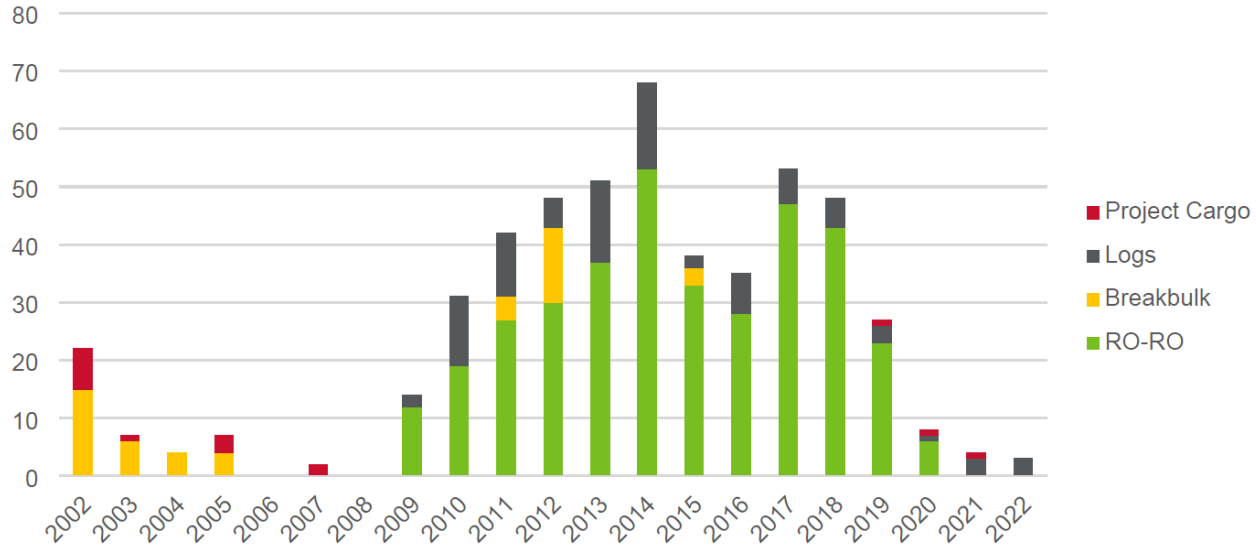
Since 2002, the first year of available data on vessel calls by commodity, there have been a total of 1,338 ship calls (an average of 63.7 per year). As shown in Figure 4, ship trips through the federal navigation channel to and from the Port have historically included four main cargo types. Liquid bulk primarily represents trips to and from T1, dry bulk includes trips to and from T2, and the remaining breakbulk and RORO trips are mainly to and from T4.

Figure 4
Total Port of Grays Harbor Ship Calls by Commodity 2002 – 2022



Between 2002 and 2022, there were a total of 504 ship calls at T4 (see Figure 5), an average of 24 per year. In 2009, the Port began receiving regular RORO vessel traffic (automobiles); volumes steadily increased until reaching a peak of 53 calls in 2014 and then began to decline through 2020, the last year the Port received a ship call of this cargo type as destinations for automobiles shifted elsewhere. During the period of 2009 to 2020, there was a total of 358 RORO ship calls, an average of 29.8 calls per year. Over this same period, non-RORO ship calls totaled 112, an average of 8 per year.

Figure 5
Port of Grays Harbor Terminal 4 Ship Calls by Commodity 2002 – 2022



5.2.2 Tribal Resources and Uses in the Harbor

Grays Harbor and surrounding lands were traditionally inhabited by the Hoquiam and Wishkah peoples and their ancestors. The harbor waters were and continue to be important fishing areas for the Quinault people. The Quinault Indian Nation is the only tribe with usual and accustomed fishing rights in Grays Harbor (USACE 2014). Grays Harbor is thus within the federally adjudicated usual and accustomed fishing area of the Quinault Indian Nation. Fisheries biologists employed by the Quinault Indian Nation actively work with WDFW to responsibly manage salmon and shellfish within their usual and accustomed fishing and hunting areas. Razor clams are harvested by Quinault treaty commercial and subsistence diggers on beaches in north Grays Harbor. The Chehalis Tribe relies on the migration of fish up the Chehalis River to the Confederated Tribes of the Chehalis Reservation (USACE 2014). Although the Chehalis tribal members do not have tribal fishing rights in Grays Harbor, the Tribe owns tidal land in Grays Harbor used for recreational shellfish harvesting.

5.2.2.1 Quinault Fishing Activities

The Quinault have treaty-reserved commercial, subsistence, and ceremonial fisheries (Resource Dimensions 2015 as cited in City of Hoquiam and Washington State Department of Ecology 2016). They fish both in the ocean, which they access through the harbor, and within the harbor. Important ocean fishing species include salmon (Chinook and coho), Dungeness crab, halibut, lingcod, rockfish, sablefish, and sardines. Within Grays Harbor, important gillnet fisheries include salmon (Chinook, coho, and chum), steelhead, and white sturgeon. Dungeness crab harvesting occurs in the harbor, and razor clam harvesting is common along beaches.

Many members of the Confederated Tribes of the Chehalis Reservation rely on fish for commercial, subsistence, and cultural reasons. Salmon and steelhead are two of the most important species. Though their current fishing grounds are limited to rivers within the Reservation, the health of the entire estuary affects the fish populations they depend on.

Quinault treaty gillnet fisheries for salmon, steelhead, and sturgeon can occur nearly year-round in Grays Harbor. Quinault fishers can deploy gillnet fishing gear in Grays Harbor, either as drift gillnets or set-net gillnets. Drift gillnet fishing uses a net off the bow or stern of the fishing vessel, perpendicular to the channel, that drifts with the water currents, sweeping the channel for fish. Drift gillnet fishing is done during incoming and outgoing tides and during slack tide. Drift gillnet fishing effort in Grays Harbor during the fall management period is concentrated in certain locations based on relative abundance of fish. Nets are actively monitored and adjusted to avoid hazards such as logs, shallow areas, docks, and other vessels.

Fishers may choose to fish for salmon, steelhead, and white sturgeon using set nets attached to the bank. Set-net gillnet fishing is when one end of the net is secured to the shore and the other end is secured in the channel, perpendicular to the channel. The net may be deployed for several hours at a time, typically in well-established locations that are allocated to specific fishers. Set-net locations within Grays Harbor are typically deployed on the edges of the federal navigation channel and do not obstruct vessel traffic.

In 2015, the Quinault reported 70 authorized fishers in Grays Harbor (Resource Dimensions 2015 as cited in City of Hoquiam and Washington State Department of Ecology 2016). Preferred drift net fishing areas during the fall months include the Chehalis River and Grays Harbor from Cosmopolis to the Crossover Channel Reach of the navigation channel. Peak fishing occurs during incoming and outgoing tides, as well as during slack tides. During peak fall fishing times, as many as nine boats may be actively fishing the navigation channel near and in front of the terminals (City of Hoquiam and Washington State Department of Ecology 2016). Spring/summer gillnet fishing has traditionally occurred from the Chehalis Bridge upriver and not in the vicinity of the terminals.

Quinault commercial and subsistence crab fishing in Grays Harbor and coastal waters outside of the Harbor occurs from November through September but is concentrated between November and February (Quinault Indian Nation 2015). Between 2004 and 2013, Quinault fishers harvested an average of 2.6 million pounds of crab annually (Resource Dimensions 2015).

5.2.3 Vessel Traffic Management

The Port, pilots, and the U.S. Coast Guard are responsible for vessel traffic management. The Port does not have a formal vessel traffic management system and uses an informal communication

system that includes frequent radio contact with all arriving and departing vessels. Sound signals and tones are also used for communication.

The U.S. Coast Guard establishes the navigation rules and vessel safety requirements for vessels in U.S. waters. The U.S. Coast Guard and State of Washington perform regular commercial boat inspections.

There is an automatic identification system antenna operating at Westport that is used by the Merchant Exchange of Puget Sound, Merchant Exchange of Portland, Pacific Merchant Shipping Association, and the Columbia River Steamship Association to receive data about vessel movements (City of Hoquiam and Washington State Department of Ecology 2016). Member organizations, including pilots, can receive real-time information about vessel movements in and around Grays Harbor. The Port and the applicant are not listed as members (Marine Exchange of Puget Sound 2023).

6 Environmental Consequences

6.1 Assumptions

This analysis is based on the description of the design, construction, and operation of the Proposed Project as described in the *Project Description Technical Report* (Anchor QEA 2023). Additional assumptions relevant to this analysis include 60 additional vessel roundtrips per year due to the Proposed Project.

6.2 Approach

This section describes the approach to the impact analysis, including the types of impacts considered.

6.2.1 Approach to Analysis

This study evaluated the potential direct, indirect, and cumulative impacts of the alternatives that would be different from existing conditions. Existing conditions include those present at the time the analysis was completed in 2023. When informative, the study also includes a comparison of the operational impacts of the Proposed Project to the No Action Alternative. This was done to provide additional information about whether the project impacts may be different later in the analysis period.

Cumulative impacts are caused by the incremental impact of the alternatives when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant actions, which take place over time (40 CFR 1508.7). The list of cumulative projects is presented in the Project Description Report (Anchor QEA 2023).

The following approach to assessing cumulative impacts was developed based on guidance from the Council on Environmental Quality (CEQ 1997):

- Determine the cumulative impacts study area for each environmental resource. The study area used to evaluate cumulative impacts is the same as described in Section 5.1.
- Assess the existing condition of each resource as it has been affected by past actions. This is based on information provided in Section 5 of this study, which includes the effects of past actions.
- Evaluate the cumulative impacts of all past, present, and reasonably foreseeable future actions on each resource in the study area, which is described in Section 6.5.
- Assess how Alternative 1 would contribute to cumulative impacts, which is also described in Section 6.5.

6.2.2 Impact Terminology

Direct impacts are those that would occur as the result of and at the same time and place as the activities proposed by the Port and AGP. Indirect impacts would occur later in time or farther in

distance from the immediate project location but would be attributable to the Proposed Project. Indirect impacts also include those that would occur as the result of operating the project, such as traffic to and from the Project Area. These impacts could be temporary or permanent.

Project impacts can be characterized by duration. Permanent impacts would affect the resource to such a degree that they would not return to their preconstruction state during the analysis period. Temporary impacts may be short-term or long-term. Short-term impacts were assumed to last for less than 2 years. Long-term temporary impacts would affect functions that will eventually be restored or recover over time, but not within 1 year or more after the impact ceases.

The magnitude of impacts is also described in terms of low, medium, and high impacts. Table 2 provides guidance for how the impact levels were assessed. The level of impacts was assessed assuming that applicable regulations and permits and approvals listed in Section 3 would be adhered to and obtained. If needed, the impact analysis also identifies where mitigation would be required to reduce the impact to acceptable levels. Mitigation is described in Section 7.

Table 2
Impact Thresholds for Vessel Traffic

Impact Indicator	Determining Degree of Impact
Vessel Traffic Conflicts with Channel Capacity and Safety and Recreational and Fishing Vessels	**No/Negligible Impact:** An Alternative would not result in any noticeable impacts on the capacity or safety of the navigation channel or conflicts with other vessels or fishers in the study area. **Low:** An Alternative would result in infrequent, temporary, and short-term impacts on the capacity or safety of the navigation channel or conflicts with other vessels or fishers in the study area. **Medium:** An Alternative would result in frequent and long-term impacts on the capacity or safety of the navigation channel or conflicts with other vessels or fishers in the study area. **High:** An Alternative would result in ongoing and permanent impacts on the capacity or safety of the navigation channel or conflicts with other vessels or fishers in the study area.

6.2.3 Methods

The analysis of potential impacts considered construction- and operation-related effects of the Proposed Project and No Action Alternative on vessel traffic in the study area. The analysis considers the effects of constructing the complete project; however, the Port and AGP may construct project elements in phases. Any major differences in the Proposed Project would be re-evaluated as appropriate. The analysis evaluated the capacity of the navigation channel and T4 berth relative to the increase in large commercial vessel trips under the Proposed Project, and potential conflicts of

these vessels with smaller recreational and fishing vessels in the harbor. The analyses were primarily qualitative and based on review of available information.

6.3 No Action Alternative

The No Action Alternative refers to the continuation of existing conditions without the implementation of the Proposed Project as it is described in Section 5 of the *Project Description Technical Report* (Anchor QEA 2023). Under the No Action Alternative, the infrastructure proposed by the Port and AGP would not be built and brought online, and potential beneficial or adverse environmental impacts of the Proposed Project would not occur. Additionally, the purpose of the Proposed Project would not be satisfied under the No Action Alternative.

Under the No Action Alternative, it is anticipated that AGP would maximize its operations at the existing T2 facility, although the T2 facility cannot accommodate the increased volume of export cargo intended to flow through T4, if redeveloped. Thus, the No Action Alternative may not have the capacity to meet the purpose and need of the Proposed Project.

T4 is the Port's main general cargo terminal. It supports a variety of cargos depending on markets and the flow of goods. Under the No Action Alternative, it is assumed that vessel traffic at T4 would continue similar to current operations. Although RORO cargo has declined in recent years, for the purposes of this analysis, it is assumed that there could be other cargo handled at the Port under the No Action Alternative. However, as described in the *Project Description Technical Report* (Anchor QEA 2023), the amount of vessel traffic to the Port under the No Action Alternative would be 131 round trips, which is the same as existing conditions. As such, the No Action Alternative is anticipated to result in **no impact** on vessel traffic.

6.4 Proposed Project

6.4.1 Construction

Construction of the Proposed Project would involve in-water construction work and transport of some construction materials by vessel.

As described in the *Project Description Technical Report* (Anchor QEA 2023), one floating derrick barge, up to two material barges, and one ocean-going tug may be required for the construction of dock upgrades at T4. Derrick barges would range from 60 to 90 feet in width and 200 to 300 feet in length and would be temporarily held in position by a combination of up to three "spuds" consisting of a closed steel shape extended down from the deck level into and below the mudline, and mooring lines to temporary anchors set at locations on the bottom away from the derrick barge. Material barges, will transport in-water piling and other construction materials, will vary in size 18 from 40 to 50 feet in width and 150 to 200 feet in length.

In-water construction work would involve the removal of existing piles using direct pull, a vibratory hammer, or breaking off at the mudline. Vibratory and impact hammers to would be used to install new steel pipe piles. All in-water work would take place during the approved in-water work window of July 16 through February 14; however, it is estimated that it would require appropriately 68 days to remove and install in-water piles.

During construction, the barges would be positioned outside of the navigation channel, so as to not impede vessels traveling within the channel. They would also be placed outside of the area used by vessels accessing other Port terminals (e.g., T2), so they would not affect these activities.

Impacts from construction activities associated with the Proposed Project will include some in-water work and transport of construction materials. In-water construction activities will be short-term and confined to the vicinity of the Project Area. As such, the Proposed Project is anticipated to result in no/negligible impact on vessel traffic.

In-water construction work associated with the Proposed Project will occur in the immediate vicinity of the dock during the approved in-water work window between July 16 through February 14. Therefore, construction activities will occur during peak tribal fishing and crabbing seasons. During peak fall fishing times, as many as nine boats may be actively fishing the navigation channel near and in front of the terminals (City of Hoquiam and Washington State Department of Ecology 2016), and tribal fishers note that salmon sometimes concentrate next to the dock at T4 (Quinault Indian Nation 2015, Exhibit E, as cited in City of Hoquiam and Washington State Department of Ecology 2016). Thus, fishing may be impeded for short periods when in-water work is occurring or when a construction-related vessel is docked. Construction activities may cause fish to temporarily move out of the vicinity of the dock. Fishers will likely be able to find alternative fishing locations, though this may be more difficult during the peak fall fishing season. Crab fishing operates outside of the navigation channel, concentrated to the north of the Harbor.

6.4.2 Operational Impacts Due to Vessel Traffic

As described in the *Project Description Technical Report* (Anchor QEA 2023), the Proposed Project will result in an average of five additional export vessels per month, or 60 vessels per year, arriving and departing the new commodity transfer facility at T4. Typical vessels will be Panamax- or Handymax-sized vessels that will be at berth approximately 3 to 5 days. This will vary based on vessel size and weather conditions. Upon completion of vessel loading, the vessel will typically depart for its destination port. Each vessel will transit out of the harbor via the federal navigation channel, which will require approximately 2 hours travel time.

6.4.2.1 Capacity and Safety

Ship traffic associated with the project will follow established rules and protocols for navigation in Grays Harbor. This includes mandatory pilotage and compliance with federal navigation rules. With the addition of 60 additional vessel calls per year for the Proposed Project, the amount of vessel traffic in the Harbor is anticipated to increase to approximately 191 vessel calls per year. This would not exceed the number of calls seen in past years, which have been as high as 304 vessel calls in 1995 and has exceeded 191 vessel calls eight times in recent years. Furthermore, the Proposed Project would result in approximately 120 transits per year (counting loaded and unloaded trips) in the federal navigational channel and a vessel would only be actively transiting approximately twice a week for approximately 2 hours. Given the safety protocols and procedures currently in place, and the short-term and temporary use of the navigation channel by vessels associated with the Proposed Project, the Proposed Project vessel traffic is anticipated to result in a low impact on capacity and safety.

6.4.2.2 Conflicts with Fishing and Recreation Vessels

In general, navigation rules restrict recreational vessels, small boats, and vessels engaged in commercial fishing from impeding vessels that can only operate in the navigation channel. Therefore, these vessels would need to make way for the vessels serving the Proposed Project. This situation already occurs due to existing ship traffic and vessel operators are already aware of this and are used to accommodating commercial ship traffic.

Operational impacts on fishing and recreation vessels from activities associated with the Proposed Project will include the movement through the navigation channel and dockage associated with approximately 60 vessel calls to Port per year. With additional vessel traffic, there is the possibility of increased conflicts and interruption of tribal, commercial, and recreational fishing activities.

Based on the number and frequency of vessel trips associated with the Proposed Project, it is foreseeable that a vessel could transit the navigation channel during the fishing season. However, it is difficult to predict if interactions would occur during an open fishing window, how fish may be distributed in the channel, or the number of fishers active on a given day. While it is difficult to predict whether increased vessel traffic would affect the ability of fishers to reach their fishing limits, increased vessel traffic could result in short-term and temporary conflicts with fishing areas.

However, given that most of fishing vessels operate outside of the navigation channel, the fact that most fishers can navigate commercial vessels limited to the navigation channel, and the modest increase in the number of ships in the navigation channel, the Proposed Project is anticipated to result in low impact on fishing and recreational vessels. See Section 6.4.2.3 for a discussion of impacts on tribal fishing.

6.4.2.3 Tribal Fishing

The Proposed Project's impacts on tribal fishing activities would likely be limited to those occurring within the navigation channel resulting from the vessel transits, but there is also a potential for some impacts to occur while a vessel is docked at the terminal. Increasing T4 port calls by 60 vessels each year may result in more frequent interruption of tribal fishing in the channel and in the vicinity of the T4 dock. Given that current ship calls at T4 since 2020 have been fewer than 10, an increase to 70 ship calls means that a vessel might be at the terminal once every 5 days (assuming they are docked for 24 hours or less and that ship calls are evenly spaced throughout the year).

Increased vessel movement is most likely to impact fishing in the preferred fishing area from the Crossover Channel Reach of the navigation channel to the turning basin. Tribal fishers note that salmon concentrate next to the dock at T4 (Quinault Indian Nation 2015: Exhibit E, as cited in City of Hoquiam and Washington State Department of Ecology 2016), so fishing might be impeded for short periods when the fish are pooling in the vicinity of T4 while a vessel is docked.

The crab fishing ground locations within Grays Harbor are outside of the navigation channel and thus are not expected to be impacted by increased vessel traffic.

It takes approximately 2 hours for a large commercial vessel to navigate the channel from the entrance buoy to the Port (City of Hoquiam and Washington State Department of Ecology 2016). Large vessels typically navigate the channel close to high tide, which includes the slack tide period, which is when Quinault fishers prefer to fish for salmon using drift gillnets. Assuming the vessel is between the Crossover Channel Reach of the navigation channel and T4 for approximately half of the 2-hour transit time, including docking and undocking maneuvers, a vessel trip could disrupt fishing for a 1-hour period. The time Quinault fishers are not fishing to avoid a vessel would likely be longer to ensure adequate time to retrieve their net, particularly if the net is full of fish during peak fishing times. Fish periodically pool in the vicinity of T4, so fishing might be impeded for short periods if fish are pooling there while a vessel is docked.

The additional large commercial vessels traveling to and docking at Port related to the Proposed Project would negatively affect the timing, duration, and physical area that could be fished. Depending on the specific situation and whether the fishers can return to fishing activities after the vessel passes, this could affect the volume of a day's catch. In some instances, the disruption could equate to lost fishing opportunities.

6.5 Cumulative Impacts

Cumulative impacts are effects that would result from the incremental addition of the Proposed Project to the impacts from past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant actions, which take place over

time (40 CFR 1508.7) and are evaluated as described in Section 6.2.1. The purpose of the cumulative impacts analysis is to ensure that decision-makers consider the full range of consequences for the Proposed Project under expected future conditions.

Current conditions are a result of past and present actions. The current conditions in the study area that were used as the baseline existing environmental condition are described in Section 5. Therefore, the cumulative effects of past actions were assumed to be captured in the analysis of project impacts and were not separately called out in the analysis of cumulative impacts.

6.5.1 Reasonably Foreseeable Future Actions

A number of other projects are currently in progress or are expected to occur in the foreseeable future, regardless of whether the Port Project or the AGP Project proceeds. The impacts of these projects may have the potential to contribute to a cumulative impact on resources when combined with the impacts of the Proposed Project. A complete list of projects with project descriptions is provided in Table 1 of the *Project Description Technical Report* (Anchor QEA 2023).

Of the cumulative projects identified in the *Project Description Technical Report* (Anchor QEA 2023), only the Westport Marina Modernization is anticipated to have the potential to contribute to cumulative impacts on vessel traffic and was considered in this analysis. Note this project would be required to complete separate project-specific State Environmental Policy Act environmental reviews and permitting, as appropriate.

Westport Marina is owned and operated by the Port of Grays Harbor. The marina currently maintains moorage for 520 vessels. The Westport Marina Modernization Report focuses mainly on increasing fairway width for access, increasing slip width, and analyzing slip mix for optimization of use. There may be a slight change in vessel docking capacity resulting from the planned modifications to the slips; it is expected that slip number decreases by 78 but end ties increase by 52. Overall ship traffic in the study area would not be expected to change significantly as a result of the Westport Marina Modernization Project.

6.5.2 Cumulative Impacts on Vessel Traffic

Impacts from construction and operation of the Proposed Project on safety, fishing and recreation vessels, and capacity are described in Sections 6.4.1 and 6.4.2 of this study. Impacts on safety, fishing and recreation vessels, and capacity during construction would range from negligible/no impact to low impact. Vessel traffic changes associated with the Westport Marina Modernization Project would be minor. Overall ship traffic is anticipated to be associated primarily with the increased vessel activity from the Proposed Project. Therefore, the Proposed Project would not contribute to a cumulative significant impact on vessel traffic.

6.5.3 Cumulative Impacts on Tribal Fishing

Impacts from the operation of the Proposed Project on tribal fishing are described in Section 6.4.2.3 of this study. With the exception of one cumulative project identified in Table 1 of the *Project Description Technical Report* (Anchor QEA 2023), none of the cumulative projects are expected to result in interference with access to or engagement in tribal fishing. The Westport Marina Modernization Project is not expected to result in changes to ship traffic in the area and would not be expected to restrict or interfere with tribal fishing.

7 Mitigation

This section proposes mitigation actions based on impacts from the Proposed Project described in Sections 6.4.1 and 6.4.2. Proposed mitigation is intended to be specific to the impact addressed and includes measures to avoid, minimize, rectify, reduce, or compensate for lost resources and functions. Mitigation measures to address impacts may require coordination and consultation with USACE, Tribes, and other state and federal agencies (e.g., WDFW, NOAA). Specific mitigation actions would be confirmed during project permitting.

The following mitigation measure would minimize impacts from the vessel traffic associated with the proposed facility:

- The Port, already familiar with requirements due to their operations at T2, shall work with the Grays Harbor Safety Committee, including the U.S. Coast Guard, the Port, and tribal contacts to establish procedures to announce project-related vessel traffic arrivals and departures over a designated Very High Frequency marine radio channel at least 1 hour before arriving and departing, which will minimize the potential for vessel collisions and interference with tribal and recreational fishing.

8 References

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