# Attachment J
# Vehicle Traffic and Safety Technical Study

# Terminal 4 Expansion Vehicle Traffic and Safety Technical Study

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

July 2023

SE23-0892

FEHR PEERS

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# 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 rail upgrades and site improvements, the Terminal 4A (T4A) 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. It 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.

The purpose of this technical study is to describe the affected environment and potential impacts of the Proposed Project on vehicle traffic and safety, focusing on railroad crossings along public roadways. This study considers measures to mitigate potential impacts of the Proposed Project on vehicle traffic and safety and documents any remaining unavoidable and significant adverse impacts.

This technical study will be used to support environmental review of the Proposed Project by the state and federal agencies with funding, jurisdictional, or permitting authority over the Project. This includes compliance with the Washington State Environmental Policy Act (SEPA) and the National Environmental Policy Act (NEPA). This technical study will also be used as supporting documentation for permitting efforts.

## 1.1 Location and Regional Setting

**Figure 1** shows the location and regional setting of the Port. The Port was founded in 1911 and is located on the Pacific coast of Washington state in the cities of Hoquiam and Aberdeen in Grays Harbor County. The Port is located near where Chehalis River enters Grays Harbor, approximately 15 miles east of the Pacific. The Port is the westernmost port in Washington. The Pacific Ocean is accessed from the Port via the Grays Harbor deep-draft federal navigation channel within Grays Harbor. The Proposed Project does not include expanding or deepening the Grays Harbor federal navigation channel. Rennie Island is just south of the Port and is within Grays Harbor. Bowerman Airport is approximately 4 miles west-northwest of the Port. The Puget Sound and Pacific Railroad (PSAP) provides a freight rail connection between the Port and Centralia, Washington.

## 1.2 Project Area

The Project Area consists of the area where the proposed facilities would be located, called the On-Site Project Area, and the existing off-site transportation corridors, called the Off-Site Project Area. The On-Site Project Area includes the area that will be directly affected by construction and operation of the Proposed Project (**Figure 2**). The Off-Site Project Area includes off-site transportation corridors used for rail and vessel transportation. This includes the PSAP line from the Port property to the connection with the BNSF Railway and Union Pacific Railroad mainline in Centralia, and the 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. The Proposed Project will likely include rail construction on property owned by others (PSAP or other private owners) along the PSAP rail corridor east of West Heron Street. It has not been established whether the additional segment of rail needed to serve the site will be built and owned by the PSAP, built and owned by the Port, or some other combination of ownership and leasing. Specific study areas for the analysis of potential impacts of the Proposed Project are defined in Section 5.1 based on the potential for effects on vehicle traffic and safety at railroad crossings along public roadways.

*Figure 1: Project Location and Regional Setting*

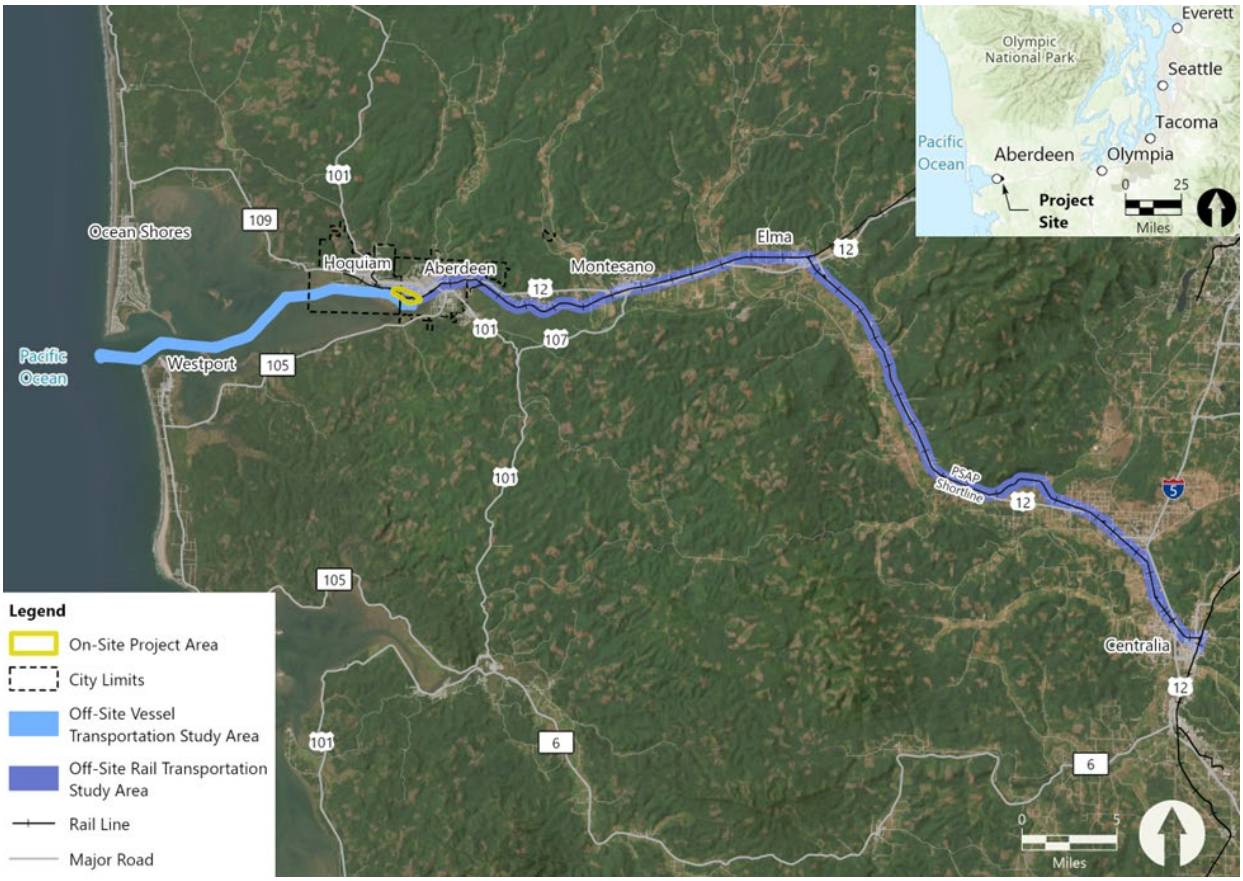
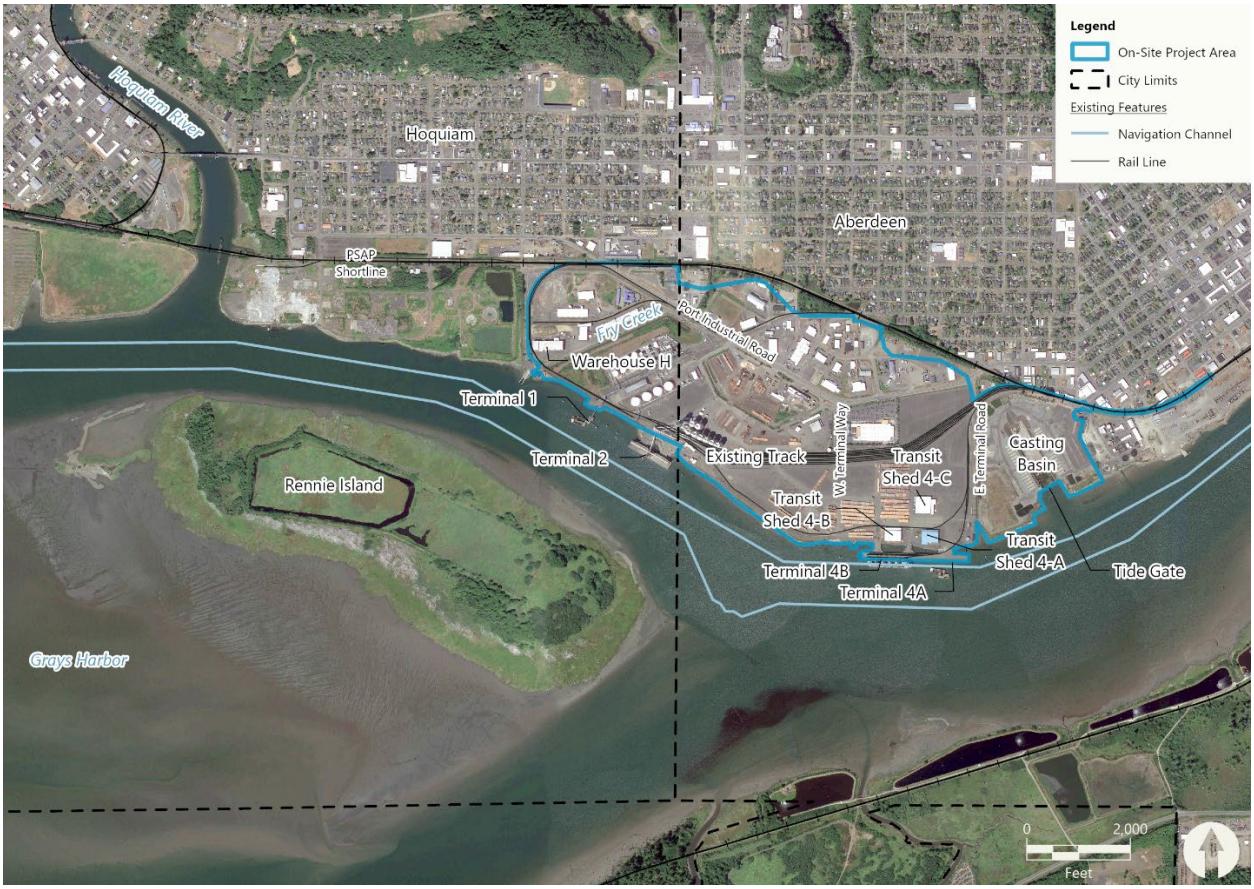


*Figure 2: On-Site Project Area*



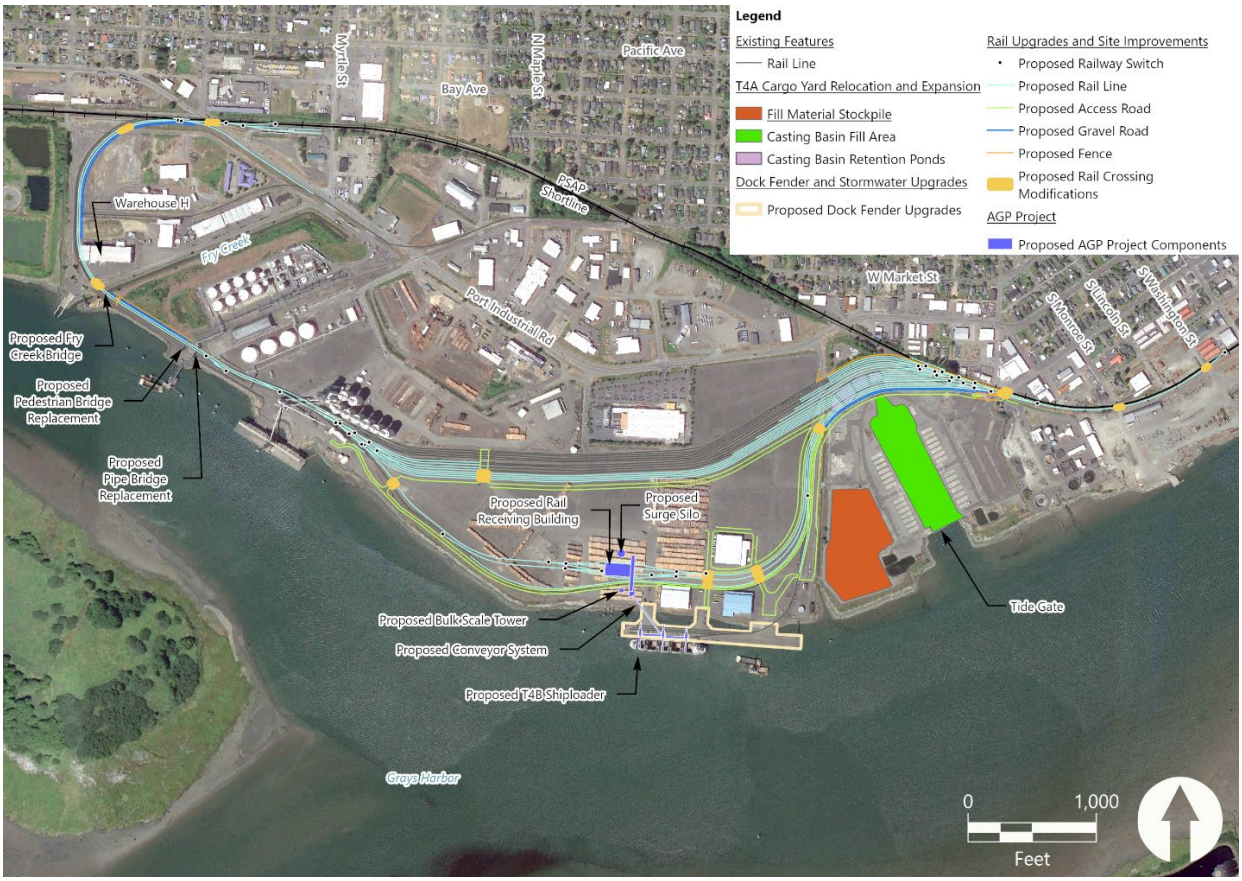

# 2 Project Alternatives

Two alternatives are evaluated in this report: the Proposed Project and a No Action Alternative. Additional details about these alternatives are documented in the *Port of Grays Harbor Terminal 4 Expansion and Redevelopment 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, 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) T4 dock, fender, and stormwater upgrades; and 3) cargo yard relocation and expansion. In addition to these proposed upgrades at T4, 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 3 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. Under the No Action Alternative, the Port would not complete the proposed infrastructure enhancements or redevelop the T4 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 (T4B), 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 3: Project Elements*



# 3 Regulatory Context

## 3.1 Regulations

**Table 1** presents the regulations, statutes, and guidelines that apply to vehicle traffic and safety within the On- and Off-Site Project Areas.

**Table 1: Federal, State, and Local Regulations, Statues, and Guidelines Applicable to Vehicle Traffic and Safety**

| Laws and Regulations | Description |
|---|---|
| ***Federal*** | |
| Railroad Safety Act of 1970 (49 U.S.C. 20101–20144; 21301–21304) | Authorizes FRA with rulemaking authority over all areas of rail line safety. |
| Highway Safety Act (23 U.S.C. 4), Railroad Safety Act (49 CFR 200–299) | Gives FHWA and FRA regulatory jurisdiction over safety at federal highway/rail grade crossings. |
| Railroad Safety Enforcement Procedures (49 CFR 200-209) | Grants FRA authority to regulate safety, track, signaling, and rolling stock for common carrier rail lines that are part of the general rail line system of transportation. |
| Manual on Uniform Traffic Control Devices (23 U.S.C. 109(d)) | Provides standards and guidelines for traffic control devices. |
| ***State*** | |
| Transportation System Policy Goals (RCW 47.04.280) | Establishes the following goals for the transportation system in Washington State: economic vitality, preservation, safety, mobility, environment, and stewardship. |
| Railroads—Operating Requirements and Regulations (RCW 81.48) | Establishes railroad operating requirements and regulations with regard to obstruction of trains, train speed, and safety. |
| Railroads—Crossings (RCW 81.53) | Provides standards, preference, and guidelines for highway rail crossings. |
| Motor Vehicles—Rules of the Road (RCW 46.61) | Establishes rules of the road for vehicle and rail crossings. |
| Grade-Crossing Petitions (WAC 480-62-150) | Requires that a petition is filed for creation or changes to a grade crossing. |
| Safety Standards at Private Crossings (WAC 480-62-270) | Regulates signage at private crossings through which crude oil is transported. |
| City Streets as Part of State Highways (RCW 47.24) | Regulates the maintenance and jurisdictional control for city streets that are part of state highways. |
| ***Local*** | |
| Traffic Regulations (AMC 10.64 and HMC 1.45) | Establishes regulations for vehicle traffic and emergency services in the respective cities. |

FRA = Federal Railroad Administration U.S.C. = United States Code; FR = Federal Regulation RCW = Revised Code of Washington; OPA 90 = Oil Pollution Act of 1990

## 3.2 Required Permits and Approvals

No required permits or approvals apply to vehicle traffic and safety.

# 4 Information Sources

Several data sources were used to characterize vehicle traffic, including grade-crossing[1] delay, and safety conditions.

- Peak hour traffic volumes adjusted to the analysis year (2025 or 2045).
- Annual average daily traffic volumes adjusted to the analysis year (2025 or 2045). The adjusted annual average daily traffic volumes were used to determine peak hour traffic volumes at locations where peak hour traffic volume information was not available.
- Existing train traffic (average number of trains per day) and operating speed on the PSAP rail line (Federal Railroad Administration).
- Future vehicle and train traffic to and from the project site as estimated by the applicant.
- Train characteristics, including number of cars (train length) and speed.

## 4.1 Vehicle Traffic

Peak hour traffic volumes were collected in 2023 for two public road crossings along the PSAP rail line near the On-Site Project Area. To supplement this data, estimates of annual average daily traffic for vehicles at each public road crossing along the PSAP rail line were calculated based on data obtained from local agencies, the Washington State Department of Transportation (WSDOT), and the Federal Railroad Administration (FRA). Annual average daily and peak hour traffic volumes were factored to reflect the analysis years (2025 and 2045). This data was used to characterize estimated future vehicle traffic along area roadways adjacent to grade crossings of the PSAP rail line.

The following planning studies address vehicle delay and safety in the study area:

- The *U.S. 101 Regional Circulation Project Report* (Washington State Department of Transportation, 2007) examined congestion along the U.S. Route 101 (U.S. 101) corridor, U.S. Route 12 (U.S. 12), and State Route (SR) 109 in Aberdeen, Hoquiam, and Cosmopolis. Intersections were found to be experiencing congestion issues and moderate levels of vehicle delay.
- The Aberdeen US 12 Highway-Rail Separation Project is currently under design and permitting with construction targeted to begin in 2026 contingent upon funding. This project will help relieve congestion and improve safety at PSAP grade crossings by providing grade-separated driveway

[1] Grade crossings are intersections of a rail line and a roadway at the same grade – no overpasses or underpasses separate the crossings.

ramps to access the commercial areas in East Aberdeen that are located south of the PSAP railroad.

## 4.2 Emergency Access

Information related to emergency access at the commercial areas in East Aberdeen and Port of Grays Harbor areas of Aberdeen was provided by the Aberdeen Fire Department and PSAP.

## 4.3 Vehicle Safety

Ten years of collision records (2013 to 2022) for the study area were obtained from WSDOT and FRA.

# 5 Existing Vehicle Traffic and Safety Conditions

## 5.1 Study Area

This section describes vehicle traffic and safety conditions in the study area that could be affected by construction and operation of the Proposed Project. The study area includes roadways near the project site that could be affected by increased vehicle traffic from construction and routine operation of the proposed action. The study area also includes public roadways that cross the PSAP rail line.

## 5.2 Vehicle Traffic

This section provides a summary of existing vehicle traffic conditions at selected higher volume PSAP grade crossings in the study area, key areas of vehicle delay in the study area, and planned improvements to address vehicle delay.

The road network from Centralia consists of arterial, collector, and local roads that cross and parallel the PSAP rail line. There are 81 public at-grade crossings of the PSAP rail line between Centralia and the project site. Information on the PSAP grade crossings in the study area is summarized as follows.

- Roadways with grade crossings on the PSAP rail line are classified as follows: four arterials, 13 collectors, and 64 local roads.
- The annual average daily traffic (collected in 2015) at the 81 grade crossings ranges from approximately 20 vehicles (at four crossings) to approximately 13,340 vehicles (at Pearl Street in Centralia).
- The annual average daily traffic at the 81 crossings is approximately 1,425 vehicles. However, 60 of the 81 crossings have an average daily traffic of less than 900 vehicles.

**Table 2** illustrates the 10 grade crossings with the highest average daily traffic from Centralia to the project site, and the existing level of service for average vehicle delay (see Section 6.1.3 for details on level of service methodology) during the peak hour. Of the 10 highest traffic volume crossings, three are

located in Centralia, one is located in unincorporated Thurston County, one is located in Satsop, four crossings are located in Aberdeen, and one is located in Hoquiam.

Vehicle delays occur in several areas along the PSAP rail line. The two most substantial areas of vehicle delay along the PSAP rail line are in Centralia and Aberdeen, as shown in **Table 2**.

### 5.2.1 Centralia

Traffic congestion issues exist in Centralia at the Tower Street and Pearl Street PSAP grade crossings when trains are delayed entering the BNSF Railway Company (BNSF) main line and stopped on the PSAP rail tracks, blocking the Tower Street and Pearl Street crossings. Delays are also experienced when trains cross Tower Street and Pearl Street during the peak traffic periods.

### 5.2.2 Aberdeen

Traffic along the U.S. 101 and U.S. 12 corridors between Aberdeen and Hoquiam is becoming more congested due to growth at the Port of Grays Harbor and overall increases in traffic caused by population growth.

All entrances to the commercial areas in East Aberdeen that are located south of the PSAP railroad can be blocked 8-10 times per day for approximately 10-30 minutes during each blockage. As a result, the City of Aberdeen is leading an effort, called the Aberdeen US 12 Highway-Rail Separation Project, to help relieve congestion, improve safety along U.S. 12, and improve access. This project will include grade-separated driveway ramps to access these commercial areas.

Currently, in the case of a train blocking intersections at these commercial areas, the Aberdeen Fire Department can provide initial medical care for emergencies by loading personnel and equipment into the Battalion Chief's response vehicle and accessing the area via the existing underpass in the railroad trestle located in the parking lot of the Best Western Plus Hotel at 701 East Heron Street.

**Table 2: Top 10 Grade Crossings by Annual Average Daily Traffic**

| Grade Crossing | Milepost | Location | Approximate 2023 Peak Hour Traffic | Peak Hour Level of Service |
|---|---|---|---|---|
| Tower Street (SR 507) | 0.82 | Centralia | 1,003 | F |
| Pearl Street (SR 507) | 0.89 | Centralia | 1,718 | F |
| West Reynolds Street | 2.14 | Centralia | 797 | C |
| Old Highway 99 SW | 6.07 | Unincorporated Thurston County | 1,269 | C |
| Monte Elma Road | 51.98 | Satsop | 596 | A |
| Tyler Street | 68.23 | Aberdeen | 506 | E |
| South Chehalis Street | 68.36 | Aberdeen | 613 | F |
| Port Industrial Road | 70.06 | Aberdeen | 859 | F |
| West 1st Street | 70.41 | Aberdeen | 578 | F |
| Port Industrial Road | 71.07 | Hoquiam | 637 | F |

Source: Fehr & Peers.

## 5.3 Vehicle Safety

Collision records in the study area near the project site from 2013 to 2022 identified three collisions involving a train, each of which resulted in vehicle damage but no injuries. All three collisions occurred at the driveways for the commercial areas in East Aberdeen that are located south of the PSAP railroad: one at the driveway adjacent to the McDonald's, one at the Tyler Street driveway, and one at the Fleet Street driveway.

The collisions at the driveway adjacent to the McDonald's and the Fleet Street driveway involved vehicles exiting the commercial area and failing to yield the right-of-way to westbound trains traveling at approximately 10 MPH. Both driveways included railroad crossbuck signs, but neither crossing has flashing lights or crossing gate arms. The collision at the Tyler Street driveway involved a vehicle waiting on U.S. 12 to enter the commercial area and turning right before the train had cleared the crossing. The traffic signal at the U.S. 12 & Tyler Street intersection has a train activated "NO RIGHT TURN" warning sign that was in place and functioning at the time of the collision. There is insufficient right-of-way between the roadway and the tracks for any additional railroad crossing warnings or control, such as flashing lights or crossing gate arms.

As required, PSAP provides information at grade crossings. This information includes a toll-free phone number and crossing identification number so the public can report any incidents, malfunctioning warning devices, stalled vehicles, or other dangerous conditions. PSAP participates in Operation Lifesaver, a nationwide public education program to help prevent collisions, injuries, and fatalities at highway and rail grade crossings.

Under FRA's Train Horn Rule, locomotive engineers must begin to sound train horns at least 15 seconds and no more than 20 seconds in advance of all public grade crossings to notify people and vehicles of approaching trains.

# 6 Environmental Consequences

## 6.1 Impact Analysis

The following sections describe the methodology for the impact analysis. 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.

### 6.1.1 Onsite

The onsite impact analysis considered the number of trips that would be generated by construction workers and employees traveling to and from the project site during construction and operations, respectively.

### 6.1.2 Rail

The analysis of vehicle traffic and safety impacts along the PSAP rail line considered operation of the Proposed Project at maximum throughput. In other words, this analysis assumes that the Project would begin operating rail traffic at 100 percent throughput. However, a more gradual ramp-up may occur, during which additional infrastructure improvements could offset some of the impacts identified in this section.

Unlike passenger trains, freight trains do not run on a schedule. Railroad companies evaluate operational needs and dispatch trains based on a number of criteria, including available crew, number of cars, cost of fuel, and overall revenue. Analysis and projection of the impact of rail operations requires developing typical operation assumptions. Because trains along the PSAP rail line do not run on a schedule, this analysis uses average vehicle delay as the primary method to characterize vehicle delay at PSAP rail line grade crossings.

### 6.1.3 Average Vehicle Delay

A level of service (LOS) scale rates the quality of traffic operations on a given transportation facility by using letter grades A through F. **Table 3** shows the definition of each LOS grade used in this analysis from the *6th Edition Highway Capacity Manual* (Transportation Research Board, 2016) methodology, which is based on average control delay per vehicle at a given intersection or grade crossing. As shown in **Table 3**, LOS A represents the least delayed conditions, with an average delay for all vehicles between 0 and 10 seconds. LOS F indicates the most delayed conditions, with an average delay of more than 80 seconds.

According to WSDOT LOS standards, LOS D or better is acceptable for urban highways and LOS C or better is acceptable for rural highways under WSDOT jurisdiction in Grays Harbor County and Thurston



County. The local jurisdictions along the PSAP rail line do not have LOS standards for PSAP grade crossings. For the purposes of this study, deterioration of LOS below D was generally used to determine potential vehicle delay impacts at PSAP grade crossings.

Average vehicle delay was calculated at selected higher volume PSAP grade crossings in the study area to determine how the crossings would operate in 2025 and 2045[2] for the No Action Alternative and the Proposed Project. The average delay per vehicle during the peak hour of traffic is based on the estimated time each train would block the crossing and grade crossing characteristics (such as peak hour traffic and number of roadway lanes). This average vehicle delay in seconds per vehicle was then converted to the applicable LOS grade (**Table 3**) to provide a qualitative measure of vehicle delay at PSAP grade crossings for comparison between the No Action Alternative and the Proposed Project.

[2] The annual traffic growth rate at PSAP rail line grade crossings between 2025 and 2045 was assumed to be 1.5% based on available traffic count data and input from the Washington State Department of Transportation.

**Table 3: Level of Service Thresholds**

| Level of Service | Signalized Intersections and Grade Crossings |
|---|---|
| A | < 10 |
| B | > 10 to 20 |
| C | > 20 to 35 |
| D | > 35 to 55 |
| E | > 55 to 80 |
| F | > 80 |

Source: Highway Capacity Manual, 6th Edition

As previously noted, it is not possible to predict when a train might travel on the PSAP rail line under existing or future conditions. To describe the highest potential vehicle delay impacts that could occur related to the Proposed Project, it was assumed that the longest unit train would travel during the peak hour of traffic. For grade crossings without existing (2023) peak hour traffic counts available, vehicle traffic during the peak hour was assumed to be 11.5 percent of the available annual average daily traffic (based on a comparison between peak hour and daily traffic in the study area where data was available).

The average vehicle delay during the peak hour assumes the longest train under consideration would operate during the peak hour. This is a very conservative assumption because, based on the average number of trains operating per day under existing conditions, the No Action Alternative, and the Proposed Project, there would be a low probability that a train related to the Project would travel during the peak traffic hour on a daily basis.

### 6.1.4 Vehicle Safety

Vehicle safety at PSAP grade crossings was analyzed by evaluating the ten-year collision history at grade crossings along the PSAP rail line near the project site. Potential mitigation options were then considered based on the type of collision (vehicle, pedestrian, or bicycle) and direction of travel.

### 6.1.5 Emergency Access

An increase in vehicle delay at PSAP grade crossings could affect emergency access and response time. A qualitative analysis was conducted to identify potential impacts on emergency vehicle response and access under the Proposed Project at PSAP grade crossings. The analysis identified areas along the PSAP rail line where emergency vehicle response and access would substantially change.

## 6.2 Vehicle Traffic and Safety Impacts

This section describes potential vehicle traffic and safety impacts that could occur in the study area. Potential impacts of the No Action Alternative are described first as a baseline for comparing the potential impacts of the Proposed Project.



### 6.2.1 No Action Alternative

Under the No Action Alternative, the applicant would continue to operate its existing facility without the Proposed Project additions and modifications. As mentioned, existing rail operations that serve the project site and the immediately surrounding industrial area contribute to existing vehicle delays. Under the No Action Alternative, these operations would continue to result in vehicle delays and grade crossing safety concerns that are expected to increase slightly between 2025 and 2045, primarily as the result of predicted increases in vehicle traffic.

Additionally, when the Aberdeen US 12 Highway-Rail Separation Project is built, vehicles accessing the commercial areas in East Aberdeen that are located south of the PSAP railroad will be able to avoid delay caused by PSAP rail crossings by utilizing grade separated driveway ramps. Since construction will begin in 2026, this analysis assumes the inclusion of the Aberdeen US 12 Highway-Rail Separation Project in the year 2045 scenarios only.

The following summarizes key vehicle traffic and safety findings under the No Action Alternative in 2025 and 2045. The analysis addresses three topics: vehicle delay (year 2025), vehicle delay (year 2045), and vehicle safety.

**Vehicle Delay (Year 2025)**

The following sections describe vehicle delays from ongoing operations at the project site and from rail operations along the PSAP rail line that would be expected in 2025 under the No Action Alternative.

*Onsite*

Because the Proposed Project would not be constructed, the number of trips generated at the project site is anticipated to be the same as described for existing conditions.

*Rail*

All crossings that would operate at LOS E or F are located in Centralia, Aberdeen and Hoquiam. Under the No Action Alternative, substantial vehicle delay would occur in these areas if a bulk agricultural unit train, the longest train currently operating on the PSAP rail line, passes through the corridor during the peak traffic hour. **Table 4** illustrates the grade crossings that would operate at LOS E or F during the peak traffic hour. This includes the crossings in East Aberdeen serving the commercial areas that are located south of the PSAP railroad and the crossings between Port Industrial Road and the project site.

**Table 4: Peak Hour Level of Service – No Action Alternative (2025)**

| Grade Crossing | Milepost | Location | Approximate 2025 Peak Hour Traffic | Peak Hour Level of Service |
|---|---|---|---|---|
| Tower Street (SR 507) | 0.82 | Centralia | 1,030 | F |
| Pearl Street (SR 507) | 0.89 | Centralia | 1,764 | F |
| West Reynolds Street | 2.14 | Centralia | 819 | C |
| Old Highway 99 SW | 6.07 | Unincorporated Thurston County | 1,303 | C |
| Monte Elma Road | 51.98 | Satsop | 612 | A |
| Tyler Street | 68.23 | Aberdeen | 519 | E |
| South Chehalis Street | 68.36 | Aberdeen | 630 | F |
| Port Industrial Road | 70.06 | Aberdeen | 885 | F |
| West 1st Street | 70.41 | Aberdeen | 593 | F |
| Port Industrial Road | 71.07 | Hoquiam | 656 | F |

Source: Fehr & Peers.

### Vehicle Delay (Year 2045)

The following sections describe vehicle delays from ongoing operations at the project site and from rail operations along the PSAP rail line that would be expected in 2045 under the No Action Alternative. This scenario accounts for increased growth in vehicle traffic during the analysis period and some improvement to and along the PSAP rail line that are likely to be made that could partially offset the potential for increased vehicle delay during this period.

*Onsite*

If the proposed action is not constructed, it is possible that another industrial use could occur at the project site; however, because it is not possible to predict, it is assumed that the number of trips generated at the project site would not change between 2025 and 2045.

*Rail*

The same crossings that would operate at LOS E or F in 2025, as identified in **Table 4**, would also operate at LOS E or F in 2045. **Table 5** illustrates the LOS results estimated for the grade crossings in 2045. The crossings near the commercial areas in East Aberdeen (Tyler Street and South Chehalis Street) are not considered in the 2045 analysis since the Aberdeen US 12 Highway-Rail Separation Project will provide grade separated driveway access to these commercial areas.



**Table 5: Peak Hour Level of Service – No Action Alternative (2045)**

| Grade Crossing | Milepost | Location | Approximate 2045 Peak Hour Traffic | Peak Hour Level of Service |
|---|---|---|---|---|
| Tower Street (SR 507) | 0.82 | Centralia | 1,285 | F |
| Pearl Street (SR 507) | 0.89 | Centralia | 2,201 | F |
| West Reynolds Street | 2.14 | Centralia | 1,022 | C |
| Old Highway 99 SW | 6.07 | Unincorporated Thurston County | 1,625 | C |
| Monte Elma Road | 51.98 | Satsop | 763 | A |
| Tyler Street | 68.23 | Aberdeen | [1] | [1] |
| South Chehalis Street | 68.36 | Aberdeen | [1] | [1] |
| Port Industrial Road | 70.06 | Aberdeen | 1,130 | F |
| West 1st Street | 70.41 | Aberdeen | 740 | F |
| Port Industrial Road | 71.07 | Hoquiam | 838 | F |

[1] The delays for grade crossings near the commercial areas of East Aberdeen that are located south of the PSAP railroad (Tyler Street and South Chehalis Street) are not considered in the year 2045 scenarios due to the assumed completion of the Aberdeen US 12 Highway-Rail Separation Project which will provide grade separated driveway access to these commercial areas.
Source: Fehr & Peers.

### Emergency Vehicle Access

Under the No Action Alternative, vehicle delays up to approximately 30 minutes would occur in Centralia, Aberdeen and Hoquiam along the PSAP rail line if a bulk agricultural unit train, the longest train currently operating on the line, were to pass through the corridor during the peak traffic hour. Emergency service providers would also experience this delay if an emergency vehicle encountered a train at a PSAP grade crossing. Additionally, as mentioned, there are times (8-10 daily occurrences) when all access to the commercial areas in East Aberdeen that are located south of the PSAP railroad is blocked for approximately 10-30 minutes. The response procedures for emergency access to the commercial areas in East Aberdeen would be the same as described above for existing conditions for the 2025 scenario. However, the 2045 scenario assumes completion of the Aberdeen US 12 Highway-Rail Separation Project which will enable grade separated access to these commercial areas for emergency vehicles. Most other locations along the PSAP rail line have alternative routes for emergency vehicles to take in the event of a long train delay.

### Vehicle Safety

Under the No Action Alternative, the frequency of a train and motor vehicle collision could potentially increase slightly between 2025 and 2045 because of the anticipated increase in vehicle traffic at PSAP grade crossings.

Infrastructure improvements considered as part of the Aberdeen US 12 Highway-Rail Separation Project would likely reduce delay and improve safety at crossings near the commercial areas in East Aberdeen.

### 6.2.2 Proposed Project

This section describes the vehicle traffic and safety impacts that could occur in the study area as a result of construction and routine operation of the Proposed Project. First, this section describes the Proposed Project's construction impacts. It then describes onsite and offsite operational impacts associated with the Proposed Project.

**Construction**

Construction for the Proposed Project is estimated to last approximately 18 months, with project elements beginning sequentially between April and June 2024. The casting basin element of the Project is anticipated to require up to 3,500 total truck trips to import fill material over the course of 5-6 months. The AGP element of the Project is estimated to require 50 trips for individual workers and 15 trips for material deliveries per day.

Average annual daily traffic on Port Industrial Road adjacent to the project site is estimated to be 7,696 in 2025. Therefore, construction-related vehicle traffic would result in an approximately 1.1 percent increase in traffic on Port Industrial Road adjacent to the site assuming both the casting basin element and AGP element were in active construction at the same time. Construction-related traffic would likely take varying routes to the project site and workers would have fluctuating schedules that would further spread out the potential for impacts over space and time. Additional vehicle trips to and from the site associated with this temporary increase in construction workers and the delivery of construction equipment and materials could increase vehicle delays at intersections surrounding the project site. However, the potential for additional construction-related vehicle trips to affect vehicle delay times, including emergency vehicle delay times, would be low.

In addition to construction vehicle traffic, increased rail traffic from delivery of construction materials could increase vehicle delays. However, the anticipated delay would typically be very similar to existing conditions because construction equipment and materials, if delivered by train, would likely occur in the form of additional cars on existing freight trains and would not increase the average number of trains per day to any appreciable extent. For these reasons, the Proposed Project's vehicle traffic during construction would not be expected to cause a lower LOS grade for rail crossings near the project site.

**Operations**

*Onsite*

The increase in vehicle trips to the Port during operation of the Proposed Project would be limited to employees commuting to the site and would be a negligible increase. Therefore, onsite operation of the Proposed Project would not contribute to a noticeable increase in vehicle delays.



*Rail*

Operation of the Proposed Project at maximum throughput would add approximately one train trip per day on average along the PSAP rail line. This increase in train traffic would result in increased occupancy of PSAP grade crossings. In general, these blockages would increase vehicle delays and reduce access. However, it is important to note that rail traffic along the PSAP has fluctuated up and down over the years, and the overall train traffic anticipated with the addition of the Proposed Project would not be unprecedented.

The following sections outline the results of the vehicle traffic analysis under the Proposed Project. The results focus on the same selected PSAP grade crossings with the highest existing annual average daily traffic as the existing conditions and No Action Alternative analyses. Like the No Action Alternative, the analysis addresses four topics: vehicle delay (year 2025), vehicle delay (year 2045), emergency vehicle access, and vehicle safety.

Vehicle Delay (Year 2025)

Because a Proposed Project train would be similar in length to an existing bulk agricultural unit train analyzed under the 2025 No Action Alternative for the peak hour scenario, the same grade crossings that would operate below LOS D (**Table 4**) would also operate below LOS D with the Proposed Project. Likewise, the same grade crossings that would operate at LOS D or better (**Table 4**) in the 2025 No Action Alternative would also operate at LOS D or better with the Proposed Project.

Vehicle Delay (Year 2045)

Because a Proposed Project train would be similar in length to an existing bulk agricultural unit train analyzed under the 2045 No Action Alternative for the peak hour scenario, the same grade crossings that would operate below LOS D (**Table 5**) would also operate below LOS D with the Proposed Project. The same grade crossings that would operate at LOS D or better (**Table 5**) in the 2045 No Action Alternative would also operate at LOS D or better with the Proposed Project. The crossings near the commercial areas in East Aberdeen (Tyler Street and South Chehalis Street) are not considered in the 2045 analysis since the Aberdeen US 12 Highway-Rail Separation Project will provide grade separated driveway access to these commercial areas.

Emergency Vehicle Access

The addition of Proposed Project trains would affect emergency response times if an emergency vehicle was blocked at a grade crossing occupied by a Proposed Project train. The potential for the Project to affect emergency response would also depend on whether the dispatched emergency vehicle would need to cross the PSAP rail line and the availability of alternative routes if a train occupies the crossing at the time of the call.

There are land uses along the grade crossing where no alternate access is provided; crossing the PSAP rail line is required. Because the frequency of train traffic on the PSAP rail line would increase, the probability

of an increase in emergency response time at these crossings would also increase. This impact would only occur if an emergency vehicle experienced a delay related to a Proposed Project train, which would operate on average one time per day.

As described previously, vehicle delays would be most substantial in Centralia, Aberdeen, and Hoquiam. Therefore, emergency response in Centralia, Aberdeen, and Hoquiam would also likely experience the most delay from blocked grade crossings under the Proposed Project. In Aberdeen, emergency response providers are located on both sides of the PSAP rail line, therefore, the emergency response impacts would be lower. Similar to existing conditions, emergency response calls could be dispatched to stations that would not be blocked at a grade crossing. However, as mentioned, trains can block all driveways at the commercial areas in East Aberdeen that are located south of the PSAP railroad simultaneously. During these times, the response procedures described for existing conditions would also apply under the Proposed Project in the year 2025 scenario, but not in the year 2045 scenario when the assumed completion of the Aberdeen US 12 Highway-Rail Separation Project will provide grade-separated access for emergency vehicles.

Vehicle Safety

Increased rail traffic related to the Proposed Project could increase the frequency of collisions along the PSAP rail line compared to the No Action Alternative. Proposed infrastructure improvements considered for the Aberdeen US 12 Highway-Rail Separation Project would likely improve both delay and safety at some of the crossings in the East Aberdeen commercial areas. Potential additional improvements are described in the Mitigation section below to help improve safety at grade crossings along the PSAP rail line.

## 6.3 Cumulative Impacts

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) and are evaluated as described in Section 6.3.2.

The future time frame for cumulative impacts considers actions that would have effects during the same time as effects of the Proposed Project. Therefore, the time frame for this study is 2025 through 2045. This time frame conservatively accounts for future actions that may only be in the planning stages now but can reasonably be expected to be complete during the analysis period, as well as projects in more advanced planning or permitting phases. Past and present actions are considered already included in the existing conditions scenario for this study.

The impacts of future actions may have the potential to contribute to a cumulative impact on vehicle traffic or safety when combined with the impacts of the Proposed Project. A complete list of foreseeable future actions with project descriptions is provided in Table 1 of the *Port of Grays Harbor Terminal 4 Expansion and Redevelopment Project Description Technical Report* (Anchor QEA, 2023).



### 6.3.1 Reasonably Foreseeable Actions

State and local sources were used to identify the actions for consideration including the Port of Grays Harbor, the Washington State Department of Transportation (WSDOT), and the Cities of Aberdeen and Hoquiam. Several transportation improvement projects in the region have been identified by WSDOT in their Six-Year State Transportation Improvement Program (STIP). Several minor projects from the STIP, such as minor pedestrian or street improvements or signal upgrades, have not been considered as cumulative projects due to their limited nature or due to their distance from the Project Area.

Twelve 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. These projects are referred to as cumulative projects.

### 6.3.2 Cumulative Impacts on Vehicle Traffic and Safety

None of the twelve cumulative projects identified are anticipated to have the potential to contribute to cumulative impacts on vehicle traffic or safety. Some of the cumulative projects identified include features designed to reduce grade crossing delays, such as the Aberdeen US 12 Highway-Rail Separation Project mentioned in this report. The rest of the cumulative projects either do not affect the public roadway system or involve rehabilitation of existing facilities.

# 7 Mitigation Measures

This section describes potential applicant mitigation as well as other measures that could be implemented to reduce vehicle traffic and safety impacts from construction and routine operation activities of the Proposed Project. Overall, impacts to vehicle safety resulting from the Proposed Project are expected to be low; however, the following measures could further improve vehicle safety along the PSAP rail line.

- To reduce the potential for increased delay of emergency vehicles at PSAP grade crossings during project operations, PSAP should work with local emergency service providers to provide advance notification of incoming trains.
- To address the potential for emergency access conflicts to areas along the PSAP rail line during unplanned unit train stoppages, PSAP should work with local emergency service providers along the PSAP rail line to develop and implement a notification protocol to inform local emergency service providers and other interested parties of the duration and magnitude of the unplanned stoppages.
- To reduce the risk of collisions on the PSAP rail line, PSAP should work with local jurisdictions including WSDOT and the Washington Utilities Transportation Commission to ensure all of the public grade crossings meet Manual on Uniform Traffic Control Devices (23 U.S.C. 109(d)) guidance to include a yield or stop sign on every cross-buck post.

- To reduce the risk of collisions at grade crossings, PSAP should install flashers, gates, and/or cantilever active-warning devices at crossings when agreed upon by the railroad and jurisdictional authorities to improve vehicle, pedestrian, bicycle, and rail safety conditions.
- To reduce the risk of collisions at grade crossings, PSAP should coordinate with applicable jurisdictions to ensure that trees, brush, and weeds are cleared from all grade crossings as far as possible to ensure clear lines of sight for all vehicle drivers approaching rail crossings.

# References

Anchor QEA (Anchor QEA, LLC), 2023. *Port of Grays Harbor Terminal 4 Expansion and Redevelopment Project Description Technical Report*. January 2023.

Transportation Research Board (TRB), 2016. *Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis*. October 2016.

Washington State Department of Transportation (WSDOT), 2007. *U.S. 101 Regional Circulation Project Report*. January 2007.