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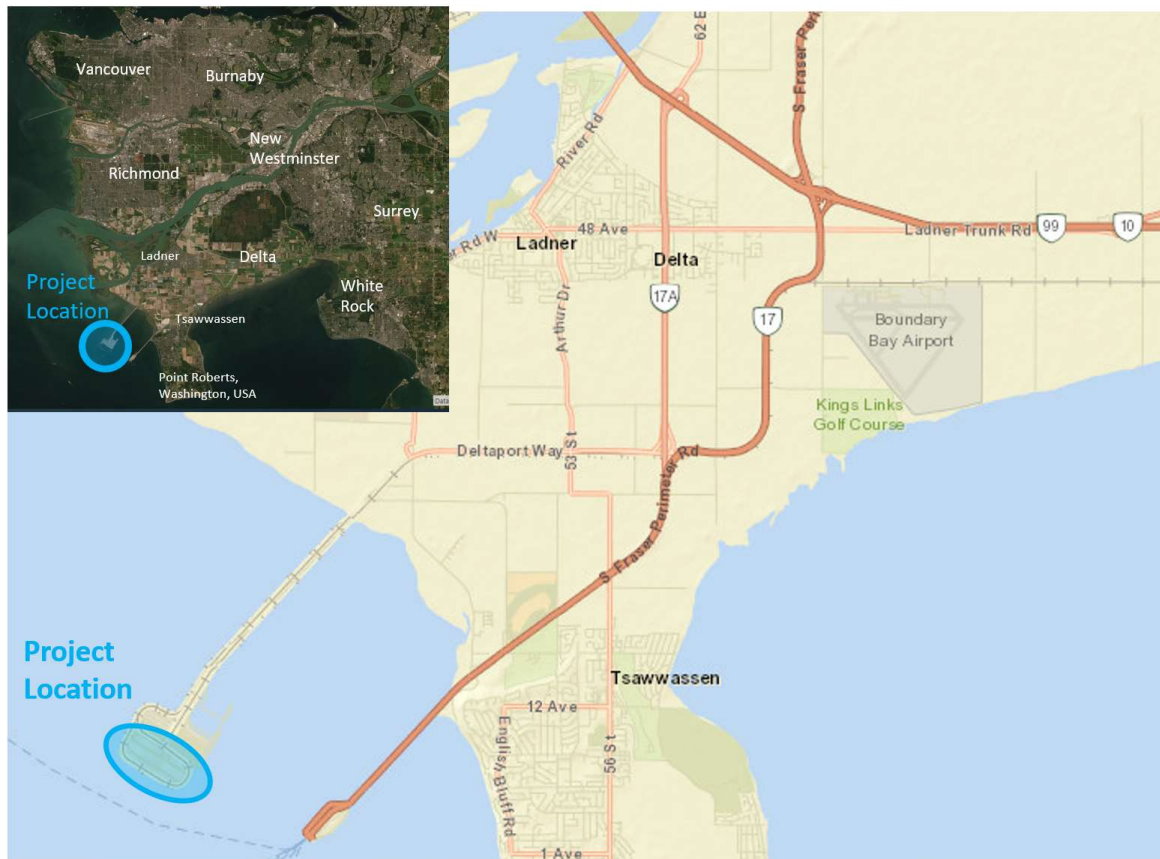
New Cargo Project – Construction Traffic Impact Memorandum

1. Introduction

Westshore Terminals Limited Partnership (Westshore) currently handles around 31 million tonnes per annum (Mtpa) with a capacity of 36 Mtpa. Through the proposed New Cargo Export Project (the Project), Westshore is planning to diversify the products shipped to market through the existing terminal with the addition of up to 4.5 Mtpa of potash. The terminal's overall capacity will remain at 36 Mtpa as the potash capacity will be displacing approximately an equivalent amount of coal export capacity.

The Project is located at 1 Roberts Bank, Delta, BC and is entirely on Vancouver Fraser Port Authority (VFPA) property at the end of the Roberts Bank causeway, as shown in Figure 1.

Figure 1: Project Location



Terminal access is on Roberts Bank Road, located near the southwest end of Deltaport Way. Access to the terminal is controlled and not open to the general public. Deltaport Way is connected to other major

access roads by the South Fraser Perimeter Road (Highway 17) and the Tsawwassen Highway (Highway 17A).

The Project includes installation of a new railcar dumper, conveyor system and storage shed; modifications to the Berth 2 shiploading systems; and modifications to onsite infrastructure, including rail, roads and utilities.

Once the new facilities are constructed, the anticipated traffic for continued terminal operation will remain the same as current operations.

2. Regulatory Requirement

The Project will undergo the VFPA's Project and Environmental Review (PER) permit application process. Project-related traffic will be considered as part of this process.

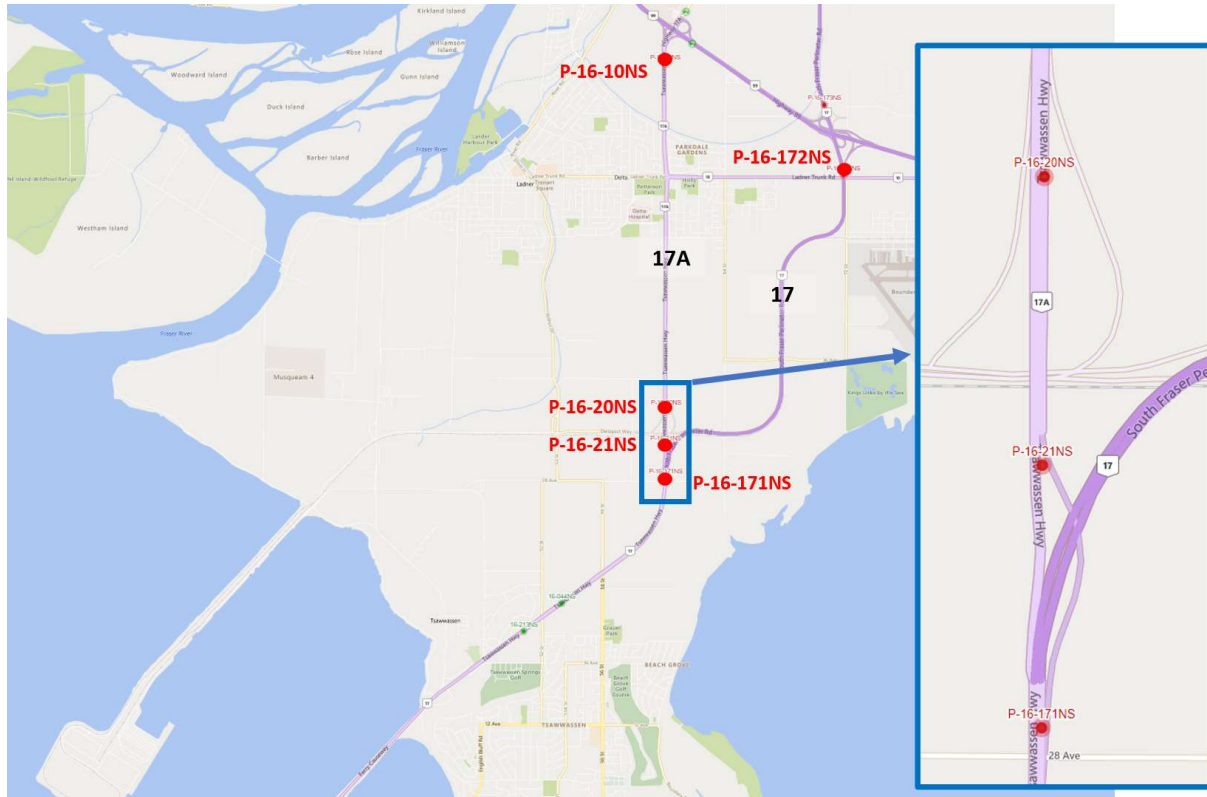
This document will discuss and identify potential traffic impacts during and post construction. This document is intended to meet the VFPA checklist requirement, as provided on January 18, 2021, of a Traffic Impact Memorandum.

3. Existing Traffic Conditions

Access to the site is generally along highways (99, 17 and 17A) and industrial access roads (Deltaport Way and Roberts Bank). Highways 99, 17 and 17A are intercity connectors seeing commuter traffic, industrial traffic (e.g., Deltaport container terminal), ferry traffic associated with the BC Ferries Tsawwassen Terminal and local residential and farm traffic. Traffic to and from the north side of the Fraser River access the Delta area via the Massey Tunnel at Deas Island on Highway 99 and via the Pattullo Bridge at Annacis Island on Highway 91.

The site is located on a remote industrial area on the Roberts Bank Causeway. The nearest residence is over 4km away. The majority of Deltaport Way traffic is truck traffic to the container terminal, also located on Roberts Bank Causeway.

Traffic count information is available through the Ministry of Transportation and Infrastructure's Traffic Data Program, which monitors traffic at various locations throughout British Columbia (<https://www.th.gov.bc.ca/trafficData/>). Local traffic count locations that were considered as part of this assessment are identified in Figure 2 and Figure 9. For this assessment, traffic counts P-16-10NS located on Highway 17A and P-16-172NS on Highway 17 were selected for comparison as the traffic count P-16-20NS occurs southbound after the exit to Deltaport Way and northbound before the onramp from Deltaport Way. Count numbers from 2018 were selected as these numbers were pre-pandemic therefore reflect anticipated volumes through Project construction.

Figure 2: Traffic Count Locations


The daily traffic counts averaged over 2018, for northbound and southbound are shown in Figures 3 and 4. Hwy 17A sees more daily traffic in both directions peaking over 20,000 vehicles per day northbound Thursday and Fridays. Average weekday traffic is approximately 15,500 northbound and 13,500 southbound for Hwy 17, and 19,600 northbound and 16,100 southbound for Hwy 17A.

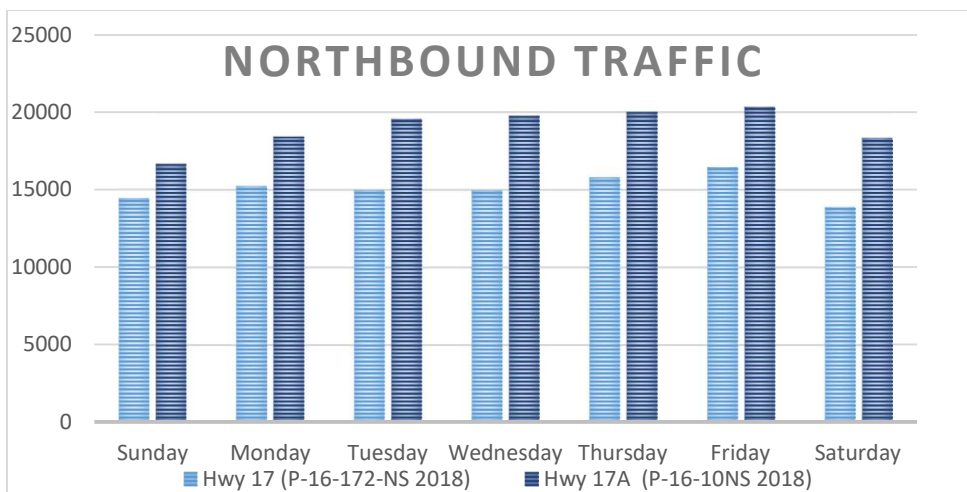
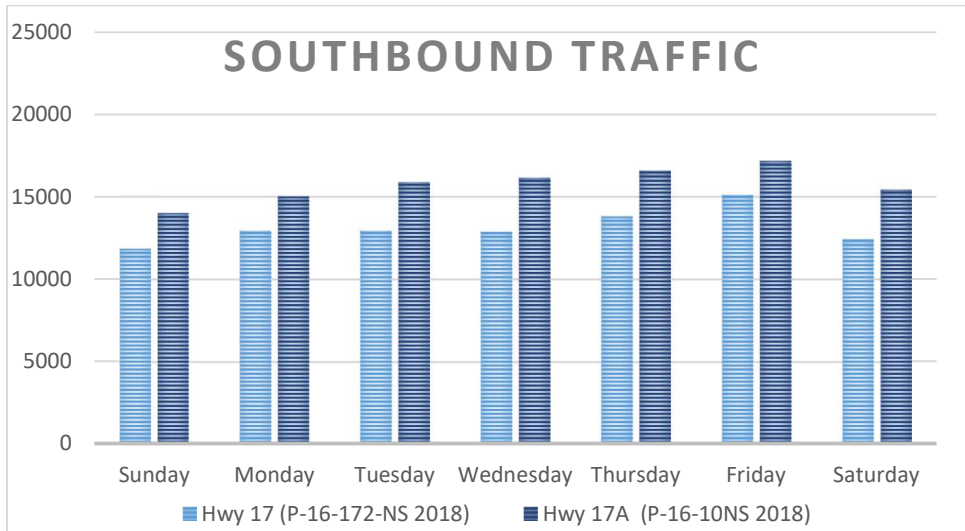
Figure 3: Northbound Traffic, Hwys 17 and 17A


Figure 4: Southbound Traffic, Hwys 17 and 17A


The hourly traffic for Highway 17 based on June 2018 is shown in Figures 5 and 6. The hourly traffic for Highway 17A based on June 2018 is shown in Figures 7 and 8. Highway 17 northbound averages approximately 1070 vehicles per hour from 7am to 5pm (7:00 to 17:00) and approximately 810 vehicles per hour from 6pm to 8pm (18:00 to 20:00) during the weekdays, and peaks around 3pm (15:00) at 1500 vehicles per hour. Highway 17 has more consistent traffic throughout the day with weekday traffic average of approximately 1000 vehicles per hour between 6am and 5pm (6:00 and 17:00).

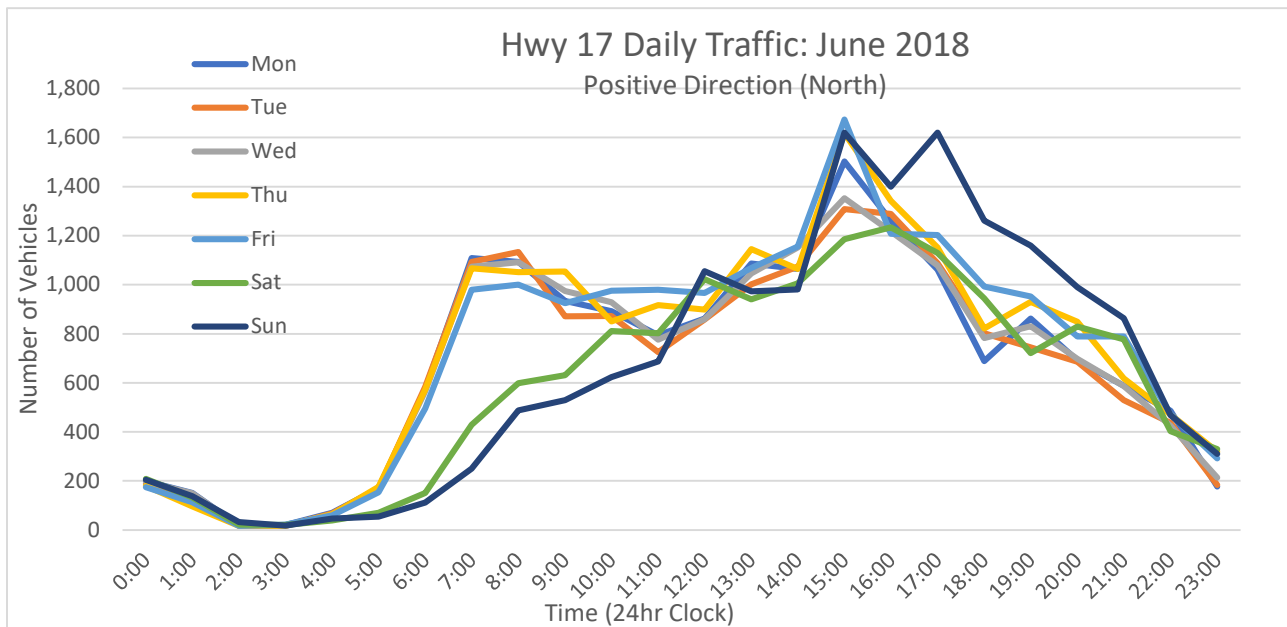
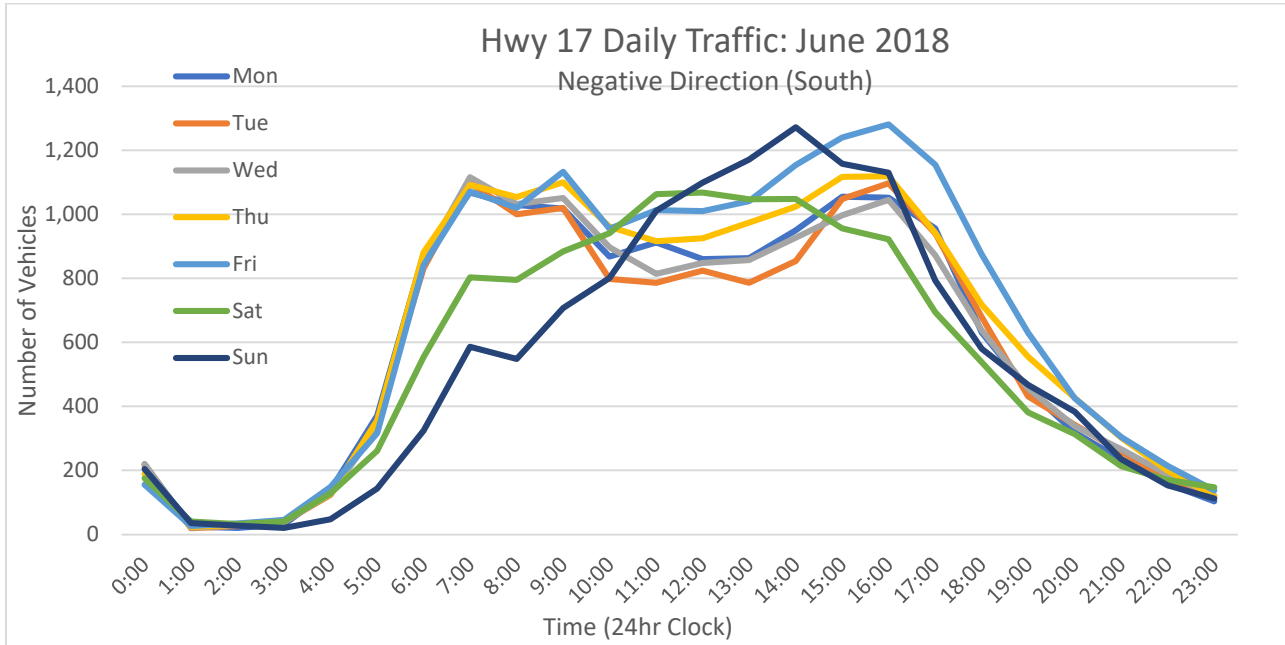
Figure 5: Hourly Northbound Traffic, Hwy 17


Figure 6: Hourly Southbound Traffic, Hwy 17


Highway 17A is more effected by commuter traffic: the northbound morning weekday peaks from 5am to 9am (5:00 to 9:00) with approximately 1700 vehicles per hour around 7am (7:00) and the southbound afternoon weekday peaks from 3pm to 7pm (15:00 to 19:00) with approximately 1600 vehicles per hour around 4pm and 5pm (16:00 and 17:00).

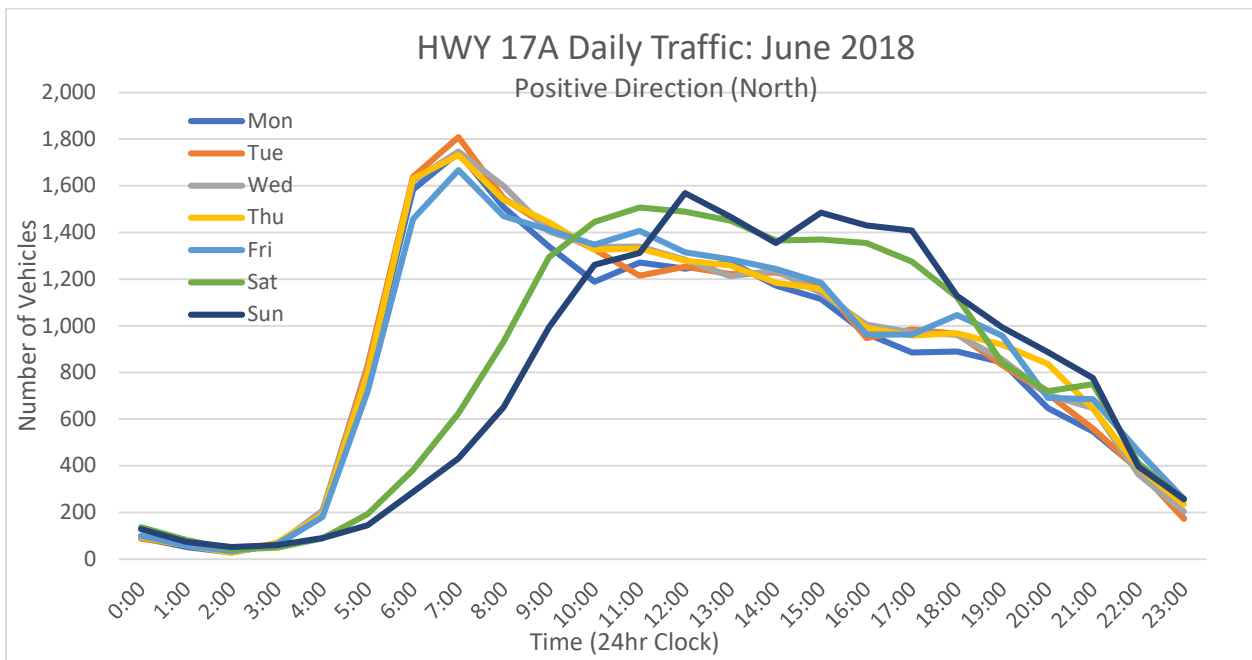
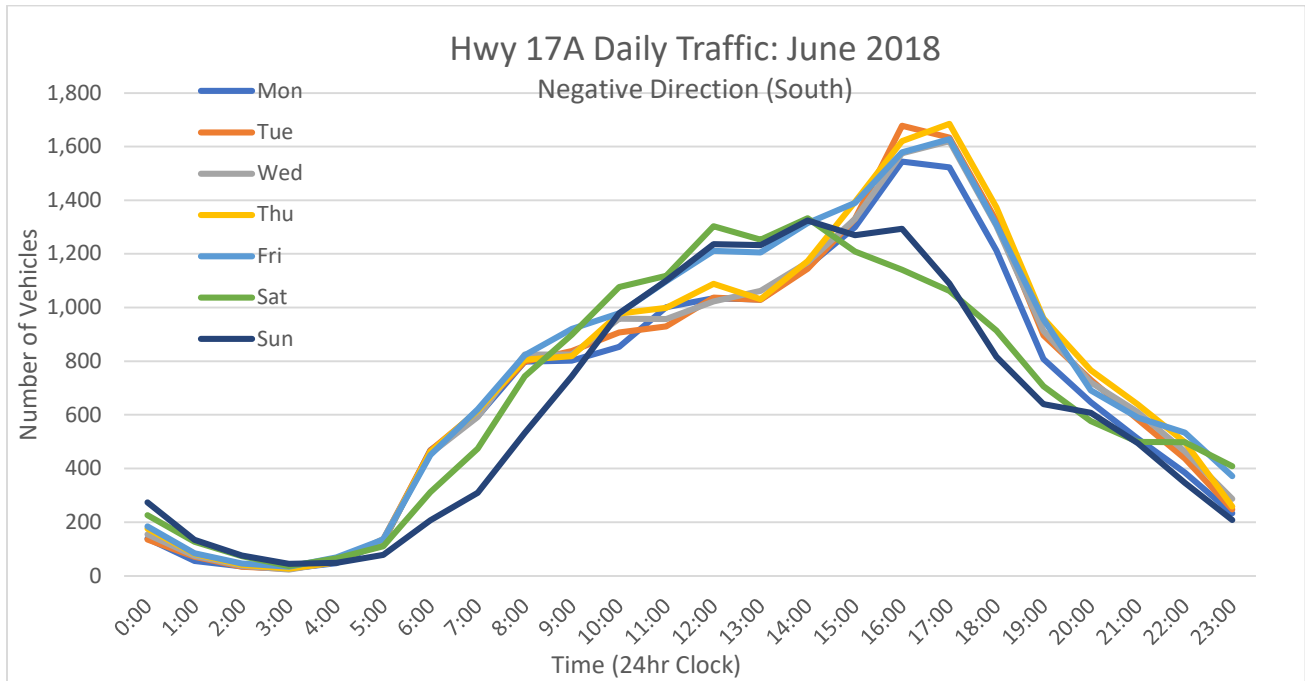
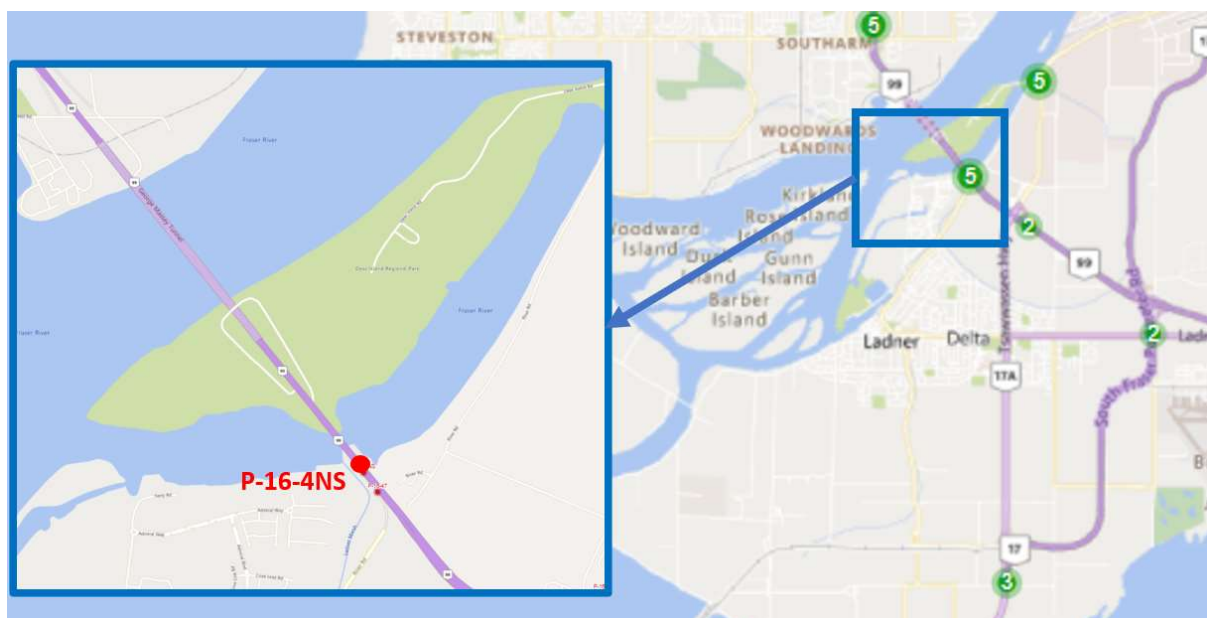
Figure 7: Hourly Northbound Traffic, Hwy 17A


Figure 8: Hourly Southbound Traffic, Hwy 17A


Some materials will be trucked along Highway 99 through the Massey Tunnel. The Massey Tunnel may be considered a congestion point by commuters and other users. The Massey Tunnel has a counterflow lane that is active approximately 3 hours northbound in the morning (3 lanes northbound, 1 lane southbound), and approximately 3 hours southbound in the late afternoon (3 lanes southbound, 1 lane northbound). The Massey Tunnel location is shown in Figure 9.

Figure 9: Massey Tunnel Traffic Counter Location


The northbound travel peaks between 16:00 (4pm) and 18:00 (6pm) at approximately 5000 vehicles per hour Wednesday and Thursday. The southbound travel peaks between 06:00 (6am) and 08:00 (8am), at approximately 5200 vehicles per hour Wednesday morning. Refer to Figures 10 and 11.

Figure 10: Hourly Northbound Traffic, Massey Tunnel

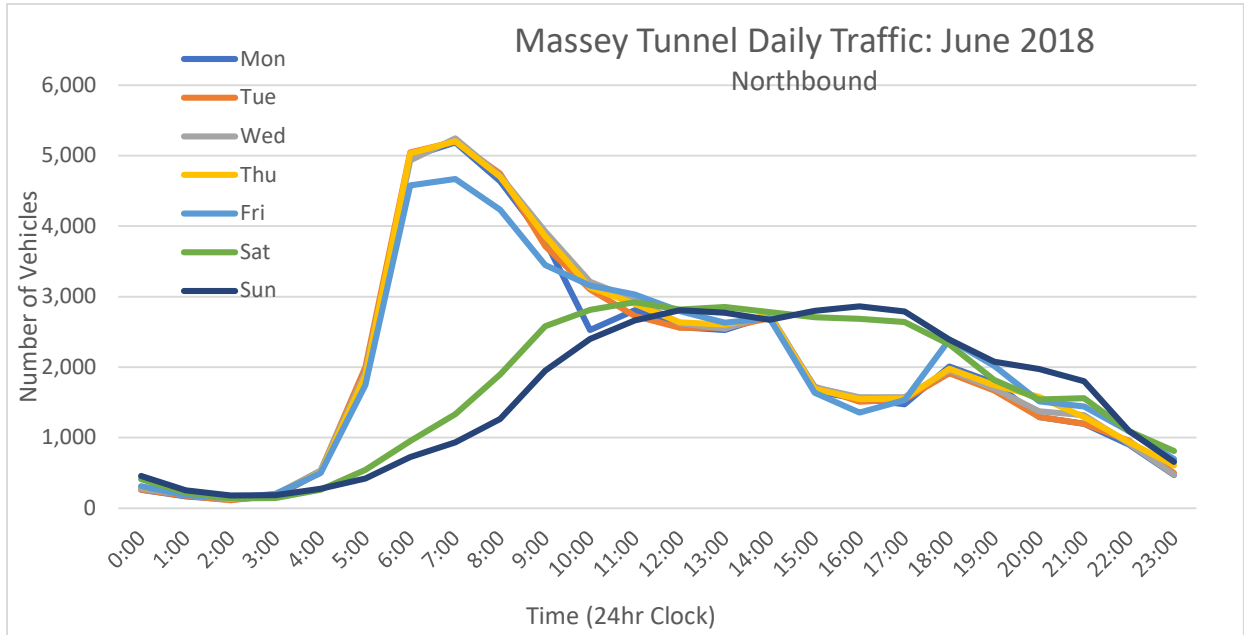
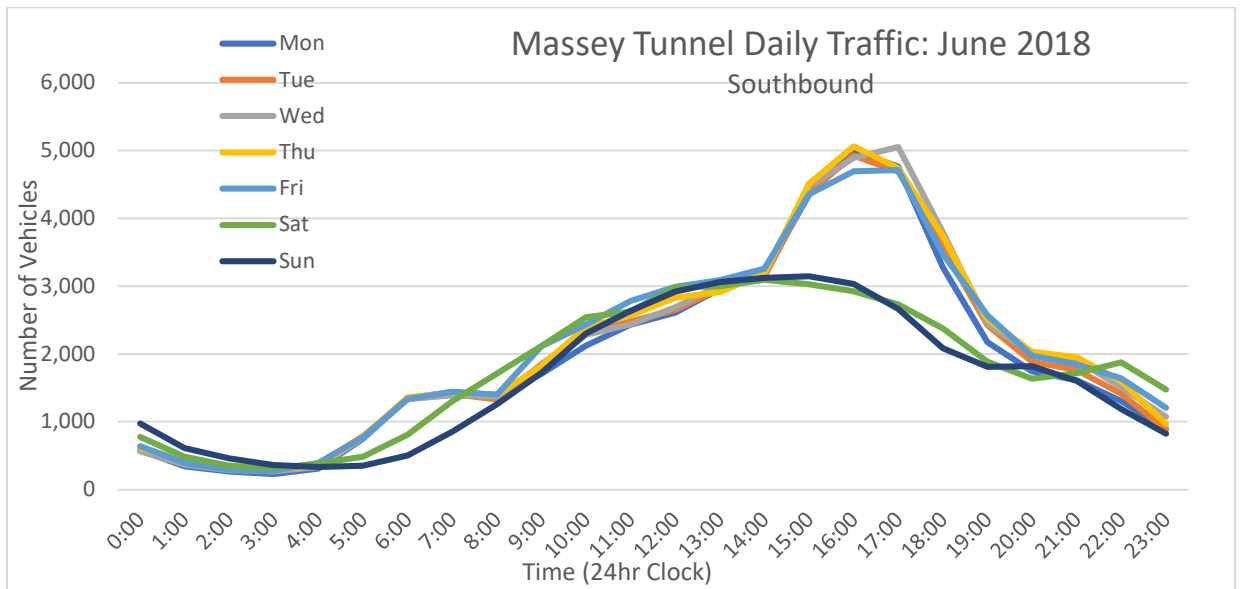


Figure 11: Hourly Southbound Traffic, Massey Tunnel



4. Construction

Construction of the Project will result in a temporary traffic increase. The Project will be built by the following areas between 2022 and 2026:

- Storage building, including internal conveyors and reclaim;
- Dumper pit;
- Unloading and stacking conveyors; and
- Reclaim and shiploading conveyors.

The Project will require civil works (material removal, fill, foundations, etc.); structural, mechanical, and electrical installations; and miscellaneous infrastructure (e.g., rail, ditching, piping, etc.). A preliminary construction schedule is provided in Figure 12. Building preparation includes pre-loading of the building site. Dumper foundations includes excavation of the dumper pit and tunnel. Conveyor foundations are shallow and located around the terminal.

Activities will be intermittent through durations shown in Figure 12. For example, the pre-load material required for the storage building site preparation will be brought onto the terminal (estimated at up to three and a half months with the majority of days scheduled for two 10 hour shifts) and placed in location, then no pre-load trucking activity will occur for approximately 6 months while the ground is settling, then the material will be relocated to another pre-load location on-site with supplemental material as needed (estimated up to two months) and left for settling, then the material is transported off site over a three to four month period.

Figure 12: Preliminary Construction Schedule



Preliminary quantities as summarized in Table 1 below.

Table 1: Anticipated Construction Quantities¹

Transported Material/Workers	Construction Phase	Estimated Total # Trucks ²	Anticipated Trucking Rate (To Site) ³
Concrete	Throughout	6800	▪ Peak 1 truck every 20 minutes or 24 trucks per day
Densification fill	Building Preparation	3000	▪ Varies, up to 1 truck every 10 minutes
Disposed sand/coal	Building Preparation	1200	▪ Varies, up to 1 truck every 10 minutes
Import material (base course)	Throughout		▪ Varies, up to 1 truck every 20 minutes
Import material (preload)	Building Preparation	11,000	▪ Peak 1 truck every 4 to 6 minutes or up to 150 trucks per 10-hour shift ▪ Two 10 hour shifts per day are anticipated
Disposed material (preload)	Building Preparation	8,000	▪ Varies, up to 1 truck every 4 to 6 minutes
Misc. Deliveries	Throughout		▪ Avg 5 trucks / day ▪ Peak 20 trucks / day
Construction Staff & Labour ⁴	Throughout		▪ Avg 132 personnel ▪ Peak 290 personnel

Notes: 1. Quantities are based on preliminary engineering drawings.

2. Based on 6m³ concrete trucks and 38T total truck and trailer for fill, import material and disposal of material.

3. Trucking rates may have minor variations due to congestion, Port and site gate delays, loading and unloading irregularities, breaks (e.g., lunch, coffee, shift change), etc.

4. Refer to Figure 13.

The majority of material transport (trucking) is associated with the storage building worksite preparation which will occur in the first portion of the construction schedule (refer to Figure 12); however as noted above, this will not relate to constant trucking throughout the duration shown on the schedule. It is anticipated that a peak of 10 to 15 trucks per hour (averaging one truck every 4 to 6 minutes; 200 to 300 trucks per day total across two 10 hour shifts) would access and leave Westshore during this time associated with the pre-load material. This includes one truck arriving (e.g. southbound on the highway system) and one truck leaving (northbound on the highway system). A potential location for preload material is north of the Massey Tunnel. Consideration may be given to scheduling that avoids afternoon rush hour. Consideration may be given to three 8-hour shifts (i.e., 24 hour working days; up to 360 preload trucks per day) which would reduce the preload trucking durations. Other transport options for preload material may be considered that reduce or eliminate trucking such as transport via vessel and use of hydraulic transport to shore; however, these options will only be implemented if practical and cost effective.

Based on two 10 hour shifts of building preload material, allowing for an average number of daily deliveries, on a day with densification import, concrete pours and import of base course, a peak of approximately 400 trucks per day is anticipated. As noted above, peak traffic will only occur for intermittent periods during preload activities. After preload, between 5 and 150 trucks per day are anticipated as different activities occur on site.

Westshore will consider further trucking in off hours where practical to reduce impacts, such as hauling base coarse at night.

The peak construction personnel will be on site mid 2024 through early 2025 associated with installation of mechanical and structural components. Refer to Figure 13 for details.

Figure 13: Anticipated Construction Personnel



The Project will utilize the approximately 140 existing parking spaces within Westshore’s lease area. Additional parking areas off-site, within industrial lands, are being investigated to accommodate remaining construction personnel.

5. Consideration of Potential Impacts

5.1. Construction

As noted in Section 3, peak trucking is associated with on-site civil works and may peak at 400 trucks per day over 24 hours for approximately 3 months or at 225 trucks per day for approximately 5 months. It is anticipated that there will be additional peak trucking levels for up to two months twice more throughout construction. Trucking levels will be reduced to 5 to 75 trucks a day for the majority of the construction period. Construction personnel levels will vary as shown in Figure 13; carpooling will be encouraged to reduce potential impacts. There are no changes to the off site road system needed as a result of this project.

The existing daily (Monday through Friday) average vehicle traffic on Highways 17 and 17A range from 13,600 to 19,000 per direction, per highway. Weekday traffic averages over 1000 vehicles per hour in each direction on each highway. The construction trucking would temporarily increase the daily traffic by approximately 3% during preload hauling periods (anticipated up to 400 trucks per day) and peak at approximately 1% (at anticipated maximum of 150 trucks per day) after preload activities. The Massey Tunnel traffic is approximately 48,000 vehicles daily on weekdays and 39,000 daily on weekends, each southbound and northbound. The construction trucking, through the Massey Tunnel (for the purposes of comparison, peak truck traffic is used, based on all trucks travelling through the tunnel), would

increase approximately 0.8% during preload hauling and peak at 0.3% after preload activities. As not all trucks will originate on the north side of Massey Tunnel, the actual numbers are anticipated to be lower.

The Project may consider, where practical and as schedule allows, using the same trucks to both haul material to site and away from site, reducing the total number of trucks needed. Consideration may be given to trucking some material during lower traffic times (evenings and nights) where practical and as schedule allows.

No modifications to existing roads are required to facilitate the construction related traffic. The existing main gate and existing construction access gate onto Westshore Terminals will be used.

The other projects being considered in the area, also located at Roberts Bank, is the Roberts Bank Terminal Two Project ([RBT2](#)) and the Global Container Terminals Canada GCT Deltaport Expansion Berth Four Project ([DP4](#)). Based on the following text from the RBT2 website “Subject to environmental approvals and permitting, market conditions and a final investment decision, construction of the Roberts Bank Terminal 2 Project could begin in 2024 and would take approximately six years to complete” it is anticipated that RBT2 will be in marine works stages during the majority of Westshore’s Project. The DP4 Initial Project Description indicates the projects starting in 2025 with expansion of the terminal area, also generally done through marine based works.

As a reference, Westshore completed the Reinvestment Project in 2015 through 2019 involving 75 workers and construction trucking. There were no traffic-related complaints during this project.

Although there will be an increase in vehicle traffic due to construction activities, this will be temporary and Westshore will consider options to reduce the impact, where practical, such as adding in a second shift for pre-load trucking.

5.2. Operations

Westshore has not received any traffic complaints on current operations. As there are no anticipated changes in operational personnel numbers or number of concurrent activities on site, there are no potential impacts anticipated.