Attachment 12

Assessment of Transport Effects prepared by Beca Limited Sensitivity: General



# **Assessment of Transport Effects**

Bledisloe Wharf and Fergusson Wharf Expansion

Prepared for Port of Auckland Ltd. Prepared by Beca Limited

## 5 February 2025



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# Appendix

Appendix A – Transport Layout Vehicle Tracking

Appendix B – Tinley Street Vehicle Tracking

Appendix C – SIDRA results

## **Revision History**

Revision N°	Prepared By	Description	Date
1	David Liang	Draft for client review	07/10/2024
2	David Liang	Draft for Planning / Legal review	24/10/2024
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## **Document Acceptance**

Action	Name	Signed	Date
Prepared by	David Liang	David. L	05/12/2024
Reviewed by	Robert Inman	flat Came	05/02/2025
Approved by	Joe Phillips	OR Phulys.	05/02/2025
on behalf of	Beca Limited		

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## 1 Introduction

## 1.1 Background

Beca Limited (Beca) has been commissioned by Port of Auckland Ltd (POAL) to undertake an assessment of the transport effects of the construction of a new wharf at the northern end of the Bledisloe North (BN) Terminal and an extension to the length of the existing Fergusson North (FN) Wharf. This assessment is prepared to support POAL's application for resource consent under the Fast-Track Approvals Act for these works.

Auckland's port infrastructure is currently not fit for purpose for larger cruise ships (over 300m in length). These ships are either berthed under very tight wind limits at Princes Wharf or at the Fergusson Container Terminal. Furthermore, unsettling weather conditions including tight operational wind limits have resulted in cruise cancellations, which is a poor outcome for passengers and Auckland.

Therefore, a new wharf at the BN Wharf is to be constructed to enable relocation of large cruise ships (>300m) from Princes Wharf to BN Wharf.

Additionally, all Roll-on/Roll-off (RoRo) vessels from Captain Cook Wharf are to be relocated to the BN Wharf, and will ultimately enable the transfer of Captain Cook and Marsden Wharves and associated land from POAL to Auckland Council in due course.

FN Wharf can currently accommodate 10,000 Twenty-foot Equivalent Unit (TEU) ships (360m long). However, the configuration of the wharf is such that quay cranes are unable to access the full length of these ships, which causes significant issues in terms of requiring the ships to be repositioned during loading/unloading (losing 2-3 hours), or being subject to (often unworkable) loading restrictions on the vessel loading plan to maintain stability.

The current FN Wharf configuration is operationally efficient for container vessels up to 5,500 TEU. However, shipping lines have signalled their intent to increase the number and size of ships calling at the Port, with more 6,000 to 8,000 TEU ships anticipated in the short term (2-3 years) and more 10,000 TEU ships anticipated in the medium term (10 years).

An extension to the existing FN Wharf will enable it to operate more efficiently when loading / unloading 10,000 TEU ships as it will allow quay cranes to access the full length of a ship. FN Wharf is to be extended by 45m to the existing mooring dolphin.

This report will cover a description of the site areas and existing activities/uses, identification of typical traffic, pedestrian and cycle movements, consider how existing effects are currently managed and assess the likely effects of the proposed and on the transport environment, including construction.

## 1.2 Report Structure

The report is divided into the following chapters following this introduction:

- Section 2 Existing transport environment
- Section 3 Proposed activities and infrastructure
- Section 4 Assessment of transport effects and mitigation
- Section 5 Summary and conclusions.

A draft report has been provided to both Auckland Council and Auckland Transport for feedback and their feedback has been incorporated, where appropriate.



# 2 Transport Environment

## 2.1 Site Description

The BN and FN wharves are adjacent to the Auckland city centre, to the east of Britomart, north of Quay Street and Tamaki Drive.

The BN Wharf site is located in the western part of the POAL Multi Cargo area at the Bledisloe RoRo terminal, as shown in **Figure 2-1**. Further west, Princes Wharf and Queens Wharf are used by cruise ships, and Captain Cook Wharf, also part of the Bledisloe RoRo terminal, is being used for storage of imported vehicles.

The FN Wharf site is at the northeastern end of the Port area within the Fergusson Container Terminal and handles freight container vessels, plus on occasion, larger cruise ships.



Figure 2-1: 2030 Wharves master plan

## 2.2 Existing transport network

Tangihua Street is a Secondary Arterial route and provides access to the Port's multi cargo operations including the proposed BN Wharf via the Quay Street / Tinley Street / Tangihua Street intersection, while Tamaki Drive is a Primary Arterial route and provides access to the Fergusson Container Terminal including FN Wharf<sup>1</sup>.

<sup>&</sup>lt;sup>1</sup> https://mahere.at.govt.nz/FutureConnect/



Quay Street is a multi-lane two-way road that connects to Lower Hobson Street and The Strand/Tamaki Drive/Quay Street intersection. This provides an east-west connection between Mechanics Bay and Viaduct, in the lower downtown area of Auckland's City Centre. Between Lower Albert Street and Commerce Street, the road is a two-way, one lane arrangement in each direction. The posted speed limit is 30km/h from Lower Hobson Street through to the Tinley Street intersection to just east of Tapora Street, where it is 50km/h to Tamaki Drive.

Quay Street has active mode, cyclist and pedestrian facilities. This includes a footpath, pedestrian crossing facilities, connections to ferry services in the vicinity of Queen Street and a bi-directional cycleway on the northern side of the road for cyclists and e-scooters. There is a dedicated bus lane in both directions between Lower Albert Street and Lower Hobson Street, and a single westbound bus lane between Commerce Street and Tangihua Street.

The Strand/Tamaki Drive/Quay Street intersection provides access to the motorway network at the eastern end of Quay Street. Lower Hobson Street and Fanshawe Street provides access to the northern motorway at the western end of Quay Street.

Access to Bledisloe Wharf is via Tinley Street, which connects to the Tangihua Street/Quay Street/Tinley Street intersection. This intersection is signalised with three lanes on each approach to the intersection, except for a two-lane approach on Tinley Street. Movements are permitted in all directions with left turn slip lanes on the Southeast and Southwest corner. Quay Street is separated by central median islands. The alternative access to Tinley Street is through the Plumer Street/Quay Street intersection, which operates as a left in and left out intersection from Quay Street.

## 2.3 Active Modes Network

Quay Street plays an important role in providing a connection for pedestrians and cyclists across the waterfront. Quay Street is classified by Auckland Transport as a Secondary walking network and Primary cycle network<sup>1</sup>. During May 2024, there were 30,426 recorded cycle trips at 107 Quay Street<sup>2</sup> with approximately 850 cyclists per day<sup>2</sup>. The bi-directional cycleway on the north side connects to the cycle-friendly environment of Wynyard Quarter on the western end and to the Tamaki Drive cycleway and shared path on the eastern end. This forms part of the regional cycle network. The Tamaki Drive cycleway runs along the northern side of Tamaki Drive past the entrance to the FN Wharf at Solent Street.

## 2.4 Public Transport Network

A dedicated westbound bus lane is provided along the southern side of Quay Street and Tamaki Drive, from the Quay Street / Tangihua Street intersection to the Quay Street / Commerce Street intersection. Quay Street and Tamaki Drive is part of the Frequent Transit Network, but there are no bus stops along Quay Street. There is a block of bus layover spaces between Commerce Street and Gore Street on the southern side for evening peak bus operation times.

Waitematā (Britomart) Station provides connection for the central city to the west, east and south of Auckland through three main train lines (western, eastern and southern line). The station is open seven days a week between 5am to 11pm on Monday to Thursday, 5am to 1:15am on Friday, 5:45am to 1:15am on Saturday and 5:45am to 11pm on Sunday. Services through the station will be enhanced with the completion of the City Rail Link in 2026.

<sup>&</sup>lt;sup>2</sup> https://at.govt.nz/cycling-walking/research-monitoring/monthly-cycle-monitoring





Figure 2-2: Bus routes near the Bledisloe North Wharf<sup>1</sup>

**Figure 2-2** above provides an overview of the bus routes and key context for the public transport connections near the BN Wharf. The radius of 800m shows the locations within an approximate 10-minute walking distance from the Quay Street / Tinley Street / Tangihua Street intersection, near the BN Wharf. This includes Britomart station, Downtown ferry terminal for trips (to West Harbour, Northcote, Birkenhead, Bayswater and Devonport) and the Lower Albert Street Bus interchange for public transport access.

The current bus routes in the city centre are shown in **Figure 2-3**. As part of the City Centre Bus Plan (Downtown bus improvements), a concept is in development, which involves a new frequent service connection from the Tamaki Drive / Quay Street intersection across the city to be implemented, which will provide good connections for customers to their destination. The concept is to be taken to Auckland Transport and NZTA for funding approval in early 2025.



Figure 2-3: Bus routes - City Centre



## 2.5 Freight Network

The key freight routes adjacent to and connecting with the BN and FN wharves are shown in **Figure 2-4** below. The BN Wharf freight route is from the Quay Street / Tinley Street / Tangihua Street intersection along Beach Road, connecting to SH16. The FN Wharf route is along Tamaki Drive and The Strand to SH16. Beach Road and Tamaki Drive are Level 1B freight routes. The Strand and SH16 are Level 1A freight routes, classified as freight routes with the highest strategic value.

The over dimension and overweight routes are shown in **Figure 2-5** below. Tamaki Drive outside of the FN Wharf, towards the eastern side (Orakei) is classified as an over dimension route only. The overweight route outside of the BN Wharf is between Mechanics Bay, Quay Street / Tinley Street / Tangihua Street intersection and adjoining roads south of this intersection. There is also a 14.5m vehicle length restriction along Quay Street between Queens Wharf and Lower Hobson Street.



Figure 2-4: Auckland Transport's Future Connect - Freight network



Figure 2-5: Auckland Transport's Future Connect - Overweight and over dimension route



## 2.6 Bledisloe North Wharf

## 2.6.1 Overall Context

Under the Auckland Unitary Plan (AUP), the site is located within the Port Precinct, with the underlying coastal marine area zoned General Coastal Marine and the underlying land zoned Business City Centre.

A multi-storey vehicle handing facility has been constructed on the Bledisloe Terminal to increase the storage capacity for imported vehicles at the Terminal.

POAL staff park at an at-grade parking area to the east of the vehicle handling facility (139 parking spaces), where one-way access into and out of the parking area is provided from Tinley Street.

Access to the BN Wharf is restricted through POAL customs gates at the northern end of Tinley Street via the Quay Street / Tinley Street / Tangihua Street signalised intersection as shown in **Figure 2-6** below. All approaches to the intersection are a three-lane entry, two lane exit configurations, except for Tinley Street, which features a wide single lane entry and two-lane exit.

There is a left turn slip lane on Quay Street and Tangihua Street with a raised pedestrian crossing. There is also a small length of existing heritage pedestrian fencing along the southern side of the Bledisloe RoRo Terminal along Quay Street, which terminates near the Quay Street / Britomart Place intersection.

## 2.6.2 Traffic Volumes

The estimated Average Daily Traffic (ADT) is 13,000<sup>3</sup> vehicles along Quay Street. This has significantly decreased from an approximate Annual Average Daily Traffic (AADT) of 30,000<sup>4</sup> vehicles in September 2007.

March 2024 traffic signal counts (SCATS data) has been retrieved for the Quay Street / Tangihua Street / Tinley Street intersection. The data is unable to differentiate between the different movements from the shared lanes. The data from the intersection showed the following:

- 187 maximum vehicle volume per hour exiting Tinley Street; and (Thursday 7<sup>th</sup> 6:15am to 7:15am)
- 338 maximum vehicle volume per hour entering Tinley Street (Thursday 21<sup>st</sup> 4:45pm to 5:45pm).

The weekday morning peak is typically in advance of the typical road network morning peak period, while the weekday afternoon peak corresponds with the typical road network afternoon peak period.

## 2.6.3 Parking

There are a number of parking, pick / up and loading zones at Queens Wharf, a 10-minute walk to the Britomart Place / Quay Street intersection. There is no public access to the Bledisloe Terminal. There is also no public parking provided at the port. Parking to the southeastern extent of the Bledisloe Terminal is utilised by staff.

The closest public carpark is the Britomart multi storey car park with 710 parking spaces located to the southern side of Quay Street near the Britomart Place / Quay Street intersection.

<sup>&</sup>lt;sup>4</sup> https://data-atgis.opendata.arcgis.com/maps/average-daily-traffic-counts



<sup>&</sup>lt;sup>3</sup> https://mobileroad.org/desktop.html



Figure 2-6: BN Wharf – Site context (Nearmaps April 2024 aerial image)



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#### 2.6.4 Safety

A high-level crash analysis was undertaken based on the data extracted from NZTA's Crash Analysis System. The crash history for the Quay Street / Tinley Street / Tangihua Street intersection and midblock section between the Quay Street / Tinley Street / Tangihua Street intersection and the Quay Street / Britomart Place was extracted over a full 5-year period between 2019 and 2023. There have been no crashes reported in 2024, based on a further crash extraction on 4<sup>th</sup> September 2024. The data was extracted to understand vehicle and pedestrian crash risks.

As shown in **Figure 2-7**, the crash records indicate there were a total of 15 reported crashes in the period between 2019 and 2023:

- Ten (5 minor and 5 non-injury) crashes were reported at the Quay Street / Tinley Street / Tangihua Street intersection.
- Two (1 minor and 1 non-injury) crashes were reported at the midblock section between the Quay Street / Tinley Street / Tangihua Street intersection and Britomart Place / Quay Street intersection.
- The highest number of crashes reported was in 2019, as shown in Table 1. In 2019, five crashes were reported at the Quay Street / Tinley Street / Tangihua Street intersection and one non-injury crash at the midblock section. It is likely the subsequent decrease in crashes would be due to the road layout, speed reduction and vehicle volume changes on Quay Street, as part of the Quay Street Enhancements project. The section of Quay Street between Lower Albert Street and Lower Hobson Street was reduced to one traffic lane in either direction, with dedicated bus lanes on the southern side and a bi-directional cycleway on the northern side.



Figure 2-7: Crash locations (2019 and September 2024)



Year	Fatal	Serious	Minor	Non-injury	Total
2019	0	0	4	2	6
2020	0	0	1	0	1
2021	0	0	0	2	2
2022	0	0	1	1	2
2023	0	0	0	1	1
Total	0	0	6	6	12

#### Table 1: Summary of crashes each year

The key crash types were crossing / turning and rear-end movements, typical for an urban environment.

There were two minor crashes involving vulnerable road users (cyclists, pedestrians or micromobility scooter) at intersections, as described below:

- A micromobility scooter crash was due to an intoxicated user crashing into the rear left side of a stationary car waiting to exit the Woolworths car park onto Quay Street.
- A cyclist crash occurred when the user was overtaking and veered right into path of a vehicle that was
  approaching them closely in the adjacent lane. The vehicle and cyclist were travelling from Tangihua
  Street to Tinley Street in separate through lanes at the Quay Street / Tinley Street / Tangihua Street
  intersection.

In summary, the crashes were attributed to different crash factors and were recorded to be a result in lack of attention from road users, rather than the street environment. There has been a consistently low number of crashes since 2019.

## 2.7 Fergusson North Wharf

## 2.7.1 Overall Context

FN Wharf is accessed through the Solent Street / Tamaki Drive signalised intersection, as shown in **Figure 2-8** below. There are three lanes on each approach and two lanes on each exit, with separate turning lanes.

Vehicles are required to pass through port security along Sunderland Street upon entry.

On the northern side of the Tamaki Drive corridor, there is a bi-directional cycleway that continues to the Tamaki Drive / Ngapipi Road intersection. On the eastern approach, there is a north-south pedestrian only crossing.



Figure 2-8: FN Wharf - Site context (Nearmaps April 2024 aerial image)

## 2.7.2 Traffic Volumes

Tamaki Drive / Solent Street SCATS data indicates that the 7-day average daily traffic (ADT) volume, over the weekday and weekends is approximately 12,000 vehicles in the eastbound direction and 11,100 vehicles in the westbound direction along Tamaki Drive. The 7-day ADT volume exiting Solent Street is approximately 1,100 vehicles.

## 2.7.3 Parking

There is no public access to the FN Wharf. The parking in the vicinity of the POAL administration building is utilised by staff, contractors and visitors. The Auckland Marine Rescue Centre and the Mechanics Bay Heliport facility are located to the east of Solent Street, north of Teal Park, with its own staff and visitor parking facilities with access via the Solent Street intersection.



# 3 Proposed Activities and Infrastructure

## 3.1 Bledisloe North Wharf

## 3.1.1 Cruise Terminal and vehicle routes

The proposed new wharf at BN Wharf is to accommodate large 300m+ cruise ships.

To support the new wharf at BN Wharf, cruise ship passengers require a processing centre and terminal to enter the country and to continue their journey. POAL intend to use the ground floor of the existing vehicle handling building as the cruise terminal and processing centre, and the associated facilities required to distribute cruise passengers towards their chosen destination. The upper levels (one to four) of the vehicle handling building will continue to be utilised for the storage and distribution of imported vehicles. The upper storeys are accessed via external vehicle ramps that are not impacted by the terminal and processing centre.

The proposed cruise terminal will occupy the eastern side of the existing vehicle handling building. Internal shuttle coaches will manoeuvre through the Bledisloe Terminal to and from the proposed BN Wharf as shown in **Figure 3-1**. The shuttle coaches are "customs bonded", meaning that the coaches will be contained within the customs operation of the port.



Figure 3-1: Shuttle coach routing and cruise terminal layout

The shuttle coach routing is dependent on whether a RoRo vessel is berthed on the western side of Bledisloe Wharf or not. When a RoRo vessel is berthed, the shuttle coach route will divert to the east, as illustrated in the above figure.



#### 3.1.2 Future site access and layout

A site visit to the Bledisloe and the proposed BN Wharf site was most recently undertaken on 13<sup>th</sup> May 2024 with Beca and POAL to understand the road constraints for the proposed transport layout.

The cruise terminal and internal shuttle coaches will be within the customs boundary along the south face of the cruise terminal. The publicly accessible area, for pedestrians, coaches, taxis, uber etc., on the south side of the cruise terminal, will not be customs bonded. The existing staff car parking accessed from Tinley Street will continue to be utilised by POAL staff use.

Vehicle access to the cruise terminal centre is proposed to be taken through the existing staff parking facility, utilising the existing vehicle crossings to Tinley Street. This results in staff and pick up / drop off vehicles using the same access. However, it avoids a new accessway being developed from Quay Street. The layout of the staff carpark will be reconfigured using temporary barriers during the cruise period. Access through the staff car park to the cruise terminal will continue to be managed, with access for permitted taxis and coaches provided by the necessary security.

A new pedestrian connection (for cruise passengers arriving / departing the cruise terminal) is to be provided to Quay Street on the northeastern side of the Quay Street / Britomart Place intersection. This provides a connection along a pedestrian desire line from the city to the cruise terminal enabling easier access to rail, ferry and bus services for cruise passengers and staff.

**Figure 3-2** shows the movements of the different users accessing the cruise terminal and the potential parking areas. The orange lines show the shuttle coach route from BN wharf to the cruise terminal. The magenta lines show the new vehicle movements to access the BN cruise terminal. To provide efficient utilisation, the movement forms two aisles for different vehicle users. There is an existing surface level difference, shown as a black dotted line, which will be addressed with the proposed changes, so that the entire area is at the same level. The green arrows show the existing vehicle movements. The green arrow movement from the upper floors of the vehicle handling facility is to be maintained.

The pedestrian and vehicle movements / interactions outside of the cruise terminal are described in Section 3.1.6.



Figure 3-2: Potential parking areas and user interactions



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## 3.1.3 Trip generation

Typical passenger and traffic movements data for two of the largest cruise ships, the Majestic Princess (2,908 maximum passengers) and the Celebrity Edge (3,600 maximum passengers) that call at Princes Wharf have been provided by POAL. A proportional increase of 36% has been applied to this data to accommodate the Ovation of the Seas (4,905 maximum passenger) cruise ship.

The transport demand is based on the current operations at Queens Wharf cruise terminal, which is closer to the city centre and adjacent to transport connections for passengers and staff than the proposed cruise terminal at BN Wharf. It is expected that the proposed cruise terminal would maintain similar demand as it remains within a 10-minute walking distance from the existing cruise terminal to Britomart, the Lower Albert Street bus interchange and Downtown ferry terminal. The expected number of cruise days per year is anticipated to be 30 to 40 days per year.

The type and number of trips associated with the different cruise ship vessels vary according to the size of the ship and if the ship berths for a transit call or passenger exchange. It is assumed that the disembarkation of passengers is more critical, as this occurs over a shorter period than boarding of passengers (higher rate of passengers per hour). This places higher demand on transport facilities on the BN Wharf and on the adjacent transport network on Quay Street.

Furthermore, the likely overall volume transport and pedestrian's movements generated from disembarkation is similar to embarkation. Disembarkation is assumed to be in the morning and embarkation is in the afternoon, at different timing intervals. As such, this assessment is based on disembarkation. It is considered not necessary to also assess embarking in further detail.

- Transit call passengers disembark for a period or a day trip and re-embark, and
- Passenger exchange passengers permanently disembark from the cruise ship in the morning with their luggage and new passengers embark with their luggage in the afternoon.

Based on a proportional increase of 36%, the likely volume of coaches, light vehicles and passengers for disembarkation of a 4,905 maximum passenger cruise ship, for transit call and passenger exchange type trips are as outlined below. The average passenger volumes assume there are 60 passengers per coach and 3 passengers per light vehicle.

- During transit call, around 3,800 (of the 4,905) passengers are expected to undertake a day trip. This would typically generate a demand of 42 coaches (2,520 passengers) and 118 light vehicles (354 passengers). This results in a total of 160 vehicles and 320 vehicle movements across 3.5 hours. The expected average pedestrian volume (passengers not undertaking a day trip by coach or light vehicle) is 926 across 3.5 hours, equating to approximately 4 pedestrians every minute.
- During passenger exchange, around 4,750 (of the 4,905) passengers disembark and 4,350 embark. This would typically generate a demand of 25 coaches (1,500 passengers) and 341 light vehicles (1,023 passengers). This results in a total of 365 vehicles and 730 movements across 3.5 hours. The expected average pedestrian volume (not disembarking via coach or light vehicle) is 2,227 across 3.5 hours, equating to approximately 11 pedestrians every minute.

Cruise ship visits would also typically require up to 10 semi-trailer trucks transporting 40ft containers of provisions (such as food and other consumables) per berthing. These trucks would travel via the Tinley Street Gate house to directly access the ship at the proposed BN Wharf.



#### 3.1.4 Internal shuttle coaches

It is anticipated that there will be 2-3 internal shuttle coaches operating throughout the cruise passenger transfer process. These coaches are to be stored on the ground floor of the existing multi-storey vehicle handling facility when the cruise operations are not in operation

#### 3.1.5 Coach and taxi parking

A total of 4 new coach parking spaces have been provided outside of the cruise terminal. This accommodates 12 coaches per hour over a 3.5-hour disembarkation period, assuming a conservatively low turnover of 20 minutes per coach. This enables a total of 42 coaches over the 3.5-hour period, accommodating the anticipated higher demand of a transit call described above.

A total of 10 new taxi / rideshare parking spaces are provided outside of the cruise terminal centre. Assuming a turnover of one taxi / rideshare vehicle every 5 minutes, this enables a total of around 420 vehicles over the 3.5 -hour period. This accommodates the anticipated higher demand of a passenger exchange described above.

An additional four new coach and 10 new taxi / ride share queueing area are provided to the south of the cruise terminal near the fence, adjacent to site boundary with Quay Street. This waiting area will enable vehicles to enter the site off Tinley Street, limiting congestion in the main loading / unloading area. This provides resilience to accommodate peaks in demand or higher than anticipated passenger demand.

## 3.1.6 Transport layout design

The proposed layout of the cruise terminal area includes separated angled coach parking and a parallel taxi / rideshare parking arrangement, with additional coach and taxi waiting areas adjacent to the Quay Street fence line. Coaches and taxis will have a separated area to manage access. Temporary barriers will be used during cruise operation periods to separate and manage interactions between vehicles and pedestrians. Outside of the cruise operation period, the temporary barriers may be dis-established, to maintain current POAL operations in the area.

**Figure 3-3** below shows the proposed transport layout with pedestrian and vehicle movements / interactions, outlined below:

- Turn around area for shuttle coaches to return to the proposed BN Wharf cruise ship berth (orange)
- Accommodate tour coach accessibility, together with tour coach 'stops' and passing areas (red)
- Separate taxi / rideshare facility, waiting area and passenger pick up area (indigo), with pedestrian platform (grey) and connection to the processing centre (dotted blue)
- Pedestrian connection (blue) from the processing centre to the public footpaths (Quay Street)
- Tour coaches, taxis / rideshare and active mode links to the public road network are to be accommodated (magenta), with temporary barriers to separate users within the Bledisloe terminal and maintain the Customs boundary
- Heritage fencing (green) to be retained
- The vehicle handling car movements via ramps on the eastern side of the vehicle handing facility (white) to be retained to handle RoRo cargo.





Figure 3-3: Internal transport layout and access



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The proposed transport layout provides quality facilities to get people in and out of the BN cruise terminal via coaches within the space available at Bledisloe, outside of the cruise terminal. This is consistent with current operational and management of cruise ship passenger transfers at the Queens Wharf and Princes Wharf.

The proposed routing for tour coaches and taxi / ride share vehicles has been checked with vehicle tracking travelling at 15km/h, based on aerial imagery. The tracking, shown in **Appendix A**, indicates that the separated pedestrian and vehicle movements indicated in **Figure 3-3** can be accommodated and there is flexibility in the arrangement of the separated movements.

#### 3.1.7 General public and pedestrian access

The proposed access for coaches and taxis from Tinley Street impacts the staff parking and requires managed access for only approved vehicles, without general public access. Private vehicles seeking to pick-up or drop-off (PUDO) passengers would need to use nearby parking facilities. The recommended local option is Britomart carpark. There is alternative PUDO facilities available at Queens Wharf.

Pedestrian access will be at the new proposed entrance along Quay Street. It is expected that this pedestrian access will need to be managed, to prevent members of the public accessing the vehicle pick-up / drop-off area. Further details to manage public access at this location is included in Section 4.2.1.1a.

## 3.2 Fergusson North Wharf

This application is seeking consent for an extension of the FN Wharf to improve efficiency in operations at this wharf (particularly the loading and unloading of larger ships). Fergusson North Wharf does not require any additional internal transport infrastructure to be provided. The proposed expansion at the Fergusson Wharf is expected to generate 1,500 TEUs per metre per annum on Tamaki Drive at the Tamaki Drive / Solent Street intersection. This equates to 67,500 TEUs per annum for the 45m extension. On a conservative basis, it is assumed 80% of TEUs are transported by trucks, with each truck carrying 1.4 TEUs. Based on the above assumptions, the proposed extension is expected to generate up to an additional 106 truck movements (1.4 TEUs per truck) per day in the 2050 scenario at the Solent Street intersection.

# 4 Transport Effects and Management

## 4.1 Construction Transport Effects

## 4.1.1 Overview

The following key potential construction phase transport effects have been identified and assessed for the new BN Wharf and FN extension:

- General traffic effects
- On-site transport effects

For both wharves, it is expected that marine deliveries will be utilised as much as possible for the revetment. It is expected that rock rip-rap and toe trenched excavated material will be transported to / from the site by barge. All other material elements as part of the revetment works, concrete, steel and wharf backfill are to be delivered by truck via the Tinley Street gate for the BN Wharf, and the Solent Street gate for the FN Wharf.

The indicative construction programme is expected to be 18 months for the BN Wharf and 8 months for the FN Wharf. The construction program may be staged for both wharves, resulting in a combined expected construction of 18 to 24 months.

## 4.1.2 BN Wharf

## 4.1.2.1 General traffic

In relation to the traffic effects on Tinley Street and Quay Street, and particularly the Tinley Street / Tangihua Street / Quay Street intersection, it is noted the traffic demand on Quay Street has significantly reduced in recent years. The approximate AADT has reduced from 30,000 vehicles in 2007 to 13,000 vehicles per day in 2023. Tinley Street currently has approximately 950 to 3,950 vehicles entering and approximately 1,275 to 1,900 vehicles exiting the Tinley Street / Tangihua Street / Quay Street intersection per day (March 2024 SCATS data).

Over the 18-month construction period, the proposed BN Wharf expansion may generate a total of 6 trucks per day, and up to 40 light vehicles per day for personnel (assuming single occupant vehicles to be conservative), equating to 92 movements per day. This is an approximate 2% increase in vehicles entering or exiting at the intersection. It is noted that the increase of 46 vehicles is actually less than the current day-to-day variability in the traffic volumes.

On this basis, it is considered that the proposed new BN Wharf would not materially impact the safety, efficiency and operation of the Tinley Street / Tangihua Street / Quay Street intersection or the adjacent network, when compared with current day-to-day variability in vehicle movements.

## 4.1.2.2 On-site transport effects

An effective and efficient operation at the existing Tinley Street access will need to be maintained to accommodate the construction vehicle demand and POAL current operations. It is recommended that permanent site staff will all have access cards, and for any one-off access such as material deliveries, they will need to be escorted by POAL.

In addition, there is an interface between construction vehicles and existing operations at the BN Wharf. Although the effects are considered low due to the relatively low demand, it is recommended these are addressed through the construction phase by condition. This should highlight site risks, required behaviour



and access requirements, to maintain a safe and efficient operation at the BN Wharf. Specific construction routing, timing of deliveries, and coordination with Port operations should also be considered.

There is limited designated parking onsite for key personnel at the BN Wharf. Site workers travelling into site with work vans will be encouraged to travel in groups and new limited on-site parking shall be implemented within the construction site. The construction traffic management condition will require the consent holder to consider parking on site, having regard to the existing operation of other port activities at the BN Wharf. This traffic is not expected to impact freight traffic to the main Tinley Street gate serving multi cargo.

#### 4.1.3 FN Wharf

4.1.3.1 General traffic

Approximately 1,000 to 1,500 vehicles per day (March 2024 SCATS data) use Solent Street.

Over the 8-month construction period, the proposed FN Wharf extension may generate an average of 3 trucks per day, and up to 45 light vehicles per day for personnel (assuming single occupant vehicles to be conservative), equating to 96 movements per day. The predicted demand associated with construction of the FN Wharf is less than the current day-to-day variability in truck movements of 1,000 to 1,500 truck movements on Solent Street.

Therefore, the construction of the FN Wharf expansion is expected to have little discernible effect on the safety and efficiency of the Solent Street / Tamaki Drive intersection or the adjacent network.

#### 4.1.3.2 On-site transport effects

An effective and efficient operation of the existing Solent Street access will be maintained during the construction period. Permanent site staff will all have access cards, and for any one-off access such as material deliveries, they will need to be escorted by the contractor or POAL. There is limited designated parking onsite for key personnel at the FN Wharf. Site workers travelling into site with work vans are encouraged to travel in groups as new parking provisions shall be limited to the construction site. These matters can be addressed by conditions, with consideration of the existing operation of other port activities at the FN Wharf.

#### 4.1.4 Construction Traffic Management

It is considered that the potential construction traffic effects can be satisfactorily managed through conditions. A specific Condition 25 is proposed to address construction traffic matters which requires the consent holder to ensure:

- All access routes and points for all construction vehicles, laydown areas, and parking areas for plant, construction vehicles and the vehicles of workers and visitors are contained within the Port of Auckland.
- There are practices and procedures in place to protect the safety of workers and users of the Port of Auckland at all times.
- Access is maintained at all times for all modes of transport to / from the Project area; and
- Disruption from construction traffic on the Port of Auckland is minimised as far as is practicable.
- There shall be no deposition of earth, mud, dirt or other debris on any public road or footpath resulting from construction works. In the event that such deposition does occur, it shall immediately be removed.



## 4.2 Operational Transport Effects

The following key potential operational transport effects have been identified and assessed:

- BN Wharf
  - oOn-site transport management effects
  - o Pedestrian, cyclist and micromobility effects
  - Public transport effects
  - o General traffic effects
- FN Wharf

 $\circ$  General traffic effects.

- 4.2.1 Bledisloe North Wharf
- 4.2.1.1 On-site transport effects

The operational transport effects are to be managed with a Transport Management Plan (TMP), as detailed in Section 4.3. The following paragraphs discuss the potential transport effects that have been identified and the requirements for management through the TMP.

It is noted that, unlike the existing cruise ship operations at Queens Wharf and Princes Wharf, the proposed BN Wharf will be entirely within the POAL Customs controlled area, without general public access. As such, the focus of the TMP relates to managing the interfaces with other POAL activities and the adjacent transport network, including vehicle access on Tinley Street and pedestrian access on Quay Street.

#### a. Pedestrian management

Management of transfers between cruise ships and transfer coaches will be undertaken in a similar manner to the current situation when cruise ships berth at FN Wharf on occasions. The disembarkation and boarding for all cruise ships are staggered to manage the passengers transfer to and from coaches, as well as the ability to process the passengers through NZ Customs and MPI at the cruise terminal. Marshals will be responsible for the management and coordination of this process in liaison with the cruise ship operator/s.

Management of the BN new cruise terminal will be the responsibility of POAL utilising 3<sup>rd</sup> party traffic and security 'event' contractors as is done at Queens Wharf and Princes Wharf currently. POAL already processes over 300,000 passengers a year using these arrangements. The transfer of passengers to and from the cruise terminal by shuttle coach will mean that arrivals are staggered, such that they can be accommodated within the Customs and MPI processing times. The facility is sufficiently sized to accommodate the NZ Customs and MPI requirements, including waiting areas.

The pick-up and drop-off area to the south of the cruise terminal at the BN Wharf has been designed to provide dedicated pedestrian routes to provide for the safety of cruise passengers. This includes the connections to/from the coach transfers, taxi / rideshare transfers, as well as pedestrian connections to Quay Street. This has been discussed previously in Section 3.1, and would be further detailed within the TMP. Marshals will be responsible for the management and coordination of pedestrians through and within this area.



As outlined in Section 3.1.3, the expected pedestrian demand is up to 2,227 people across 3.5 hours (649 pedestrians each hour, 11 per minute) during passenger exchange cruise calls. In the context of Quay Street pedestrian volumes at the Ferry Terminal crossing, the March 2024 pedestrian data<sup>5</sup> indicates that the maximum peak hour volume is 1,838 pedestrians (4pm – 5pm). As the pedestrian volumes are expected to disperse along Quay Street, to the multiple signalised crossing locations along the corridor, it is expected that the effect on the functionality of Quay Street and pedestrian safety on the corridor will not be adversely impacted.

#### b. Coach transfers

As discussed in Section 3.1.5, the proposed layout of the new coach transfer facility provides sufficient capacity to accommodate the anticipated demand, with additional coach waiting areas provided to accommodate peaks in demand or higher overall demand. Specific routing has been identified for coaches to separate these from pedestrian routes and taxi / rideshare facilities, where practical. The operation and management of the coach facility by marshals will be set out in the TMP.

#### c. Taxi / rideshare transfers

As discussed in Section 3.1.5, the layout of the taxi / rideshare transfer facility provides sufficient capacity to accommodate the anticipated demand, with additional vehicle waiting areas provided to accommodate peaks in demand or higher overall demand. Specific routing has been identified for taxi / rideshare vehicles to separate these from pedestrian routes and coach facilities, where practical. The operation and management of the taxi / rideshare facility by marshals will be set out in the TMP.

d. Interfaces with Other POAL activities

Interfaces with the following other POAL activities have been identified:

- Staff parking on the entry and exit routes off Tinley Street
- Imported cars moving to / from the upper level of the vehicle handling facility
- Operation of Bledisloe RoRo terminal, when cruise ships berthed at BN Wharf.

As discussed in Section 3.1.6, coaches and taxi / rideshare vehicles will have defined access routes, which will be put in place using barriers during the cruise ship season to manage the interface and Customs bonded boundaries of these routes with the staff parking.

Alternative routing has been considered to avoid coaches transferring passengers between the cruise ship and processing centre conflicting with activities within the Bledisloe RORO terminal. The vehicle handling facility and operation of Bledisloe RoRo terminal will continue to be managed as it is currently by PoA.

e. Tinley Street access

An effective and efficient operation at the existing gate to enter the transfer area off Tinley Street will be necessary to manage the potential effects on Tinley Street and the adjacent network.

Vehicle tracking has been completed for a 14.5m tour coach entering at the Tinley Street gate. This indicates that a tour coach travelling at a speed of 15km/h may be obstructed by the existing fence line of the Z service station and existing electronic sign board, as per **Appendix B**. As such, the existing barriers on the ports land on the northern side of the access lane will be moved further north to accommodate these manoeuvres.

<sup>&</sup>lt;sup>5</sup> https://www.hotcity.co.nz/city-centre/results-and-statistics/pedestrian-counts



In addition, it will be necessary for the procedures for operating the entry at the Tinley Street access to be set out in the TMP. Given this will include taxi / rideshare vehicles, it is recommended that the access is managed manually by POAL / marshals, rather than an electronic gate / pass system. It is recommended that the 'check point' is managed by marshals to prevent private cars entering, as discussed below.

As set out in Section 3.1.7, general public vehicle access to the cruise terminal would not be permitted Should public vehicles try and access the facility, the operational procedures can be put in place to direct those vehicles immediately to the egress onto Tinley Street, without permitting access to the transfer area. It is considered that allowing those vehicles to enter off Tinley Street, but directing them back to the egress, will facilitate more efficient operation at the Tinley Street entry gate.

The operational procedures and management of the entry and exit gates off Tinley Street by marshals will be set out in more detail in the TMP. This traffic is not expected to impact freight traffic to the main Tinley Street gate operation.

4.2.1.2 Pedestrian, cyclist and micromobility effects

Cruise ship passengers would depart and arrive via a dedicated pedestrian access onto Quay Street.

Given that there is the potential for some passengers to be greeted or farewelled, and given the potential cruise passenger pedestrian demand, it is recommended that a dedicated area is identified inside the pedestrian gate onto Quay Street to enable 'meet and greet' and keep the gate clear. As it is not recommended that the general public access the cruise facility on foot, this would provide an area to manage controlled access to the transfer facility.

The indicative location of this facility would be to the west of the north-south pedestrian route off Quay Street, as shown in **Figure 3-3**. The more specific size, location and management of this facility can be identified in the TMP, particularly as it will be informed by the future boundary with Marsden Wharf, when its ownership is transferred to Auckland Council. Indeed, once Captain Cook and Marsden Wharves are under Auckland Council ownership, there is the potential that cruise ship passengers could move to / from the city centre via that area, instead of Quay Street. It is considered that the provision of this facility will avoid the potential for cruise passengers to dwell and the general public to congregate on the footpath on Quay Street.

It is considered that the proposed cruise terminal is still well located to benefit from the transport accessibility on foot within the city centre, including Britomart, the Lower Albert Street bus interchange and the Downtown ferry terminal. Quay Street has a wide footpath, and it is considered that this should provide adequate width to accommodate cruise ship passengers moving to / from the transfer facility, particularly given the staggered arrangements for passengers alighting and boarding cruise ships.

As the cruise terminal is located further east of the city centre, it is recommended that cruise passengers are provided with information on the route to the city centre area, particularly Britomart, where they can orientate themselves for their visit. In addition, it could be beneficial for marshals to be located along the route, during the busier arrival / departure times to guide passengers. In the future, the connections may also be possible through Captain Cook Wharf and Marsden Wharves, which will be owned by Auckland Council. These measures should be further defined as part of the TMP, in liaison with Auckland Council and Auckland Transport.



#### 4.2.1.3 Public transport effects

As noted above, Britomart, the Lower Albert Street bus interchange and the Downtown ferry terminal are located within reasonable walking distance of the proposed facility new pedestrian access on Quay Street. This provides very good access to a wide range of public transport services for both visiting passengers as well as staff working at the transfer and processing facility. This can support the ability to reduce the potential for private car use by passengers and staff.

As set out below, given the proposed facility is not expected to adversely impact the operation of the Tinley Street / Tangihua Street / Quay Street intersection, or the general operation of these roads, then it is considered there would be no adverse impact on bus services using Quay Street.

#### 4.2.1.4 General traffic effects

In relation to the traffic effects on Tinley Street and Quay Street, and particularly the Tinley Street / Tangihua Street / Quay Street intersection, it is noted the traffic demand on Quay Street has significantly reduced in recent years. The approximate AADT has reduced from 30,000 vehicles in 2007 to 13,000 vehicles per day in 2023.

During passenger exchange, the overall vehicle demand for the proposed cruise facility is greater than during a transit call. The passenger exchange will typically result in an increase of 104 vehicles (208 movements) generated per hour for a 4,905-passenger cruise ship. Based on the March 2024 traffic signal counts for the Quay Street / Tangihua Street / Tinley Street intersection, the maximum vehicle volume per hour exiting Tinley Street was 187 vehicles (6:15am to 7:15am). In the afternoon peak hour, 338 vehicles were the maximum number of vehicles entering Tinley Street (4:45pm to 5:45pm).

The predicted demand associated with the cruise ship terminal in terms of the potential number of peak direction vehicles is therefore less than these peak hourly demands that are accommodated on Tinley Street and at its intersection with Quay Street. It is recognised that there is the potential for some overlap in the operation of the cruise transfer facility and these peak periods. However, the predicted demand of the cruise facility equates to less than two vehicles per minute entering or exiting the facility. It is considered that this level of demand would not materially impact the intersection operation.

Moreover, typically the peak hour demand is approximately 10% of the daily traffic demand. On this basis, given the identified daily traffic demand from the intersection counts, the hourly demand at the intersection has reduced from 3,000 in 2007 to 1,300 in 2023. The additional 208 vehicle movements associated with cruise facility would therefore only be around 16% of that peak existing demand and when added to that demand the total of 1,508 vehicles would be well below the 3,000 vehicles per hour previously accommodated by the intersection.

The estimated Average Daily Traffic (ADT) is between 9,000 and 10,000<sup>3</sup> vehicles along Tangihua Street (in both directions). Based on the passenger exchange demand, this equates to 1,028 movements per day for the combination of both the disembarkation and embarkation activities. This is an increase of 10% to 11% of 30 to 40 days when cruise ships are anticipated to use BN Wharf. The predicted changes are similar to daily fluctuations in traffic demand and will be spread over periods of around 3.5 hours each. Therefore, it is considered that the additional demand is unlikely to materially impact the safe operation of Tangihua Street.

<sup>&</sup>lt;sup>3</sup> https://mobileroad.org/desktop.html



To further consider the impacts, a traffic modelling assessment has been undertaken using SIDRA in the AM peak (07:45-08:45) and PM peak (16:45-17:45) periods.

The baseline traffic data (SCATS counts, AT traffic counts and site observations) were combined with the estimated trip generation in Section 3.1.3 for the passenger exchange. The assumed distribution of additional vehicles at the Quay Street / Tangihua Street / Tinley Street intersection simulated is 70% of light vehicles and heavy vehicles on Tangihua Street, 15% of light vehicles on Quay Street East and Quay Street West and 30% of heavy vehicles on Quay Street East.

Overall, the traffic modelling assessment indicates that the intersection is predicted to continue to perform satisfactorily in the weekday AM and PM peak periods with additional cruise facility traffic demands. Refer to **Appendix C** for the results.

It is therefore considered that there are not anticipated to be any significant adverse effects on the safe operation of the Tinley Street intersection, Tangihua Street and Quay Street resulting from the proposed facility.

#### 4.2.2 Fergusson North Wharf

#### 4.2.2.1 General traffic effects

Solent Street currently has approximately 1,000 to 1,500 vehicles per day (March 2024 SCATS data) exiting Solent Street. The proposed FN Wharf expansion is expected to generate up to an additional 106 truck movements per day (1.4 TEUs per truck) in the 2050 scenario exiting the Solent Street / Tamaki Drive intersection. This is an approximate 7 to 11% increase in vehicles at the intersection per day in 2050, without accounting for background daily traffic growth along Tamaki Drive, which would reduce this relative impact. It is noted that the predicted increase of 106 truck movements is actually less than the current day-to-day variability in truck movements of 1,000 to 1,500 truck movements.

A traffic modelling assessment has been undertaken using SIDRA in the AM peak (07:45-08:45) and PM peak (16:30-17:30) periods. The baseline traffic data (SCATS counts, AT traffic counts and site observations) were combined with the estimated trip generation in Section 3.1.3. It is assumed that all vehicles travel via Tamaki Drive West to enter and exit the Fergusson Wharf. Refer to **Appendix C** for the results.

It is considered that the proposed FN Wharf expansion will have little discernible effect on the safety and efficiency of the Solent Street / Tamaki Drive intersection or the adjacent network, when compared with current day-to-day variability in truck movements.

## 4.3 Cruise Facility – Transport Management Plan

To proactively manage the operation of the cruise ship facilities at the BN Wharf, it is recommended that a Transport Management Plan (TMP) be prepared. The following recommendations are provided for the matters to be addressed through the TMP. It is expected that the TMP will be a 'live' document with ongoing monitoring and feedback to enable continual improvement of the safe and efficient operation of the BN Wharf cruise ship facility.



Overall, it is recommended that the TMP include details of:

- The purpose and objectives of the TMP
- The key agencies / stakeholders who are involved in the TMP, including roles and responsibilities
- Details of the boundary between the facility and the adjacent public network
- Details of the key infrastructure elements within the facility
- Details of the proposed external network access points and internal circulation by transport mode
- Details of the key interfaces with other POAL operations
- Details of the review process for the TMP and the parties to be involved.

More specifically, it is recommended that the TMP include:

- Details on the management and operation of coaches and taxi / rideshare vehicles in the transfer facility, including the provision of marshals
- Details of the separated routes (using concrete barriers or similar) for different vehicle types between the Tinley Street access and egress and the transfer facility, including the provision of marshals, as well as identified speed limits
- Details of the management and dedicated route for pedestrians between the processing centre and Quay Street, including the 'meet and greet' area north of Quay Street
- Details of how the cruise ship passengers will be provided with information on routes to / from the city centre, including any marshals / wayfinding signage to be located along the route.
- Details of how the cruise ship passengers will be provided with information on travel options for the facility, particularly nearby parking and PUDO options for those needing to travel by private car.
- Details of the how interface with staff parking on the entry and exit routes off Tinley Street will be managed
- Details of the access and egress routes between Tinley Street and the site, including the proposed management procedures for the entry / exit gates.

# 5 Summary and Conclusions

## 5.1 Summary

## 5.1.1 Bledisloe North Wharf

This assessment has considered the potential operational and construction transport effects associated with the proposed new wharf at BN Wharf, which will enable larger cruise ships to berth at BN Wharf. This assessment has therefore also assessed the effects of the new cruise ship terminal proposed on the ground floor of the existing vehicle handling facility. The new cruise ship terminal includes a new NZ Customs and MPI processing centre (on the ground floor of an existing carpark building), pick and drop off facility for coaches and taxis / rideshare, as well as vehicle access off Tinley Street and pedestrian access off Quay Street.

The proposed cruise ship terminal facility is well located to continue to benefit from similar levels of transport accessibility as the existing cruise ship facilities at Princes Wharf and Queens Wharf, given it remains within a 10-minute walk of key public transport facilities in the city centre. This should be supported by information provided to cruise passengers and wayfinding to clearly identify routes between the facility and the city centre.

It is recommended that the proposed facility be supported by a TMP that will be prepared by POAL prior to commencing operation of the new facility. The recommended content for the TMP is provided in Section 4.3.

It is considered that any operational transport effects of the proposed use of the wharf for unloading cruise ship passengers through the new cruise ship facility, during the cruise season period, on the adjacent transport network can be accommodated without adverse impact on its safe operation, including at the Tinley Street /Quay Street intersection and along Quay Street.

As identified in Section 4.1.4, it is recommended that the construction traffic effects of the new wharf at BN Wharf be managed through a condition and Condition 25 is proposed to address these matters.

It is considered that any transport effects of the construction of the proposed new BN Wharf, to the adjacent transport network can be accommodated without adverse impact on its safe operation, including at the Tinley Street /Quay Street intersection and along Quay Street.

## 5.1.2 Fergusson Wharf

This assessment has considered the potential operational and construction transport effects associated with the extension of FN Wharf enabled by the wharf extension.

It is considered that the potential traffic impacts of the operation and construction of the FN Wharf extension are unlikely to be discernible in the context of current day-to-day fluctuations in truck demand at the Solent Street intersection.

As identified in Section 4.1.4, it is recommended that the construction traffic effects of the FN Wharf extension be managed through a condition and Condition 25 is proposed to address these matters.



## 5.2 Conclusions

It is therefore considered that, with the preparation a TMP, the operational effects of the proposed cruise ship facility at the BN Wharf can be satisfactorily managed. The preparation of a CMP will also enable the potential construction effects of the new BN Wharf to be satisfactorily addressed.

No discernible adverse transport effects have been identified in relation to the operation or construction of the proposed FN Wharf extension.

On the basis of this transport assessment, it is therefore considered that the transport effects of the proposed new BN Wharf and the FN Wharf extensions can be satisfactorily addressed.

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Figure: Transport layout vehicle tracking



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Figure: Coach tracking at Tinley Street entrance



Figure: Tinley Street entrance

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## Background:

- Base traffic data uses a combination of SCATS, AT traffic counts and site observations.
- Both the additional coaches and taxis have been added to existing flows with the distribution below, the same for inbound and outbound vehicles.
- Assumed distribution of additional vehicles at each intersection
- Tinley St Intersection Bledisloe North Wharf
  - o70% Tangihua St
  - $_{\odot}15\%$  Quay St East and West for Light Vehicles, 30% Quay St East for Heavy Vehicles
- Solent St Intersection Fergusson Wharf
  - o100% Tamaki Dr West

## **Bledisloe North Wharf Results:**

## **Tinley Street / Quay Street Intersection**

AM Peak Hour: 07:45 – 08:45

	Existing			Existing With Development		
Approach	Queue length (m)	Delays (s)	Degree of Saturation (V/C)	Queue length (m)	Delays (s)	Degree of Saturation (V/C)
Tangihua St	31	42	0.26	40	38	0.33
Quay St East	94	14	0.55	101	17	0.66
Tinley St	19	62	0.44	39	54	0.60
Quay St West	80	25	0.38	76	28	0.41
Overall	94	21	0.55	101	25	0.66

	Existing			Existing With Development		
Approach	Queue length (m)	Delays (s)	Degree of Saturation (V/C)	Queue length (m)	Delays (s)	Degree of Saturation (V/C)
Tangihua St	96	45	0.72	116	48	0.81
Quay St East	57	17	0.49	57	17	0.49
Tinley St	15	56	0.34	37	61	0.81
Quay St West	196	37	0.80	196	38	0.81
Overall	196	31	0.80	196	33	0.81

PM Peak Hour: 16:45 - 17:45

Results summary:

- Overall, the intersection is predicted to continue to perform satisfactorily in the weekday AM and PM peak periods with the additional cruise facility traffic demands.
- There is predicted to be an increase in queuing on Tinley St in both peak periods of approximately 20m (three to four cars). The overall predicted queue of approximately 40m would still be some 40m south of the proposed exit from the cruise facility on the western side of Tinley Street and 80m south of the Port egress onto Tinley Street.
- It is also noted traffic data indicates that peak periods for trucks entering and exiting the Port are generally outside the typical commuter peak periods.
- Moreover, the cruise season is only anticipated to be 30 to 40 days per year.
- It is therefore considered this would not impact the operation and access off Tinley Street, particularly as this represents the 95<sup>th</sup> percentile queue in the peak hour.



#### Fergusson Wharf Results:

#### Solent Street / Tamaki Drive Intersection

AM Peak Hour: 07:45 - 08:45

	Existing			Existing With Development		
Approach	Queue length (m)	Delays (s)	Degree of Saturation (V/C)	Queue length (m)	Delays (s)	Degree of Saturation (V/C)
Tamaki Dr East	370	17	0.80	370	17	0.80
Solent Ave	5	60	0.04	6	60	0.04
Tamaki Dr West	74	19	0.24	75	20	0.24
Overall	370	18	0.80	370	18	0.80

PM Peak Hour: 16:30 – 17:30

	Existing			Existing With Development		
Approach	Queue length (m)	Delays (s)	Degree of Saturation (V/C)	Queue length (m)	Delays (s)	Degree of Saturation (V/C)
Tamaki Dr East	71	10	0.30	71	10	0.30
Solent Ave	11	57	0.09	13	57	0.10
Tamaki Dr West	453	29	0.88	454	29	0.88
Overall	453	22	0.88	454	22	0.88

Results summary:

- As noted above, the proportion of daily trucks in the peak periods is lower than the typical peak hour to daily ratio, based on observed traffic data.
- During the AM and PM peak the additional truck movements are predicted to have negligible impact on the operation of the intersection.

