

BAYSWATER MARITIME PRECINCT TRANSPORTATION ASSESSMENT

PREPARED FOR **BAYSWATER MARINA HOLDINGS LIMITED**





February 2021



This document has been prepared for the benefit of Bayswater Marina Holdings Limited. No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other person.

This disclaimer shall apply notwithstanding that the report may be made available to other persons for an application for permission or approval to fulfil a legal requirement.

QUALITY STATEMENT

PROJECT MANAGER		PROJECT TECHNICAL LEAD
Don McKenzie		Saulius Vingrys
PREPARED BY		
Gabriela Surja		18/02/2021
CHECKED BY		
Gabriela Surja		18/02/2021
REVIEWED BY		
Don McKenzie		19/02/2021
APPROVED FOR ISSUE BY		
Don McKenzie		25/02/2021

AUCKLAND

Level 3 Stantec House, 111 Carlton Gore Road, Newmarket, Auckland 1023
PO Box 13-052, Armagh, Christchurch 8141
TEL +64 9 580 4500

REVISION SCHEDULE

Rev No.	Date	Description	Signature or Typed Name (documentation on file)			
			Prepared by	Checked by	Reviewed by	Approved by
01	20/05/20	Draft	NK	GS	SV	DJM
02	08/09/20	Revised Draft pending final plan	NK	GS	-	-
03	18/12/20	Updated Revised Draft pending final plan	GS	-	-	-
04	25/02/21	Final	GS	GS	DJM	DJM

Bayswater Marina Holdings Limited

Transportation Assessment

CONTENTS

1.	Introduction	1
2.	Existing Environment	2
2.1	Site Location	2
2.2	Road Network	3
2.3	Public Transport	4
2.4	Walking and Cycling	5
2.5	Traffic Volumes	5
2.6	Road Safety	6
3.	Proposal	8
4.	Access	9
4.1	Site Access	9
4.2	Internal Precinct and Residential Access	9
5.	Parking	10
5.1	Parking Requirements	10
5.2	Car Parking Layout	11
5.3	Parking Provision	11
6.	Traffic Effects	13
6.1	Trip Generation and Distribution	13
6.2	Effects on Road Network	14
7.	Construction Traffic Management Plan	17
8.	Auckland Unitary Plan Assessments	18
8.1	Statutory Assessment	18
8.2	1504 Bayswater Marina Precinct Assessment	24
9.	Conclusions	27

LIST OF TABLES

Table 2-1: Traffic Volumes on Existing Roads Around the Site	5
Table 2-2: Surveyed Traffic Volumes	6
Table 2-3: Summary of injury types of crashes	7
Table 5-1: Unitary Plan Minimum Parking Requirements	10
Table 6-1: SIDRA Results for Existing Traffic Volume and Proposed for Weekday AM Peak	14
Table 6-2: SIDRA Results for Existing Traffic Volume and Proposed for Weekday PM Peak	15
Table 6-3: SIDRA Results for Existing Traffic Volume and Proposed for Weekend Peak Hour	15
Table 8-1: Assessment against E27.8.2(3) Criteria for Exceeding Trip Generation Thresholds	18

Table 8-2: Statutory Assessment	19
Table 8-3: Assessment against E27.8.2(7) Criteria for Loading Spaces	21
Table 8-4: Assessment against E27.8.2(8) Criteria for Access.....	23
Table 8-5: Review of I504 – Traffic Related Rules	24

LIST OF FIGURES

Figure 2-1: Site Aerial Photograph.....	2
Figure 2-2: Road Network in the Site's Vicinity	3
Figure 2-3: North Shore Public Transport Network in the Vicinity of the Site	4

APPENDICES

Appendix A	Existing & Proposed Development Layout
Appendix B	Vehicle Tracking Analysis
Appendix C	Parking Allocation
Appendix D	Zoning Plan
Appendix E	SIDRA Results
Appendix F	Typical CTMP Structure

1. Introduction

Stantec has been commissioned by Bayswater Marina Holdings Ltd to assess and describe the transportation implications of the proposed Bayswater Maritime Precinct, which is a mixed-use development at 21 Sir Peter Blake Parade, Bayswater, Auckland. The site is within an established suburban area and zoned Coastal – Marina Zone in the Auckland Unitary Plan Operative in Part (**Unitary Plan**) and identified as the Bayswater Marina Precinct.

This Transportation Assessment report describes and assesses the transport-related matters of the proposal, including:

- The site and its surrounding existing transport environment.
- The proposal, focussing on key transport-related aspects of the development.
- The proposed vehicle accesses and on-site circulation.
- The parking provisions including those for the marina and ferry terminal.
- The expected volumes of vehicular traffic likely to be generated by the development.
- The effect of this development on the surrounding road network.
- An assessment of the development against the relevant, transport-related unitary plan development controls.

These and other matters are addressed in detail in this report. By way of summary, it is concluded that the proposed transport aspects of the development are suitable to support the on-site operations, while ensuring minimal effects on the function, capacity and safety of the surrounding transport network.

2. Existing Environment

2.1 Site Location

Figure 2-1 is an aerial photograph with the subject site at 21 Sir Peter Blake Parade, with the development extents outlined in yellow.



Figure 2-1: Site Aerial Photograph

The site is located at the southern tip of Bayswater Peninsula and is only connected inland by Sir Peter Blake Parade. Bayswater Peninsula is a branch off the Devonport Peninsula which is on the northern side of the Waitemata Harbour and north of the Auckland city centre. Bayswater Marina is located immediately to the west of the development site with its car parking facilities within the site area. The Bayswater Ferry Terminal is located at the southern end of the site and has dedicated parking spaces available for ferry commuters.

2.3 Public Transport

The public transport network for the Devonport/Takapuna area is shown in **Figure 2-3**.



Figure 2-3: North Shore Public Transport Network in the Vicinity of the Site

The site is located adjacent to the Bayswater Ferry terminal. Ferry services from this terminal connect to the Auckland Downtown Ferry terminal on the opposite side of the Waitemata Harbour. During the weekdays, ferries operate on a 30-minute frequency and on the weekends, ferries operate every two to two and a half hours.

The 801 and 802 bus services provide public transport for the Bayswater peninsula. The 801 service provides a link between Bayswater Ferry Terminal and Akoranga Bus Station via Takapuna. Multiple other bus options are available at the Akoranga and Takapuna transport interchanges that provide rapid and frequent connections to the city and other parts of Auckland. The service operates on a 30-minute

frequency throughout the day. The 802 service operates only during the weekday peak periods and connects Bayswater directly to the city.

Overall, the Bayswater Marina development site is considered to have good links to public transport services that provide residents and visitors to the area with a range of viable alternative transport choices and reduce reliance upon private vehicles.

2.4 Walking and Cycling

Sir Peter Blake Parade includes a footpath on its western side that connects up to Bayswater Avenue. All other streets on the Bayswater peninsula include footpaths on both sides of the road.

The shops are approximately 6-minutes from the site for cyclists with relatively flat terrain along Bayswater Avenue. While there is no dedicated cycling infrastructure in the vicinity of the site, cyclists are able to share the road with vehicles.

The site is somewhat removed from complementary activities to residential dwellings such as offices and shops. However, the surrounding area has relatively good cycling and walking infrastructure and it is therefore expected that a proportion of trips, especially to other local key areas such as Devonport or Takapuna, will occur using active travel modes.

2.5 Traffic Volumes

The latest traffic volume data for the surrounding road network has been sourced from the most recent Auckland Transport data and is summarised in **Table 2-1**.

Table 2-1: Traffic Volumes on Existing Roads Around the Site

Road	Date	Traffic Volumes			
		5-Day ADT (vpd)	7-Day ADT (vpd)	AM Peak (vph)	PM Peak (vph)
Bayswater Avenue (Birkley Rd to Rosyth Ave)	July 2019	5,050	4,902	512	585
Bayswater Avenue (Leander St to Preston Ave)	July 2019	5,242	5,107	486	553
Lake Road (Bayswater Ave to Egremont St)	October 2016	25,460	25,270	2,060	1,890
Lake Road (Regent St to Roberts Ave)	October 2016	21,330	21,210	1,730	1,590

A turning movement survey was undertaken at the intersection of Lake Road and Bayswater Avenue on Thursday 14 June 2018. The survey recorded all vehicle movements through the intersection during the morning and evening peak hours. **Table 2-2** summarises the peak hour observed volumes on Lake Road and Bayswater Avenue.

Table 2-2: Surveyed Traffic Volumes

Road	Direction	AM Peak	PM Peak
Lake Road (south of Bayswater Road)	Northbound	591	619
	Southbound	949	978
	Both	1,540	1,597
Bayswater Avenue (west of Lake Road)	Eastbound	294	291
	Westbound	160	245
	Both	454	536

The surveyed traffic counts are slightly lower than, but still comparable (for the purposes of this transportation assessment) to those recorded in the Auckland Transport database.

The traffic volumes observed and reported are broadly typical of those expected for the types and functional classifications of the roads observed.

2.6 Road Safety

A search of road safety records has been undertaken using the New Zealand Transport Agency Crash Analysis System for the full five-year period from 2015 to 2019, and all available 2020 records. The search area extends along the Sir Peter Blake Parade to the roundabout, and along Bayswater Avenue to its intersection with Lake Road and Williamson Avenue.

Over the study period and area, 35 crashes were recorded on Bayswater Avenue, where 25 of those crashes occurred at the Bayswater Avenue / Lake Road / Williamson Avenue intersection.

The crashes along Bayswater Avenue are summarised below:

- Seven crashes involved a vehicle hitting a parked vehicle on Bayswater Avenue.
- One crash involved the driver failing to notice another party from the other direction while turning right onto a road, the driver did not stop at a stop sign.
- One crash involved a cyclist hitting a vehicle from the same direction of travel.
- One crash was due to driver losing control and going off the road.

The crashes at the Bayswater Avenue / Lake Road / Williamson Avenue intersection are summarised below:

- Ten crashes were due to failing to give way.
- Three crashes involved a vehicle crashing into a parked vehicle.
- Three crashes due to incorrect merging or changing lanes.
- Two crashes were related to losing control of the vehicle.
- Five crashes were related to miscellaneous reasons, such as head-on crashes, rear end crashes or not checking/noticing a vehicle behind.

Table 2-3 summarises the data of the injuries of crashes in the study area.

Table 2-3: Summary of injury types of crashes

Area	Non-Injury	Minor Injury	Severe Injury	Fatal	Total
Along Bayswater Avenue	3	6	1	0	10
Intersection of Bayswater Avenue / Lake Road / Williamson Avenue	21	4	0	0	25
Total	24	10	1	0	35

One minor injury involved a vehicle and a cyclist travelling in the same direction and was attributed to in the crash record as the vehicle driver not noticing the cyclist. Another minor injury crash (which included four people) was due to a vehicle turning right colliding with a cyclist due the vehicle failing to see the cyclist and not giving way at the priority-controlled merge point. Both injury crashes occurred on the Bayswater Avenue stretch.

This existing crash history does not indicate the presence of any inherent specific or general safety issues with the adjacent road network. Due to the relatively small increase in traffic associated with the proposed development, it is not expected that the existing safety record for this area will be exacerbated to any degree.

3. Proposal

The Bayswater Maritime Precinct proposed by Bayswater Marina Holdings Ltd is a new mixed-use development at 21 Sir Peter Blake Parade, Bayswater, Auckland. The proposed layout by PB&A Architects includes three internal precincts (referred to as the North, Central and South precincts). These precincts collectively include 94 terrace houses with internal garages and three apartment buildings, consisting of 9 apartment units per building (27 units overall), with residential parking spaces in the underground basements.

Additionally, 342 exterior parking spaces are provided within the main site, and 20 parallel parking spaces for cars with trailers along Sir Peter Blake Parade are proposed for berth holders and Marina visitors.

Dedicated pedestrian routes proposed within the development include a boardwalk along the coastline and a network of footways and shared surfaces throughout the development. The total landscaping area is to be approximately 7,750 m². The existing and proposed layout of the development is shown in

Appendix A.

Sir Peter Blake Parade is to be realigned along the eastern boundary of the site, with roads connecting perpendicularly west towards another road that is parallel to the Parade. Right-angled, angled, and on-street parking will be provided on the outskirts of the Precinct for parking accessibility for the public accessing the ferry or the piers.

4. Access

4.1 Site Access

The majority of trips associated with the development site will be accessed by Sir Peter Blake Parade via movements originating on Lake Road (southbound), with vehicles turning right at the Bayswater Avenue / Lake Road / Williamson Avenue intersection and travelling along Bayswater Avenue westbound towards the site.

The full layout of the development area indicating the intended vehicular circulation within the site is shown in **Appendix A**. Sir Peter Blake Parade will connect to North Lane at the northern end of Sir Peter Blake Parade, Link Street in the centre, and Cross Street in the southern end.

Link Street and Cross Street are short two-way, two lane streets running at right angles from Sir Peter Blake Parade in an east-west direction, where they connect with South Street; another north-south running street parallel to Sir Peter Blake Parade. South Street joins with North Lane at the northern end and extends in a southerly direction along the peninsula to a cul-de-sac end/turn around area.

North Lane is a one-way road, only allowing for north-easterly movements from its intersection with South Street and Link Street. South Street is a two-way, two-lane road from the cul-de-sac end to its intersection with Cross Street.

4.2 Internal Precinct and Residential Access

Residential vehicles will access their garages (for terrace houses) and the basement car parks (for apartments) through the internal vehicular driveways (mews) available within each of the Precincts.

The North Precinct has four accesses (vehicle crossings); one connecting to Sir Peter Blake Parade, one connecting to North Lane and two connecting to Link Street with sufficient space within the precinct for circulation. The vehicle crossings measurements are as follows:

- Vehicle crossing connected to Sir Peter Blake Parade: 6.9m wide.
- Vehicle crossing connected to North Lane: 6.4m wide.
- Vehicle crossings connected to Link Street: 6.7m wide (eastern) and 7.0m wide (western).

The Central Precinct has three vehicle crossings, two connecting to Link Street and one connecting to Cross Street in the south. Internal circulation is also possible within this parking area. The vehicle crossings measurements are as follows:

- Vehicle crossing connected to Cross Street: 7.0m wide.
- Vehicle crossings connected to Link Street: 7.0m wide (western) and 3.8m wide (eastern, exit-only).

The South Precinct has one vehicle crossing connecting to Cross Street. Internal circulation is possible within this parking area. This vehicle crossing is 6.8m wide.

The Auckland Unitary Plan specifies that where an access serves 10 or more parking spaces, its vehicle crossing width is required to be between 5.5m (two-way) and 6.0m (two-way); while a one-way access should have a minimum width of 3.0m and a maximum width of 3.5m. The minimum formed access width is required to be 5.5m, however it permitted to be narrowed to 2.75m if there are clear sight lines along the entire access and passing bays at 50m intervals are provided.

The vehicle crossings measurements above exceed the maximum allowable specified in the applicable Unitary Plan standards and therefore require specific consideration as a restricted discretionary matter. The proposed access widths are considered appropriate for the development, primarily because they mostly form part of the physically required manoeuvring space for vehicles accessing and egressing parking spaces. As these accesses are considered low volume driveways, the extra access widths are not expected to impede the safety of pedestrians nor the function of the driveways themselves, being the outcomes sought to be achieved by the standard.

The width of formed vehicle accesses in the North, Central and South Precincts vary between 4.0m and 9.0m. Sufficient sight lines and passing opportunities are available within these areas.

Vehicle tracking analysis is shown in **Appendix B** to show the feasibility of the internal accesses and vehicle crossings.

A review of the proposed gradients for the accesses within the precinct has been undertaken based on the information in the Proposed Rooding and Road Long sections plans by Aireys. The proposed gradients generally meet the Unitary Plan standards. One exception is the proposed gradient of Link Street where it adjoins Sir Peter Blake Parade, which exceeds the Unitary Plan standard by a 0.59%.¹ This is noted as a minor issue which would have no practical effect on safety or effectiveness of the kink. In any event, this minor issue will be resolved at detailed design stage to satisfy the Unitary Plan standard.

5. Parking

5.1 Parking Requirements

The Unitary Plan minimum parking requirements for the site are outlined below in **Table 5-1**. No maximum parking rates apply for this site.

Table 5-1: Unitary Plan Minimum Parking Requirements

Unitary Plan Activity		Minimum Rate	Proposed Activity Size	Minimum Requirement
Description	Code			
Residential	T46	1 per dwelling	121 dwellings (94 terrace houses + 27 apartments)	121 parking spaces
Commercial Activities (including retail, offices, marina offices, and other commercial services)	T54	1 per 25sqm GFA	645.77sqm	26 parking spaces.
Marinas (including Marina Facilities)	I504.4.1a)	0.5 per berth provided	418 berths	209 parking spaces
Car and trailer	I504.4.1b)	20 car and boat trailer spaces provided		20 parking spaces
Loading Space (all other activities, including residential and commercial activities)	T112-T115	Greater than 5,000sqm up to 20,000sqm: 1 loading space required	7,600sqm	1 loading required

The proposed development provides the minimum parking spaces required on site and therefore complies with the Unitary Plan. The exact provisions are highlighted in Section 5.3.

While no dedicated loading space is provided for the residential and office activities, it is noted that the internal roads within the Precinct have been designed to accommodate larger vehicles that may occasionally access the site, such as rubbish collection and emergency vehicles.

¹ Unitary Plan E27.6.4.4 (3) notes a maximum gradient no steeper than 5 per cent for vehicle access where it adjoins the road. Road Longsection Sheet 3 (Dwg no 307) by Aireys shows a gradient of -5.59% between CH 11 and 22 of Link Street.

5.2 Car Parking Layout

5.2.1 Angled Parking Space

Parking spaces along the waterfront on North Lane and the northern side of South Street are provided as 60-degree angled parking spaces. The parking spaces are 2.5m wide, 5.2m deep, and accessed off a one-way 4.5m-wide aisle operating south to north.

Parking spaces in the middle of the Central Precinct are also provided as 60-degree angled parking spaces. The spaces are 2.5m wide, 5.2m deep, with aisle widths providing for manoeuvring space ranging from 6.3m to 7.0m.

5.2.2 Perpendicular Parking Spaces

Parking spaces on South Street are 90-degree parking spaces that are 2.5m wide and 5.0m deep, with access aisle width of 6.7m.

Parking spaces on Cross Street are 90-degree parking spaces that are 2.5m wide and 5.0m deep, with access aisle width of 7.5m.

Parking spaces in the middle of the South Precinct are 2.5m wide and 5.0m deep, with varying manoeuvring space of no lesser than 6.7m. The width of aisle opposite the apartment building in the South Precinct is 4m, which is sufficient for one-way traffic, and is not in the direct path of parking manoeuvre.

The parking spaces are typically 100mm wider than existing parking spaces, therefore providing more space for the car park users and improving the ease and safety of access.

All parking space dimensions comply with the Unitary Plan section E27.6.3.1 parking design standard. Comprehensive parking manoeuvre tracking has been undertaken, and the tracking diagrams are included in **Appendix B**.

5.2.3 Interface with the Auckland Council Carpark

At the time of writing this Transport Assessment, Auckland Transport is in the process of developing a concept plan for a park & sail and bus terminal, east of the proposed Bayswater Maritime Precinct. The park & sail will provide access to the Bayswater Ferry Terminal.

A draft preliminary design plan from Auckland Transport shows an idea of potential layout for the proposed park & sail site. Continuous liaison is on-going between Auckland Transport and Bayswater Marina Holdings Ltd to ensure appropriate tie-in between the Bayswater Maritime Precinct site and the park & sail site. Once the park & sail design is advanced and committed by Auckland Transport, any required adjustment(s) to the eastern boundary of the Precinct can be assessed. It is anticipated that the adjustment(s), if necessary, would be minor in nature and able to be accommodated within the final detailed layout of the Precinct without impacting on its operation and compliance with the Unitary Plan.

5.3 Parking Provision

5.3.1 Car Parking

The parking provision for residential activities in the Precinct is in line with the requirements of the Unitary Plan.

For each terrace house, two car park spaces will be provided in an internal garage unit. With a total of 94 terrace housings over North, Central and South Precincts, this means a total of 188 car parking spaces will be provided. For apartment buildings, the car parks will be underground and with provision of one car parking space per apartment unit. This will equate to a total of 27 car parking spaces provided for the 27 apartment units. Providing residential parking internally within each terrace unit and apartment building contributes positively to the provision of safe and effective pedestrian connectivity and a range of walking options within the Precinct, including to the ferry terminal and the boardwalk.

There are also up to 32 spaces provided for visitors to the Precinct, which is considered to be sufficient for the marina offices as well as for café and marine retail customers who will be accessing the site from time to time. These 32 visitor spaces are highlighted in green in **Appendix C**.

There are 418 berths in the Bayswater Marina Precinct. The Unitary Plan states that for the Bayswater Marina Precinct, a minimum of 0.5 parking spaces per berth is required to be provided for the site. The minimum requirement is therefore 209 spaces, and the proposed layout complies with this as it will maintain the existing provision of 285 car parking spaces and some loading zones for berth holders. These are indicated by the orange spaces in **Appendix C**.

A total of 20 car and trailer parking spaces will be provided within the development to comply with the requirements of the Unitary Plan precinct plan I540. These are the blue spaces in **Appendix C**. These parking spaces are provided in the following arrangements and locations:

- 11 parallel spaces along Sir Peter Blake Parade Extension. The spaces have a width of 2.5m and a depth of 12.0m with access aisle width of 6.0m.
- 5 parallel and angled spaces within the North Precinct. Four of these spaces have a width of 2.5m and a depth of 12.0m. The remaining space has a width of 2.5m and a depth of 8.0m, which fits a shorter trailer.
- 3 parallel spaces within the Central Precinct. Two of these spaces have a width of 2.5m and a depth of 12.0m, while the remaining space has a width of 2.5m and a depth of 13.0m.
- 1 parallel space at the southwest corner of Cross Street, adjacent to the boat ramp. This space has a width of 2.5m and a depth 13.0m.

Car and trailer parking space dimensions are not specified in the Unitary Plan, but the feasibility of the proposed layout has been tested using swept path analysis and is considered adequate for the vehicles that are going to use it and found to be satisfactory.

It is noted that the majority of car and trailer parking users are regular licensed users who will likely be familiar with the layout of the site. Trailer count surveys were undertaken at the site daily throughout a summer period between December 2017 to February 2018 at 10am, 2pm and 6pm each day. The surveys showed that the average daily peak demand for trailer parking within the Marina was 13 spaces, which typically occurred on weekend mornings. The average demand in the weekdays was significantly lower, at only 2 to 3 spaces. Therefore, it is anticipated that on typical days, the car and trailer spaces within the site will not be fully occupied.

Overall, 215 residential parking spaces, 342 non-residential parking spaces (including visitors and berth holder parking and loading), and 20 car and trailer spaces are provided within the site. These provisions exceed the minimum requirements indicated in **Table 5-1**.

5.3.2 Bicycle Parking

The Unitary Plan requires residential developments of 20 or more dwellings to provide 1 visitor (short-stay) bicycle parking per 20 dwellings and 1 secure (long-stay) bicycle parking per dwelling without a dedicated garage. As the terrace housings will have internal garages in which bicycles can be stored, only the three apartment buildings will require bicycle parking.

The Unitary Plan requires 1 visitor bicycle parking and 9 secure bicycle parking be provided for each apartment building (3 visitor parking and 27 secure parking altogether). Dedicated secure bicycle parking will be provided in the basement parking areas to comply with the above requirement.

For commercial activities², the Unitary Plan requires 1 visitor parking for activity greater than 200sqm and 1 secure parking per 300sqm. Secure bicycle parking for the commercial activities will be provided on-site to meet the requirement.

² E27.6.2.5 T84 Offices

Visitor bicycle parking is provided at the southern end of the Precinct by the Ferry Terminal. These are highlighted pink in **Appendix C**.

5.3.3 Loading

The development does not specifically provide a dedicated loading zone for the activities within the Precinct, but it is noted that the internal roads within the Precinct have been designed to accommodate larger vehicles that may occasionally access the site, such as refuse and emergency vehicles.

Loading zones for berth holders' use will be maintained throughout the development, in accordance with the agreement between the Trustees Executors Limited (on behalf of the berth holders) and Bayswater Marina Holdings Limited as to the Alternative Parking Areas to be provided under the terms of the Lease between these parties.

6. Traffic Effects

6.1 Trip Generation and Distribution

Traffic expected to be generated by the activities at the site has been estimated using the New South Wales Roads and Maritime Services' *Guide to Traffic Generating Developments* produced by the Roads and Traffic Authority of New South Wales (**RTA Guide**), and also the Institute of Transportation Engineers' *Trip Generation Manual (ITE)*.

The RTA Guide provides peak hour traffic generation rates for terrace housing for up to two bedrooms, and three bedrooms or more. For terrace house dwellings with three bedrooms or more, 0.65 trips per unit are estimated to be generated. Daily vehicle trips are estimated to be 6.5 trips per dwelling.

The ITE contains rates for mid-rise multifamily housing for general urban/suburban settings. In the peak hour, this is estimated to be 0.44 trips per apartment unit. Daily vehicle trips are 4.4 trips per apartment unit.

The non-residential component of the Bayswater Maritime Precinct consists of marine retail and café(s). These retail components will primarily serve customers who are already accessing the area (such as the berth holders), living in the area (residents of the Precinct and their visitors), ferry commuters, or other local residents living in proximity to the Bayswater Maritime Precinct, who will likely travel on foot, bike, or scooter. Therefore, it can be assumed that the retail activity of the Precinct will not generate additional external vehicle trips into the Precinct.

The trips expected to be generated by the residential component of the development are based upon the number of units of terrace house dwellings and apartment units. With 94 terrace housing units and 27 apartment units proposed in the Precinct, this will generate a total of 73 trips during the peak hour and in the order of 730 trips on a daily basis.

However, given the site location and its good accessibility to public transport (ferry and bus services), it is considered that the development will generate less daily and peak hour trips than estimated above. For city-bound commuters, travel time from the Precinct in the AM peak by ferry is approximately 20 minutes, while by car the trip could take as long as 40 - 45 minutes. While there are some destinations that will be easier to reach by car, a significant proportion of commuting trips by Precinct residents in the peak periods is likely to be undertaken by public transport. In this way, the development at this location will support good transportation outcomes.

Although the Precinct does cater for multiple car households, there is no direct relationship between car parking spaces per household and commuter travel. In general, it is recognised that vehicles owned by residents will not necessarily be used for commuter travel but are often required for other non-commuting purposes (weekends, shopping, leisure, school drop-offs, etc). Social and recreational trips are a major component of domestic travel. Data from the 1997/98 NZ Travel Survey reveal that work-related trips (24%) and social and recreational trips (29%) made the highest contributions to the annual tally of kilometres travelled by vehicle drivers. By accommodating occupants who wish to park multiple cars, the Precinct will be able to attract people who would otherwise live elsewhere, potentially further away from public

transport network and therefore less likely to use public transport and consequently result in greater car use elsewhere in the network.

With consideration of the above matters, the trip rates and resulting peak hour trips above are considered appropriate if not on the conservative side.

6.2 Effects on Road Network

It is assumed that all private vehicle trips generated by the site will travel out of the development along Bayswater Avenue onto its intersection with Lake Road and Williamson Avenue.

An intersection modelling software called SIDRA INTERSECTION (**SIDRA**) was used to analyse the current and expected performances of the Bayswater Avenue / Lake Road / Williamson Avenue intersection. Parameters reported include degree of saturation (**DOS**), the 95th percentile queue length (95% Q) in metres (m), average delay in seconds per vehicle (s/veh), and level of service (**LOS**). Typically, DOS up to 0.85 represents sufficient capacity at an intersection during the peak hour. For the Level of service assessment LOS A and B are considered to represent an efficient operation and indicative of free-flow conditions; C is good; D is acceptable; and E and F are indicative of congestion. The queue length is compared with the lane length available to consider if any operational issues would arise due to the generated queuing exceeding the available lane lengths.

Two scenarios for each of the peak hour periods of weekday and weekend were modelled:

- A baseline model using existing traffic flows (from the June 2018 traffic survey); and
- A future scenario adding the proposed Bayswater Maritime Precinct development volumes to the baseline.

For the purpose of the modelling, no growth has been added to the background traffic as surveyed in June 2018. This is considered reasonable as there have not been no significant changes to the traffic demand in the area since the original survey and it has been assumed that background traffic will remain fairly static for the foreseeable future due to the zoning of the surrounding areas, which do not anticipate any significant increases in residential or commercial activity density. Refer to Appendix D for the zoning of the surrounding areas.

A summary of the SIDRA results is in the following **Table 6-2** and **Table 6-3**.

The full SIDRA results by lane for both the existing and proposed scenario are shown in the attached Appendix E.

Table 6-1: SIDRA Results for Existing Traffic Volume and Proposed for Weekday AM Peak

Approach	Movement	Reference Case				Proposed			
		DOS	Ave. Delay (s/veh)	LOS	95 % Q (m)	DOS	Ave. Delay (s/veh)	LOS	95 % Q (m)
Lake Road (Southern Leg)	Left	0.345	35	D	70	0.354	36	D	71
	Through	0.625	34	C	144	0.643	35	C	147
Williamson Avenue (East)	Left	0.004	21	C	0	0.004	23	C	1
	Through	0.304	56	E	3	0.272	54	D	20
	Right	0.304	61	E	3	0.272	59	E	20
Lake Road (Northern Leg)	Left	0.781	17	B	177	0.813	20	B	200
	Through	0.781	12	B	177	0.813	15	B	200
	Right	0.431	12	B	54	0.448	19	B	55
	Left	0.194	9	A	24	0.230	10	A	30

Bayswater Ave (West)	Through	0.757	62	E	53	0.786	62	E	64
	Right	0.757	67	E	53	0.786	66	E	64
Intersection		0.781	23	C		0.813	25	C	

Table 6-2: SIDRA Results for Existing Traffic Volume and Proposed for Weekday PM Peak

Approach	Movement	Reference Case				Proposed			
		DOS	Ave. Delay (s/veh)	LOS	95 % Q (m)	DOS	Ave. Delay (s/veh)	LOS	95 % Q (m)
Lake Road (Southern Leg)	Left	0.333	33	C	69	0.346	34	C	71
	Through	0.604	31	C	144	0.628	32	C	149
Williamson Avenue (East)	Left	0.069	21	C	8	0.071	23	C	8
	Through	0.415	57	E	27	0.412	56	E	29
	Right	0.415	62	E	27	0.412	61	E	29
Lake Road (Northern Leg)	Left	0.740	17	B	168	0.777	18	B	186
	Through	0.740	12	B	168	0.777	13	B	186
	Right	0.408	17	B	43	0.428	19	B	44
Bayswater Ave (West)	Left	0.202	9	A	25	0.220	10	A	28
	Through	0.746	62	E	50	0.763	62	E	54
	Right	0.746	67	E	50	0.763	67	E	54
Intersection		0.746	23	C		0.777	24	C	

Table 6-3: SIDRA Results for Existing Traffic Volume and Proposed for Weekend Peak Hour

Approach	Movement	Reference Case				Proposed			
		DOS	Ave. Delay (s/veh)	LOS	95 % Q (m)	DOS	Ave. Delay (s/veh)	LOS	95 % Q (m)
Lake Road (Southern Leg)	Left	0.313	34	C	63	0.325	35	D	65
	Through	0.568	32	C	129	0.590	33	C	133
Williamson Avenue (East)	Left	0.055	17	B	6	0.057	19	B	7
	Through	0.465	56	E	33	0.460	54	D	38
	Right	0.465	61	E	33	0.460	59	E	38
Lake Road (Northern Leg)	Left	0.668	17	B	140	0.710	18	B	158
	Through	0.668	12	B	140	0.710	14	B	158
	Right	0.368	17	B	44	0.391	19	B	45
Bayswater Ave (West)	Left	0.240	9	A	29	0.285	9	A	37
	Through	0.664	58	E	50	0.686	58	E	57
	Right	0.664	63	E	50	0.686	62	E	57

Intersection	0.668	23	C		0.710	24	C	
---------------------	--------------	-----------	----------	--	--------------	-----------	----------	--

The modelling indicates that there will only be minimal changes to the overall Bayswater Avenue / Lake Road / Williamson Avenue intersection and the performance of individual intersection legs with the addition of the proposed development traffic will remain within acceptable limits. Overall, there is no significant increase in terms of either delays or queue length at the intersection. The highest increase in queue length is in the order of 20m at the Lake Road northern leg for the shared left and through lane, which is equivalent to approximately three to four car lengths. The LOS does not alter from the current reference case scenario in any of the new scenarios. It is noted that the development will result in approximately 70-80 additional trips through the intersection which forms a total of 4-5% of the total traffic passing the intersection during the peak hours.

Similarly, with respect to Lake Road, the level of additional peak hour trips as discussed above is considered marginal. Lake Road, as discussed in Section 2.2, is classified as arterial road and therefore its function is to cater for higher levels of through traffic movements between the suburbs and the wider Auckland region. The predicted additional trips resulting from the development are approximately 5% of the normal levels of peak hour traffic as noted in Section 2.5 and therefore is not considered to result in any noticeable difference in the normal operation and performance of the corridor.

Overall, it is considered that the effect of the proposed development on the overall performance of the surrounding roading network will be acceptable from the perspective of the operation of this intersection and the wider Lake Road arterial route.

7. Construction Traffic Management Plan

It is standard practice that a Construction Traffic Management Plan (CTMP) to outline how the effects of construction, including delivery of materials, will be managed and mitigated will be required as part of any approvals for the development. The CTMP should include the following:

- Construction dates and hours of operation including any specific non-working hours for traffic congestion, noise reasons, and other key elements aligned with normally accepted construction hours in the Auckland region.
- Truck route diagrams both internal to the site and externally on the surrounding road network.
- Temporary traffic management signage/details for both pedestrians and vehicles to appropriately manage the interaction of these existing road users with heavy construction traffic.
- Details of site vehicle access/egress over the entire construction period, noting that all egress points should be positioned so that they achieve appropriate sight distance as per the RTS6 guidelines.

Specifically, the CTMP will need to include details of the following matters in relation to the operation of public transport services:

- Details of temporary relocation of the existing bus stop by the boat ramp – subject to further discussions with AT.
- Details of how safe and appropriate pedestrian access between the Ferry Terminal, Park and Ride, and bus stop (temporary or permanent) will be maintained.

Based on experience with the construction planning and traffic management associated with similar developments, and bearing in mind the available capacity within the existing road network, with an appropriate CTMP in place and the above measures implemented, it is considered that the effects of construction activities can be managed to ensure an appropriately low level of construction traffic effects. Of note, the construction activities are temporary and with appropriate measures in place, will be able to be controlled. The likely construction effects are therefore considered to be acceptable from a transportation perspective.

An indicative CTMP structure is included as Appendix F. This will eventually be tailored to the specific construction staging and activities in the Precinct and approved by Auckland Transport.

8. Auckland Unitary Plan Assessments

8.1 Statutory Assessment

The proposal will enable a development of 121 dwellings (94 terrace housings and 27 apartment dwellings).

As such, according to the Unitary Plan Table E27.4.1 (A3) any activity or subdivision which exceeds trip generation standards set out in Standard E27.6.1 requires **consent for a restricted discretionary activity**. The proposal exceeds the threshold set out in standard E27.6.1(1)(c), the threshold being any subdivision which has the capacity to accommodate more than 100 dwellings. The proposal is for 121 dwellings.

Assessment against the relevant criteria for a restricted discretionary activity, according to the Unitary Plan Standard E27.8.2(3), is provided in **Table 8-1**. Assessment of the proposal against other key relevant transport-related standards of the Unitary Plan is detailed in **Table 8-2**.

The assessments demonstrate that the proposal meets the criteria for a restricted discretionary activity consent.

Table 8-1: Assessment against E27.8.2(3) Criteria for Exceeding Trip Generation Thresholds

E27.8.2(3) Criteria: For any activity or subdivision which exceeds the trip generation thresholds under Standard E27.6.1	Assessments
a) The effects on the function and the safe and efficient operation of the transport network including pedestrian movement, particularly at peak traffic times;	<p>The predicted number of additional vehicle trips generated in peak hours will not have a noticeable impact on the safety and operation of the surrounding public road network, and in particular the change in operation performance of the intersection of Bayswater Avenue and Lake Road will be negligible. Detailed traffic effects assessment is provided Section 4 and Section 6.</p> <p>Well-connected footpaths are provided within the Precinct, including through all vehicle crossings, as well as to connect with the AT's Ferry Terminal and Bus Stop adjacent to the Precinct, and to existing footpath on Sir Peter Blake Parade.</p>
b) The implementation of mitigation measures proposed to address adverse effects which may include measures such as travel planning, providing alternatives to private vehicle trips including accessibility to public transport, staging development, or contributing to improvements to the local transport network;	<p>The site location and internal network offers good accessibility to public transport (ferry and bus services). It is expected that a significant proportion of commuting trips by Precinct residents in the peak periods is likely to be undertaken by public transport. Continuous footpath network and bicycle parking are provided within the Precinct which will encourage active travel for the various activities within the Precinct.</p>
c) The trip characteristics of the proposed activity on the site.	<p>The Precinct will generate a combination of non-residential and residential trips. The non-residential component consists of various commercial activities; such as retail, offices and other commercial services, which will primarily serve customers that are already accessing the area (such as berth holders, Precinct and local residents, and commuters).</p>

	The residential component will generate commuting trips at peak periods, however as noted above, the public transport mode share is expected to be high.
--	--

Table 8-2: Statutory Assessment

Criteria		Compliance	Comments
E27.6.2(1) The number of parking spaces must meet the minimum rates and not exceed the maximum rates specified which apply to the zone specified in Table E27.6.2.4	Residential (All other areas) – minimum 1 per dwelling and no maximum rate Commercial Activities – 1 per 25sqm GFA	Complies	See Section 5.3
E27.6.2(6) The activities specified in Table E27.6.2.5 must provide the minimum number of bicycle parking spaces specified	Residential (developments of 20 or more dwellings): 1 per 20 dwellings for visitor (short stay), and 1 per dwelling without a dedicated garage for secure (long stay) Commercial activities (offices): 1 visitor parking per activity greater than 200sqm and 1 secure parking per 300sqm.	Complies	Residential secure parking provided in internal garages and basement parking areas. Commercial activities will provide secure bicycle parking on-site. Visitor bicycle parking is provided at the southern end of the Precinct. See Section 5.3.2
E27.6.2(8) All activities must provide loading spaces as specified in Table E27.6.2.7	All other activities – Greater than 5000sqm up to 2000sqm: 1 loading space.	Does not comply	No dedicated loading zone is provided within the Precinct. See Section 8.1.1.
E27.6.3(1)(a) Every parking space must: a) comply with the minimum dimensions given in Table E27.6.3.1.1 and Figure E27.6.3.1.1 b) be located on the same site as the activity to which it relates c) not be used for any other purpose d) be kept clear and available at all times the activity is in operation	90 degrees (regular users): 2.5m wide, 5m deep and 6.7m manoeuvring space Angled (60 degrees): 2.5m wide, 5.2m deep and 4.1m manoeuvring space 0 degrees (parallel): 6m wide, 2.4m deep and 3.7m maneuvering space	Complies	See Section 5.2

Criteria		Compliance	Comments
g) not to be sold or leased separately from the activity for which is provides parking as an accessory activity unless a resource consent is granted to an alternative arrangement such as shared parking or off-site parking			
E27.6.3.3(1) Every parking space must have driveways and aisles for entry and exit of vehicles to and from the road, and for vehicle manoeuvring within the site. Access and manoeuvring areas must accommodate the 85 percentile car tracking curves in Figure E27.6.3.3.1		Complies	See Section 4
E27.6.3.4(1) Sufficient space must be provided on the site so vehicles do not need to reverse off the site or onto or off the road from any site where the following apply:	a) Four or more parking spaces are served by a single access	Complies	
E27.6.3.6(3) The gradient for the surface of any parking space must not exceed:	a) 1 in 20 in any direction for other spaces	Complies	
E27.6.3.6(4) The gradient for manoeuvring area must not exceed 1 in 8 (12.5%).		Complies	
E27.6.4.2(1) The maximum number of vehicle crossings permitted for any site and separation distance between crossings is specified in Table E27.6.4.2.1 .	1 per 25m frontage or part thereof, minimum 2m separation from vehicle crossings servicing adjacent sites provided that two crossings on adjacent sites can be combined where the combined crossings do not exceed a total width of 6m at the property boundary, no minimum separation distance will apply.	Complies	

Criteria		Compliance	Comments
E27.6.4.2(2) The width of a vehicle crossing(s) must meet the minimum width and not exceed the maximum width as specified in Table E27.6.4.3.2.	Two-way movement: minimum width of crossing at site boundary is 5.5m, maximum width of crossing at site boundary is 6m One-way movement: minimum width of crossing at site boundary is 3.0m, maximum width of crossing at site boundary is 3.5m	Does not comply	Vehicle crossings in the Precinct are wider the maximum widths. See Section 8.1.2.
E27.6.4.3(1)(b) Every on-site parking and loading space must have vehicle access from a road, with the vehicle access complying with the standards for width.	Minimum formed access width to be 5.5m. The formed width is permitted to be narrowed to 2.75m if there are clear sight lines along the entire access and passing bays at 50m intervals are provided.	Complies	See Section 4.
E27.6.4.4(1) Gradient of vehicle access must not be steeper than specified in Table E27.6.4.4.1.	Maximum gradient for vehicle access used by residential activities is 1 in 5 (20%) or used by heavy vehicles is 1 in 8 (12.5%).	Will comply	

The transportation elements of the development that do not meet the Unitary Plan standards, as identified above, are discussed below.

8.1.1 Loading Spaces

Standard E27.6.2.8 specifies that “**all activities must provide loading spaces as specified in Table E27.6.2.7**”.

Table E27.6.2.7 specifies that for “all other activities greater than 5000sqm up to 20000sm, one loading space need to be provided. The Precinct does not provide any dedicated loading zone and therefore does not comply with this standard. Assessment against relevant restricted discretionary criteria on this matter, in accordance with E27.8.2(7) is provided in Table 8-3 below.

Table 8-3: Assessment against E27.8.2(7) Criteria for Loading Spaces

E27.8.2(7) Criteria: For any activity or development which provides fewer than the minimum number of loading spaces under Standard E27.6.2(8):	Assessments
d) Effects of the loading arrangements proposed for the site on the safe and efficient operation of adjacent transport network	The Precinct does not provide a dedicated loading space within the site. The internal roads within the Precinct have been designed to accommodate larger vehicles that may occasionally access the site, such as refuse and emergency vehicles. Vehicle tracking has been undertaken to demonstrate how the movements within the Precinct can operate safely and efficiently.

E27.8.2(7) Criteria: For any activity or development which provides fewer than the minimum number of loading spaces under Standard E27.6.2(8):	Assessments
e) The specific business practice, operation or type of customer associated with the proposed activities	The loading space requirements relate to the residential and commercial activities (offices and retail) within the site.
f) The extent to which an accessible and adequate on-street loading space is available nearby or can be created while having regard to other demands for kerbside use of the road	As per assessment against criterion a) above.
g) The extent to which loading can be provided informally on site or on another site in the immediate vicinity	As per assessment against criterion a) above.
h) The extent to which the reduction in loading spaces will contribute to the efficient use of land and the growth and intensification provided for in this Pan	The no provision of loading space has contributed to a larger public open space area on site, which is supportive of the accessibility for active modes within the Precinct.

For the reasons above, it is considered that the proposal relating to the loading zone within the site is supportable from a traffic engineering perspective and should not preclude acceptance of the development.

8.1.2 Vehicle Crossing Width

Standard E27.6.4.2(2) specifies that *“the width of a vehicle crossing(s) must meet the minimum width and not exceed the maximum width as specified in Table E27.6.4.3.2”*.

Table E27.6.4.3.2 specifies that for two-way movement, the minimum width of crossing at site boundary is 5.5m and the maximum width is 6.0m; while for one-way movement, the minimum width is 3.0m and the maximum width is 3.5m.”

The vehicle crossings in the Precinct are wider than the maximum widths noted above from the Unitary Plan standard, with the width exceedance ranging from 0.4m to 1.0m. The locations of this occurrence are noted in Section 4.

Assessment against relevant restricted discretionary criteria on this matter, in accordance with E27.8.2(8) is provided in Table 8-4 below.

Table 8-4: Assessment against E27.8.2(8) Criteria for Access

E27.8.2(8) criteria: Any activity or development which infringes the standards for design of parking and loading areas or access under Standard E27.6.3, E27.6.4.2, E27.6.4.3, and E26.6.4	Assessments
<p>a) Effects on the safe and efficient operation of the adjacent transport network having regard to:</p> <ul style="list-style-type: none"> (i) The effect of the modification on visibility and safe sight distances (ii) Existing and future traffic conditions including speed, volume, type, current accident rate and the need for safe manoeuvring (iii) Existing pedestrian numbers, and estimated future pedestrian numbers having regard to the level of development provided for in this Plan (iv) Existing community or public infrastructure located in the adjoining road, such as bus stops, bus lanes, footpaths and cycleways 	<ul style="list-style-type: none"> (i) All vehicle crossings and vehicle accesses within the Precinct are generally located at a straight alignment which benefits the visibility on site. The extent of exceedance, as noted previously, is considered of little consequences to the visibility and safe sight distances on site. (ii) The vehicle accesses are considered low volume driveways, and the extra widths are not expected to impede the safety of pedestrians nor the function of the driveways themselves. The extra widths are required to accommodate manoeuvring movements for vehicles (including car and boat trailers) accessing and egressing the site. (iii) Pedestrian numbers are expected to increase due to the addition of residential and commercial activities within the Precinct. Well-connected footpaths are provided within the Precinct, including through all vehicle crossings, as well as to connect with the AT's Ferry Terminal and Bus Stop adjacent to the Precinct. (iv) As per assessment against criterion a)iii) above.
<p>b) Effects on pedestrian amenity or the amenity of the streetscape, having regard to:</p> <ul style="list-style-type: none"> (i) The effect of additional crossings or crossings which exceed the maximum width 	<p>As per the above assessment against criteria a).</p>
<p>c) The practicality and adequacy of access arrangements having regard to:</p> <ul style="list-style-type: none"> (i) Site limitation, configuration of buildings and activities, user requirements and operational requirements; 	<p>As per the above assessment against criteria a). The vehicle access and vehicle crossings have been designed to accommodate the safe and practical needs of the various vehicle types that are expected to use the accesses; including car and boat trailers,</p>

E27.8.2(8) criteria: Any activity or development which infringes the standards for design of parking and loading areas or access under Standard E27.6.3, E27.6.4.2, E27.6.4.3, and E26.6.4	Assessments
<p>(ii) The ability of the access to accommodate the nature and volume of traffic and vehicle types expected to use the access. This may include considering whether a wider vehicle crossing is required to:</p> <ul style="list-style-type: none"> • Comply with the tracking curve applicable to the largest vehicle anticipated to use the site regularly • Accommodate the traffic volumes anticipated to use the crossing, especially where it is desirable to separate left and right turn exit lanes. 	<p>refuse and emergency vehicles; as well pedestrian movements within the site.</p> <p>Vehicle tracking has been undertaken to demonstrate how the movements within the Precinct can operate safely and efficiently.</p>

For the reasons above, it is considered that the proposal relating to the vehicle access and vehicle crossings within the site is supportable from a traffic engineering perspective and should not preclude acceptance of the development.

8.2 1504 Bayswater Marina Precinct Assessment

The Unitary Plan has specific policies for the Bayswater Marina Precinct. Compliance of the proposal with those policies is assessed in this section. The review of these policies is in **Table 8-5**:

Table 8-5: Review of I504 – Traffic Related Rules

Rule	Description	Compliance
I504.4.1	<p>Dwellings in Sub-precinct B subject to the following minimum provision being available for primary activity focus within Sub-precincts A and B:</p> <p>b) Marina berth parking at a ratio of no less than 0.5 spaces per berth</p> <p>c) 20 car and boat trailer parking spaces</p> <p>Note for (b) and (c): Approval may be given as a discretionary activity for these spaces to be shared with other non-residential activities.</p>	<p>b) complies: 418 berths would require 209 car parking spaces, the proposed layout maintains the existing provision of 285 car parking spaces as required by the Memorandum of Lease between the Trustees Executors Limited and the Bayswater Marina Holdings Limited.</p> <p>c) complies: Overall 20 car and boat trailer spaces provided on Sir Peter Blake Parade, Cross Street, and within the North and Central Precincts.</p>
I504.6.4	(1) An esplanade strip of no less than 15m in width must be provided at the time of any subdivision involving sub-precincts A or B.	Complies – 15m esplanade strip provided.

Rule	Description	Compliance
I504.8.2.4	<p>(a) the extent to which the proposal, including any additional vehicle movements, adversely affects the safe and efficient operation of the internal or adjacent road network, including the operation of public transport and the movement of pedestrians, cyclists and general traffic;</p> <p>(b) the extent to which the provision of parking ensures the amount of parking is adequate for the site and the proposal, and considers effects on alternative parking available in the area and access to the public transport network; and</p> <p>(c) the extent to which the generation of a need for parking or transport facilities is in conflict with the main marina use and is integrated with public transport.</p>	Complies.
I504.8.2.5	<p>(a) the extent to which the scale, design, management and operation of the parking facility and its access points adversely affects the safe and efficient operation of the transport network.</p> <p>(b) the extent to which the location, design and external appearance of the parking facility is:</p> <ul style="list-style-type: none"> • accessible, safe and secure for users with safe and attractive pedestrian connections within the parking building and area, and to adjacent public footpaths. • ensures that any buildings or structures are of similar or complementary scale to other buildings or structures existing or provided for in the surrounding area. • ensures that any buildings can be adapted for other uses if no longer required for parking purposes. In particular, the floor to ceiling height of a parking building at street level should be capable of conversion to other activities provided for in the zone. <p>(c) the extent to which the parking facility is compatible with surrounding activities. This includes the extent to which the design and operation of the</p>	<p>a) As far as reasonably possible parking is provided away from the main traffic and PT route.</p> <p>b) Pedestrian footways provided. All car parks for berth holders and marina visitors are provided outdoor and on street.</p> <p>c) Parking facilities support surrounding activities (visitors and marina users). Lighting design and noise assessment to be carried out.</p>

Rule	Description	Compliance
	facility is in accordance with the lighting and noise standards.	
I504.9.1	<p>b) the exact location and design of vehicle access and car parking (including any proposed shared parking) and:</p> <p>(i) an assessment of traffic generation having regard to the safe and efficient operation of the internal and adjacent road network, including the operation of public transport and the movement of pedestrians, cyclists and general traffic;</p> <p>(ii) an assessment of parking, confirming the amount of parking is adequate for the application area and the proposal, including consideration of effects on alternative parking available in the area and access to the public transport network.</p>	Complies
I504.9.1	(c) identification of the main pedestrian routes that provide circulation around each sub-precinct area and between sub-precincts, showing how they are integrated with the coastal margin, public transport nodes and bus stops;	<p>Complies</p> <p>Boardwalk along the coastline and continuous footways around the sub-precincts, which provides connection to the interim and future ferry terminal and bus stop.</p>
I504.9.1	<p>(d) the exact location and design of proposed areas of:</p> <p>(ii) public pedestrian access to and along the coastal marine area;</p>	<p>Complies</p> <p>Boardwalk provided along the coastline.</p>
I504.9.1	(k) how the development provides or facilitates adequate transport connections, including connections to the surrounding road network;	<p>Complies – access off arterial road via Sir Peter Blake Parade and Bayswater Avenue and links to public transport are maintained.</p>

9. Conclusions

This Transportation Assessment has been prepared to assess the proposed Bayswater Maritime Precinct, at the Bayswater Marina in Auckland. Based on the detailed assessments and traffic modelling undertaken and reported on in this report, it is concluded from a transportation perspective that:

- The site is well located for access by all modes of transport, with well-connected ferry and bus routes in the near vicinity of the site.
- There are no inherent safety concerns associated with the existing site access points and surrounding public road network. The crashes recorded at the Bayswater Avenue / Lake Road / Williamson Avenue intersection were mostly typical crashes experienced at signalised intersections serving main arterial routes such as Lake Road.
- The predicted number of additional vehicle trips generated in peak hours will not have a noticeable impact on the safety and operation of the surrounding public road network, and in particular the change in operation performance of the intersection of Bayswater Avenue and Lake Road will be negligible.
- Overall, there are eight vehicle crossings providing access to the three internal Precincts: four in North Precinct, three in Central Precinct and one in South Precinct. All eight crossings exceed the maximum widths allowed by the Unitary Plan. However, this departure from the Unitary Plan standards is considered acceptable from a traffic engineering, safety and operation perspectives.
- The parking layout proposes a total of 215 residential spaces, 342 non-residential spaces, and 20 car and trailer spaces. The provision of parking spaces and the parking design generally complies with the Unitary Plan. While the loading space requirement is not met, provision for loading activity and larger vehicle movements has been considered in the design of the internal roads within the Precinct.

The proposed development is considered acceptable as intended and there are no safety or network capacity issues that could preclude the development from a transport engineering and planning perspective.

Stantec New Zealand

Appendix A Existing & Proposed Development Layout