378-390 Pacific Highway, Crows Nest

Planning Proposal

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Revision History

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Glossary

Acronym	Description
AGRD	Austroads Guide to Road Design
AGTM	Austroads Guide to Traffic Management
CC	Construction Certificate
Council	North Sydney Council
DA	Development Application
DCP	Development Control Plan
DoS	Degree of Saturation
DPE	Department of Planning and Environment
FSR	Floor space ratio
GFA	Gross Floor Area
HRV	Heavy Rigid Vehicle (as defined by AS2890.2:2018)
LEP	Local Environmental Plan
LGA	Local Government Area
LoS	Level of Service
MOD	Section 4.55 Modification (also referred as a S4.55)
MRV	Medium Rigid Vehicle (as defined by AS2890.2:2018)
NHVR	National Heavy Vehicle Regulator
OC	Occupation Certificate
RMS Guide	Transport for NSW (formerly Roads and Traffic Authority), Guide to Traffic Generating Developments, 2002
S4.55	Section 4.55 Modification (also referenced as MOD)
S96	Section 96 Modification (former process terminology for an S4.55)
SRV	Small Rigid Vehicle (as defined by AS2890.2:2018)
TDT 2013/04a	TfNSW Technical Direction, Guide to Traffic Generating Developments – Updated traffic surveys, August 2013
TfNSW	Transport for New South Wales
TIA	Transport Impact Assessment
TIS	Transport Impact Statement
veh/hr	Vehicle movements per hour (1 vehicle in & out = 2 movements)

1 Introduction

1.1 Overview

Ason Group has been engaged by Futuro No. 1 Pty Ltd to prepare a Transport Assessment (TA) supporting a Pre-Gateway Planning Proposal of a mixed-use development at 378-390 Pacific Highway, Crows Nest (the Site).

The Site is located within the North Sydney Council (LGA) and is therefore subject to that Council's controls.

This Planning Proposal seeks to amend the *North Sydney Local Environmental Plan 2013* (NSLEP) by way of the following:

- Amend the maximum building height to establish a new height control of RL 176
- Establish a maximum floor space ratio control of 7.5 : 1, comprising a non-residential floor space ratio control of 2 : 1 and a residential floor space ratio of 5.5 : 1.

The Planning Proposal seeks to unlock the potential of the Site to deliver a high-quality mixed-use development opposite the Crows Nest Metro Station in a location envisioned for increased density under the St Leonards / Crows Nest Plan 2036 (SLCN 2036 Plan).

The future redevelopment will create enhanced commercial floor space and a mix of residential dwellings in a strategically valuable location.

1.2 Site Context

The subject Site has a site area of 1,309 m^2 and is legally comprised of:

- Lot 1 DP 577 047,
- Lot 5 SEC 32 DP 4320
- Lot 1 DP 573 543,
- Lot 4 DP 663 560, and
- Lot 1 DP 177 051

It is located within land zoned as *B4 – Mixed Use* under the North Sydney Local Environmental Plan 2013 (NSLEP).

Surrounding developments include low-medium density residential to the west, heritage building to the south-east and the future Crows Nest Metro Station (currently a construction site).

Figure 1 shows the Site location relative to the surrounding context.

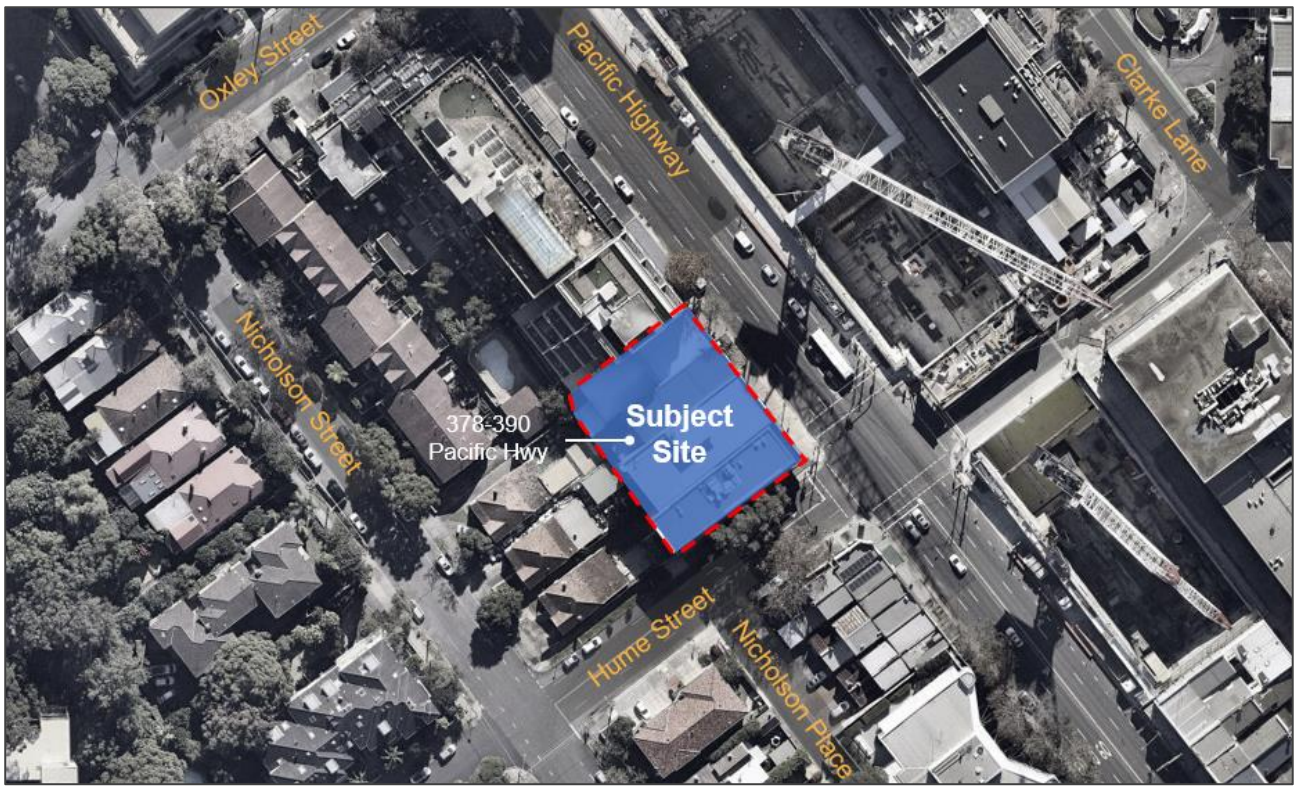


Figure 1: Site Location

1.3 The Proposal

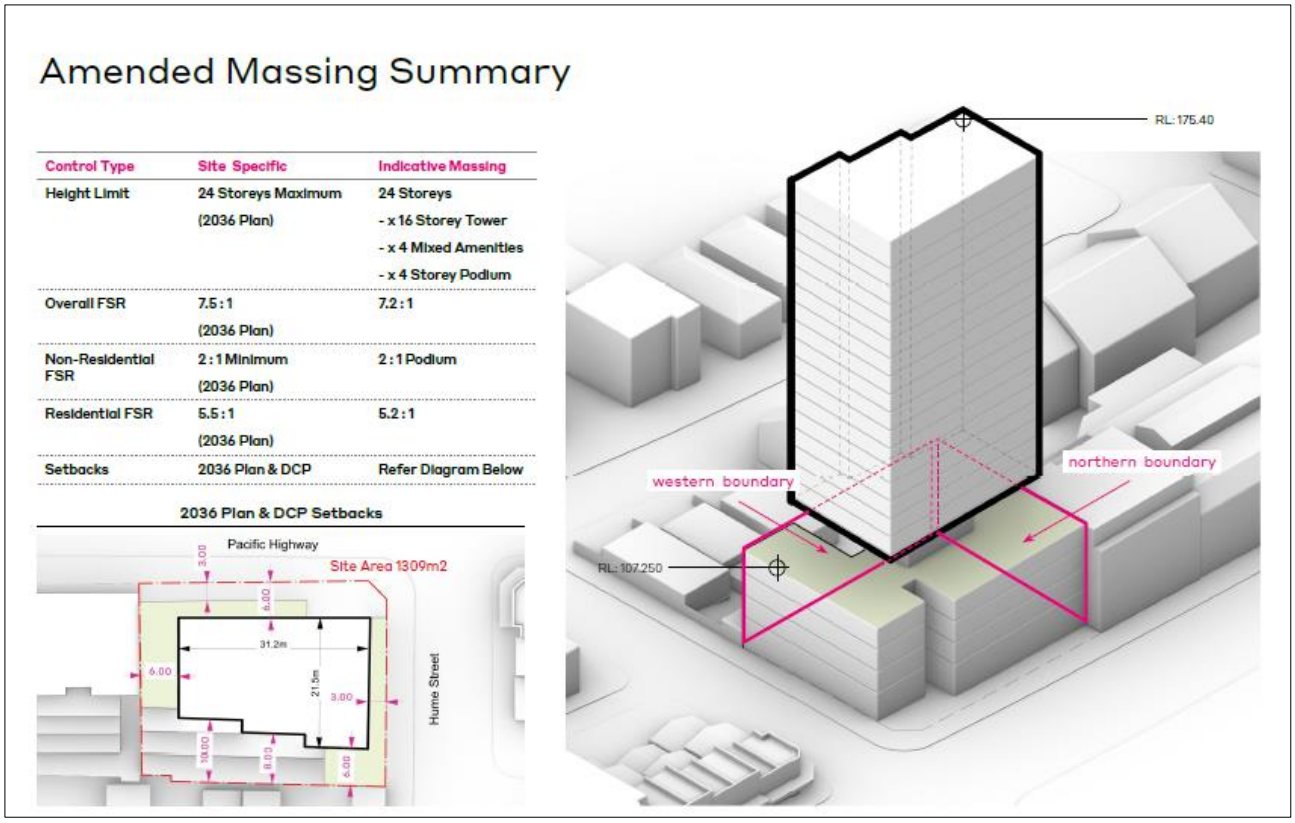
The Planning Proposal retains the B4 - Mixed Use Zoning for the subject Site, while amending the maximum building height and floor space ratio controls, as initially set out in the North Sydney LEP 2013 and subsequently the St Leonards Crows Nest 2036 Plan. Proposed changes are summarised as follows:

- Amend the maximum building height to establish a new height control of RL 176
- Establish a maximum floor space ratio control of 7.5 : 1, comprising a non-residential floor space ratio of 2:1 and residential floor space of 5.5 : 1.

To aid assessment of the above, a concept scheme has been developed by Woods Bagot which envisages:

- 16 floors of Residential on the subject site
- Four (4) floors of mixed residential amenities
- Four (4) storey commercial podium level on the subject site
- Residential: 72 dwellings on the subject site
- Commercial: 2,618 m^2 GFA on the subject site

It is noted that the non-residential component is located within a ground and podium level; consistent with the 2036 Plan (discussed further in following sections) such that the main change from a yield perspective is in relation to the number of residential units.



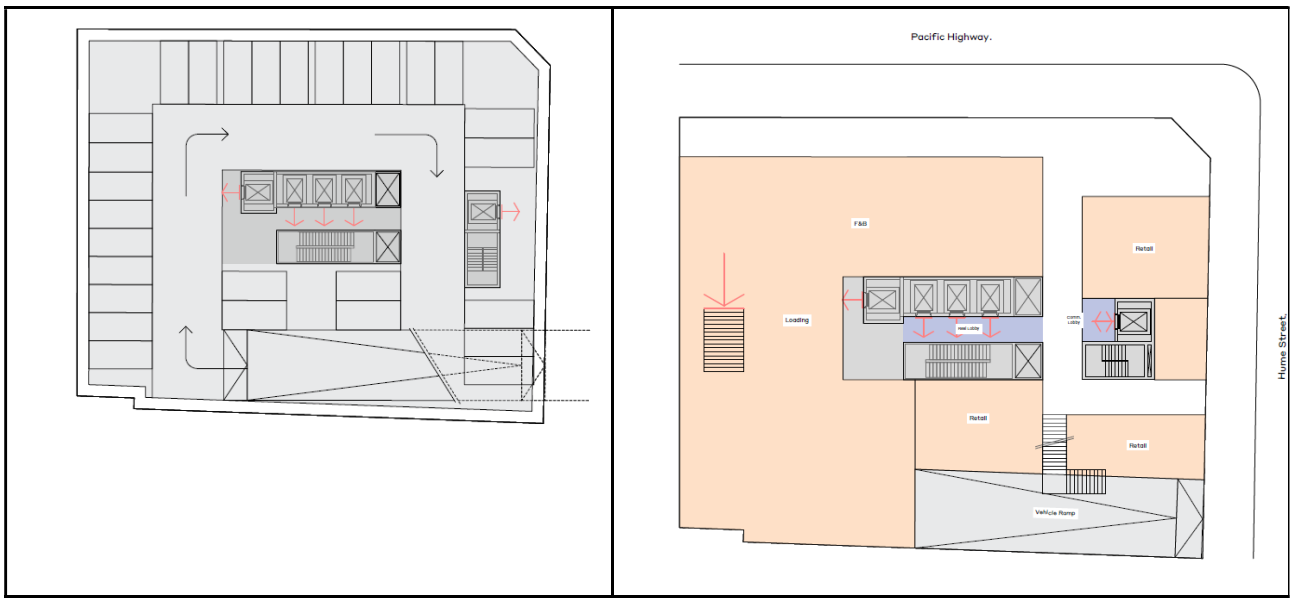


Figure 2: Indicative Concept Plan

The Planning Proposal also seeks to increase the pedestrian activation at the street level through the setback of the building envelop by 3 metres along Pacific Highway and widening to 5 metres at the corner of the Pacific Highway and Hume Street. It is envisaged that this will create space for pedestrian storage at the signalised intersection to facilitate the increased numbers of people walking to work.

In this regard, the impact this has on different user groups will be assessed and compared to the observed impact of the existing development. An impression of the pedestrian set back zone is shown in **Figure 3**.

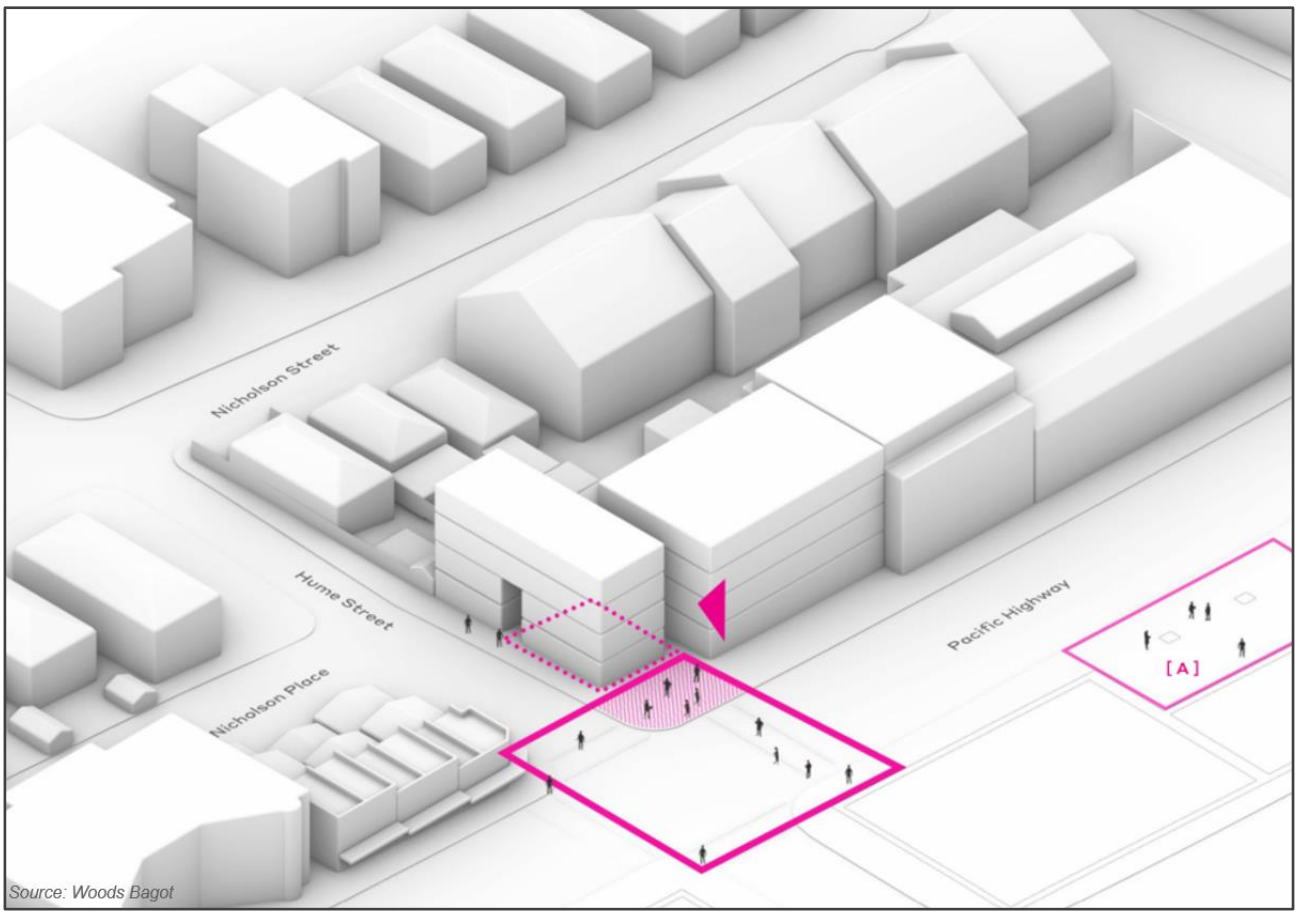


Figure 3: Pacific Highway & Hume Street corner activation

1.4 Key References

In preparing this TA, a series of key strategic, design and planning documents have informed the assessment of the traffic and transport related elements of the project. These documents include:

- North Sydney Local Environmental Plan 2013 (NS LEP)
- North Sydney Development Control Plan 2013 (NS DCP)
- Sydney Metro, Sydney Metro City & Southwest: Crows Nest Over Station Development Transport, Traffic & Pedestrian Access Report (OSD Report)
- Cardno, St Leonards and Crows Nest Station Precinct Traffic and Transport Study – Future Year Modelling Report, (SLCN Modelling Report)

This TA also references general access, traffic and parking guidelines, including:

- Roads and Maritime Services, Guide to Traffic Generating Developments (RMS Guide)

- RMS Guide to Traffic Generating Developments: Updated Traffic Surveys (RMS TDT2013/04a).
- Australian Standard 2890.1:2004 Parking Facilities – Off Street Car Parking (AS 2890.1:2004)
- Australian Standard 2890.2:2018 Parking Facilities – Off Street Commercial Vehicle Facilities (AS 2890.2:2018)

2 Existing Conditions

2.1 Existing Land Use & Access

Under the NS LEP, the Site is currently zoned *B4 – Mixed Use* and legally comprised of Lot 1 DP 577 047, Lot 5 SEC 32 DP 4320, Lot 1 DP 573 543, Lot 4 DP 663 560, and Lot 1 DP 177 051.

Existing developments on the Site consist of commercial developments ranging from 2 – 3 floors of some 3,200 m^2 GFA which is broadly consistent with the existing FSR of 2.5 : 1 on the subject site.

2.2 Existing Traffic Generation

With reference to the *RMS Guide to Traffic Generating Developments: Traffic Surveys Update TDT 2013/04a* (RMS TDT 2013/04a), the following peak hour traffic generation rate for Commercial land use has been adopted:

- AM Peak: 1.6 trips per 100 m^2 GFA
- PM Peak: 1.2 trips per 100 m^2 GFA

Application of the above rate to the existing GFA of the subject Site results in the following peak hour traffic generation:

- AM Peak: 51 trips
- PM Peak: 38 trips

It is acknowledged that these are Sydney average rates and the likely generation of the site is expected to be lower given the minimal amount of car parking spaces provided by the existing developments.

2.3 Road Hierarchy

The road hierarchy in the vicinity of the site is also shown in **Figure 4** below, with a description of key roads in the locality provided below.

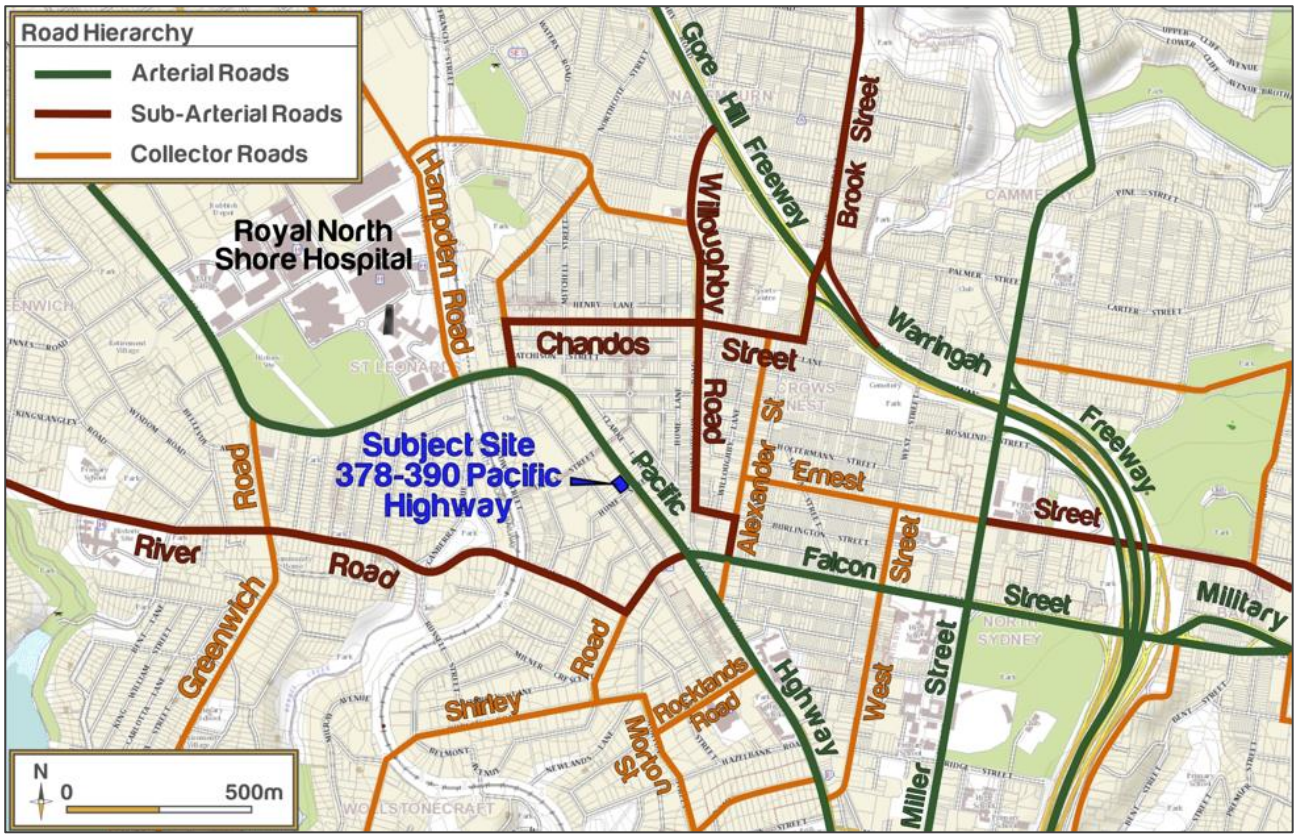


Figure 4: Road Hierarchy

2.3.1 Pacific Highway

Pacific Highway is a major arterial road fronting the north-east of the site that runs generally in a north-south direction between Sydney and Newcastle.

It provides access to one of the Lots of the existing development and carries 3 lanes of traffic in each direction within a divided carriageway separated by a raised median.

Pacific Highway has of width 18.0 m outside of the Site. Within vicinity of the Site, a signposted 60 km/h speed limit applies.

2.3.2 Hume Street

Hume Street is a local road located on the southern side of the site. It generally runs in a north-south direction servicing the surrounding residential developments and the Pacific Highway.

Access to the proposed development is to be to / from Hume Street where it provides 2 lanes of traffic in each direction separated by a solid continuous line within a divided carriageway of width 12.0 m outside of the Site.

Traffic lanes northbound include a left turn only and right turn only at the Pacific Highway / Hume Street intersection. The northbound approach left lane is signposted Bus Zone. Adjacent to this is a signposted 2P 10:00 am – 6:00 pm Monday to Friday and 8:30 am to 12:30 pm Saturday.

Signage parking controls on the left lane southbound include a No Parking 8:30 am to 6:00 pm Monday to Friday and 8:30 am to 12:30 pm Saturday 10 m from the south of the Pacific Highway / Hume Street intersection and No Stopping thereafter. A 50 km/h speed limit in the area applies.

2.3.3 Oxley Street

Oxley Street is a local road generally travelling parallel to Hume Street and in the north-west direction of the Site. It generally runs in a northeast-southwest direction servicing the surrounding residential developments to the Pacific Highway.

2.3.4 Nicholson Place

A local laneway to the south of the site that forms a priority-controlled T-junction with Hume Street adjacent to the corner of the site. It carries a single lane of traffic in a southern direction (away from the subject site) and provides rear lane access to properties fronting Pacific Highway.

2.4 Intersection Performance

The performance of the existing road network is largely dependent on the operating performance of key intersections, which are critical capacity control points on the road network.

TfNSW provides the following criteria for the assessment of intersection performance as outlined in **Table 1**

TABLE 1 INTERSECTION ASSESSMENT CRITERIA

Level of Service	Average Delay (sec)	Traffic Signals	Give way and stop sign
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode or major treatment

Reference is made to the *Sydney Metro Over Station Development (OSD) EIS Transport, Traffic and Pedestrian Assessment Report* (OSD Report) which provides an assessment of the transport network as a result of the Crows Nest OSD.

The OSD Report provides results of the existing intersection performance — as modelled in LinSig — which are shown in **Table 2**.

TABLE 2 PACIFIC HWY & HUME ST - EXISTING INTERSECTION PERFORMANCE

Peak Hour	Demand Flow	Delay	LOS
AM Peak	3,244	13 seconds	A
PM Peak	3,298	12 seconds	A

With regard for the above table, the existing performance of the critical intersection of the road network is performing with good operations and delays of less than 14 seconds in the morning and evening peak hours.

2.5 Public Transport Network

The Site is well serviced by public transport infrastructure. Existing key rail and bus services within accessibility of the Site is detailed below and shown in **Figure 5**.

2.5.1 Railway Services

According to the *Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area* December 2013 (IPT Guidelines), rail services influence the travel mode choices of areas within 800 metres walk (approximately 10 minutes) of a railway station.

In this regard, it is noteworthy that St Leonards Railway Station is located at approximately 700 metres walking distance to the northwest of the Site via the Pacific Highway. St Leonards Railway Station is serviced by a plethora of train services including services to Sydney CBD, Artarmon, Chatswood, Hornsby, Berowra, Epping, West Ryde, Rhodes, Gordon, Central Coast, Newcastle and other regional centres.

Peak hour train services and frequencies are summarised in **Table 3**.

TABLE 3 TRAIN FREQUENCIES AT ST LEONARDS RAILWAY STATION

Station - Line	To City	From City	Total
Berowra to City via Gordon			
Morning Peak Hour (8:00 am – 9:00 am)	20	20	40
Off Peak Hour	10	10	20
Afternoon Peak Hour (5:00 pm – 6:00 pm)	20	16	36
Hornsby to North Shore via City			
Morning Peak Hour (8:00 am – 9:00 am)	4	4	8
Off Peak Hour	4	3	7
Afternoon Peak Hour (5:00 pm – 6:00 pm)	4	4	8
Central Coast & Newcastle Line			
Morning Peak Hour (8:00 am – 9:00 am)	4	0	4
Off Peak Hour	0	0	0
Afternoon Peak Hour (5:00 pm – 6:00 pm)	0	4	4

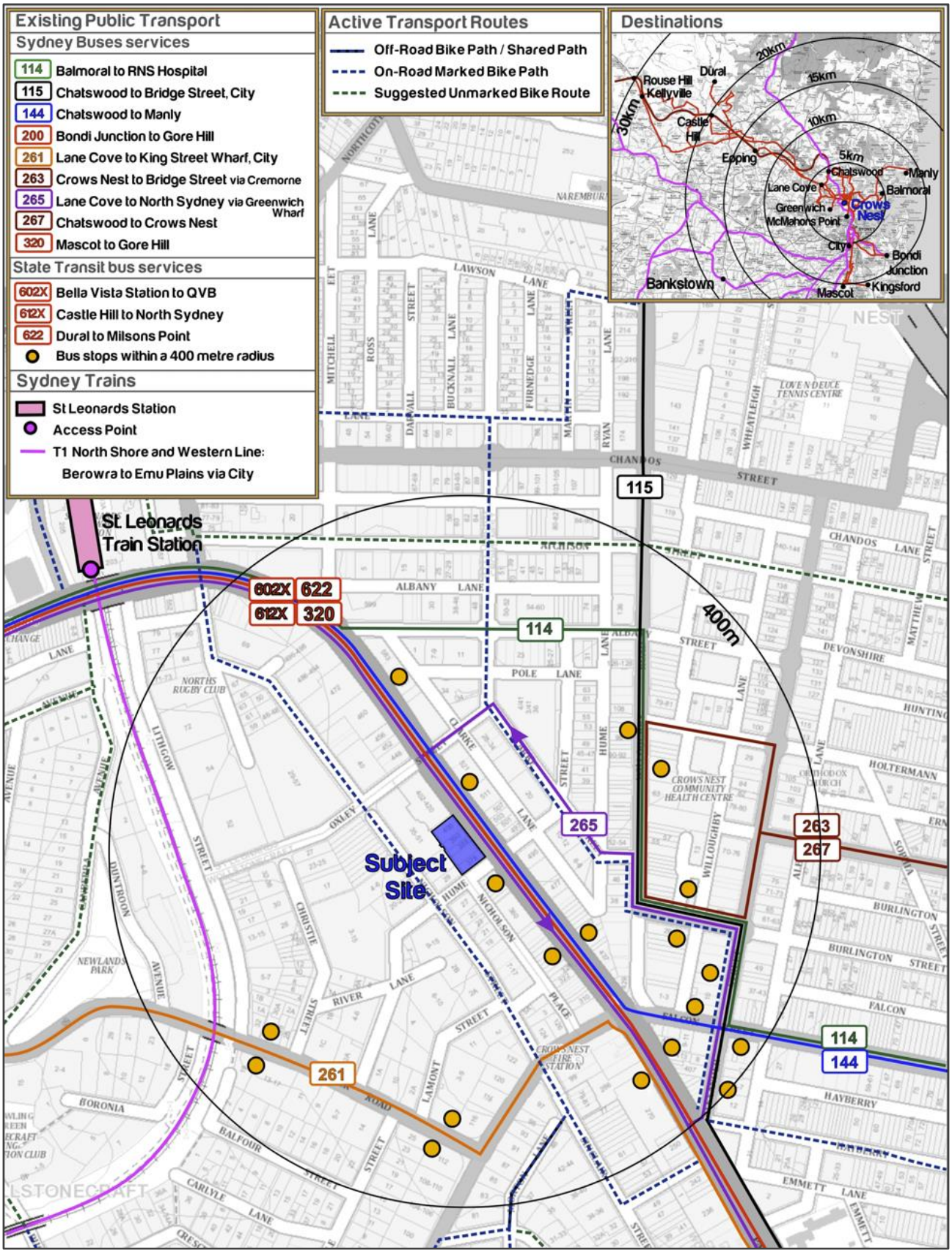


Figure 5: Existing Public and Active Transport Network

2.5.2 Bus Services

Having regard to the standard bus travel, the IPT Guidelines state that bus services influence the travel mode choices of sites within 400 metres (approximately 5 minutes' walk) of a bus stop.

The Site is well serviced by a wide selection of bus stops within 400 walking distance of the Site as shown in Figure 5. Existing bus services and frequencies are summarised in **Table 4.**

TABLE 4 BUS SERVICES

Route	Description	Stops	Frequency
114	Balmoral to Royal North Shore Hospital	Mosman, Cremorne, Neutral Bay, North Sydney, Crows Nest, St Leonards	AM Peak: 5 services PM Peak: 5 services Weekend Peak: 3 services
115	Chatswood to Bridge Street, City	Chatswood, North Willoughby, Willoughby, Naremburn, Crows Nest, Wollstonecraft, North Sydney	AM Peak: 6 services PM Peak: 6 services Weekend Peak: 3 services
144	Chatswood to Manly	Manly, Fairlight, Balgowlah, Clontarf, Seaforth, Mosman, Cremorne, Neutral Bay, North Sydney, Crows Nest, St Leonards, Greenwich, Artarmon, Greenwich, Chatswood	AM Peak: 6 services PM Peak: 7 services Weekend Peak: 5 services
200	Bondi Junction to Gore Hill	Bondi Junction, Woollahra, Edgecliff, Darlinghurst, Potts Point, Sydney, North Sydney, Wollstonecraft, Crows Nest, St Leonards, Artarmon	AM Peak: 3 services PM Peak: 4 services Weekend Peak: Nil
261	Lane Cove to King Street Wharf, City	Chatswood, Artarmon, Lane Cove, Northwood, Longueville, Lane Cove, Greenwich, St Leonards, Wollstonecraft, Crows Nest, North Sydney, Sydney	AM Peak: 2 services PM Peak: 2 services Weekend Peak: 1 service
263	Crow Nest to Bridge Street via Cremorne	Crows Nest, Cammeray, Cremorne, Neutral Bay, Kurraba Point, North Sydney, Sydney	AM Peak: 1 service PM Peak: 2 services Weekend Peak: 1 service
265	Lane Cove to North Sydney via Greenwich Wharf	Lane Cove, Greenwich, St Leonards, Crows Nest, Wollstonecraft, Waverton, McMahons Point, North Sydney	AM Peak: 2 services PM Peak: 1 service Weekend Peak: 1 service
267	Chatswood to Crows Nest	Chatswood, North Willoughby, Willoughby, Northbridge, Cammeray, Crows Nest	AM Peak: 2 services PM Peak: 2 services Weekend Peak: 1 service

320	Mascot to Gore Hill	Mascot, Alexandria, Beaconsfield, Zetland, Waterloo, Redfern, Surry Hills, Haymarket, Sydney, North Sydney, Waverton, Wollstonecraft, Crows Nest, St Leonards, Greenwich	AM Peak: 4 services PM Peak: 5 services Weekend Peak: 3 services
602X	Bella Vista Station to QVB	Bella Vista, Glenwood, Kings Langley, Seven Hills, Baulkham Hills, North Rocks, West Pennant Hills, Artarmon, St Leonards, Crows Nest, North Sydney	AM Peak: 5 services PM Peak: 5 services Weekend Peak: Nil
612X	Castle Hill to North Sydney	Castle Hill, Baulkham Hills, North Rocks, West Pennant Hills, Artarmon, St Leonards, Crows Nest, North Sydney	AM Peak: 9 services PM Peak: 6 services Weekend Peak: Nil
622	Dural to Milsons Point	Dural, Cherrybrook, West Pennant Hills, North Ryde, Lane Cove, Artarmon, St Leonards, Crows Nest, Lavender Bay, Milsons Point	AM Peak: 3 services PM Peak: 2 services Weekend Peak: Nil

Existing bus stops throughout Crows Nest are generally of good quality and provide a combination of shelter, seating, covered seating and service information at all stops, with most containing all four.

2.6 Surrounding Active Transport

2.6.1 Pedestrian Network

The Site is well serviced by a well-connected pedestrian network, with the key features outlined as follows:

- Covered footpaths along either side of the Pacific Highway and Hume Street
- Frequent signalised pedestrian crossings along the Pacific Highway including at key intersections which provide regular crossing opportunities
- Widened footpaths in locations such as Clarke Street / Hume Lane intersection, and outcome of the new development public domain set back of 3 m.
- Trees provide shade coverage along footpaths in sporadic locations

2.7 Travel Mode Share

2.7.1 Journey to Work

Journey-to-Work (JTW) data from the Australian Bureau of Statistics (ABS) Census data of people travelling to work in the Crows Nest Destination Zone 114 143 316 of which the Site forms a part of, has been analysed to ascertain the plausible travel behaviour of future workers inbound to the Site.

The location of the zone relative to the surrounding context is presented in **Figure 6** and the results of the travel mode summary is presented graphically in **Figure 7**.

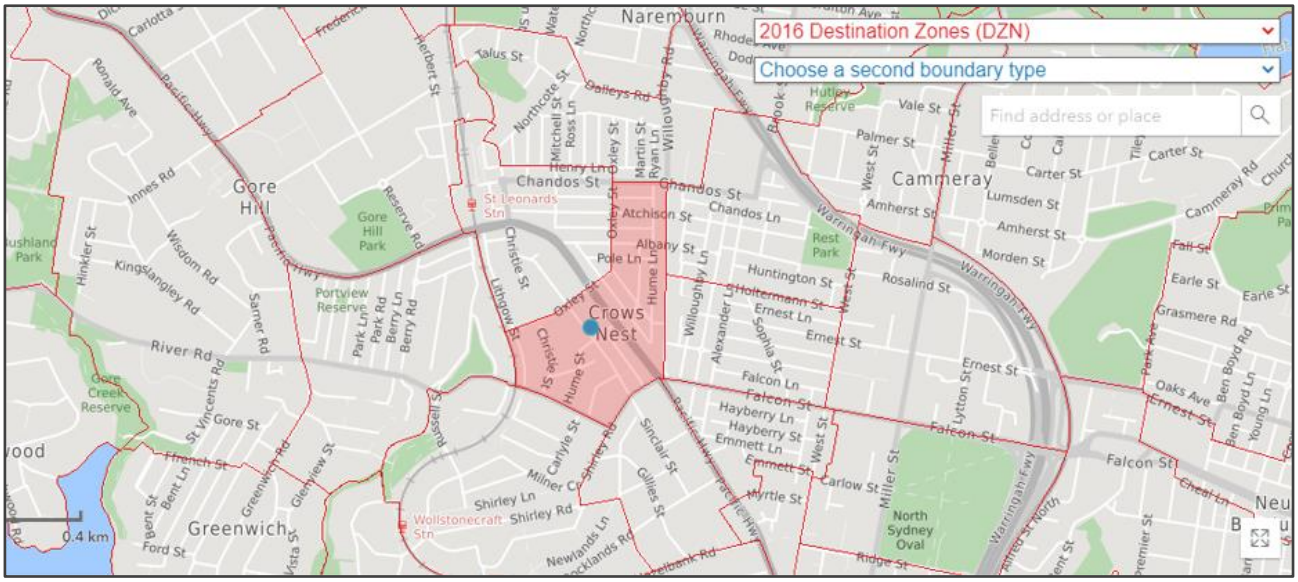


Figure 6: Destination Zone 114 143 316

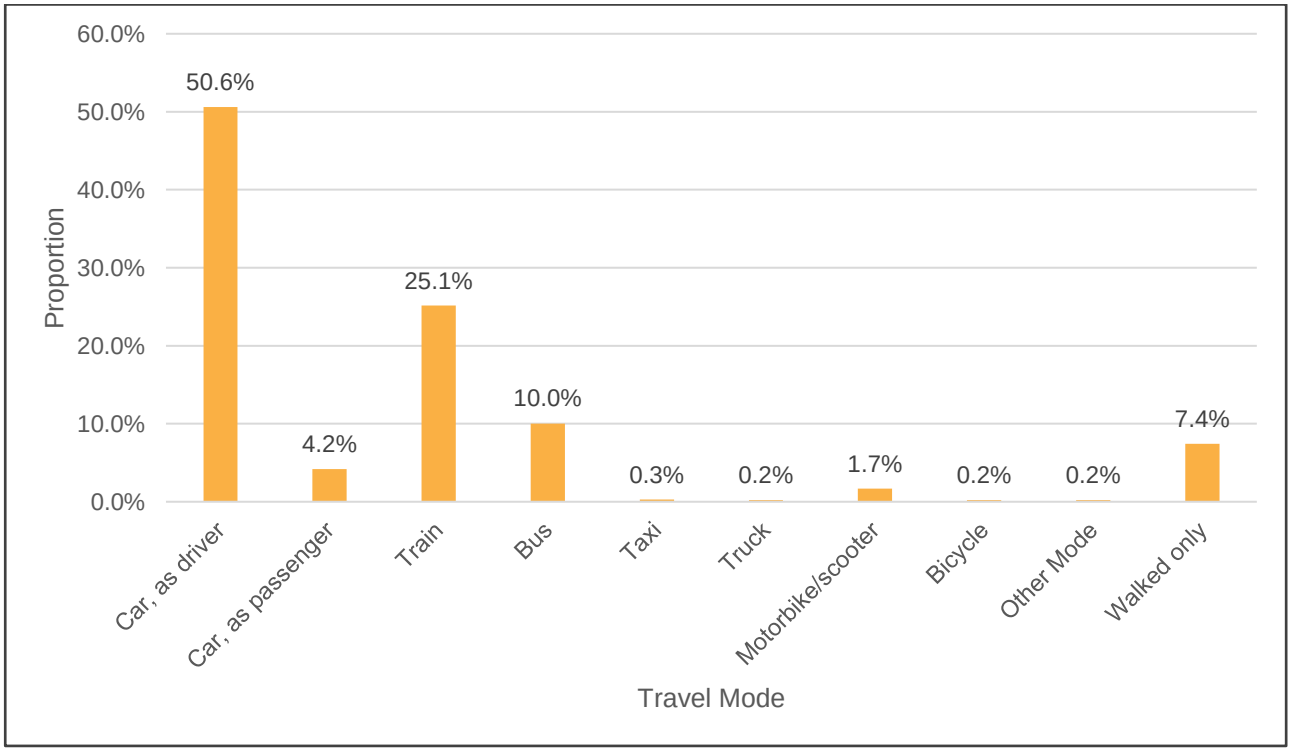


Figure 7: Modal Split – Workers to Destination Zone 114 143 316

As demonstrated in Figure 7, for workers travelling to the area, it can be seen that:

- Car or private vehicle is the most prevalent in the modal split, with 54.8% of workers (50.6% as driver and 4.2% as passenger) travelling by private vehicle.
- 35.1% of workers to the Crows Nest area travel by public transport.
- Train is the most popular mode of public transport to Crows Nest, with 25.1% reporting that their main mode of travel was by train.
- Active transport represented 7.6% comprising of 7.4% walking and 0.2% cycling.

A review of travel modes of workers from the Crows Nest area has also been undertaken. The Statistical Area 1 which represents this data pool is shown in **Figure 8** and the travel modal split is presented in **Figure 9**.

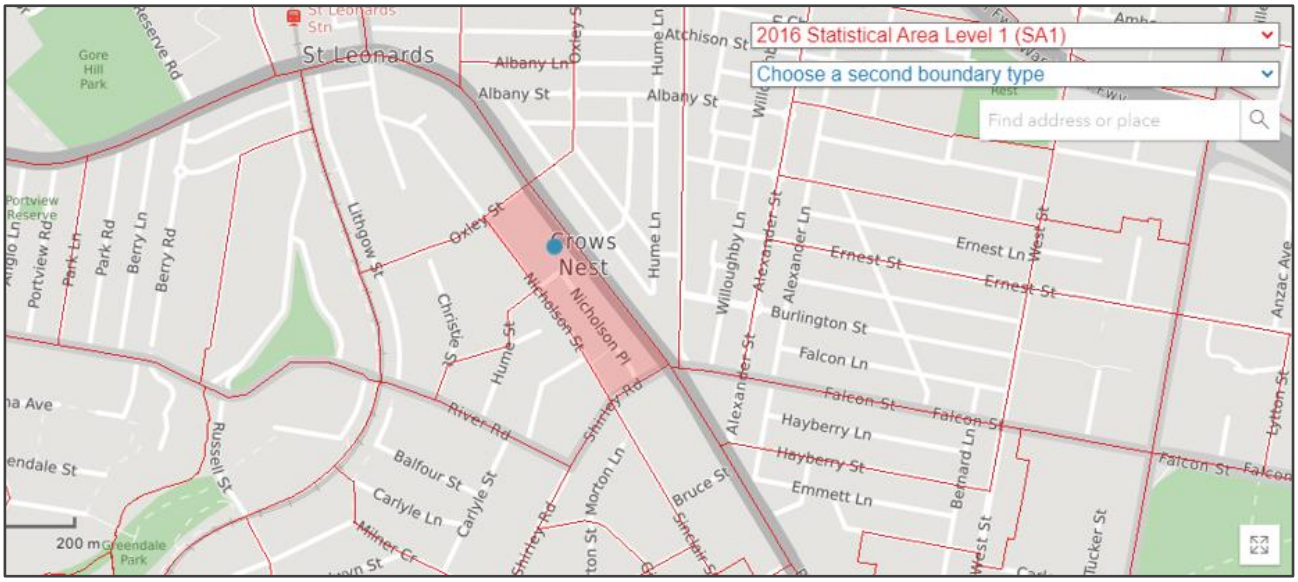


Figure 8: Crows Nest Statistical Area 1

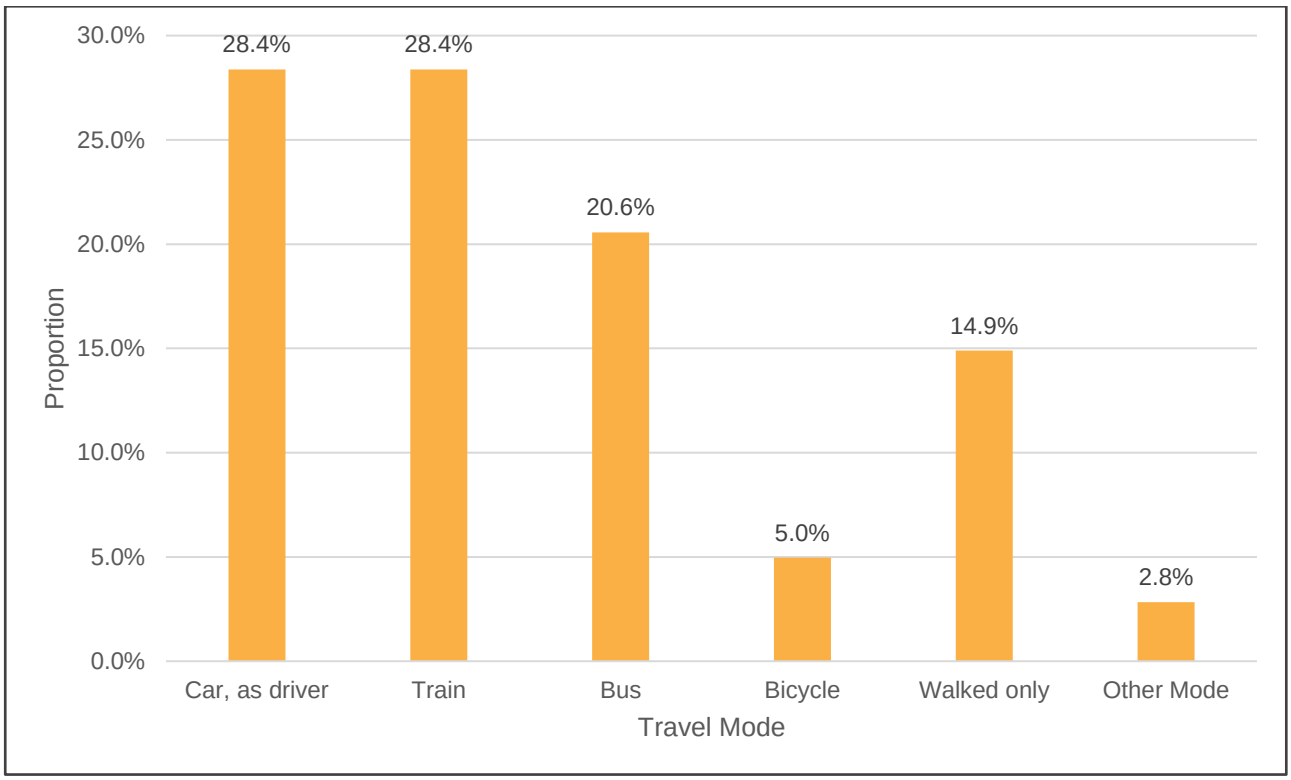


Figure 9: Modal Split – Workers from the Crows Nest Statistical Area 1 (SA1)

Given the Site's favourable proximity to St Leonard's Railway Station, numerous bus services and the future Crows Nest Metro Station, the higher density development is anticipated to exhibit a similar travel modal profile with an even greater representation of Public Transport and in turn less dependency on private vehicle usage.

2.7.2 Existing Travel Behaviours – Reference Site

Ason Group have undertaken travel mode surveys of an existing mixed-use development (predominately residential with ancillary commercial / retail) at 7-9 Gibbons Street, Redfern.

This development shares similar traits to the Proposal such that it is located directly across Redfern Railway Station (less than 100 m walking distance), comprises of 149 residential units, 725 m^2 of commercial GFA, 330 m^2 retail GFA and a 1,360 m^2 supermarket. The modal survey was referenced to ascertain the likely travel behaviours of the future residents of the Proposal.

Residents were asked which mode of transport they use to travel to / from work during the morning and evening peak periods and was undertaken over two days (20th March 2018 & 21st March 2018). The average results of the survey are displayed graphically in **Figure 10**.

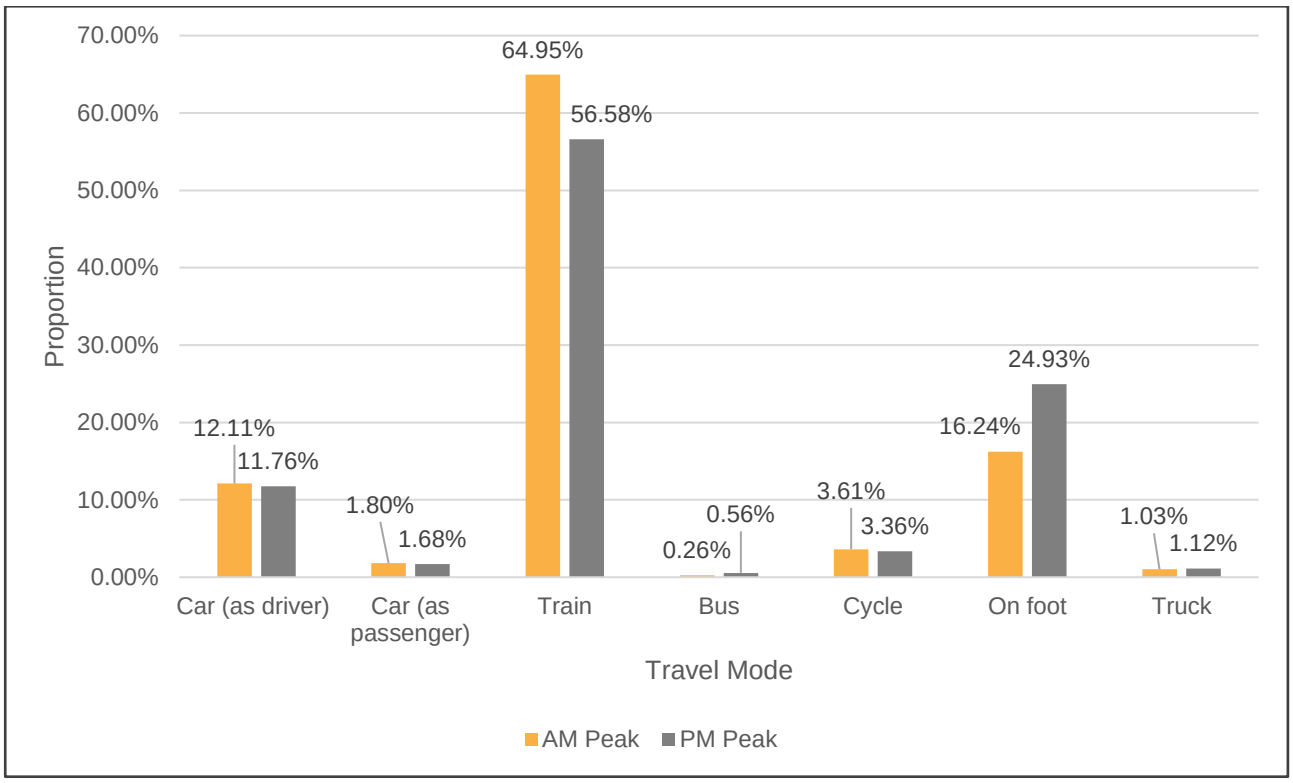


Figure 10: Travel Mode survey of Commercial & Residential Mixed-Use Development

Having regard for the above, the Site is anticipated to experience similar modal split noting its close proximity to numerous bus services, St Leonards Station and the new Crows Nest Metro Station. The reduction in the car usage (as driver), can be expected to be range in 16-38%.

2.8 Car Share

Car sharing has emerged as a cost effective, flexible alternative to private vehicle ownership and is a convenient and reliable means for residents to use a car when they need it. As of 2016, there are approximately 3,500 resident members, and 1,500 business members involved in car sharing in North Sydney.

Notably, Council supports car sharing, stating that it provides the following benefits:

- Reduce overall private vehicle ownership and therefore the net demand for on-street parking on North Sydney streets
- Allow one parking space/vehicle to cater for a number of residents
- Reduce traffic congestion caused by people 'cruising' to find parking
- Provide a transport option for those in the community who don't or can't own their own car

GoGet is one of the operators providing a car share service allowing members to book cars for private use. Each vehicle has a home location which is referred to as a ‘pod’. These are typically located in a parking lot or on-street and generally in a highly populated urban neighbourhood.

There are approximately 28 pods providing 1 or more cars including vans, 4WDs, and smaller hatchbacks within 800 metres radius of the Site.

The location of these pods are detailed in **Figure 11**; note, the figure shows all pods within proximity of the Site; however, at the time of image capture, some vehicles associated with a number of pods were unavailable as indicated by the circles coloured grey.

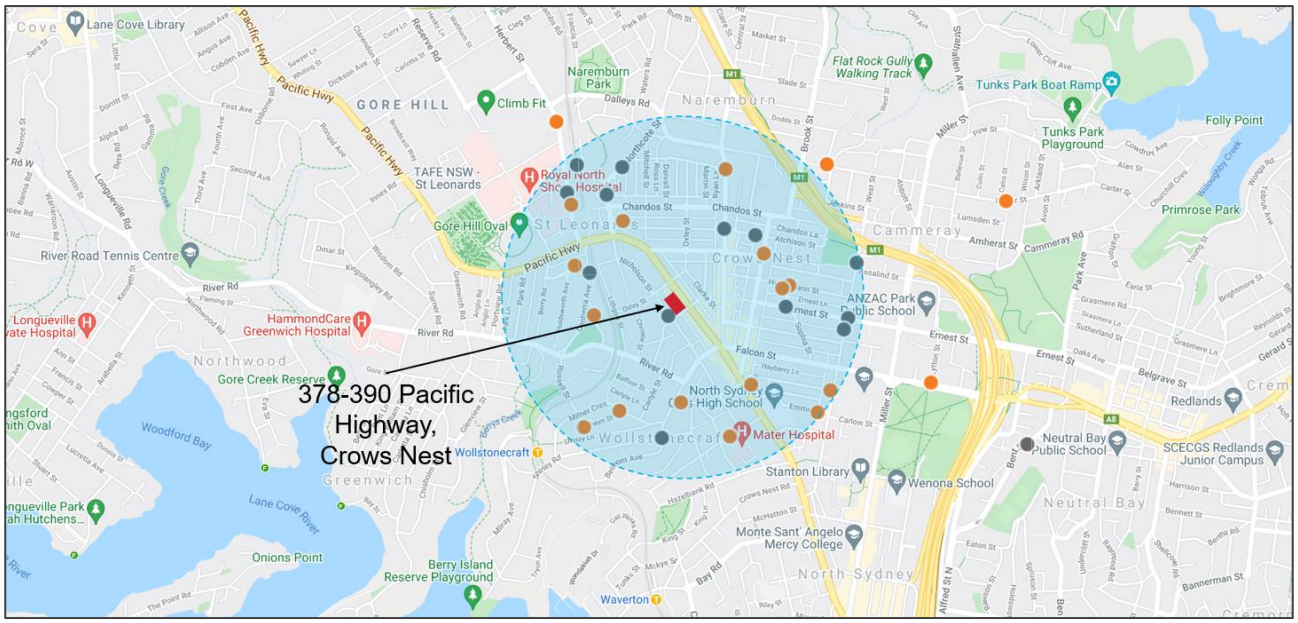


Figure 11: GoGet Pod Locations

2.9 Crash History

A review of *TfNSW Centre for Road Safety Database* has been undertaken for the most recent five-year period between 2015 – 2019 of the key roads within immediate proximity to the Site.

Locations of the crashes are illustrated in **Figure 12** and the details are summarised in Table 5.

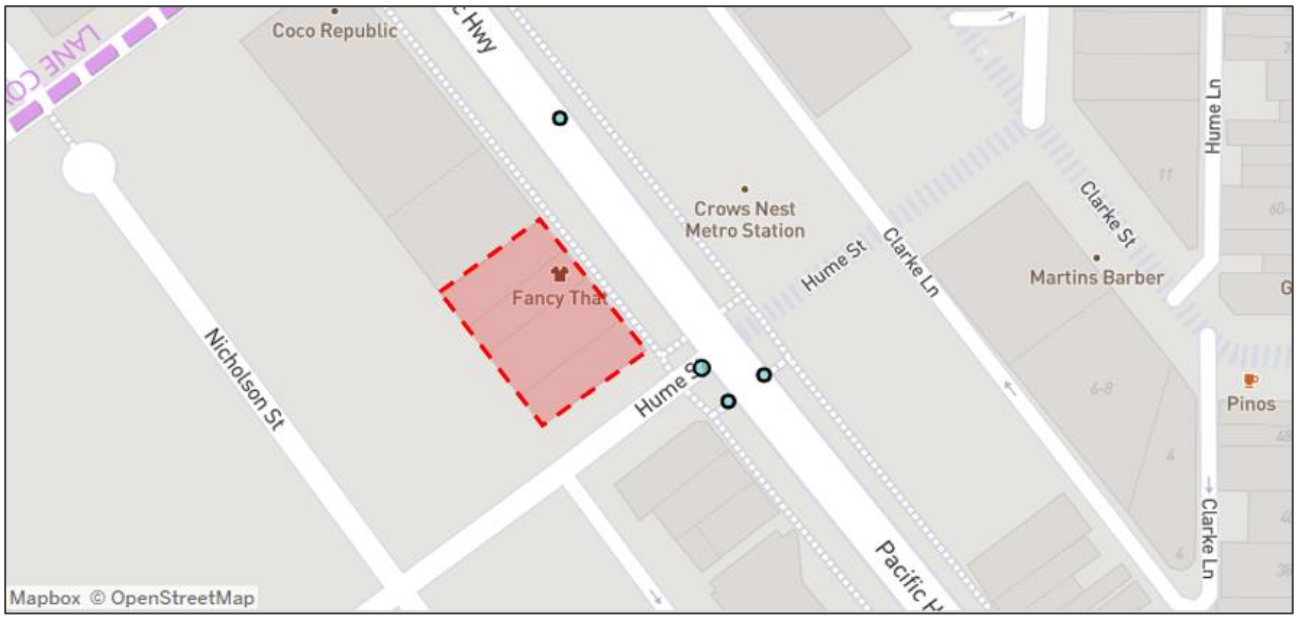


Figure 12: Crash Locations

TABLE 5: CRASH TYPOLOGY

Reporting Year	Location	RUM Description	Lighting	Injury
2015	Pacific Highway / Hume Street	2 - Pedestrian far side	Daylight	1 moderate injury
2016	Pacific Highway	30 - Rear end	Dusk	1 minor injury
	Pacific Highway / Hume Street	2 - Pedestrian far side	Daylight	1 minor injury
	Pacific Highway / Hume Street	30 - Rear end	Daylight	2 minor injuries
2017	Pacific Highway / Hume Street	30 - Rear end	Daylight	1 minor injury

With regard for the above, there have been five (5) crashes within the last five (5) years in the study area resulting in minor injuries. The most common type of crash are rear end crashes with three (3) being recorded. This suggests that there could potentially be inherent safety issues in the road network at this location.

3 Future Context

3.1 Statutory Planning Framework

3.1.1 North Sydney LEP

The *North Sydney Local Environment Plan* (NS LEP) 2013 is the principal legal document for controlling development and guiding planning decisions within the North Sydney Council area.

Accordingly, the NS LEP provides the following controls as outlined in **Table**.

TABLE 6 NS LEP 2013 CONTROLS

Description	NS LEP
Zoning	B4 – Mixed Use
Height	16 m
FSR	N/A
Non-residential FSR	1.5 : 1

3.1.2 North Sydney DCP

The *North Sydney Development Control Plan 2013* (NS DCP) provides guidance which supports the implementation of the LEP.

With reference to Clause 2.2.2 of the *North Sydney Development Control Plan 2013* (NS DCP) which states the following objective with respect to new developments maximising the use of public transport:

- To ensure that developments maximise access to public transport, walking and cycling.
- To try and achieve a modal split of 60% public transport and 30% private car

3.2 Crows Nest 2036 Plan

The *St Leonards and Crows Nest 2036 Plan* (SCLN 2036 Plan) was prepared by the NSW Department of Planning and Environment (DPE) in August 2020. It provides a strategic framework to guide the urban renewal in the St Leonards and Crows Nest area and supporting infrastructure within walking distance of St Leonards and Crows Nest stations to 2036.

The SCLN 2036 Plan leverages the existing public transport infrastructure and the future Crows Nest Metro Station to support the growing St Leonards and Crows Nest community with the provision of new infrastructure, open spaces, upgraded cycle lanes and planning for health and education.

In late 2018, DPE prepared a rezoning proposal for the Crows Nest Metro sites to amend the planning controls of the *North Sydney Local Environmental Plan 2013* (NS LEP). It is noted that the existing planning controls for the subject site were adopted in 2013, prior to any commitment by the NSW Government to deliver the Sydney Metro project, including a new Metro station at Crows Nest.

Consequently, the existing controls do not reflect opportunities for transit-oriented development and improved accessibility enabling people to live, work and spend time around public transport hubs such as Crows Nest.

Figure 13 provides the Floor Space Ratios (FSR) to guide development in St Leonards and Crows Nest.

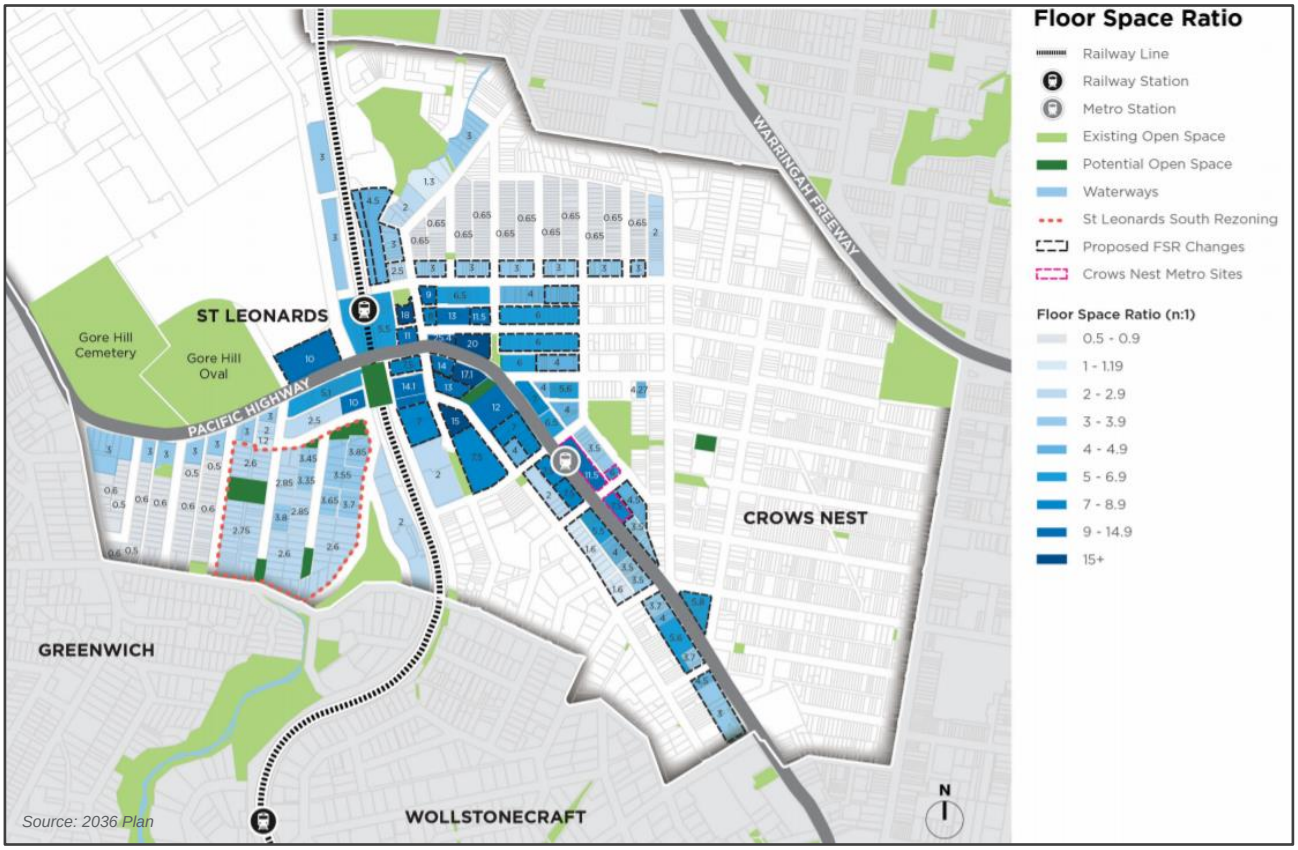


Figure 13: Floor Space Ratio

3.3 Sydney Metro Crows Nest Over Station Development

Sydney Metro have secured approval for a mixed-use development comprising four buildings above the Crows Nest Station, otherwise known as the over station development (OSD SSD) (SSD-9579). The project involves procurement through the construction of the OSD SSD as part of an Integrated Station Development package, which would result in the combined delivery of the station, OSD SSD and public domain improvements.

The OSD provides an opportunity for a mixed-use development that capitalises on its immediate access to Australia's biggest public transport project, that delivers significant improvements to the amenity of the local area. This is in alignment with the broader vision for the area as outlined in key strategic planning documents.

Notably, the OSD SSD did not require substantial traffic modelling, with a focus on relevant travel planning initiatives which is consistent with the broader strategic planning. With regard for the Proposal, the increased density on the subject site is immediately opposite the OSD to the southwest and is considered to compliment that broader intent. By way of comparison, the OSD has an FSR of 11.5 : 1 compared to the 7.5 : 1 sought by the Proposal.

Figure 14 shows the location of the future Crows Nest Metro station in addition to the existing public transport services available in the study area.

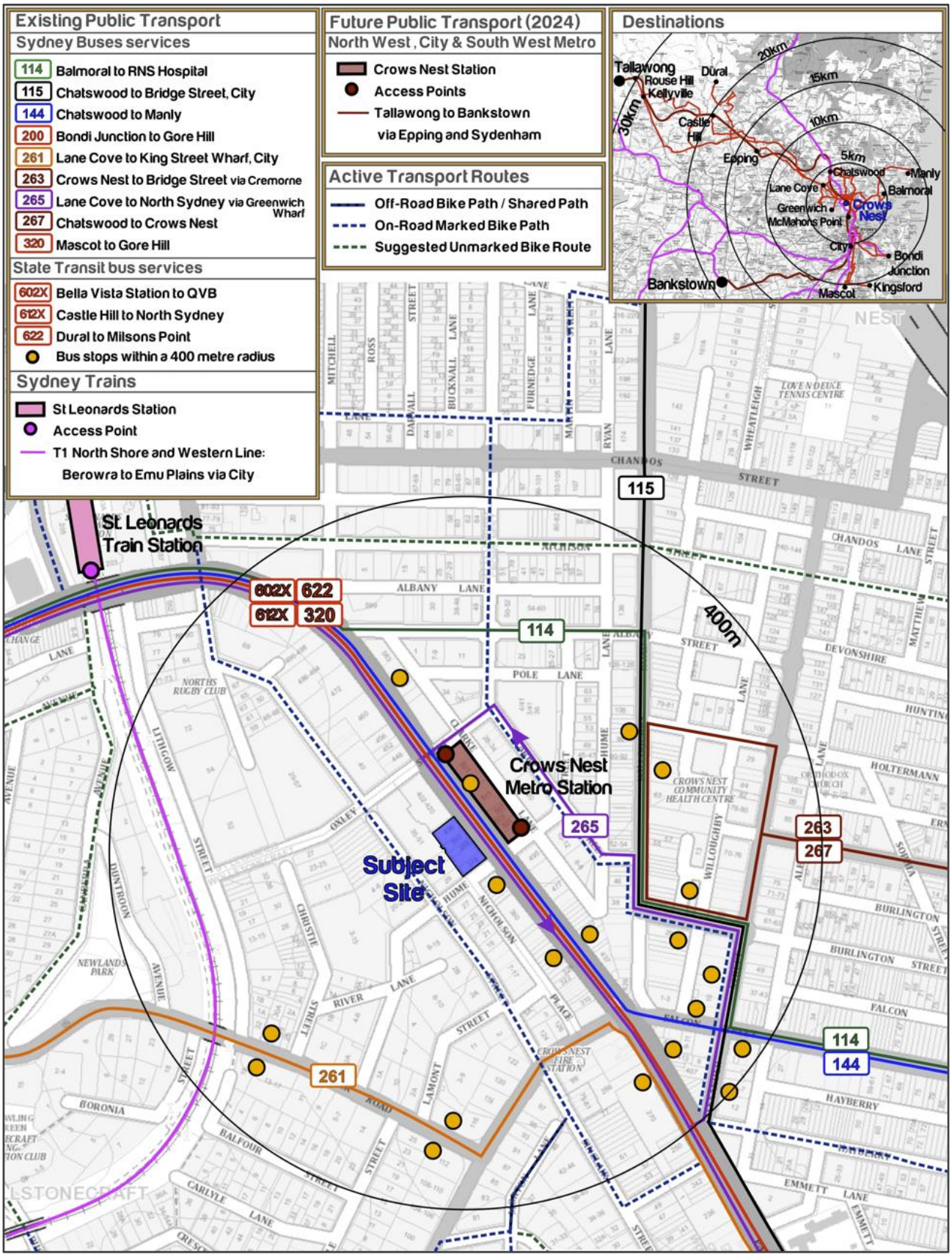


Figure 14: Future Public Transport

3.4 North Sydney Transport Strategy

The *North Sydney Transport Strategy* (NS Transport Strategy) was prepared by North Sydney Council in 2017. Based on extensive feedback from preliminary community consultation, the NS Transport Strategy sets out Council's vision for transport and modal hierarchy in North Sydney.

According to the NS Strategy, safe travel, transport security, social well-being, active health, fair access to parking, environmental sustainability, local environments, transport affordability, minimising congestion and business activity should be prioritised.

On the basis of these priorities, the NS Strategy established the following modal hierarchy for the future of North Sydney transport planning.

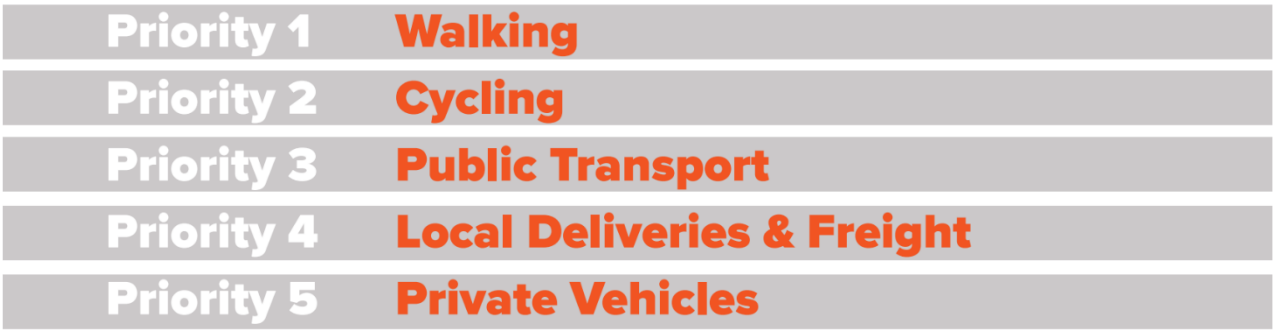


Figure 15: North Sydney Modal Hierarchy

This broadly aligns with State Government's access priorities for transport interchanges (such as the Crows Nest Station) and will be used to prioritise the provisions for access, facilities and space for the indicative OSD.

3.5 State Environment Planning Policy (Infrastructure) 2021

The aim of the Infrastructure SEPP is to facilitate the provision of infrastructure across NSW. In this regard, Clauses relevant to the proposal include Clause 2.103: Development near proposed Metro Stations, Clause 2.119: Development with frontage to classified road and Clause 2.122: Traffic-generating development.

Clause 2.103 clarifies that the consent authority must not grant consent to development on land to which this clause applies unless it has taken into consideration:

- *Whether the proposed development will adversely affect the development and operation of a proposed metro station, including by impeding access to, or egress from, the proposed metro station; and*
- *Whether the proposed development will encourage the increased use of public transport.*

With regard for the above, it is considered that the Proposal will be constructed opposite the Crows Nest Metro Station along the Pacific Highway. The Proposal is located such that it will not adversely affect access / egress to the proposed Sydney Metro Station. Furthermore, the station is likely to encourage and maximise the increased use of public transport to and from the development. Conversely, the increased development proposed on the subject site will increase patronage of the Metro and hence justify that investment.

Clause 2.119 clarifies that the consent authority must not grant consent to development on land to which this clause applies unless it has taken into consideration:

- *Where practicable and safe, vehicular access to the land is provided by a road other than the classified road, and*
- *The safety, efficiency and ongoing operation of the classified road will not be adversely affected by the development as a result of—*
    - *The design of the vehicular access to the land, or*
    - *The emission of smoke or dust from the development, or*
    - *The nature, volume or frequency of vehicles using the classified road to gain access to the land.*
- *The development is of a type that is not sensitive to traffic noise or vehicle emissions, or is appropriately located and designed, or includes measures, to ameliorate potential traffic noise or vehicle emissions within the site of the development arising from the adjacent classified road.*

Having regard for the above, vehicular access to the Site is not provided via a classified road that is the Pacific Highway. Rather, access to the Proposal is provided via an existing access location to / from Hume Street.

However, in its current form, 382 Pacific Highway forming the subject site provides an access to / from the Pacific Highway. Therefore, by proposing the single access to / from Hume Street, the Proposal seeks to consolidate access points to one single.

Additionally, given the proximity to the future Crows Nest Metro, the volume and frequency of vehicles utilising Pacific Highway to access Hume Street will be of a low order. This is aided further by the existing traffic controls including the *'No Right Turn'* at the Pacific Highway / Hume Street intersection and discussed in detail later in the report.

On the basis of the above, by utilising the existing access to the Site and consolidating the access into one single point will yield a better outcome as it reduces the amount of overall crossings onto a classified road. As such, it is considered that the safety, efficient and continued operation of the Pacific Highway will be relatively consistent with its existing operations and unlikely to be compromised by the Proposal.

Clause 2.122 clarifies that the consent authority must take into consideration:

- *The accessibility of the site concerned, including—*
    - *The efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and*
    - *The potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk freight by rail, and*
- *Any potential traffic safety, road congestion or parking implications of the development.*

The location of the Proposal directly adjacent to the Crows Nest Metro Station and proposed pedestrian activation infrastructure including building setbacks and lane through passages promotes the efficient movement of people and trips.

Concurrently, it reduces the need to rely on the travel by private vehicle which again is also due to the proposed restrictions on car parking spaces provisions. In turn, this minimises the possible safety, congestion and parking issues that would arise from a development with a high vehicular trip generating potential.

4 Parking Rates

4.1 Car Parking

Reference is made to NS DCP 2013 – Section 10 to determine the car parking requirements. Notably, the site is within land zoned *B4 – Mixed Use* under the NS LEP 2013 and, as such, corresponding car parking rates have been adopted.

Notwithstanding, it is important to note that Council policies and also an objective of the 2036 Plan seek to reduce the usage of private vehicles and parking provisions such as through the maximum parking rates stipulated in the LEP controls.

The NS DCP provides a guide to the maximum number of on-site car parking spaces that can be provided for new developments based on their location and level of transport accessibility. By providing a minimal number of parking spaces per apartment, residents will be discouraged from owning and using private vehicles, reducing the impact of the development on the local and broader road network.

In this regard, the car parking requirements and provision as per the current scheme is shown in **Table 6**.

TABLE 7 NSDCP 2013 CAR PARKING REQUIREMENTS (CURRENT)

Land Use		Parking Rate	Yield	Parking Permitted[1]
Residential	Studio / 1 bedroom	0.5 spaces per dwelling	36 units	18
	2 + bedroom	1 space per dwelling	36 units	36
	Sub-total	**-**	***72 units***	***54***
Commercial		1 space per 60 m^2 GFA	2,618 m^2	44
TOTAL		**-**	**-**	**132**

Note: 1) Council rates are maximum provisions - objective being to minimise reliance on private car use
2) Car share parking is encouraged in mixed use developments as per Section 10.2.2 of NSDCP

Further to the above, it is noted that Council currently has a draft amendment to the NSDCP (*Draft Amendment to North Sydney Development Control Plan 2013 - Implementation of the St Leonards Crows Nest 2036 Plan*) on exhibition (until 15 November 2022) which seeks to reduce on-site car parking provisions with the following objective:

The level of parking provided on sites in close proximity to the railway and metro stations should be minimised as far as practical to encourage more active forms of transport.

In response, Council has is also proposing amendments to Section 10 of the DCP with the *Draft NSDCP2013 Amendment - Car Parking Rates for new high-density developments in areas with high public transport access* on exhibition until 13 December 2022. A summary of the car parking requirements under that draft amendment is provided below.

TABLE 7 NSDCP 2013 CAR PARKING REQUIREMENTS (DRAFT AMENDMENTS)

Land Use		Parking Rate	Yield	Parking Permitted[1]
Residential	Studio /	0.3 spaces per dwelling	nil	0
	1 bedroom	0.4 spaces per dwelling	36 units	14.4
	2 bedroom	0.6 spaces per dwelling	28 units	16.8
	3 + bedroom	0.7 spaces per dwelling	8 units	5.6
	Sub-total	**-**	***72 units***	***37***
Commercial		1 space per 400 m^2 GFA	2,618m^2	7
TOTAL		**-**	**-**	**44**

Note: 1) Council rates are maximum provisions - objective being to minimise reliance on private car use
2) Car share parking is encouraged in mixed use developments as per Section 10.2.2 of NSDCP
3) Figures for each land use summed and then rounded to nearest whole number
4) Site is located within a B4 zone and in a "High Accessibility Area"

Final car parking provisions shall comply with the relevant NSDCP at the time of DA lodgement. It is noted that higher car parking rates apply should a future DA propose "Food and Drink (excluding Pubs)" (1 space per 50m^2 GFA) or "Supermarket" (1 space per 25m^2 GFA) be proposed at that time.

4.2 Bicycle Parking

With reference to the NS DCP 2013 – Clause 10, the bicycle parking provisions are outlined in **Table**.

TABLE 9: BICYCLE PARKING PROVISIONS

Land Use	Resident / Staff	Visitor / Customer
Residential	1 per dwelling	1 per 10 dwellings
Commercial	1 per 150 m^2	1 per 400 m^2

Application of the above bicycle parking rates, to the indicative yield results in the bicycle parking requirements outlined in **Table 6**.

TABLE 6: BICYCLE PARKING REQUIREMENTS

Land Use	Yield	Resident / Staff	Visitor / Customer	Total
Residential	72 units	72	8	80
Commercial	2,618 m^2	18	7	25
Total	**-**	**90**	**15**	**105**

While the current indicative scheme does not provide bicycle parking provision, it is proposed that the bicycle parking will be provided in accordance with the requirements of the NS DCP bicycle parking rates.

Furthermore, this active travel infrastructure will be highlighted as part of any future travel demand initiatives such as a Green Travel Plan (GTP).

4.3 Servicing

Reference is made to Clause 10.4 of the NSDCP 2013 to determine the service vehicle parking requirements. In this regard, Clause 10.4 P3 states the following:

Developments containing more than 60 dwellings must provide at least 1 service delivery space, capable of accommodating at least:

a) 1 Heavy Rigid Vehicle (HRV), or

b) 2 Medium Rigid Vehicle (MRV)

Detailed design of any on-site loading areas shall be scope for future development applications.

5 Operational Site Traffic Demands

As discussed previously, the primary change sought by this Proposal is an increase in FSR to maximise the potential afforded by the planned building heights. As such, it is concluded that the overall traffic generating potential is consistent with that contemplated under the Proposal is consistent with that envisaged under the 2036 Plan.

5.1 Non-residential Demands

The non-residential yield potential (on ground and podium levels) is largely consistent between existing, 2036 Plan and proposed development scenarios. As such, the non-residential traffic generation is considered under existing baseline scenarios.

5.2 Residential Demands

Furthermore, the overall FSR is consistent with that envisaged under the 2036 Plan. As such, the Proposed traffic generation implications have already been considered as part of the strategic transport planning that supported the 2036 Plan.

For context, TfNSW (formerly RMS) undertook surveys of residential developments around Sydney in 2010 to update the traffic generation rate database. A summary of the database is provided in the RMS Guide to Traffic Generating Developments: Updated Traffic Surveys TDT 2013/04a (RMS TDT 2013/04a).

These surveys highlighted those residential developments in the St Leonards area demonstrated one of the lower traffic generation during the morning and evening peak hours. In this regard, the associated traffic generation rates adopted for the assessment are as follows:

- AM Peak hour: 0.14 trips per unit
- PM Peak hour: 0.07 trips per unit

Application of the above rates to the current proposed number of units results in the following two-way traffic movements during peak periods:

- AM Peak hour: 10 veh/hr
- PM Peak hour: 5 veh/hr

With reference to the above, this is a relatively minor increase of traffic, particularly when considered in the context of the surrounding traffic demands identified in Section 2.4. Such an increase is deemed to have negligible impact and is discussed further in the following section.

It is anticipated that no further traffic would be generated from the commercial and retail uses given that it is intended to service the residential units above and surrounding development within a walking catchment. On-street parking in the area is quite constrained and often provides little opportunity for passing car trade; reinforcing the localised catchment.

In addition, given the proximity of the residential development to significant levels of employment in North Sydney, the estimated vehicle trip generation is further supported. Further, the opening of the Sydney Metro

from 2024 which will increase the alternative transport options available to the future residents of the Proposal.

On the basis of the above and noting the considerations by DPE as part of the preparations of the 2036 Plan, the impacts of the traffic generated by the Proposal is minimal and discussed further in the following section.

6 Traffic Analysis

6.1 Site Access

6.1.1 Vehicle Access

Vehicular access to the Proposal is proposed to be via Hume Street utilising the existing access point. This access services the basement car park and proposed loading areas for the development.

It is noted that vehicular access to 398-390 Pacific Highway – currently via Pacific Highway – shall be retained. However, no changes to built form are proposed on that particular site and, as such, retention of that existing access will have no impact on traffic conditions.

Figure 16 shows the proposed access location from Hume Street.

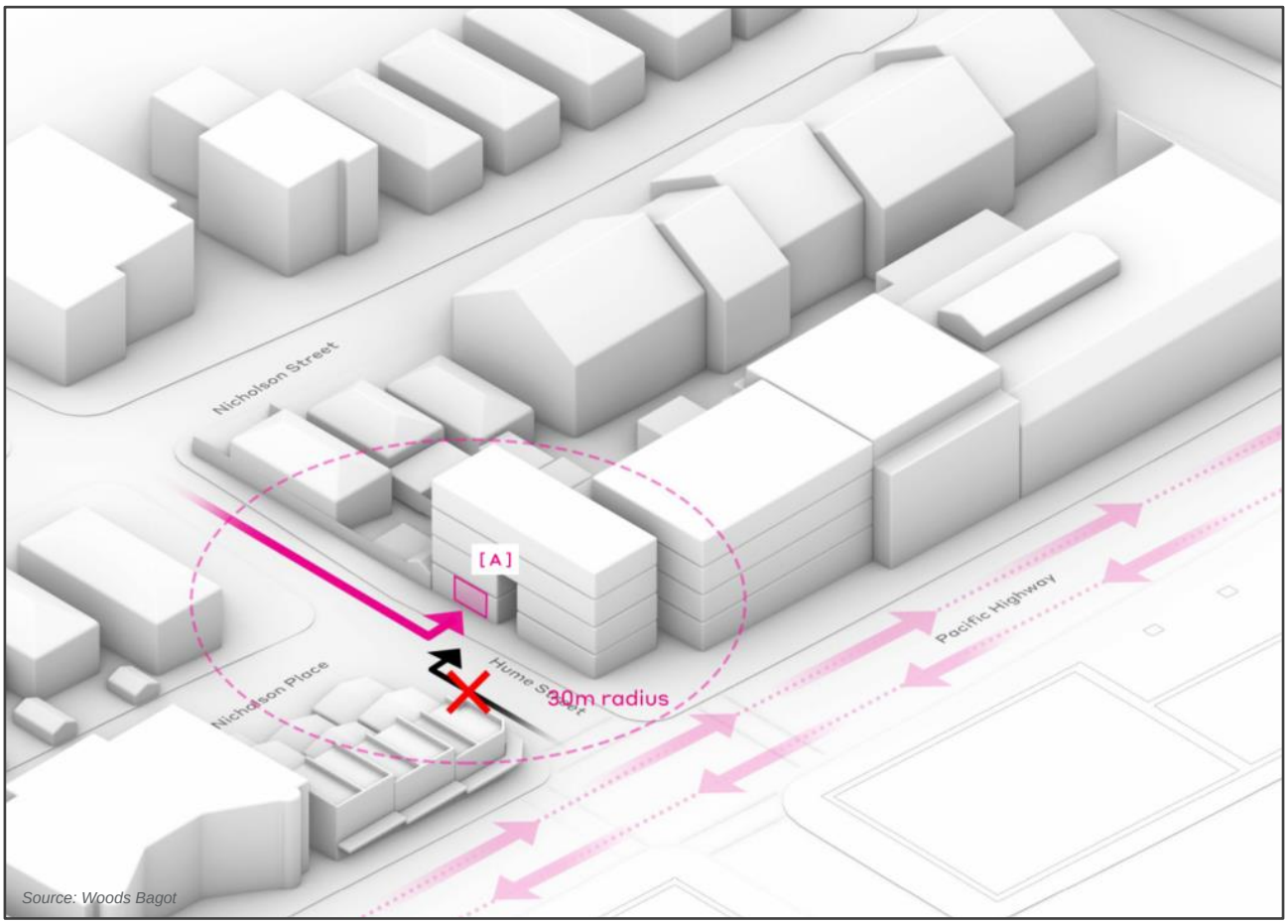


Figure 16: Proposed Indicative Vehicle Access Location

6.1.2 Existing Controls Route

Based on the existing traffic controls, vehicles are permitted to access Hume Street from the Pacific Highway from the south (travelling northbound) and similarly, vehicles can access the Pacific Highway from Hume Street in both directions. Vehicles from the north can also access Hume Street via Oxley Street and Clarke Street, noting the No Right Turn restrictions at Oxley Street and Hume Street, as demonstrated in **Figure 17**.

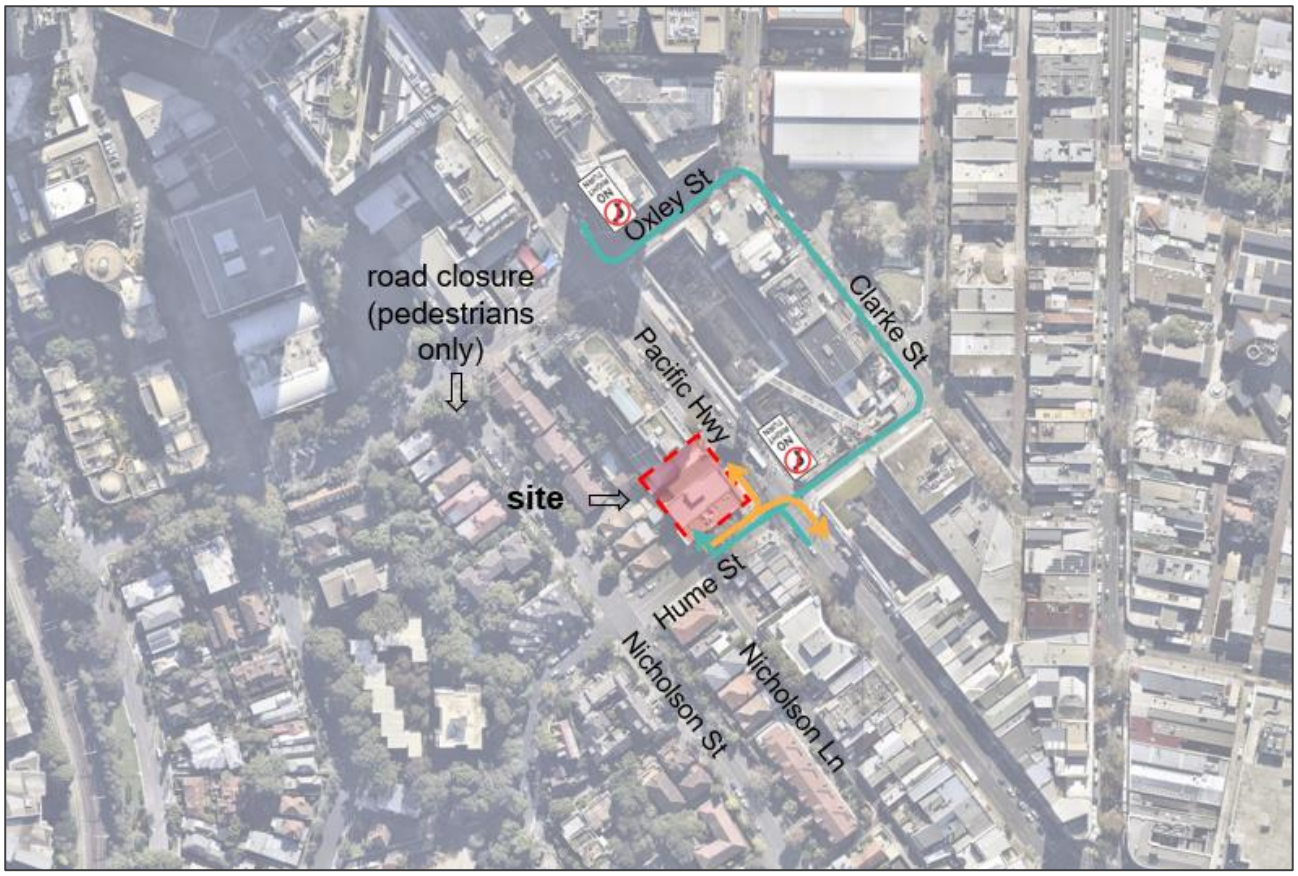


Figure 17: Site Access & Egress Routes

6.1.3 Alternative Route

Reference is made to **Figure 16,** which also contains a black arrow with a red cross overlay indicative of a banned inbound right turn manoeuvre from Hume Street. It is noted that this a predictive measure to mitigate potential effects of queuing at the Pacific Highway / Hume Street intersection, the outcome of which would typically be investigated further at the Development Application stage.

Notwithstanding, the impact that this would have is relatively minimal. Under these traffic controls, the outbound vehicle movements would remain the same as is in the current scenario. The inbound route would be slightly different in that vehicles arriving from the north along the Pacific Highway would be required to take a localised detour.

Based on ABS Census data, it can be assumed the volume of vehicles taking this route would be relatively minimal ranging in the order of one (1) vehicle in the AM peak hour and six (6) vehicles in the PM peak hour.

Vehicles arriving from the south would likely be arriving from the Gore Hill Freeway, taking the Falcon Street exit and accessing the Pacific Highway / Shirley Street / Falcon Street intersection regardless.

Figure 18 illustrates the alternative access and egress routes to the Site based on the predictive control.

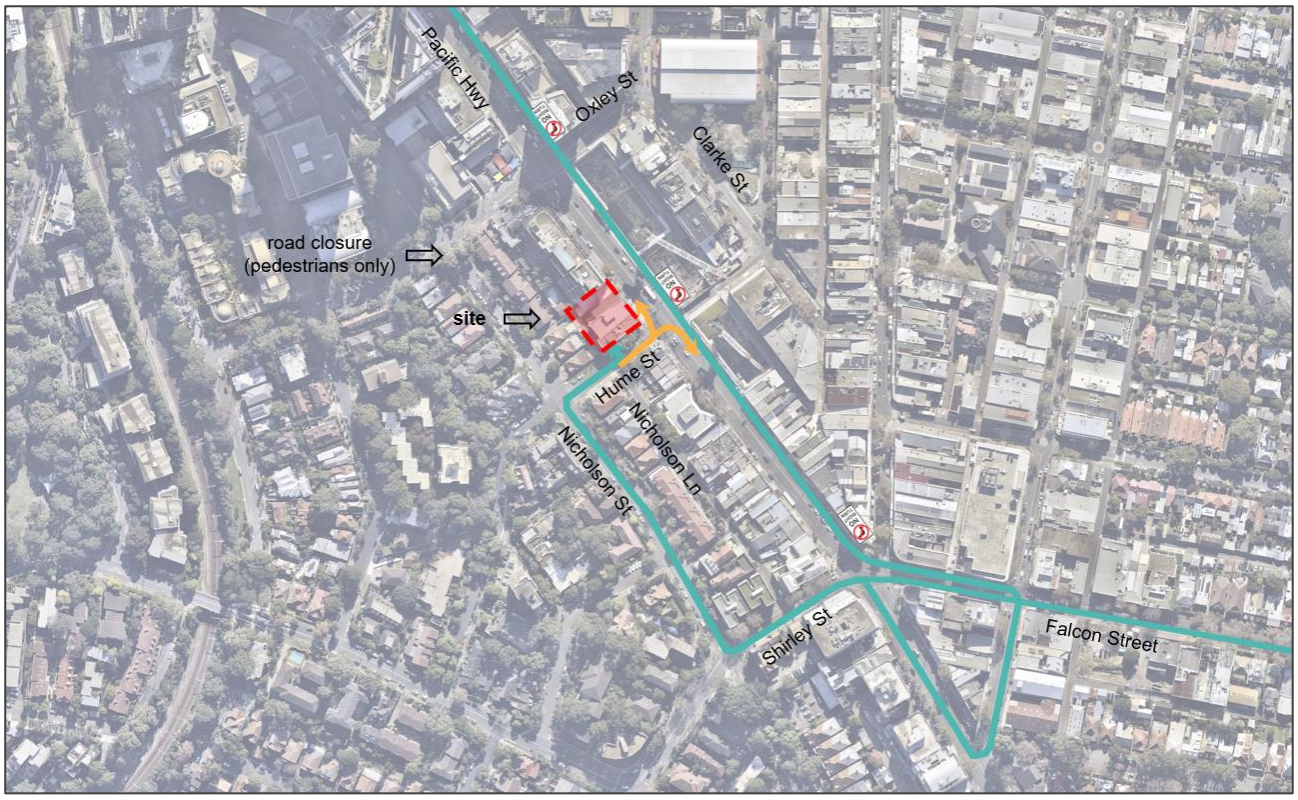


Figure 18: Site Access & Egress Alternative Routes

6.1.4 Pedestrian Access

Reference is made to NS DCP Clause 2.4.9 which outlines the following objectives relevant to through-site pedestrian links:

- To increase pedestrian permeability through commercial and mixed-use centres
- To increase linkages to facilities, outdoor spaces and public transport
- To provide safe and usable pedestrian spaces
- To increase the amenity for pedestrians

Similarly, the relevant provisions in relation to through-site pedestrian links are as follows:

- Provide linkages through sites to other streets and laneways as identified in the relevant area character statement (refer to Part C of the DCP) applying to the site or where enhancing pedestrian movement to public transport infrastructure.
- Provide linkages to facilities, outdoor spaces and public transport.

Having regard for the above, the Proposal demonstrates the capacity to showcase this as it enhances the pedestrian amenity and character while integrating into the existing pedestrian infrastructure. The design of the ground floor includes building setbacks on the Hume Street / Pacific Highway corner to provide pedestrian storage capacity on approach to the new Metro station and the through site link affords an alternative route between Pacific Highway and Hume Street to bypass the signal queuing areas, if necessary.

The proposed indicative pedestrian access location and desire lines it capitalises on is shown in **Figure 19.**

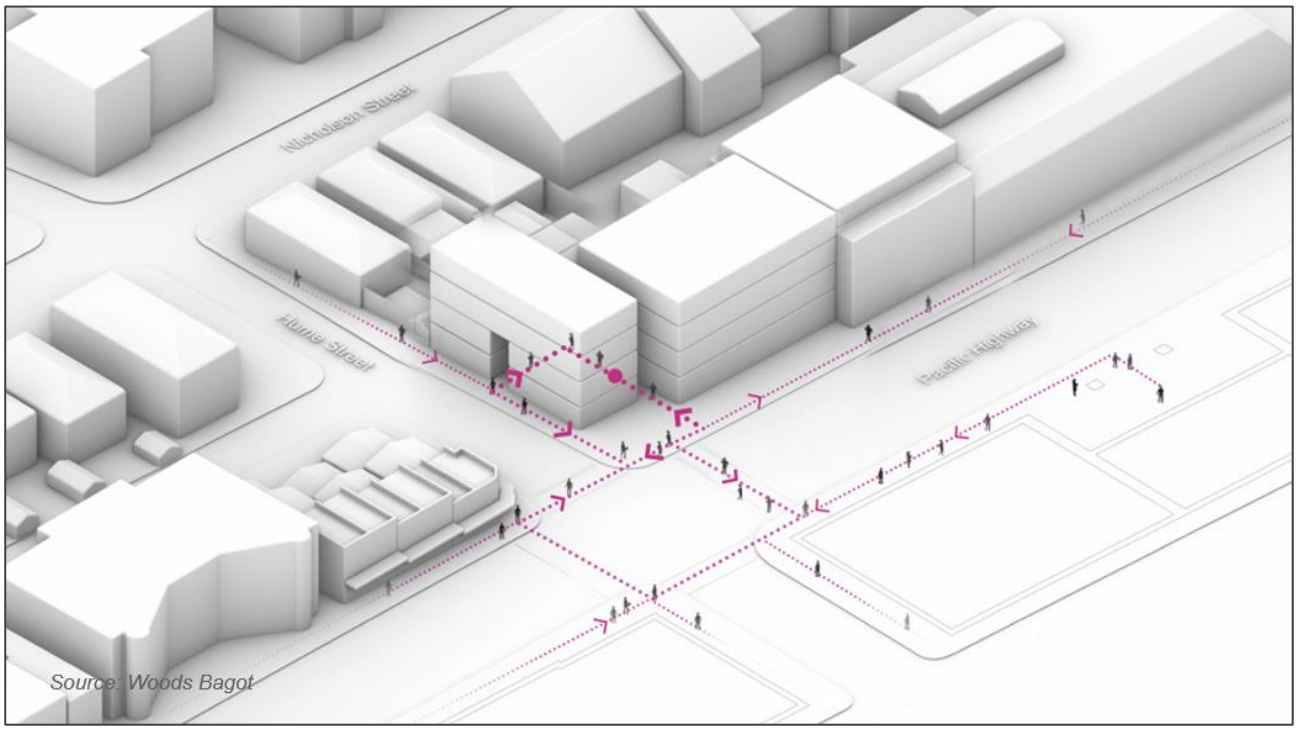


Figure 19: Proposed Pedestrian Access and Laneway Arrangement

6.2 Network Capacity

As noted earlier in Section 2.4, the key intersection at Pacific Highway & Hume Street performs well, with a LOS A and delays of less than 14 seconds during the morning and evening peak hours. This indicates spare capacity and traffic generated by this Proposal – which is consistent with the Crows Nest 2036 Plan – is unlikely to have a material impact.

Given the strong connectivity of the surrounding network, traffic arising from the development will distribute in various directions further reducing the impacts on the surrounding road network and indeed the Pacific Highway / Hume Street intersection. As such, further detailed traffic modelling is considered not necessary at this Planning Proposal stage.

Furthermore, reference to the *St Leonards and Crows Nest Station Precinct Traffic and Transport Study – Future Year Modelling Report* 2020 (SCLN Modelling Report) which is an analysis to assist in the planning investigations for the St Leonards and Crows Nest Station Precinct. Importantly, the Pacific Highway / Hume Street intersection was not identified as one of the intersections which required upgrades as part of the study.

6.3 Safety Impacts

Based on the location of the proposed access being in the location of the existing access, and the crash analysis undertaken, there are no demonstrated adverse safety issues or trends observed at the proposed access location.

Crash analysis did show that the Pacific Highway / Hume Street intersection has experienced some crashes over the last 5 years. However, these crashes are considered part of the existing road network and will not be materially impacted by the Proposal.

Additional storage space for pedestrians is provided for under the Proposal as they wait at the signalised crossing, and in doing so reduces the chances of pedestrians stepping out onto live traffic. This presents a positive safety outcome.

In this regard, the Proposal itself is not anticipated to create safety issues with consideration to the low traffic frequency it would generate. Furthermore, it is considered to provide some form of safety measures for the public with the building setback at the corner the Pacific Highway and Hume Street.

6.4 Site Circulation

The Proposal is envisaged to be serviced by the following vehicles:

- Waste and Recycling collection;
- Goods deliverables

The collection of waste/recycling and the delivery of goods for the apartments and commercial entities will use the loading dock in the basement car park accessed from Hume Street. In terms of movement frequency, these movements are low in nature and will generally occur outside of the typical road network peak hours.

Traffic safety measures would be recommended to improve driver's sight distance and minimise the conflicts with other traffic flows on site.

Detailed design review is not considered necessary at this (Planning Proposal) stage; instead being a detailed matter for consideration as part of a future development application at which time it is expected that the Proposal would be designed in accordance with the relevant Australian Standard (AS2890) series.

6.5 Operational Summary

The Site is located directly opposite the future Crows Nest metro station. Together with the wide bus network coverage, train frequency, journey-time reliability and improved customer offering of Sydney Metro, it is expected that there will be an increase journey to work trips by non-car modes. The extensive bus network on Pacific Highway also continues to play a key role to attract commuters to public transport.

It is considered that the delivery of this Proposal would support a development with sustainable travel behaviour, by providing increased mixed-use density in proximity to high frequency and capacity public transport services being the Sydney Metro. Furthermore, Sydney Metro will provide employees with greater access to public transport and employment options, while promoting the use of sustainable travel options.

The proposed development will deliver residential density to meet housing demands in a manner which is consistent with strategic government policies and strategies, namely providing density at transport nodes so as to influence travel demand towards sustainable modes of transport including public and active transport.

The mixed-use nature of the proposed development will provide ancillary services and facilities so as to reduce the need for travel from point to point.

7 Summary and Recommendations

Ason Group has been engaged by Futuro No. 1 Pty Ltd to prepare a Transport Assessment (TA) supporting a Pre-Gateway Planning Proposal of a mixed-use development at 378-390 Pacific Highway, Crows Nest (the Site).

7.1 Key Findings

The key findings are as follows:

- Proposal generally relates to the increase in permissible floor-space-ratio (FSR) controls. A concept scheme has been prepared to support this.
- The Proposal is consistent with the Crows Nest 2036 Plan with an overall FSR of 7.5 : 1. Ground floor and podium level non-residential uses remain relatively consistent between all scenarios and, as such, do not have a substantial bearing on this assessment.
- Ancillary services and facilities are provided as part of the mixed-use development so as to reduce the need for travel from site to site.
- The future Crows Nest Metro Station is planned to be operational by 2024 at which time it will significantly improve the accessibility of the development by public transport.
- The proposed mixed-use development is strategically located to enable the existing transit-orientated travel demands to be maintained and further enhanced with the future construction of the Sydney Metro rail line.
- A consolidated access to the Site is being provided at Hume Street for resident parking and service vehicles.

7.2 Conclusions

In summary, the Planning Proposal is considered supportable on transport planning grounds and is not expected to result in any adverse impacts on the surrounding transport network.

The increased density sought on the subject site achieves broad goals of increased density in close proximity to a range of public transport and services, thus minimising traffic impacts and supporting Government investment in the Metro.

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