

St Leonards South (Areas 7-11)

Transport Impact Assessment

Prepared for:

Silver Pond Investments Pty Ltd ATF Silver Pond Unit Trust

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PROJECT INFORMATION

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1 Introduction

1.1 Background

JMT Consulting was engaged by Silver Pond Investments Pty Ltd ATF Silver Pond Unit Trust to prepare a transport assessment to support a Development Application (DA) to Lane Cove Council for Areas 7-11 within the St Leonards South precinct.

1.2 Site location

The site is located within the broader St Leonards South precinct as illustrated in Figure 1 below. The St Leonards South precinct was rezoned in late 2020 to allow for increased residential floor space and building heights, recognising its strategic location adjacent to St Leonards railway station and close to the future metro station at Crows Nest. Encompassing over 12,600m² in area, the site currently contains approximately 20 detached residential dwellings.



Figure 1 Site location

1.3 Report purpose

The purpose of this report is to describe the traffic, transport and parking implications of the development application for the site. The report details the following:

- Existing transport conditions, including:
 - Surrounding road network
 - Vehicle site access
 - Travel patterns
 - Car parking
 - Public transport provision
 - Walking and cycling network
- Proposed site access arrangements.
- Additional trips generated by all modes of transport.
- Additional traffic movements likely to be generated by the proposal and their associated impact on the surrounding road network.
- Parking demands arising from the proposal and ability of the site to accommodate these demands.
- Proposed vehicle loading and servicing arrangements.
- Proposed enhancements to the pedestrian network supporting the site.
- Bicycle parking to be provided as part of the future site development.

2 Existing Transport Conditions

2.1 Existing site uses

The existing site comprises of approximately 20 detached residential dwellings. On-site parking is provided for these residences, with vehicle access obtained from either Canberra Avenue or Holdsworth Street.

2.2 Travel patterns

Travel behaviours for residents and employees within the St Leonards South precinct have been analysed using 2016 Journey to Work Census data. The data demonstrates a strong proportion of people travelling from the precinct to work use public transport, accounting for 49% of all trips in the case of residents travelling to work. This reflects the strong availability and accessibility of public transport in this area. A high proportion of residents walk to work, which reflects the likelihood that future residents of the site will choose to work in the St Leonards CBD. These existing travel behaviours are summarised in Table 1 below.

Table 1 Existing travel behaviours

Mode of travel*	Proportion of journey to work trips from St Leonards South
Car driver	32%
Car passenger	3%
Bus	2%
Train	49%
Walk	13%
Other	1%
Total	100%

* Excludes people working from home or not going to work on the date of the Census

2.3 Road network

To manage the extensive network of roads for which councils are responsible under the Roads Act 1993, Transport for NSW (TfNSW) in partnership with local government established an administrative framework of *State*, *Regional*, and *Local Road* categories. State Roads are managed and financed by TfNSW and Regional and Local Roads are managed and financed by councils.

Regional Roads perform an intermediate function between the main arterial network of State Roads and council controlled Local Roads. Key State and Regional roads which provide access to the site are illustrated in Figure 2. This demonstrates the precinct is very well connected to the surrounding road network, with the Pacific Highway acting as the primary access to the site. The Pacific Highway is classified State road which serves as a major north-south arterial link, providing connectivity between the Warringah Freeway and M1 Pacific Motorway. The River Road is a regional road which provides a connection to the southern end of the precinct, with connections to the River Road available at both Canberra Avenue and Duntroon Avenue. All roads within the St Leonards South precinct are local roads under the control of Lane Cove Council.

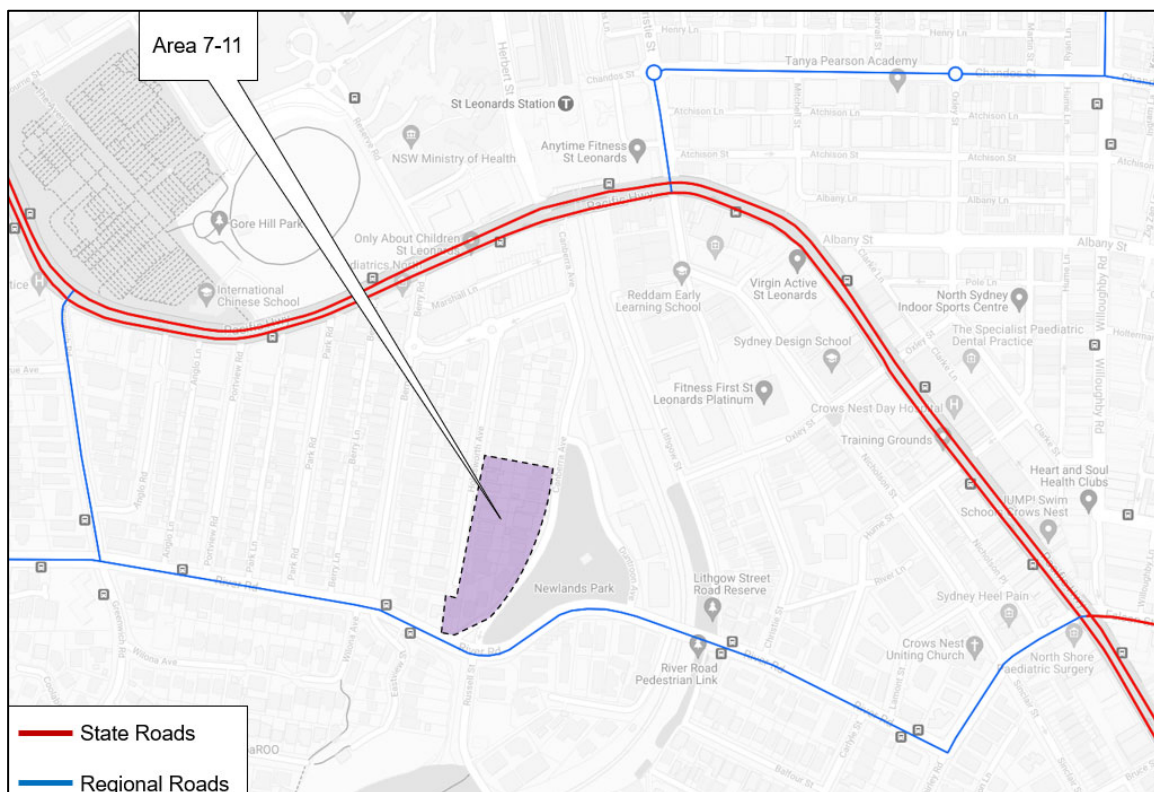


Figure 2 Road network serving the site

2.4 Public transport

The St Leonards South precinct is within easy walking distance of St Leonards railway station. St Leonards Station is located on the northern side of Pacific Highway. Additionally, Wollstonecraft Station is located within 800 metres of the area. Both stations provide rail connections along the T1 line. The T1 (the North Shore and Northern and the Western line) operates at a frequency of approximately 3 minutes during peak periods and between 5 to 10 minutes during the off-peak period.

In addition to frequent train services, a large number of bus services operate along Pacific Highway that provide connections to key centres including Chatswood, North Sydney, Manly, the Sydney CBD, Bondi as well as The Hills District. There is only one bus route that operates from River Road, operating between Lane Cove and the City. The bus services in vicinity of this site are summarised in Table 2 below.

Table 2 Summary of existing bus services

Bus route	Route description
143	Manly to/from Chatswood via Balgowlah and St Leonards
144	Manly to/from Chatswood via Royal North Shore Hospital
200	Bondi Junction to/from Chatswood
252	Gladesville to/from City via North Sydney
254	McMahons Point to/from Riverview
261	Lane Cove to/from the City
265	Lane Cove to/from North Sydney via Greenwich
286	Denistone East to/from Milsons Point via St Leonards and North Sydney
287	Ryde to/from Milsons Point via St Leonards and North Sydney
290	Epping to/from City via Macquarie University and North Sydney
291	Epping to/from McMahons Point
602X	Rouse Hill to/from North Sydney
612X	Kellyville to/from Milsons Point
622	Dural to/from Milsons Point via Cherrybrook
653	West Pennant Hills to/from Milsons Point
M20	Botany to/from Gore Hill
N90	Hornsby to/from City via Chatswood
N91	Bondi Junction to Macquarie Park via City

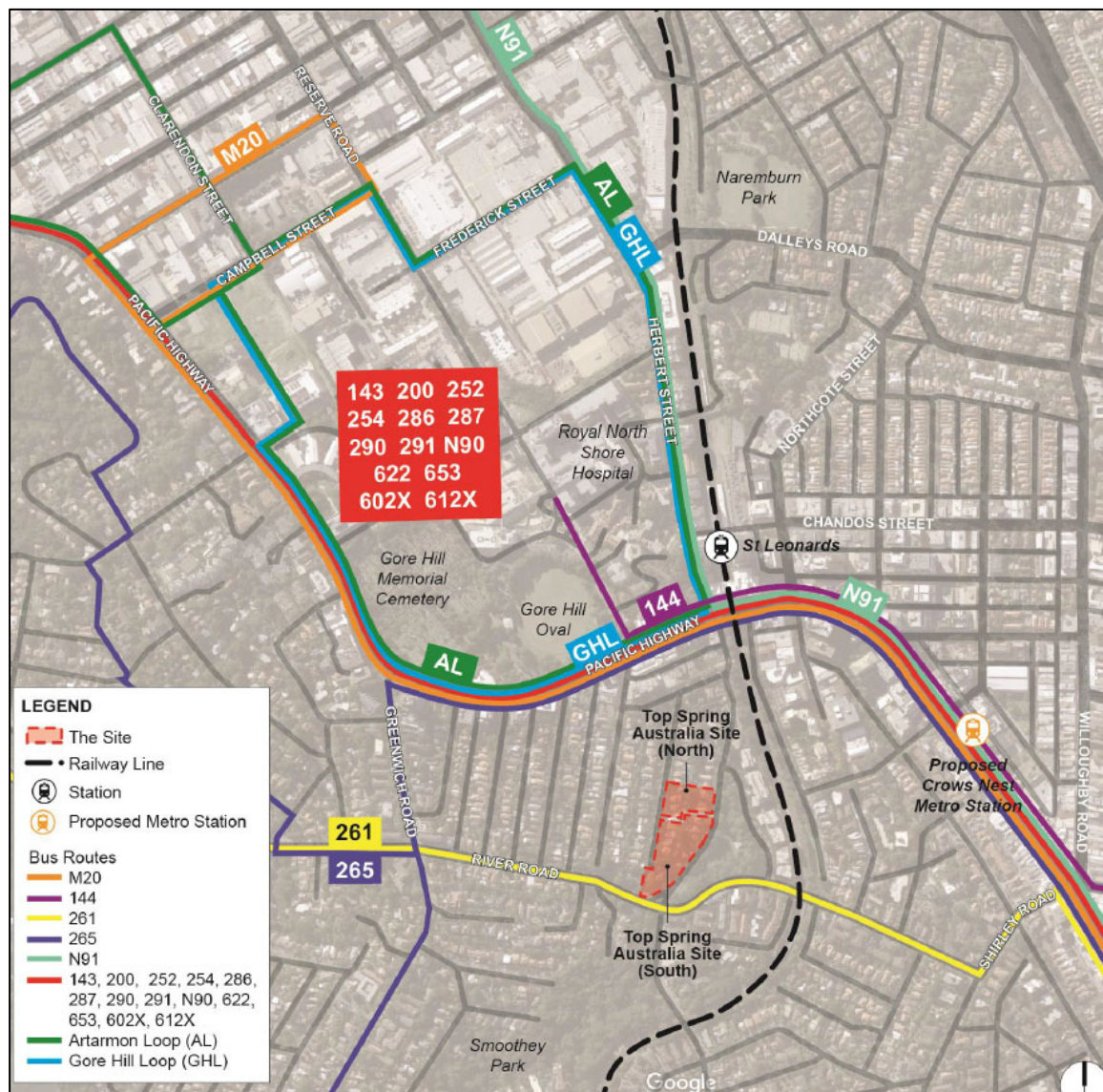


Figure 3 Existing bus network

Source: SCT Consulting, February 2019

A key indicator of the level of public transport accessibility a site contains is the number of locations accessible within a 30 minute public transport catchment. A key objective of the Greater Sydney Commission's Greater Sydney Region Plan is to deliver a 30-minute city where jobs, services and quality public transport spaces are in easy reach of residences.

As illustrated in Figure 4 a number of key employment centres across Sydney can be reached within 30 minutes public transport travel time of the site, including the Sydney CBD, North Sydney, Chatswood and Macquarie Park. The highly accessible nature of the site reduces the need for residents to own cars and rely on public transport as a means of accessing their place of work.

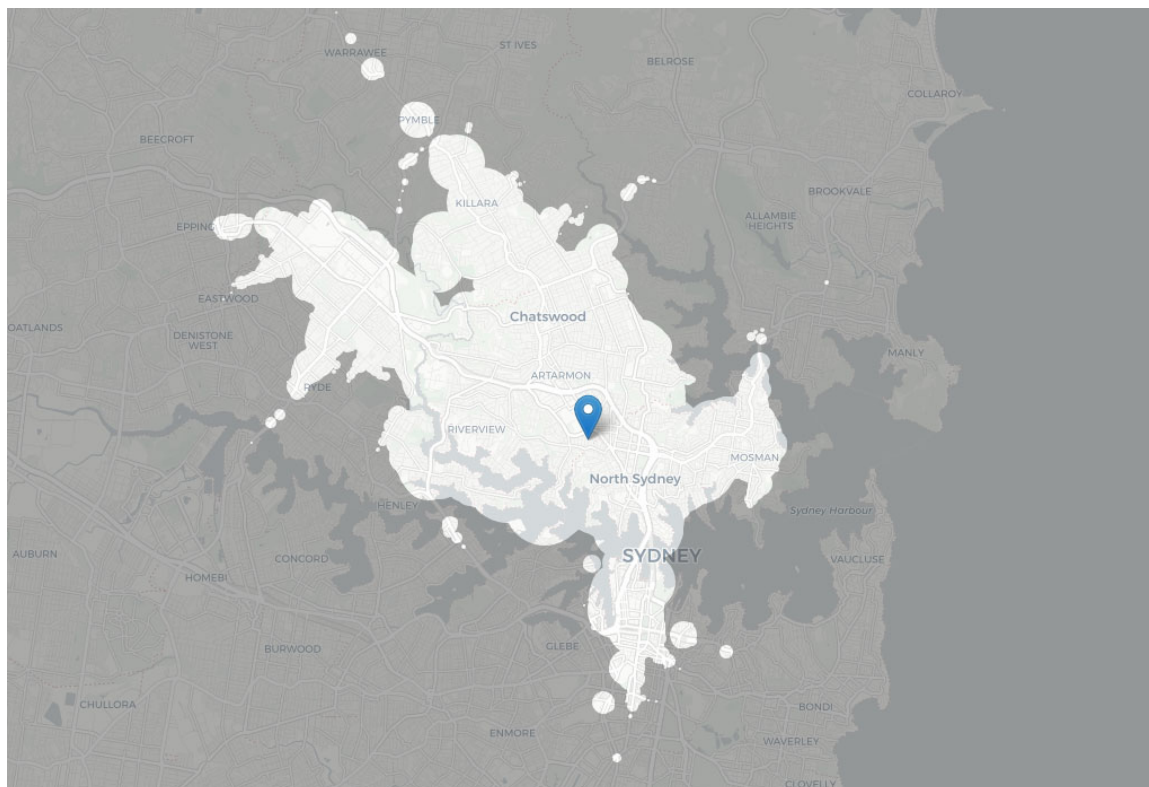


Figure 4 30 minute public transport catchment

Source: <https://www.mapnificent.net/sydney>

Further benefitting the St Leonards South precinct in future years will be the Sydney Metro (City and South West) service. Sydney Metro is a major public transport infrastructure project currently in the construction phase within proximity of the subject site. The Sydney Metro City and Southwest metro line (currently under construction) will connect to the recently opened Sydney Metro Northwest line at Chatswood station and provide significantly improved connectivity from the southwest and Sydney CBD to Chatswood and the northwest.

The site is located within 800m or a 10 minute walk from the future Crows Nest metro station. The expansion of the Sydney Metro network will further enhance public transport accessibility to the site and reduce car reliance for residents and employees of the St Leonards CBD.

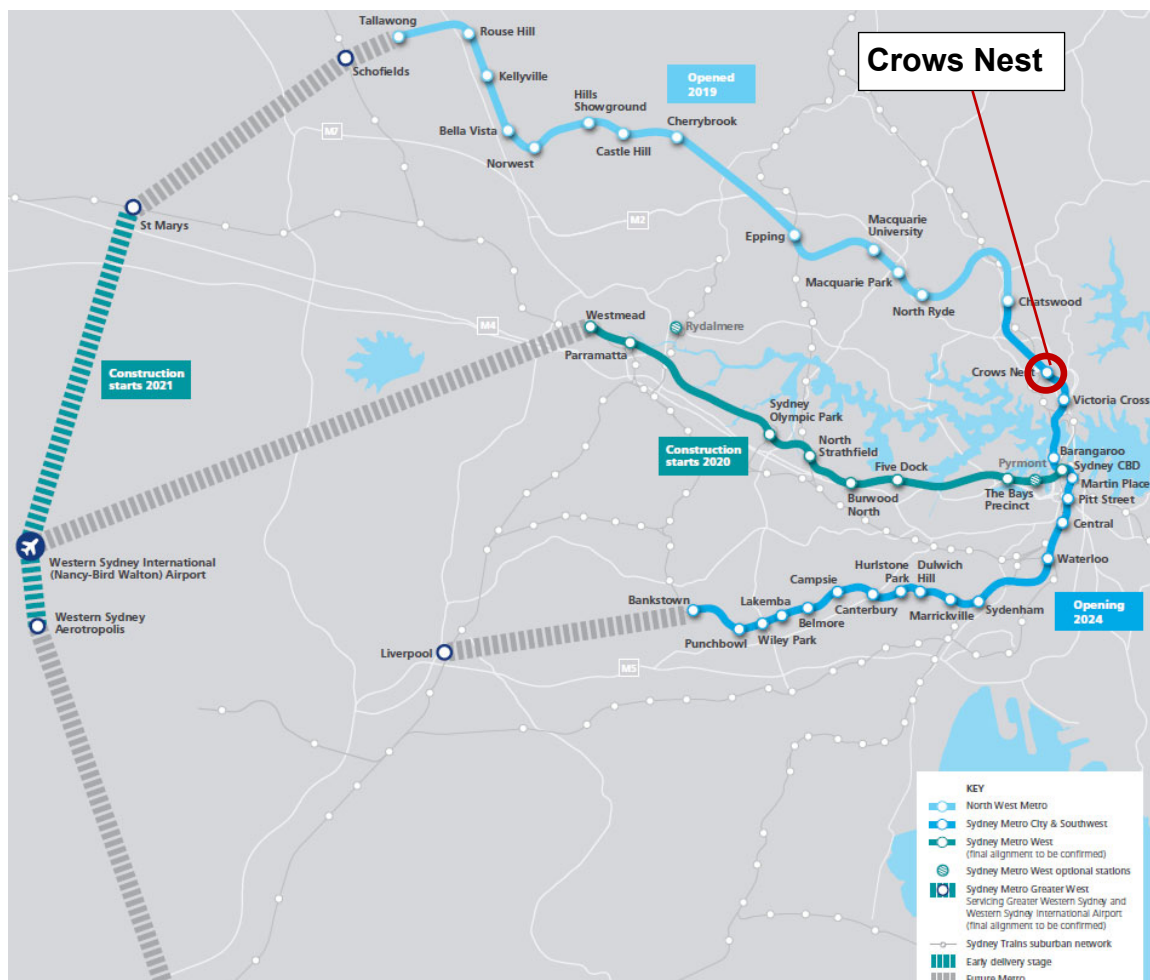


Figure 5 Sydney Metro network

Source: Transport for NSW

2.5 Pedestrian facilities

The existing pedestrian facilities in the vicinity of the site is illustrated in Figure 6 below. The quality of the existing network is generally good with footpaths provided on both sides of the street, supported by a number of pedestrian refuges to assist people crossing local streets. Signalised intersections on the Pacific Highway contain formal pedestrian crossings however not all approaches of the intersection contain crossing points. A pedestrian underpass of the Pacific Highway is provided at Lithgow Street which supports pedestrian movements to St Leonards railway station.

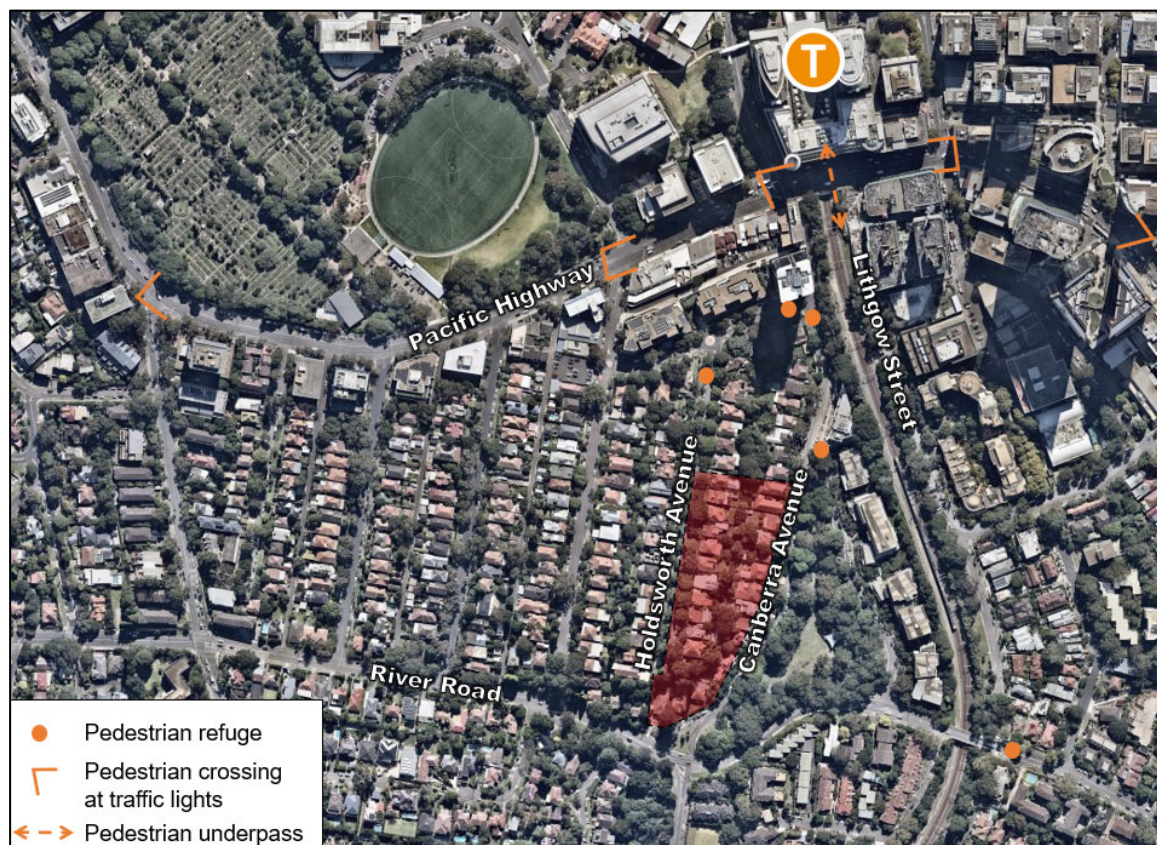


Figure 6 Existing pedestrian facilities

2.6 Cycling network

The existing network of cycling routes servicing the St Leonards South precinct is illustrated in Figure 7 below. While existing cycling connections are limited there are future plans to provide for enhanced cycling connections along both the River Road and Canberra Avenue which would benefit future residents of the site.

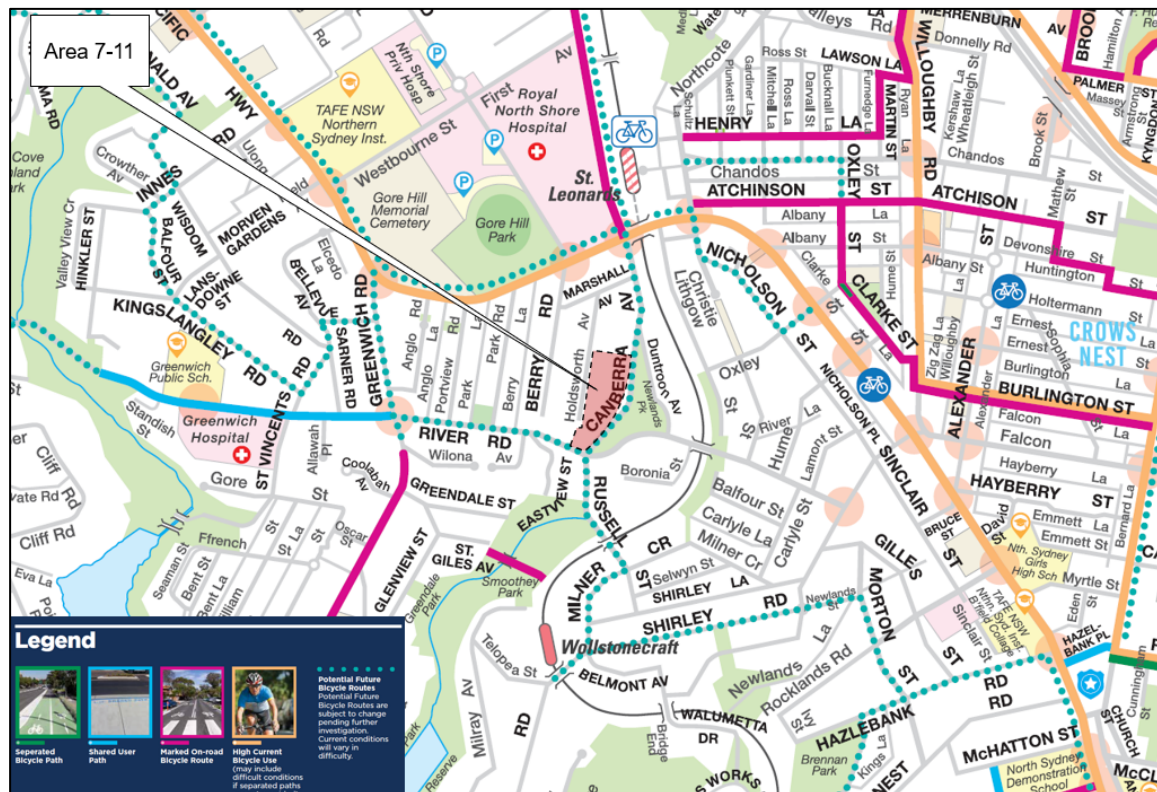


Figure 7 Cycling network around the site

Image source: North Sydney cycling map

3 Development Proposal

3.1 Description of the proposal

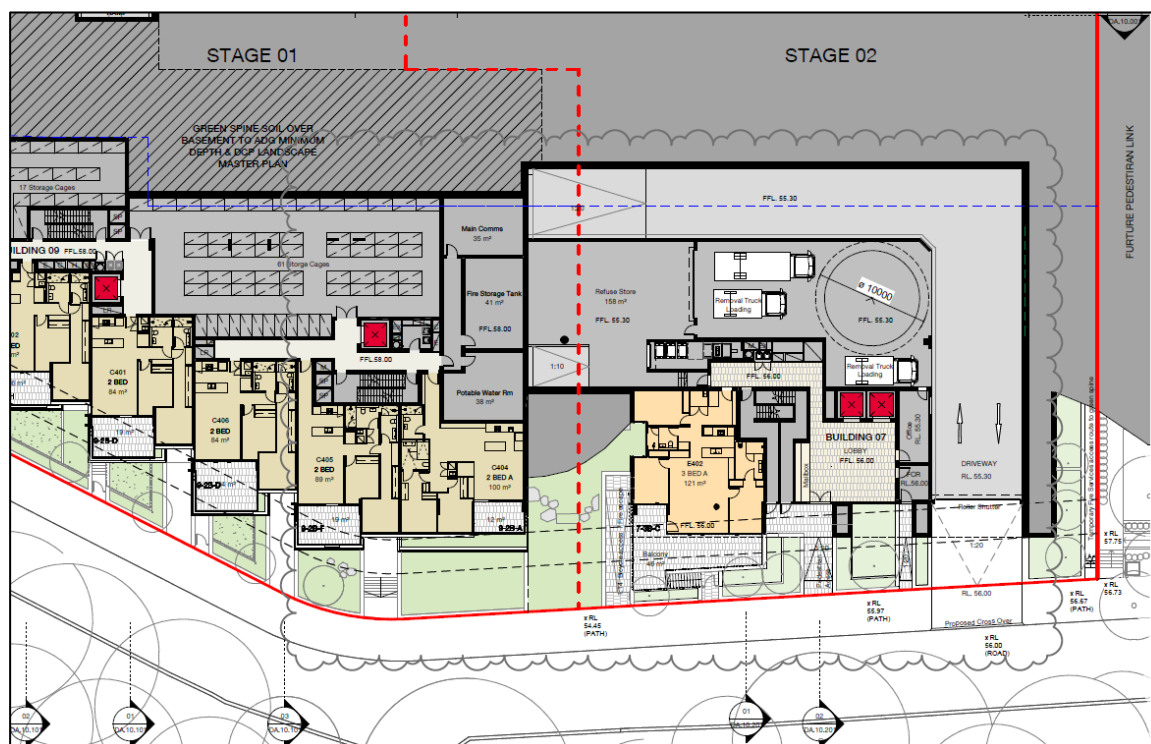
This submission is for the proposed development of the site at 21 to 41 Canberra Avenue and 18 to 32 Holdsworth Avenue, St Leonards of 329 dwellings, including:

- 72 One Bedroom Apartments
- 169 Two Bedroom Apartments
- 78 Three Bedroom Apartments

The proposal includes on-site car parking and loading, a publicly accessible through site link and a significantly landscaped green spine

3.2 Site access

A single driveway access point is proposed for the site via Canberra Avenue near the northern boundary as illustrated in Figure 8. This access point would service both cars and service vehicles accessing the on-site loading dock. The site access point considers the potential future extension of Newlands Park and resultant closure of the southern end of Canberra Avenue. This is subject to further investigations by Council and does not form part of this development application.



The St Leonards South masterplan envisages a significant number of vehicle driveways along Holdsworth Avenue and Canberra Avenue serving each of the future development sites. This prevalence of vehicle driveways has the potential to result in traffic conflicts on local streets as well as impacting the movement of pedestrians and cyclists.

As part of the proposal all vehicle access (including service vehicles) into the development would be rationalised down to one access point on Canberra Avenue. Providing a single, consolidated access driveway aligns with best practice for transit oriented developments by prioritising the movement of pedestrians and cyclists at street level.

Access from Canberra Avenue is considered preferable from a traffic perspective to reduce conflicts between entering and exiting vehicles from the numerous future site access driveways to be constructed along Holdsworth Avenue. Canberra Avenue also has significantly better access to the regional road network given it connects with Duntroon Avenue which in turns connects to the River Road. This strong access to the higher order road network from Canberra Avenue reduces the extent of traffic circulation on local streets within the St Leonards South precinct

To emphasise pedestrian priority along Canberra Avenue the driveway entrance is to be fully integrated with the adjoining footpath at one continuous level. The treatment will therefore be an area which is designed for pedestrians across which vehicles can pass slowly. Drivers of vehicles will be guided and encouraged to give way to pedestrians on the footpath as required by law. The crossing would also be designed with consistent pavement material.

3.3 Pedestrian and cyclist access

Pedestrian and cycle access will be from all directions, with each of the five buildings have a street lobby and a lobby to the Green Spine. Access through and alongside the site is facilitated by the existing Holdsworth/River Road link, the new through site link, and the linear park to the north of areas 7/8. Pedestrian access through to public transport nodes, particularly St Leonards train station, is prioritised under this arrangement. Access to bicycle storage areas within each building will be through dedicated entry points at street level, with cyclists fully segregated from cars and trucks using the access ramp and basement car park. This separation of cyclists and vehicles aligns with best practice design and will support cycling as a mode of transport to the site.

3.4 Car park design

The car park has been designed in accordance with AS2890.1 with respect to ramp gradients, circulation aisle widths and car space dimensions. A 7.4m wide access ramp (kerb to kerb) has been provided which allows for the safe and efficient entry of a Medium Rigid Vehicle (MRV) or 9.5m garbage truck while passing a standard passenger vehicle. This size of truck is consistent with the largest waste vehicle type noted in Council's DCP. Swept paths of a 9.5m waste collection vehicle entering and exiting the car park are provided in Appendix A of this document.

3.5 Parking provision

3.5.1 Car parking – residents and visitors

An assessment of car parking requirements for the proposed development against requirements set out in Table 2 of Part R – Traffic, Transport and Planning of the Lane Cove Development Control Plan (2016) (DCP) has been undertaken. The parking rates for land within a 400-metre radius of St Leonards Railway Station have been applied. The DCP provides recommended (neither maximum nor minimum) parking rates for residential flat buildings.

The car parking assessment of the proposed development is detailed in Table 3 below and indicates 372 car parking spaces would be provided as part of the development. This demonstrates that the on-site car parking provision complies with the Lane Cove Council DCP requirements for the residential uses.

Table 3 Car parking numbers

Type	No. of units	DCP parking rate	No. of spaces required under DCP	Car spaces provided
1 bed	72	0.5 / unit	36	36
2 bed	179	0.9 / unit	161	161
3 bed	78	1.4 / unit	109	109
Visitor	329	1 / 5 units	66	66*
Total			372	372

* 6 visitors spaces may be utilised as car share spaces depending on market demand from car share operators

The Lane Cove DCP car parking rates are very similar to those noted in the *RMS Guide to Traffic Generating Developments* document for metropolitan sub-regional centres as outlined in Table 4 below. Therefore the adopted residential parking rates for the project are considered suitable.

Table 4 Parking rates comparison

Dwelling Type	Parking rate	
	Lane Cove DCP	RMS Guidelines
1 bed	0.5 spaces / unit	0.6 spaces / unit
2 bed	0.9 spaces / unit	0.9 spaces / unit
3 bed	1.4 spaces / unit	1.4 spaces / unit
4 bed	2 spaces / unit	Not specified
Visitors	1 space / 5 units	1 space / 5 units

3.5.2 Car wash spaces

The Lane Cove Council DCP requires that parking for car wash bays be provided at a rate of one space per 50 units. This would require six car wash spaces to be provided, with the design proposing five car wash spaces which is a minor shortfall of one space.

3.5.3 Motorcycle parking

The Lane Cove Council DCP requires that motorcycle parking be provided at a rate of one space per 15 car parking spaces. It is proposed to comply with this requirement, with 25 motorcycle parking spaces provided within the basement.

3.5.4 Bicycle parking

The Lane Cove Council DCP outlines minimum bicycle parking requirements for new developments. Table 5 below summarises the proposed bicycle parking provision based on the current development scheme. This demonstrates that the proposed provision of 121 bicycle parking spaces exceeds the requirements of the Lane Cove DCP, therefore supporting cycling as a mode of transport to the site.

Table 5 Bicycle parking requirements

Land Use	No. of units	Bicycle parking rate		Bicycle parking requirement		Spaces provided	
		Residents	Visitors	Residents	Visitors	Residents	Visitors
Residential	329	1 / 4 units	1 +1 / 10 units	82	34	87	34

3.5.5 Accessible car parking

The DCP also provides rates for disabled parking provision. The required disabled parking provision for the subject development is detailed in Table 6, demonstrating the proposed accessible car parking provision complies with the DCP requirements.

Table 6 Accessible car parking

Type	DCP parking rate	No. of spaces required under DCP	Spaces provided
Residents	1 space / adaptable apartment	66	66
Residential visitor	1 / 10 visitor spaces	6	6

3.5.6 Car share

Six car share spaces have been identified in the basement plans to support reduced car dependency and in turn minimise traffic impacts of the development. This equates to a rate of approximately 1 car share space for every 60 parking spaces provided on site which aligns with guidance from other Councils, e.g. City of Sydney Council.

Engagement with car share operators (e.g. Go Get) will take place closer to the initial occupancy of the development to confirm there is market demand for these spaces.

3.6 Loading dock

All loading and servicing will take place within the development site, with an on-site loading dock provided which makes provision for the following vehicles:

- 1 * 9.5m Council waste collection vehicle (largest waste vehicle specified in Part Q of Council's DCP)
- 1 * 6.4m small rigid vehicle which can be used for general deliveries as well as removalists
- 1 * 5.4m long van / ute space which can be used for general deliveries as well building maintenance

This loading dock provision meets the requirements of the Lane Cove DCP, which require one service vehicle space to be provided for every 100 residential units. The loading dock design provides for flexibility in allowing different sized vehicles to enter and exit the facility, meeting the demands of residents and tenants of the building.

A 4.5m height clearance would be provided from the street entry all the way through to the loading dock, complying with the requirements for height clearance outlined in the Australian Standards. As previously noted a 7.4m wide access ramp (kerb to kerb) has been provided which allows for the safe and efficient entry of a Medium Rigid Vehicle (MRV) or 9.5m garbage truck while passing a standard passenger vehicle.

A turntable will be provided within the loading dock to allow all vehicles to enter and exit the site in a forwards direction. The loading dock arrangement is shown in Figure 9, with vehicle swept path analysis provided as Appendix A of this document.

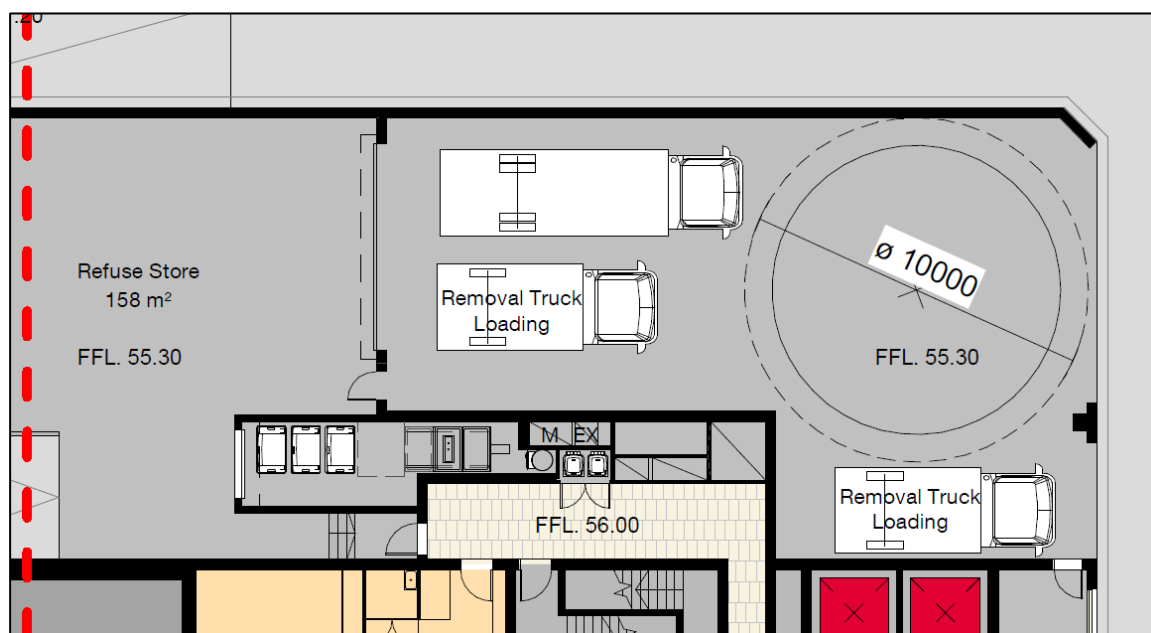


Figure 9 On-site loading dock

Typically 20% of units within residential apartment buildings turn over every year. Based on 329 apartments and this typical turnover rate of 20% it could be expected that between 1 and 2 move ins/outs each week will take place. The building manager will ensure all move ins/outs are scheduled in advance so that space within the loading dock can be allocated appropriately.

During the initial move in phase for each building new, special arrangements will be made at basement level through allocation of space and scheduling of bookings.

There will be a range of service vehicles visiting the site for durations of up to 2 hours to provide maintenance and repair services to residential properties. These vehicles will typically be vans and utes which can use the service vehicle spaces in the loading dock area. In addition residents may have goods delivered to their building throughout the week and these deliveries will need to be pre-booked with the building manager.

4 Transport Impact Assessment

4.1 Person trip generation

Recent surveys undertaken by the TfNSW of high density residential developments indicates a person trip generation rate of approximately 0.6 trips / dwelling. Applying this rate to the dwelling yield of 329 dwellings possible under the DA, 197 trips would be generated during the AM and PM peak hours of the day. Using the existing mode splits previously noted in Section 2.2, and applying adjustments based on the site's proximity to the future metro station at Crows Nest as well as the measures proposed in the Sustainable Travel and Access Plan, the forecast number of trips by mode can be determined. The forecast mode share also aligns with that documented in the St Leonards Cumulative Transport and Accessibility Study prepared for Lane Cove Council to support the rezoning of the precinct.

This expected person trip generation is outlined in Table 7 below.

Table 7 Mode share and peak period person trips

Mode Share		Peak Hour Person Trips	
		AM Peak Hour Trips	PM Peak Hour Trips
Car Driver	15%	28	28
Car Passenger	1%	2	2
Train / metro	56%	111	111
Bus	6%	12	12
Walk	19%	38	38
Cycling/Other	3%	8	8
Total	100%	197	197

4.2 Traffic generation

Previous consultation undertaken between Lane Cove Council and Transport for NSW (formerly Roads and Maritime Services) resulted in a request from TfNSW (4 January 2016) to use the following traffic generation rates for new development in the St Leonards South precinct:

- 0.14 vehicle trips per dwelling in the AM peak hour (8am – 9am)
- 0.07 vehicle trips per dwelling in the PM peak hour (5pm – 6pm)

These traffic generation rates were adopted in the detailed traffic modelling undertaken by Council to support the rezoning of the precinct. The resultant traffic generation from the development proposal would be as follows:

- 46 vehicle trips in the **AM peak hour**
 - 37 vehicle trips out of the site
 - 7 vehicle trips into the site
- 23 vehicle trips in the **PM peak hour**
 - 5 vehicle trips out of the site
 - 18 vehicle trips into the site

It is also important to note that the existing site contains approximately 20 detached residential dwellings which would generate 15-20 vehicle movements during peak hours. Therefore the net increase in traffic generation resulting from the development of the site would be 30 vehicles or less during the morning peak hour and 10 vehicles or less during the afternoon peak hour.

4.3 Traffic distribution

Based on existing travel patterns for residents of the area the following traffic distribution is expected:

- 35% of traffic via Pacific Highway (west)
- 25% of traffic via River Road (east)
- 20% of traffic via River Road (west)
- 10% of traffic via Herbert Street (north)
- 10% of traffic via Pacific Highway (east)

4.4 Road network impacts

4.4.1 St Leonards South cumulative transport impact assessment

Lane Cove Council prepared a Planning Proposal for the St Leonards South area which was supported by a detailed transport and accessibility study. TEF Consulting was engaged to prepare a detailed traffic model of the area to consider the cumulative traffic impacts of approved and potential development proposals within Lane Cove Council's portion of St Leonards. This detailed (Aimsun traffic modelling) considered development within the St Leonards South precinct (including the subject site) as well as other sites as noted below.

- St Leonards South precinct – 2,400 dwellings
- 71 – 79 Lithgow Street and 82 – 90 Christie Street – 450 dwellings & 7,760m² commercial/retail
- 1 – 13 and 15/25 Marshall Street– 335 dwellings & 395m² commercial/retail
- 472-494 Pacific Highway - 539 dwellings & 8,263m² commercial/retail
- 496-504 Pacific Highway - 495 dwellings & 5,628m² commercial/retail

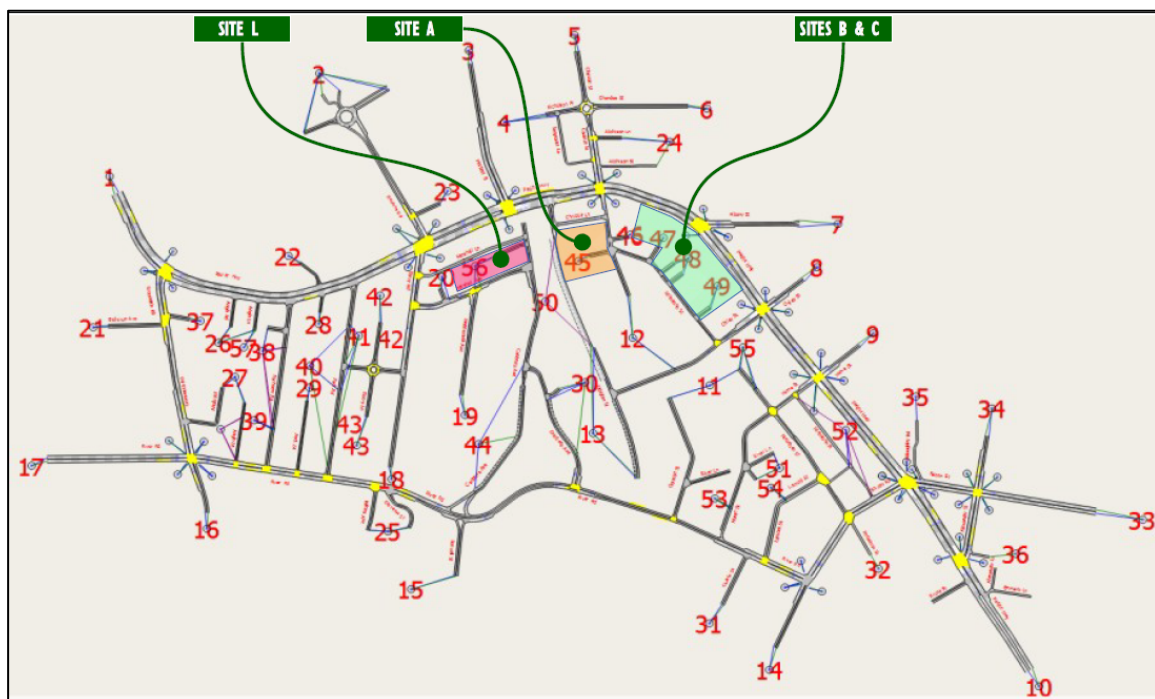


Figure 10 Aimsun traffic modelling for St Leonards South

Source: TEF Consulting

The peak hour trip rates for residential uses were 0.14 trips per dwelling (AM peak) and 0.07 trips per dwelling (PM peak), as per Roads and Maritime request detailed in letter dated 4th January 2016.

Overall, this study found that traffic increases are moderate for each of the development sites, especially where proposed developments are replacing existing substantial buildings. The report states, “*Levels of service remained essentially the same for all models*” compared to a pre-development base. The modelling indicated the to maintain satisfactory network function as a result of the proposed developments only relatively minor improvements would be needed. For the St Leonards South (residential) area, the recommended infrastructure improvements were as follows:

- The roundabout at the intersection of Marshall Avenue and Berry Road be removed and replaced with a Give Way intersection (Further investigations required as this may have been introduced for modelling purposes rather than actual capacity issues); and
- A new road connection be provided between Berry Road and Park Road.

4.4.2 Impacts of development of subject site

As noted in section 4.2 the site is forecast to generate, in net terms, 30 vehicles or less during the morning peak hour and 10 vehicles or less during the afternoon peak hour. This is a relatively low level of traffic movements and would not impact the operation of the surrounding road network.

It is important to recognise that traffic modelling for the St Leonards South precinct as described in the previous section took into consideration the development of up to 2,400 dwellings within the St Leonards South precinct, assuming a higher FSR for the precinct compared to what was ultimately approved.

Based on the site areas and permissible FSR for each site, Area 7-11 accounts for just under 20% of the total permissible GFA in the St Leonards South precinct. This would imply a dwelling yield of 472 dwellings based on the original assumption of 2,400 dwellings for the entire precinct. The current proposal comprises of a significantly lower development yield of 329 dwellings – approximately 30% less when compared to what was assumed in the Aimsun traffic modelling. Therefore the traffic impacts of the proposal would be considerably less than that originally considered as part of the original Aimsun modelling.

4.4.3 Canberra Avenue road closure

The closure of Canberra Avenue is a resolution of Council and not something that is proposed as part of the development application for Areas 7-11. While the proposed design makes provision for and does not preclude the future closure of Canberra Avenue by Council, it does not rely upon it. Any closure of Canberra Avenue, including the implications to traffic movements, would need to be considered separately by Council outside of this DA.

In this context there is not considered a requirement for any update of the Aimsun model which has already been approved by Council and endorsed by Transport for NSW. Further the traffic implications of the proposal have already been considered by Council as part of the rezoning of the precinct and determined to be acceptable.

4.5 Public transport

The site is forecast to generate demand for up to 111 trips by train/metro and 12 trips by bus during the AM and PM peak hours. As shown in Figure 11 the distance to St Leonards train station is approximately 400m with bus stops available on River Road and the Pacific Highway. The opening of the Crows Nest metro station in 2024 will significantly improve public transport accessibility to the area and accommodate growth in travel demand on the public transport network.



Figure 11 Future public transport arrangements

4.6 Active transport

Pedestrian and cycle access will be available from all directions, with each of the five buildings have a street lobby and a lobby to the Green Spine. Access through and alongside the site is facilitated by the existing Holdsworth/River Road link, the new through site link, and the linear park to the north of areas 7/8. Pedestrian access through to public transport nodes, particularly St Leonards train station, is prioritised under this arrangement.

The proposal includes a number of publicly accessible pedestrian through site links connecting Canberra Avenue with Holdsworth Street (see Figure 12). Footpath improvements will be undertaken as part of the development works to improve the pedestrian environment in the area.

Bicycle parking is to be provided at rates exceeding that of the Lane Cove DCP, promoting cycling as a form of transport for future residents. Access to bicycle storage areas within each building will be through dedicated entry points at street level, with cyclists fully segregated from cars and trucks using the access ramp and basement car park. This separation of cyclists and vehicles aligns with best practice design and will support cycling as a mode of transport to the site.

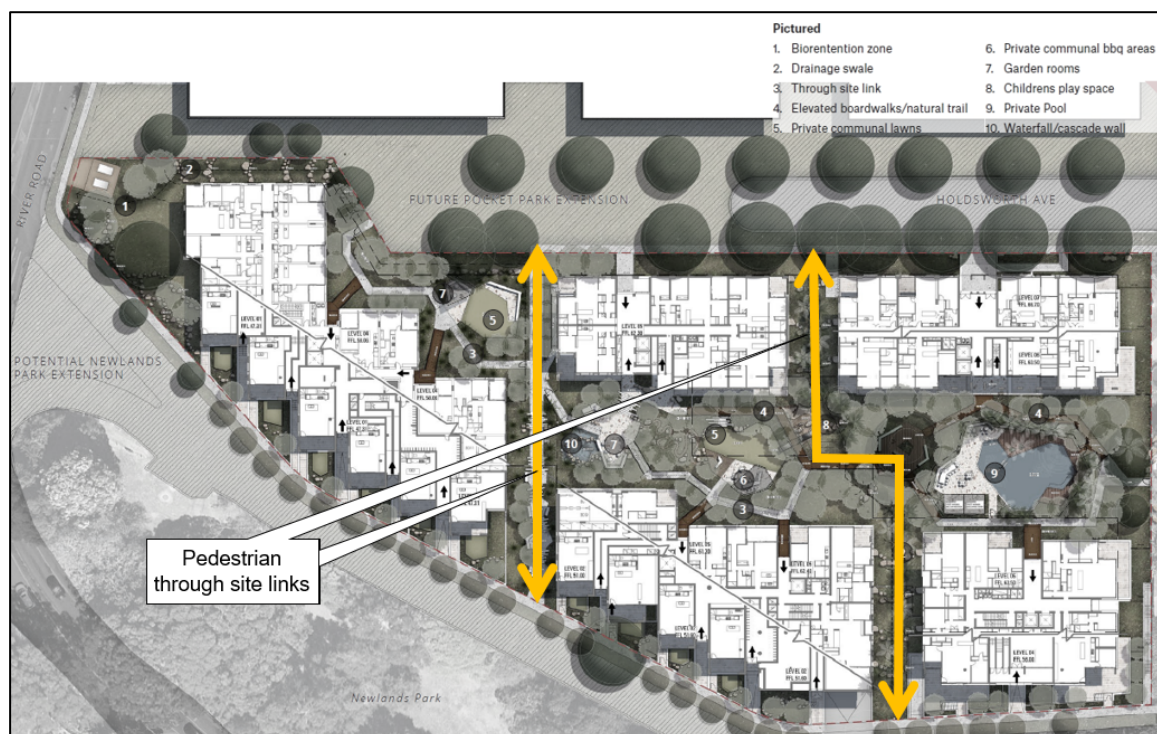


Figure 12 Pedestrian through site link

4.7 Sustainable travel and access plan

In accordance with the requirements of the Lane Cove Council DCP a Sustainable Travel and Access Plan (STrAP) has been prepared to support the development. The purpose of the STrAP is to outline a package of initiatives to reduce car-based travel. The objective of the STrAP is to encourage residents / customers / staff to make greater use of public transport, cycling, walking and car-sharing for journeys to and from the development.

The STrAP for the subject site is provided in a separate report supporting the development application.

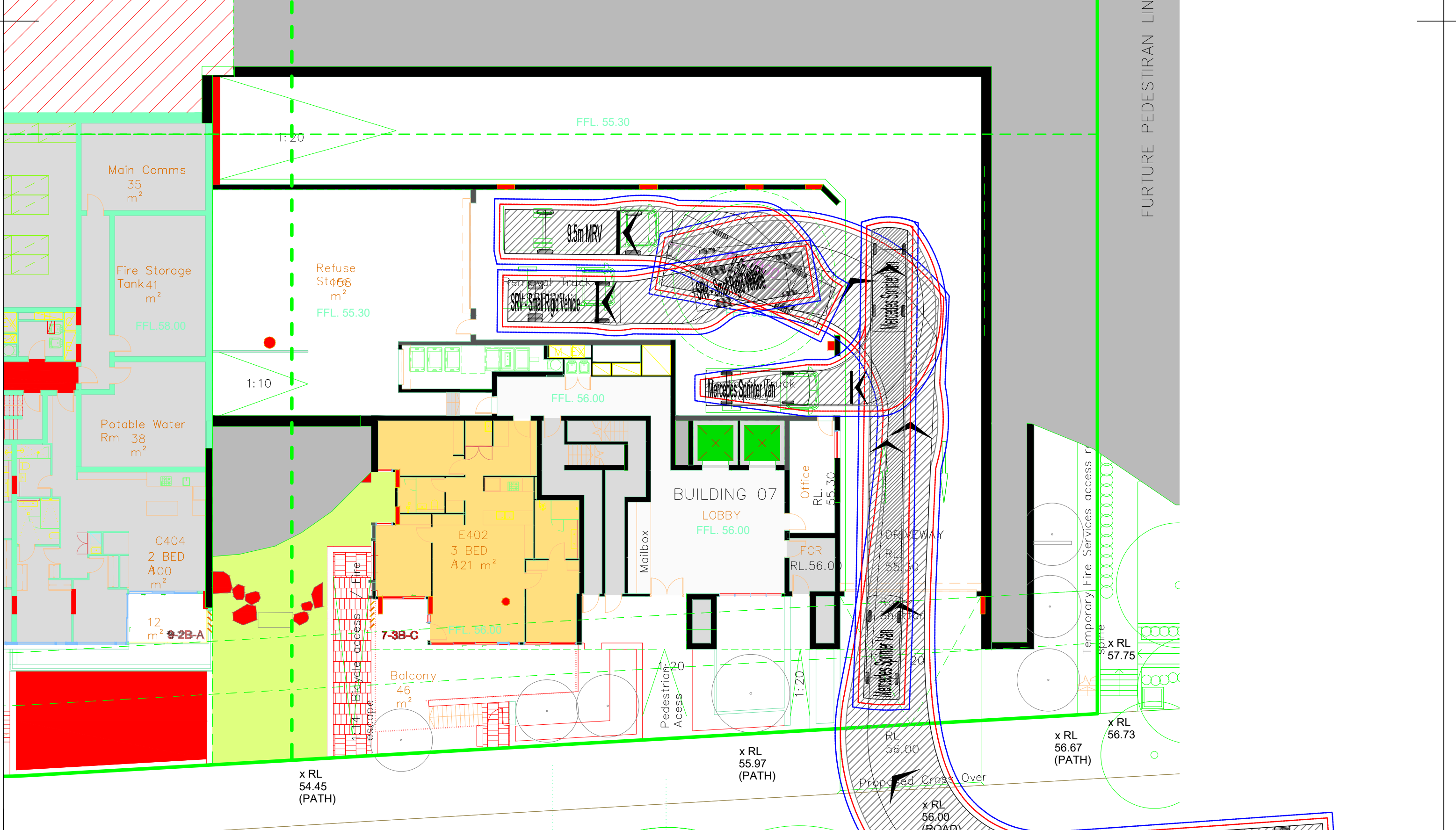
5 Summary

This transport assessment has been prepared by JMT Consulting on behalf of Silver Pond Investments Pty Ltd ATF Silver Pond Unit Trust to support a Development Application to Lane Cove Council for Areas 7-11 within the St Leonards South precinct. The DA proposes the development of 329 residential dwellings on the site. Key findings from the transport assessment are as follows:

- The site is within easy walking distance of St Leonards station and the future Crows Nest metro station, supporting trips by public transport.
- A single driveway access point is proposed for the site on Canberra Avenue which aligns with best practice for transit oriented developments by prioritising the movement of pedestrians and cyclists at street level and reducing vehicle crossover points. A single driveway entry/exit point will also benefit the broader St Leonards South precinct by reducing conflict points with future development sites, particularly those fronting Holdsworth Avenue.
- Pedestrian and cycle access will be from all directions, with each of the five buildings have a street lobby and a lobby to the Green Spine.
- On-site car parking and loading will be provided in accordance with Council's DCP.
- The proposal includes the provision of car share spaces and bicycle parking which will reduce car dependency for future site residents.
- The site is forecast to generate, in net terms, 30 vehicles or less during the morning peak hour and 10 vehicles or less during the afternoon peak hour. This level of traffic generation is relatively minor and was contemplated in the detailed Aimsun traffic modelling undertaken by Lane Cove Council to support the rezoning of the site.
- The proposal includes a number of publicly accessible pedestrian through site links connecting Canberra Avenue with Holdsworth Street.
- Travel demand management measures have been suggested to improve the mode share of public transport and active transport as outlined in a Sustainable Travel and Access Plan. These items should be considered further at detailed design stage.

In the above context, the traffic and transport impacts arising from the proposal are considered acceptable.

Appendix A: Vehicle Swept Paths



Client
Top Spring

Date
30.11.21

Job Title
St Leonards South

Job No
2062

Drawing Title
Turning Paths
Loading Dock

Drawing No
SKT03

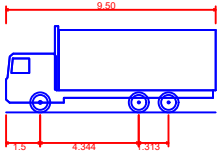
Drawing Status
For Information

Legend

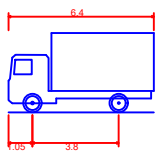
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- 300mm Envelope
- 600mm Envelope
- Wheel Envelope

Scale at A3
1:200

Vehicle type(s)



9.5m Garbage Vehicle
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock-to-lock time
Curb to Curb Turning Radius



SRV - Small Rigid Vehicle
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock-to-lock time
Curb to Curb Turning Radius

6.400m
2.330m
3.500m
0.398m
2.330m
4.00s
7.100m

