

# 7 City View Road, Pennant Hills

Planning Proposal  
Transport Impact Assessment



Prepared by: Stantec Australia Pty Ltd for EG Group  
on 08/11/2021  
Reference: N141173  
Issue #: A-Dr3

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GTA Report (NSW)



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# 1. INTRODUCTION

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## 1.1. Background

It is understood that a Planning Proposal is to be lodged with Hornsby Shire Council (Council) for the site at 7 City View Road, Pennant Hills. The proposal seeks approval to increase floor space ratio controls and to facilitate a modern mixed-use commercial, community and residential redevelopment of the site.

A concept scheme has been drafted which is representative of a development that would incorporate the proposed controls at its full potential. This scheme incorporates 79 residential apartments, 28 Independent Living Units (ILUs), 3,089 square metres gross floor area of commercial space and 931 square metres gross floor area of community space.

Stantec Australia Pty Ltd was commissioned by EG Group in July 2021 to undertake a transport impact assessment for the proposal.

## 1.2. Purpose of Report

This report sets out an assessment of the anticipated transport implications of the Planning Proposal, including consideration of the following:

- existing traffic and parking conditions surrounding the site
- car and bicycle parking requirements
- service vehicle requirements
- the traffic generating characteristics of the proposed development
- suitability of the proposed access arrangements for the site
- the transport impact of the development proposal on the surrounding road network.

## 1.3. References

In preparing this report, reference has been made to the following:

- an inspection of the site and its surrounds
- Hornsby Local Environmental Plan (LEP) 2013
- Hornsby Development Control Plan (DCP) 2013
- Australian Standard/ New Zealand Standard, Parking Facilities, Part 1: Off-Street Car Parking AS/NZS 2890.1:2004
- Australian Standard/ New Zealand Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS/NZS 2890.2:2018
- Planning Proposal, 7 City View Road, Pennant Hills, September 2021 by Fender Katsalidis architects
- other documents and data as referenced in this report.

## 2. PLANNING CONTEXT

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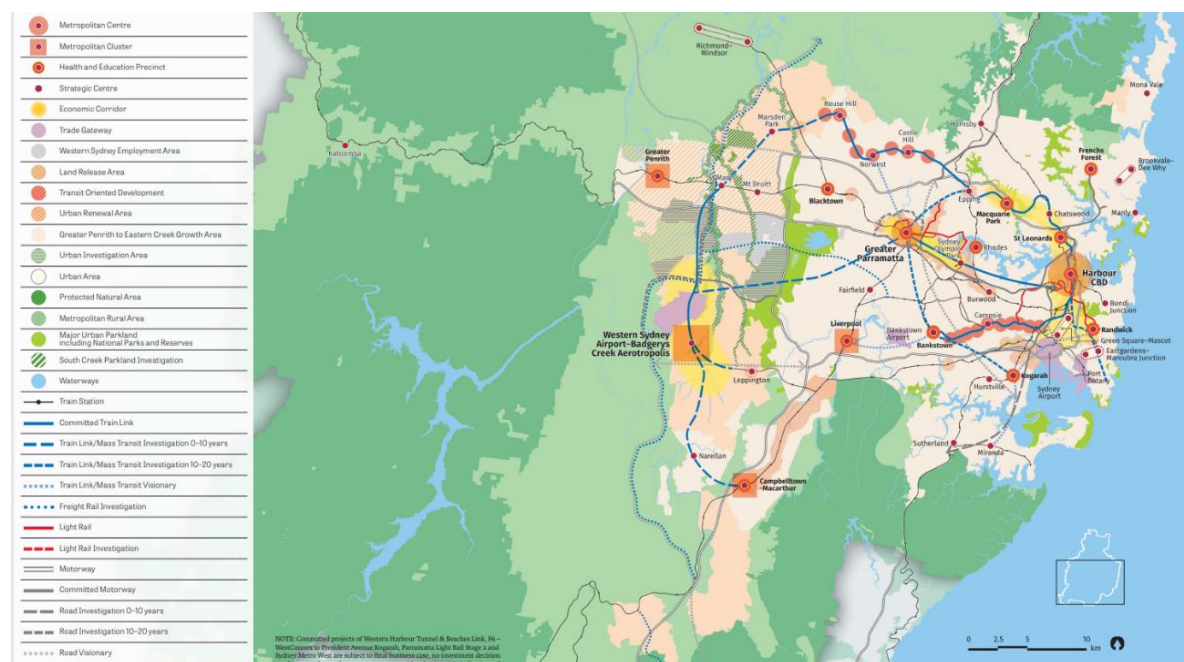
## 2.1. Greater Sydney Region Plan

The Greater Sydney Commission (GSC) is an independent organisation that leads metropolitan planning for Greater Sydney. It has prepared the Greater Sydney Region Plan which outlines how Greater Sydney will manage growth and guide infrastructure delivery. The Greater Sydney Region Plan has been prepared in conjunction with the NSW Government's Future Transport 2056 Strategy and informs Infrastructure NSW's State Infrastructure Strategy.

The GSC's vision is to create three connected cities; a Western Parkland City west of the M7, a Central River City with Greater Parramatta at its heart and an Eastern Harbour City. By integrating land use, transport links and infrastructure across the three cities, more people will have access within 30 minutes to job, school, hospitals and services.

The Greater Sydney Region Plan is a 20-year plan with a 40-year vision and has four key focuses; infrastructure and collaboration, liveability, productivity and sustainability. The Greater Sydney Structure Plan 2056 is shown indicatively in Figure 2.1.

Figure 2.1: Greater Sydney Structure Plan 2056 – The Three Cities



Source: Greater Sydney Commission, accessed 7 March 2019

The site is a short walking distance to Pennant Hills Station and the adjacent bus interchange on Railway Street. In accordance with the 30-minute city concept, employment centres in Hornsby, Macquarie Park (T1-North Shore & Western Line) and Castle Hill (Route 633) will be accessible from the site via available public transport services.

## 2.2. North District Plan

The vision for Greater Sydney Metropolis of Three Cities – The Western Parkland City, the Central River City and the Eastern Harbour City and a 30-minute city – means residents in the Northern District will have quicker and easier access to a wider range of jobs, housing types and activities. The vision will improve the District's lifestyle and environmental assets.



The North District forms a large part of the Eastern Harbour City, with its vision to provide fast and efficient transport connection to achieve a 30-minute city. The district seeks to protect heritage and local character, as well as improve walking and safe cycling ways. It aims to protect and enhance the District's quality and improve access to open space and increase urban tree canopy.

The Plan puts emphasis on a city supported by sustainability, liveability, affordability and to create healthy and resilient places for all people. The Plan promotes a place-based and collaborative approach to maintain and enhance the liveability of the North District by implementing services and social infrastructure, fostering healthy and socially connected communities, housing supply, affordability with jobs, services and public transport and renewing great places and local centres.

The proposal enhances the 30-minute city by increasing density within the Pennant Hills centre, access to jobs, services and amenities, housing diversity, improved access to public transport and open space.

The North District is shown in Figure 2.2.

Figure 2.2: The North District



Source: North District Plan, Greater Sydney Commission - accessed 28 September 2021

The North District specifically identifies opportunities for redevelopment within centres such as Pennant Hills Road in the Hornsby LGA. In particular, the potential urban renewal opportunities to align growth with infrastructure investment under the plan include *"leveraging the investment in NorthConnex on Pennant Hills Road"*.

## 3. EXISTING CONDITIONS

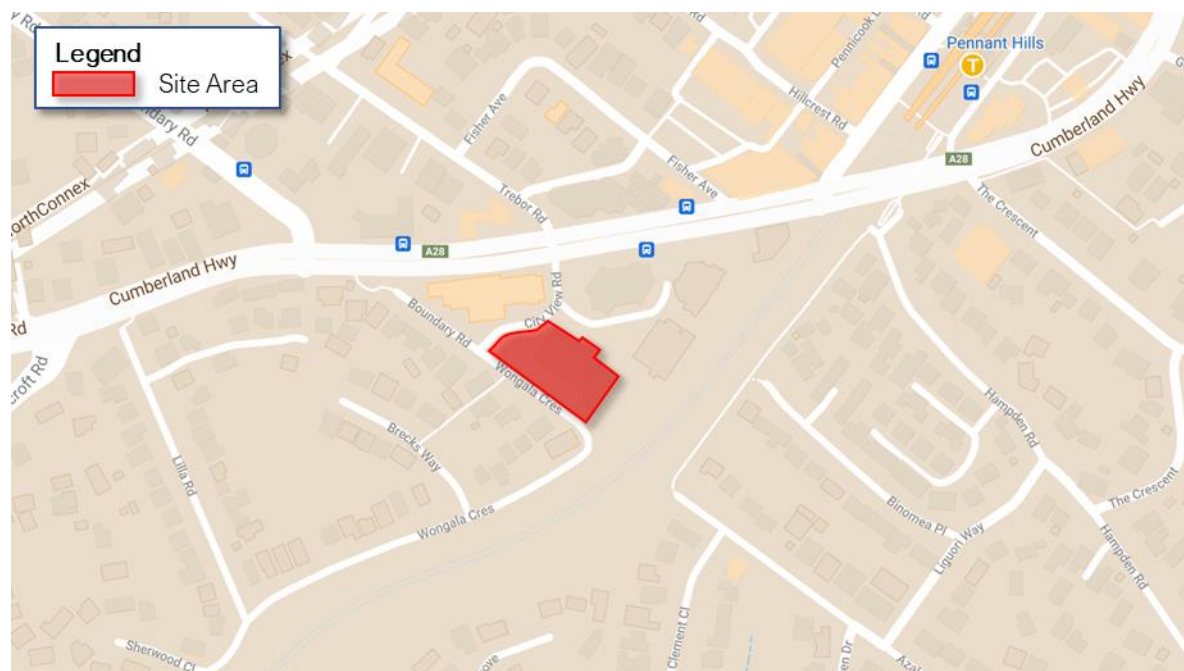
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### 3.1. Location

The subject site is located at 7 City View Road, Pennant Hills. The site has a frontage of around 110 metres to Wongala Crescent and 70 metres to City View Road. The site of 6,476 square metres is currently zoned B5 Business Development and contains a vacant commercial building. The surrounding properties predominantly consist of commercial, hotel and residential uses.

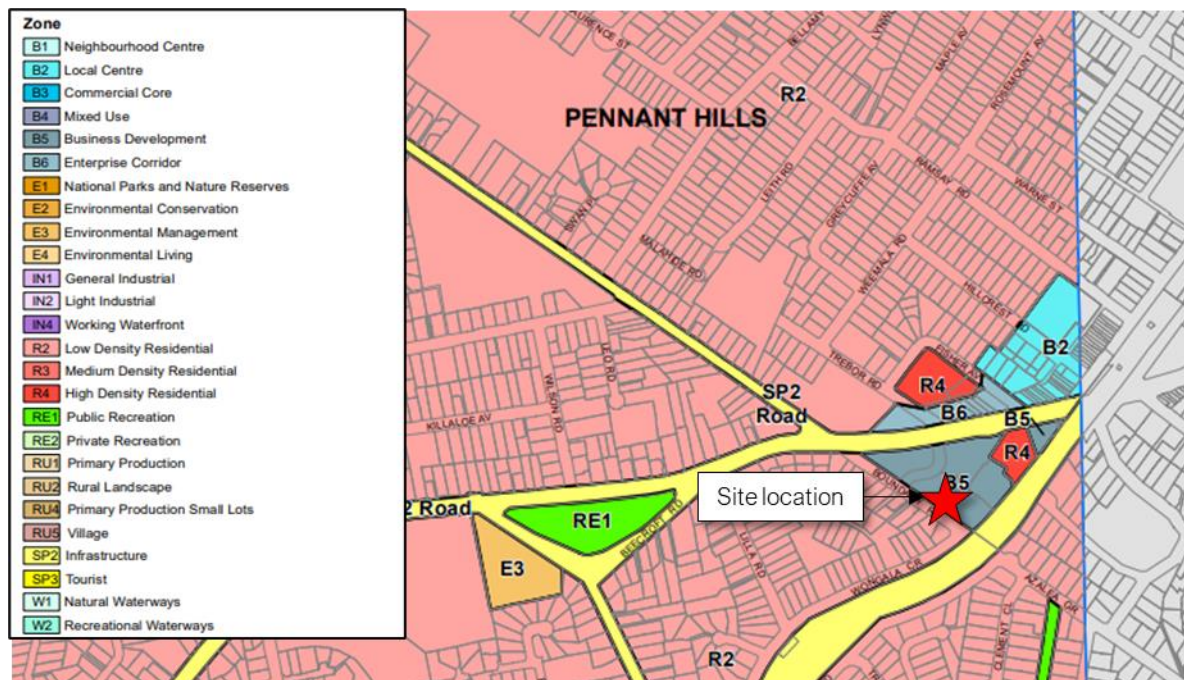
The location of the subject site and its surrounding environs is shown in Figure 3.1, while the LEP land use map is shown in Figure 3.2.

Figure 3.1: Subject site and its environs



Base image source: Google MyMaps, accessed 20 July 2021

Figure 3.2: Land use map



Source: Hornsby LEP 2013, accessed 20 July 2021

## 3.2. Transport Network

### 3.2.1. Surrounding Road Network

#### Wongala Crescent

Wongala Crescent is a local road and is aligned in an east-west direction. It is a two-way road configured with one-lane in each direction, set within an approximately 11-metre-wide carriageway. Unrestricted kerbside parking is permitted near the site on both sides of the road. Wongala Crescent has a posted speed limit of 50km/h.

#### City View Road

City View Road is a local road and is aligned in a north-south direction. It is a two-way road configured with one-lane in each direction, set within an approximately 11-metre-wide carriageway. Unrestricted kerbside parking is permitted near the site on both sides of the road. City View Road has a posted speed limit of 50km/h.

#### Pennant Hills Road

Pennant Hills Road is a Transport for NSW managed State Road and is aligned in an east-west direction to the north of the site providing connection from North Parramatta and Wahroonga. It is a two-way road with generally three lanes in each direction and a central median separating the directions of travel. Clearway conditions are in place on both sides of the road between 6am and 7:00pm on weekdays, and 8:00am to 8:00pm on weekends. Pennant Hills Road near the site has a posted speed limit of 70km/h.



### 3.2.2. Surrounding Road Operation

The surrounding road network was observed in 2017 (Thursday, 9 November) which accounted for regular peak conditions prior to the following events:

- Changed travel behaviour associated with the COVID-19 pandemic, including travel/ movement restrictions within the Sydney metropolitan area (June-October 2021).
- The opening of the NorthConnex motorway tunnel in October 2020 which provides additional network capacity parallel to Pennant Hills Road between the M1 Pacific Motorway and M2 Hills Motorway.

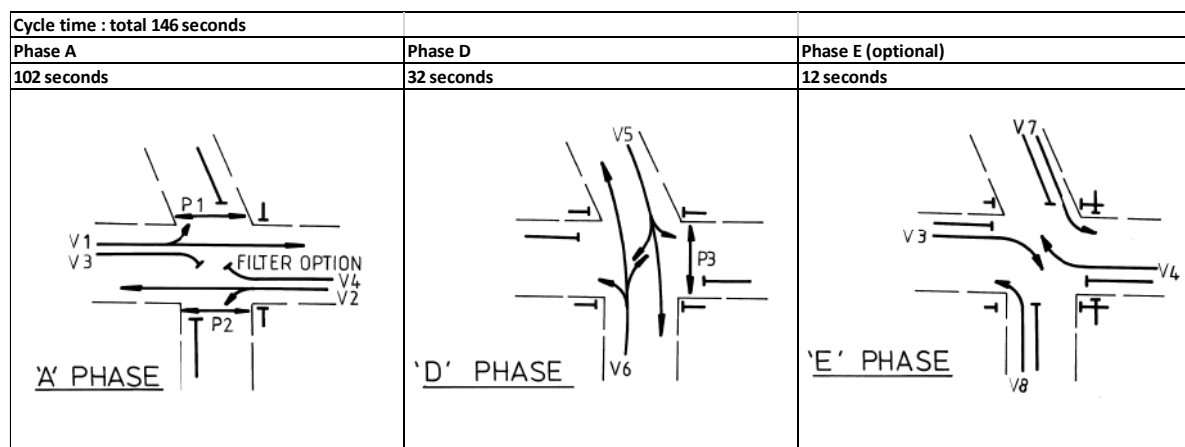
The Pennant Hills Road/ City View Road intersection is key to the site and surrounding properties as it provides the only access point to the precinct.

Site visits during the PM road network peak prior to the above events confirmed the high traffic volumes and the congested conditions on Pennant Hills Road. Traffic signal operations prioritise the Pennant Hills Road traffic flows and provide limited green time for the minor intersecting roads and for turning right movements from Pennant Hills Road, which means that the capacity for additional traffic from/ to City View Road is limited by the overall traffic and signal operation of the Pennant Hills Road corridor.

The Pennant Hills Road/ City View Road/ Trebor Road intersection was operating close to capacity (estimated Level of Service E). Some key site observations were:

- Phase E allowing the right-turn from Pennant Hills Road to City View Road (to enter the site) is only 12 seconds long on average and allows 5 vehicles to go through. There was 0 or 1 vehicle per cycle for this movement. This phase only operates if a right-turning vehicle is present.
- Phase D allowing movements from both City View Road and Trebor Road comprises conflicting and merging movements that already create issues in the existing situation. This situation would be exacerbated with additional traffic.
- When there are pedestrians crossing Pennant Hills Road (on the east side of the intersection), the remaining time for the right turn from City View Road into Pennant Hills Road is very limited.
- The coordinated operation of the adjacent intersections on both sides (i.e. Pennant Hills Road/ Boundary Road and Pennant Hills Road/ Yarrara Road) constrain operation/ efficiency of the Pennant Hills Road/ City View Road/ Trebor Road intersection, reducing the overall capacity of this intersection.

Figure 3.3: Existing phasing at the Pennant Hills Road/ City View Road intersection



Source: Roads and Maritime Services Traffic Signal Plan (VV2548\_1L)



Indicative traffic volumes on Pennant Hills Road have been sourced from the Transport for NSW permanent count station data (near the site is station identification number 74087). The average hourly traffic volume was 2,300 vehicles per hour per direction in March 2017. The proportion of heavy vehicles was around 16%.

Since undertaking this assessment, it is expected that NorthConnex will have removed a significant proportion of traffic from Pennant Hills, especially heavy vehicles (estimated 5,000 heavy vehicles per day). However, the North Connex EIS<sup>1</sup> Traffic and Transport Report notes that while improvements are expected in the short term, traffic conditions on Pennant Hills Road will remain congested in the long term: *“it is anticipated that by 2029, traffic volumes and associated delays on Pennant Hills Road would remain high due to the large degree of localised traffic movements not impacted upon by the project. As a result, background growth absorbs spare capacity on Pennant Hills Road provided by the project.” (EIS Appendix E, p175).*

The typical six-month adjustment period following the opening of a new toll road was immediately followed by the COVID-19 pandemic and as such, reliable data on surface road traffic patterns following the NorthConnex opening is not available.

### 3.3. Public Transport

The site is well serviced by the surrounding public transport network, being in close proximity to bus services along Pennant Hills Road and train services at Pennant Hills railway station. There is also a bus interchange on Railway Street, adjacent to the station.

Key employment destinations include Epping (Metro North West), Macquarie Park, Parramatta, with additional regional retail centres at Hornsby, Macquarie Park and Castle Hill. These locations all provide interchange opportunities for public transport to other destinations further afield, including the Sydney Central Business District, North Sydney and Chatswood.

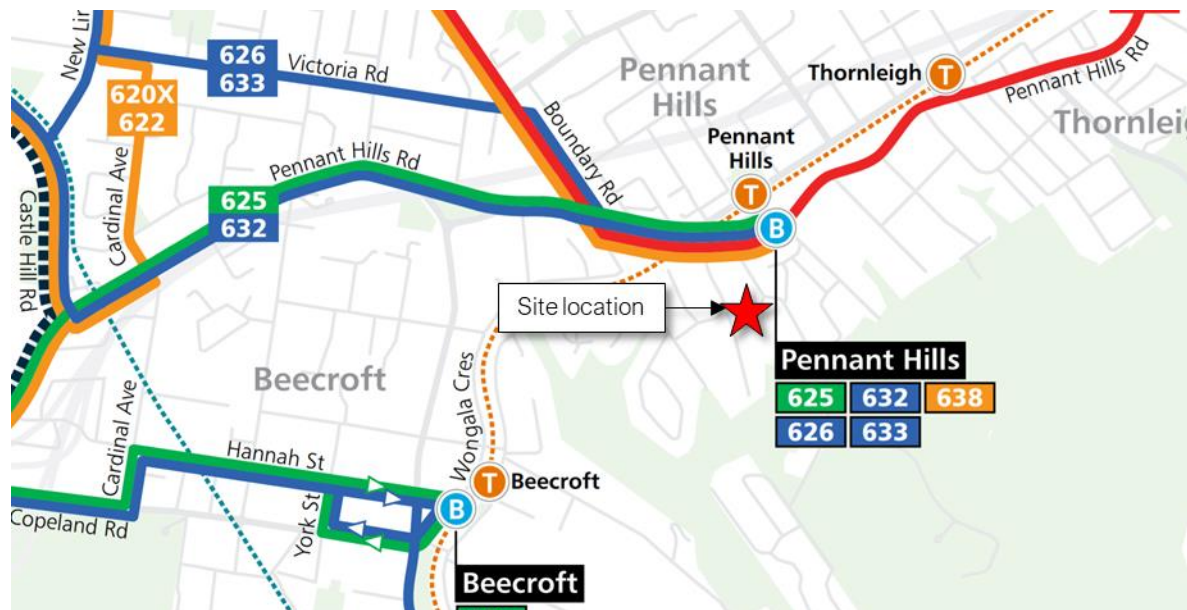
A review of the public transport available near the site is summarised in Table 3.1 and shown indicatively in Figure 3.4.

**Table 3.1: Public transport provision**

Service	Route number	Route description	Location of stop	Distance to nearest stop	Frequency on/ off-peak
Bus	600	Hornsby to Parramatta	Pennant Hills Road at Fisher Avenue	180 metres	10 min/ 15 min
	625	Pennant Hills to Parramatta	Pennant Hills Road before City View Road	110 metres	30 min/ 60 min
	626	Kellyville Station to Pennant Hills via Cherrybrook	Pennant Hills Road at Fisher Avenue	180 metres	30 min/ 30 min
	632	Rouse Hill Station to Pennant Hills via Norwest & Castle Hill			15 min/ 30 min
	633	Rouse Hill to Pennant Hills via Kellyville & Castle Hill	Pennant Hills Road before City View Road	110 metres	10-15 min/ 30 min
	638	Berowra Waters and Berrilee to Pennant Hills	Pennant Hills Road at Fisher Avenue	180 metres	Irregular
Train	T9	Hornsby to North Shore	Pennant Hills Station	480 metres	15 min/ 15 min

<sup>1</sup> Source: North Connex Environmental Impact Statement, Appendix E: Technical working paper: Traffic and Transport

Figure 3.4: Surrounding public transport network



Base image source: Transport for NSW, accessed 23 July 2021.

### 3.4. Walking and Cycling Infrastructure

Well established pedestrian paths are located on both sides of most of the surrounding roads. Combining with the signalised crossings at the City View Road/ Pennant Hills Road and Yarrara Road/ Pennant Hills Road intersections, these paths provide good connection to nearby bus stops, Pennant Hills railway station and surrounding businesses. This is also supplemented by a pedestrian bridge on Pennant Hills at Hampden Road.

There is limited cycling infrastructure near the site.

## 4. DEVELOPMENT PROPOSAL

04

## 4.1. Land Uses

In addition to changing the floor space ratio for the site (2.7:1), the Planning Proposal facilitates site redevelopment for commercial (office) floorspace in addition to residential apartments. It is noted that residential usage in the form of 'shop top housing' is already permissible under the applicable B5 zoning.

A concept scheme has been prepared by Fender Katsalidis architects, which includes residential, seniors living (independent living units), commercial and community uses. A breakdown of yields for the concept scheme is summarised in Table 4.1.

**Table 4.1: Indicative development yields**

Use	Type	Size
Residential	1 bedroom	21 dwellings
	2 bedroom	38 dwellings
	3 bedroom	15 dwellings
	4 bedroom	5 spaces
	<b>Total</b>	<b>79 dwellings</b>
Seniors Living	Independent Living Units	28 dwellings
Commercial Space	-	3,089m <sup>2</sup> GFA
Community space (including small café)	-	931m <sup>2</sup> GFA

A representative floor plan is shown in Figure 4.1.

**Figure 4.1: Representative Floor Plan**



Source: Ground Floor Plan, Fender Katsalidis architects, October 2021

The proposed development would utilise the existing shared driveway from City View Road (shared with 1, 3 and 5 City View Road). This driveway would provide access to basement car parking.

Loading is also proposed to take place on-site, with separation to be provided between car parking and the loading facilities.

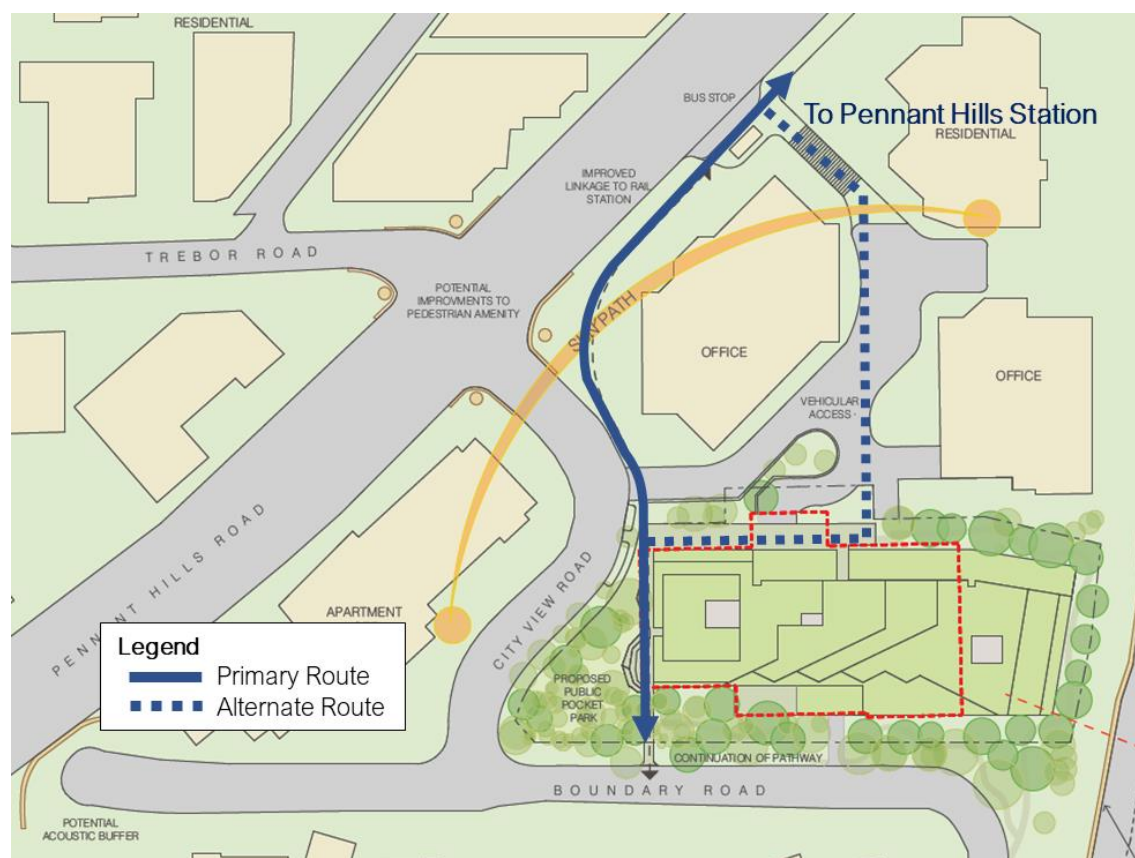
## 4.2. Walking and Cycling Connectivity

Internal footpaths (with shelter where possible) would be provided within the development site, to connect access points and internal open spaces with the adjacent street network. As evident in Figure 4.2, the concept scheme introduces a new street level frontage on City View Road, with a footpath pedestrian connection to Wongala Crescent, which will particularly enhance amenity for external public users walking to Pennant Hills Station.

Internal bicycle access routes would also be provided to connect resident, tenant and visitor bicycle parking with the adjacent street network. Although the immediate local topography is not conducive to cycling, a wider footpath or shared path could be provided on City View Road to connect with Pennant Hills Road.

There is also an opportunity to contribute a new shared path on the southern side of Pennant Hills Road, which could improve bicycle access to the Pennant Hills town centre and railway station (noting the existing pedestrian bridge over Pennant Hills Road available at Railway Street), as well as more broadly to Thornleigh Marketplace, Beecroft local shops and several schools.

Figure 4.2: Walking Connections



Source: Masterplan, Fender Katsalidis architects, October 2021



## 5. PARKING ASSESSMENT

05

## 5.1. Car Parking

State Environmental Planning Policy No 65 - Design Quality of Residential Apartment Development (SEPP 65) in conjunction with the Apartment Design Guide states that developments located in the following areas should provide the minimum car parking requirement as specified in the Transport for NSW *Guide to Traffic Generating Developments* 2002 (the TfNSW Guide), or the car parking requirement prescribed by the relevant council, whichever is less:

- on sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area or
- on land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre.

Given the site is located within 800 metres of Pennant Hills Station, this condition applies to the subject site. Table 5.1 summarises the car parking requirements set out in the Hornsby Development Control Plan (DCP) 2013 and the TfNSW Guide. It is noted that the DCP refers parking rates for seniors living uses to those stipulated under State Environment Planning Policy – Housing for Seniors or People with a Disability (SEPP Seniors) 2004.

Neither the Guide or the DCP do not stipulate parking rates for general community uses, however it is understood that the community space is to function for the majority of the time as on-site resident communal space. From time to time, it would also be made available for use by the external local community (e.g. small meetings, pilates, art studio etc). The community space component also includes a small café which will largely service the residential apartments, commercial offices and a local walk-up catchment. For the purposes of assessment, the commercial parking rate has been applied to all non-residential uses in the concept scheme, in order to avoid an oversupply of parking (ordinarily arising from visitor parking).

Table 5.1: DCP and TfNSW Parking Requirements

Use	Description	Size	DCP parking rate	TfNSW parking rate <sup>1</sup>	DCP parking requirement <sup>2</sup>	TfNSW parking requirement
Residential	1-bedroom units	21 dwellings	0.75 space/ dwelling	0.6 space/ dwelling	84 spaces	75 spaces
	2-bedroom units	38 dwellings	1 space/ dwelling	0.9 space/ dwelling		
	3 or more bedroom units	20 dwellings	1.5 space/ dwelling	1.4 spaces/ dwelling		
	Visitor	79 dwellings	1 space/ 7 dwellings	1 space/ 5 dwellings	11 spaces	16 spaces
Sub-Total					95 spaces	91 spaces
SEPP 65 Requirement					91 spaces	
Seniors Living <sup>3</sup>	2-bedroom units	20 dwellings	0.5 spaces per bedroom <sup>2</sup>	N/A	32 spaces	
	3-bedroom units	8 dwellings				
Commercial		3,089m <sup>2</sup> GFA	1 space/ 48m <sup>2</sup> GFA	N/A	64 spaces	
Community		931m <sup>2</sup> GFA	1 space/ 48m <sup>2</sup> GFA	N/A	19 spaces	
Total					206 spaces	

<sup>1</sup> Parking rates adopted for residential developments in metropolitan sub-regional centres.  
<sup>2</sup> Parking spaces rounded up to the next whole number in accordance with DCP.  
<sup>3</sup> DCP refers to parking rates published under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004.

It is evident that the concept scheme generates a nominal requirement for 206 parking spaces when adopting the lesser TfNSW residential requirement for 91 parking spaces. It is emphasised however that opportunities for shared parking would arise between different users of the development.

In particular, residential visitor and community space demands are likely to have different peak demand times (e.g. weekdays for community users and weeknights/weekends for residential visitors). Moreover, the community facility will be ancillary to many users of the development and surrounding local area (resulting in walk-up trips from many regular users). On this basis, the following reductions in parking supply are considered appropriate:

1. no dedicated residential visitor parking, with visitors to make use of the parking supply for the community space
2. 15% reduction in the DCP requirement for the community component to reflect ancillary use and local walk-up catchment.

Accordingly, it is anticipated that a total parking supply of 187 parking spaces would be sufficient for the proposal, where a reduced provision of 16 community use parking spaces would also satisfy residential visitor demand.

The concept scheme has provisioned a three-level basement car park with a total floor space of 6,561 square metres. When assuming an allowance for 35 square metres per parking space (accounting for circulation area including ramps), it is estimated that the car park would accommodate in the order of 187 parking spaces, which would accommodate the anticipated parking demand (accounting for shared use of resident visitor/ community use parking). While the exact parking provision would be established during a subsequent development application stage, the plans demonstrate that sufficient space allocation has been provided within the concept scheme to satisfactorily accommodate parking demands for a development of the scale envisaged under the Planning Proposal.

## 5.2. Motorcycle Parking

A review of the Hornsby DCP 2013 indicates that all buildings that provide on-site parking must provide one motorcycle space per 50 car parking spaces, or part thereof. Based on the nominal parking requirement for 206 car parking spaces, the development is required to provide a minimum of 5 motorcycle parking spaces.

The proposed site layout is capable of accommodating this parking requirement within the basement levels of the building envelopes.

## 5.3. Bicycle Parking

The bicycle parking requirements for different development types are also set out in the DCP. A review of the bicycle parking rates and the floor area schedule results in a bicycle parking requirement for the proposed development as summarised in Table 5.2.

Table 5.2: Hornsby DCP 2013 bicycle parking requirements

Use	Description	Size	Bicycle parking rate requirement	Bicycle parking requirement
Residential	Resident	79 dwellings	1 space/ 5 dwellings	16
	Visitor		1 space/ 10 dwellings	8
Aged Care		28 dwellings	N/A	0
Commercial		3,089m <sup>2</sup> GFA	1 space/ 600m <sup>2</sup> GFA	5
Community		931m <sup>2</sup> GFA	1 space/ 600m <sup>2</sup> GFA	2
<b>Total</b>				<b>31</b>
Note: Commercial developments with a gross floor area over 2,500m <sup>2</sup> should provide end of trip facilities for staff in the form of at least 1 shower cubicle with ancillary change rooms.				

Based on the above, the proposed development is required to provide 31 bicycle parking spaces.

The proposed site layout is capable of accommodating appropriate bicycle parking provisions for residents, tenants and visitors through a combination of at-grade and basement facilities, along with end-of-trip facilities including showers and lockers.

## 5.4. Loading and Servicing

With respect to service vehicle requirements, the Hornsby DCP recommends the following provisions for the non-residential uses of the concept scheme:

- 1 service vehicle space (in accordance with rates in the TfNSW Guide to Traffic Generating Developments)
- 1 car space and 1 motorcycle space for couriers.

Provisions should also be made for on-site waste collection for the residential component and in this regard, the DCP clarifies that 12.5-metre Heavy Rigid Vehicles is the default vehicle for servicing high density residential developments.

The concept scheme incorporates a loading dock on Lower Ground Level 2, which can accommodate a 12.5m Heavy Rigid Vehicle. The arrangement will enable on-site waste collection and facilitate larger delivery vehicles where required. The area external to the Level 3 car park can also be made to accommodate deliveries from smaller service vehicles for added flexibility and to minimise amenity impacts on Wongala Crescent.

## 5.5. Access Design

### 5.5.1. Basement Car Park

The concept scheme utilises the existing shared ramp for access to the basement car park (servicing 1 City View Road, 3 City View Road, 5 City View Road and the subject site). The integration of the Lower Ground Level 1 basement access with the ramp is shown in Figure 5.1, and is consistent with the configuration for the existing commercial development on-site.



Figure 5.1: Basement Car Park Access



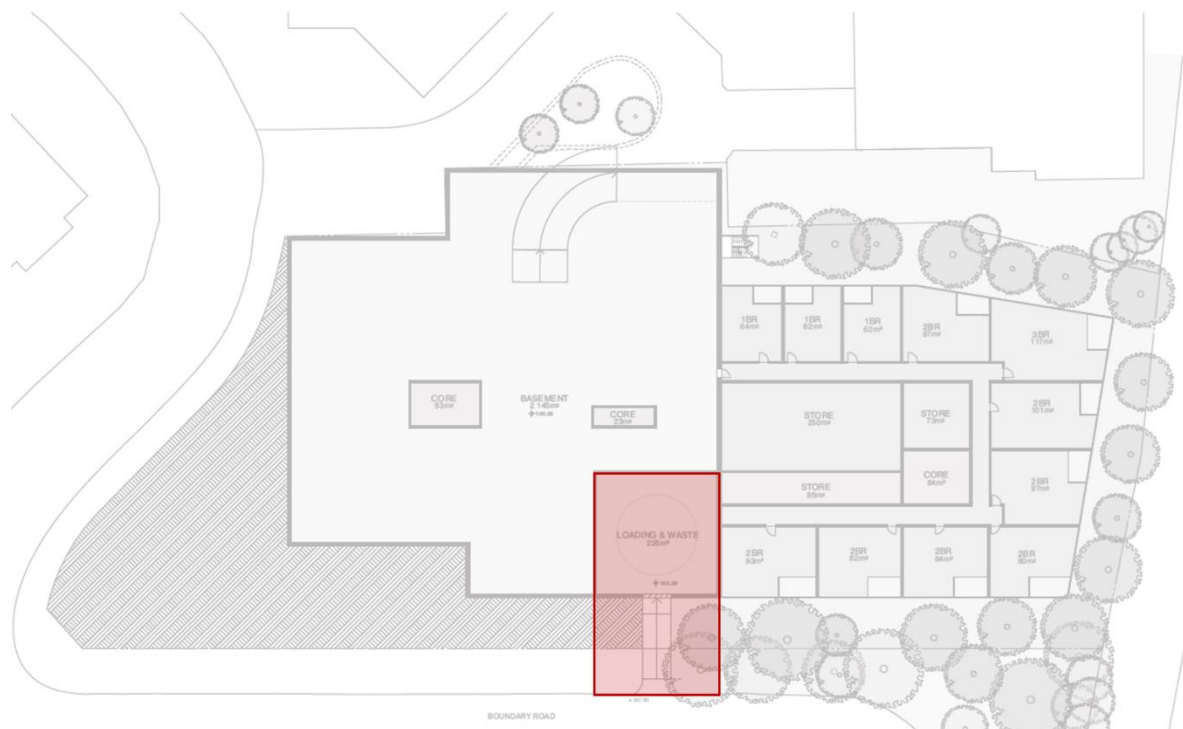
Source: Lower Ground Level 1 Plan, Fender Katsalidis Architects, October 2021

It is noteworthy that the existing ramp structure has been constructed with ample width to accommodate high traffic volumes, allowing for simultaneous flow of vehicles. When observing from Section 6 that the concept scheme will generate comparable traffic volumes to existing conditions (assuming historical full occupation of 7 City View Road), continued use of this ramp is considered acceptable. It is also evident from the masterplan that access to the basement car park on Level 3 has been designed with sufficient separation from the existing 3 City View Road commercial building car park entrance.

### 5.5.2. Loading Dock Access

The loading dock for the development is situated on Lower Ground Level 2 will be served by a separate access on Wongala Crescent and will incorporate a turntable installation as shown in Figure 5.2.

Figure 5.2: Loading Dock Access



Source: Lower Ground Level 2 Floor Plan, Fender Katsalidis Architects, September 2021

This access will allow for efficient access for service vehicles, and in particular, will be designed to accommodate Council's default waste collection vehicle, equivalent to the size of a 12.5m Heavy Rigid Vehicle. The concept development has also provisioned a turntable installation, which will permit both entry and exit movements to be undertaken from Wongala Crescent in a forward direction.

Whilst opposite a number of existing dwellings, the frequency of service vehicle access is typically low (i.e., several times a week for large vehicle access only). It is also noted the turntable and waste collection point will be internal and accessed via a roller shutter to mitigate noise and visual intrusion.

## 6. TRAFFIC IMPACT ASSESSMENT

06

## 6.1. Traffic Generation

### 6.1.1. Existing and Permissible Development

The existing site currently has a vacant commercial building of approximately 7,300 square metres GFA. Further to this, the existing planning controls for the site allow for a commercial development of 1.5:1 FSR to be constructed on site, equivalent to approximately 9,760 square metres GFA.

In estimating the likely traffic generation of the existing commercial building (when fully occupied as has historically been the case) and a development meeting the allowable FSR, reference has been made to the traffic generation rates outlined in the Transport for NSW Guide to Traffic Generating Developments (TfNSW Guide) and Updated Traffic Surveys Technical Direction (TDT 2013/4a).

The TDT 2013/4a recommends a commercial traffic generation rate of 1.6 and 1.2 per 100 square metres in the AM and PM peak hours respectively. In addition, an 80:20 direction split between inbound and outbound traffic has been assumed in the AM peak and the opposite in the PM peak hour. The existing and permissible development traffic generation estimates are shown in Table 6.1.

**Table 6.1: Existing and allowable development traffic generation estimates**

Use	FSR	Size	Traffic generation rate		Traffic generation estimate			
			AM	PM	AM		PM	
					In	Out	In	Out
Commercial (existing)	1.13:1	7,300m <sup>2</sup> GFA	1.6 trips/100m <sup>2</sup>	1.2 trips/100m <sup>2</sup>	93	23	18	70
Commercial (permissible)	1.5:1	9,760m <sup>2</sup> GFA			125	31	23	94

### 6.1.2. Development Proposal

#### Residential

The TDT 2013/4a recommends a traffic generation rate of 0.19 and 0.15 trips per dwelling in the AM and PM peak hours respectively for apartment buildings with 20 or more dwellings, that are close to public transport and almost entirely residential in nature. The average high-density residential trip generation rates are generally associated with a vehicle mode share of approximately 28 to 30 per cent, while the vehicle mode share for the area is expected to be around 50 per cent. As such, rates of 0.34 and 0.27 trips per dwelling in the AM and PM peak hours respectively have been adopted as a conservative assumption, noting that Green Travel Planning will be implemented as a condition of consent to reduce this private car reliance in the future.

In addition, a 20:80 direction split between inbound and outbound traffic has been assumed in the AM peak and the opposite in the PM peak hour.

#### Housing for Aged and Disabled Persons

The TDT 2013/4a recommends a traffic generation rate of 0.4 trips during the evening peak hour. To apply conservatively, the below analysis has been undertaken presuming that AM generation is the same as PM generation, and the upper rate of 0.4 trips per dwelling has been applied, noting that the TDT 2013/ 04a indicates that the morning site peak hour does not coincide with the network peak hour.

As such, a rate of 0.4 trips in the AM and PM peak hours have been adopted as a conservative assumption, noting that appropriate travel planning should be implemented as a condition of consent to reduce this private car reliance in the future.

In addition, a 20:80 direction split between inbound and outbound traffic has been assumed in the AM peak and the opposite in the PM peak hour.

## Commercial

Traffic generation rates of 1.6 and 1.2 trips per 100 square metres GFA have been adopted similar to the existing uses.

An 80:20 direction split between inbound and outbound traffic has been assumed in the AM peak and the opposite in the PM peak hour.

## Community

The TfNSW Guide and TDT 2013/4a do not provide traffic generation rates for community facilities, with the usage profile of such facilities varying with the specific uses. For the purposes of this assessment, the TDT 2013/4a rate for commercial use has been adopted for the road network peak periods, assuming occasional use by external community groups. This is considered a maximum for the proposed facilities, as it is understood that the space will normally be on-site resident communal space. Furthermore, it is anticipated that external community use would mostly occur during evenings (not mornings), although trip rates have been applied to the AM and PM peak periods for the purposes of a conservative assessment.

An 80:20 direction split between inbound and outbound traffic has been assumed in the AM peak and the opposite in the PM peak hour.

Estimates of peak hour traffic volumes resulting from the proposal are set out in Table 6.2.

**Table 6.2: Traffic generation estimates**

Use	Size	Traffic generation rate		Traffic generation estimate					
		AM	PM	AM			PM		
				In	Out	TOTAL	In	Out	TOTAL
Residential	79 dwellings	0.34 trips/dwelling/hour	0.27 trips/dwelling/hour	5 trips/hour	22 trips/hour	27 trips/hour	17 trips/hour	4 trips/hour	21 trips/hour
Aged Care	28 dwellings	0.4 trips/dwelling	0.4 trips/dwelling	2 trips/hour	9 trips/hour	11 trips/hour	9 trips/hour	2 trips/hour	11 trips/hour
Commercial	3,089m <sup>2</sup> GFA	1.6 trips/100m <sup>2</sup>	1.2 trips/100m <sup>2</sup>	39 trips/hour	10 trips/hour	49 trips/hour	7 trips/hour	30 trips/hour	37 trips/hour
Community	931m <sup>2</sup> GFA	1.6 trips/100m <sup>2</sup>	1.2 trips/100m <sup>2</sup>	12 trips/hour	3 trips/hour	15 trips/hour	2 trips/hour	9 trips/hour	11 trips/hour
<b>Total</b>				<b>58 trips/hour</b>	<b>44 trips/hour</b>	<b>102 trips/hour</b>	<b>35 trips/hour</b>	<b>45 trips/hour</b>	<b>80 trips/hour</b>



### 6.1.3. Net Change

Based on the above discussions, the net change in potential traffic generated by the site under the existing planning controls and proposed controls is summarised in Table 6.3.

**Table 6.3: Net change in traffic generation**

Use	Traffic generation estimates (trips/ hour)			
	AM		PM	
	In	Out	In	Out
Existing permissible use	125	31	23	94
Planning Proposal	58	44	35	45
<b>Net difference</b>	<b>-67</b>	<b>13</b>	<b>12</b>	<b>-49</b>
	<b>-54</b>		<b>-37</b>	

As shown in Table 6.3, the proposed development would result in a minor overall decrease in traffic generation in both peak periods in comparison to the maximum permissible development.

## 6.2. Distribution and Assignment

The directional distribution and assignment of traffic generated by the proposed development will be influenced by a number of factors, including the:

- configuration of the arterial road network in the immediate vicinity of the site
- existing operation of intersections providing access between the local and arterial road network
- distribution of households in the vicinity of the site
- surrounding employment centres, retail centres and schools in relation to the site.

With consideration for the Journey to work patterns discussed above and the traffic distribution observed during the site visit, it is anticipated that the majority of the vehicle movements generated by the redevelopment along City View Road would be to and from the south leg of Pennant Hills Road. The distribution of traffic is assumed to be:

- 75 per cent to/ from Pennant Hills Road (west)
- 20 per cent to/ from Pennant Hills Road (east)
- 5 per cent to/ from Trebor Road.

## 6.3. Traffic Impact

### 6.3.1. Net Impact Considering Existing Uses

In comparison to the existing building on site (see Table 6.1), the proposal could result in a minor decrease of 14 trips in the AM peak hour and eight trips during the PM peak hour, when assuming occupation of the existing building.

The proposal could generate up to 102 additional trips during the peak hour, compared to the current situation with a vacant building. It is noted however that this building has historically been fully occupied and could be tenanted again prior to any redevelopment.

With the proposal, there would be up to an additional 44 vehicles per hour turning right from Pennant Hills Road (west) into City View Road. This would be 2-3 additional vehicles on average per cycle. As noted in Section 3.2.2, observations indicate that existing demand for this right turn movement is generally around one vehicle per cycle during peak periods. Considering the existing short turn bay has capacity for up to seven vehicles, the additional traffic from the proposed development could be accommodated within the available storage capacity. Observations confirmed adequate green time for up to five vehicles to turn right in one traffic signal cycle and a minor improvement in available green time could be possible with reduced volumes on Pennant Hills Road associated with the opening of the NorthConnex tunnel in October 2020. It is anticipated that any benefit from the tunnel can be evaluated during a subsequent development application stage, subject to traffic conditions returning to normal peaks following changed travel behaviour in 2021 resulting from the COVID-19 pandemic.

It is expected that up to 45 trips relating to the proposal would exit via City View Road at Pennant Hills Road during road network peak hours, with the majority of these (34 trips) turning left. If the existing building was occupied, the net change would be a reduction of 25 vehicles exiting from City View Road, with an additional 17 vehicles entering from Pennant Hills Road (13 vehicles turning right). In the context of existing intersection traffic volumes, the additional traffic impact of the proposal is considered minor. The quantum of additional trips would be lower than the day-to-day variance in intersection traffic volumes and therefore intersection modelling is not considered warranted at the planning proposal stage.

### 6.3.2. Net Impact Considering Permissible Development

In comparison to the anticipated traffic generation of a commercial development at the existing maximum allowable FSR, the proposal would also result in fewer trips in the AM peak (54 less trips) and PM peak (37 less trips). At the Pennant Hills Road/ City View Road intersection, this would result in less vehicles entering and slightly more vehicles exiting City View Road in the AM peak hour (13 additional trips), and vice versa in the PM peak hour (12 additional trips).

Based on the above, the proposed mixed use development would have a lower traffic impact than a commercial development with the maximum allowable FSR under the existing controls. It is emphasised that the differences in traffic between the maximum allowable FSR commercial development and vacant building would be more pronounced, than the concept scheme envisaged under the Planning Proposal.

### 6.3.3. Cumulative Assessment of Adjacent Sites

The following nearby sites have been identified as having medium term redevelopment potential:

- 1 City View Road (current use: commercial offices)
- 3 City View Road (current use: commercial offices)
- Waldorf apartments (current use: serviced apartments).

For the purposes of this assessment, it has been assumed that any redevelopment of the above sites would be mixed use, similar to the proposal at 7 City View Road (FSR 2.7:1, 77% residential apartments and 23% commercial uses). The location of these sites is shown Figure 6.1.

Figure 6.1: 7 City View Road and adjacent sites



Base image source: Nearmap

Table 6.4 summarises existing traffic generation estimates for the sites, and the anticipated traffic generation should redevelopment occur in a similar manner to the proposal. A more detailed breakdown is provided in Table 6.5.

Table 6.4: Cumulative change in traffic generation of surrounding sites (summary)

	AM			PM		
	In	Out	Total	In	Out	Total
Estimated existing traffic generation	275	102	377	86	208	295
Anticipated traffic generation of adjacent sites with similar redevelopment	174	132	306	103	132	234
<b>Net change</b>	<b>-101</b>	<b>30</b>	<b>-71</b>	<b>17</b>	<b>-76</b>	<b>-61</b>

Table 6.4 indicates that redevelopment of the subject site and adjacent sites would result in a net decrease of around 71 trips in the AM peak and a net decrease of 61 trips in the PM peak. This overall reduction in traffic volumes (with minor individual increases for exit movements in the AM peak period and entry movements in the PM peak period) would be expected to have negligible traffic impacts.

# TRAFFIC IMPACT ASSESSMENT

Table 6.5: Cumulative change in traffic generation of surrounding sites (detailed)

Use	Site	Land use	Site area (m²)	FSR	GFA/ No.	AM			PM		
						In	Out	Total	In	Out	Total
Existing use	1 City View Road	Commercial offices	5,024	1.7:1	8,484	109	27	136	20	81	102
	3 City View Road	Commercial offices	3,648	1.4:1	5,000	64	16	80	12	48	60
	7 City View Road	Commercial offices	6,476	1.7:1	8,484	93	23	116	18	70	88
	Waldorf apartments	Serviced apartments	3,808	-	27 studio units	9	36	45	36	9	45
	Total					275	102	377	86	208	295
Future use	1 City View Road	Commercial (23%) Residential (77%)	5,024	2.7:1	13,565	46	35	81	27	35	62
	3 City View Road		3,648	2.7:1	9,850	34	25	59	20	25	45
	7 City View Road		6,476	2.7:1	17,485	59	45	104	35	45	80
	Waldorf apartments		3,808	2.7:1	10,282	35	26	61	21	26	47
	Total					174	132	306	103	132	234
Net Impact	1 City View Road					-63	8	-55	7	-46	-40
	3 City View Road					-30	9	-21	8	-23	-15
	7 City View Road					-34	22	-12	17	-25	-8
	Waldorf apartments					26	-10	16	-15	17	2
	Total					-101	30	-71	17	-76	-61

## 7. PRELIMINARY GREEN TRAVEL PLAN

07



## 7.1. Overview

Green Travel Plans (GTP) have proven to be a successful way of changing travel behaviour throughout Australia and overseas. A GTP is a way in which a development can manage the transport needs of employees, residents and visitors.

The aim of the plan is to reduce the social and environmental impact of travel to and from a given site. Essentially, the plan encourages more efficient use of motor vehicles, as well as alternatives to the private car.

GTPs are informed by the existing transport network and operations and supported by policy and program initiatives to encourage the use of these networks. A GTP is a strategy with a package of practical measures for users of the development to implement in order to influence and encourage sustainable travel behaviour.

## 7.2. Existing Travel Behaviour

Journey to Work data has been sourced from the Australian Bureau of Statistics (ABS) 2016 Census and provides to establish existing travel behaviour for both residents of the area and those commuting to a place of work within the locality. It is noted that the destination zone (DZN) which contains the site is quite large and data may not accurately represent site characteristics, whereas the SA1 for residents is a small enough area and can be considered representative of the site.

Figure 7.1 shows the location of the SA1 and DZN in which the site is contained. A summary of travel modes for residents and non-residents is provided in Table 7.1 and illustrated diagrammatically in Figure 7.2 and Figure 7.3.

Figure 7.1: SA1 and DZN Mapping



Base image source: Google MyMaps



Table 7.1: ABS 2016 modes of travel in/ out of the site

Mode of Travel	SA1 12601149626 (Residents)	DZN 114963428 (Employees)
Vehicle Driver	53%	76%
Vehicle Passenger	0%	4%
Motorcycle	0%	<1%
Bus	3%	2%
Train	37%	13%
Bicycle	0%	<1%
Walk	7%	4%

Figure 7.2: Travel Mode Share (Residents)

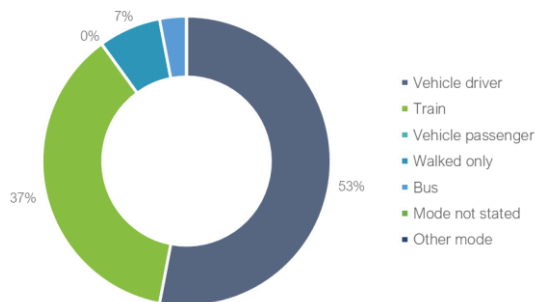
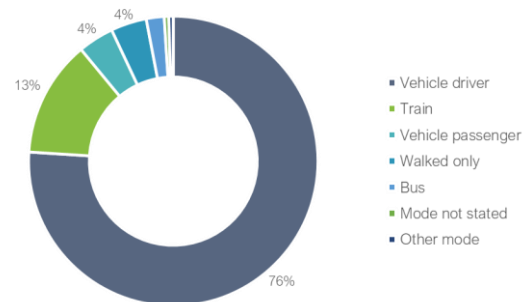


Figure 7.3: Travel Mode Share (Non-Residents)



For residents of the area, the proximity of Pennant Hills Station translates into a high train mode share, with 37 per cent of residents travelling to work by train. In contrast, the bus mode share is only three per cent, despite frequent services on Pennant Hills Road.

The private vehicle (vehicle driver or vehicle passenger) remains the principal mode of transport for journeys to work, accounting for 53 per cent of resident trips and 80 per cent of employee trips. However, compared to 2011 historic data, public transport mode share increased (e.g. from 30 per cent by train to 37 per cent) and the corresponding car mode share decreased.

## 7.3. Travel Demand Strategies

Existing ABS 2016 travel data indicates that 80 percent of employees commute to the travel zone either by driving or being driven in a private vehicle. Considering the site's proximity to the Pennant Hills railway station and increasing regional traffic congestion (pre-COVID), it is possible that some mode shift has occurred in recent years, including with the introduction of metro rail services from Epping Station, which connect to Castle Hill to the west and Macquarie Park/ Chatswood to the east. Considering the large size of the destination zone, further and more specific data could be obtained through a travel mode survey for businesses and residents within the surrounding area.

The findings of the survey would help to benchmark existing activity and identify if there are opportunities to further improve the use of sustainable travel modes to and from the site and surrounding developments. The following potential measures and initiatives could be considered to encourage more sustainable travel, which can be developed further in a future detailed GTP:

- Prepare a Travel Access Guide (TAG) and make it available to all employees, residents and visitors.
- Provide public transport information boards to inform residents and employees of the alternative transport options available (the format of such information boards would be based upon the TAG).
- Provide a regular newsletter bringing the latest news on sustainable travel initiatives in the area.
- Identify opportunities to improve internal (and any external) pedestrian and cyclist connections to the broader precinct to encourage cycling and walking.
- Provide bicycle facilities including secure bicycle parking and shower and change room facilities for employees.
- Encourage residents and employees that drive to work to carpool with others by creating a carpooling club or registry/ forum.
- Provide a pool car for staff to use for any off-site travel requirements during work hours, if required.
- Regularly promote 'ride/ walk to work' days.

## 7.3.1. Travel Access Guide

A Travel Access Guide (TAG) provides information to staff and residents on how to travel to and from the site using sustainable transport modes such as walking, cycling and public transport. The information is presented visually in the form of a map showing the site location, nearby public transport modes and highlighting available pedestrian and cyclist routes. The information is usually presented as a brochure that is included in a welcome pack or available at any building management intranets. A TAG would be updated as the surrounding transport environment changes.

## 7.3.2. Information and Communication

Connecting residents and employees with information would help to facilitate journey planning and increase their awareness of convenient and inexpensive transport options which support change in travel behaviour. These include:

- Transport for NSW provides bus, train and ferry routes, timetables and journey planning through their Transport Info website: <http://www.transportnsw.info>.
- Council provides a number of services and a range of information and events to encourage people of all levels of experience to travel by bicycle<sup>2</sup>.

In addition, connecting employees and residents via forums may provide a platform to informally pilot new programs or create travel-buddy networks and communication.

<sup>2</sup> <https://www.hornsby.nsw.gov.au/lifestyle/sports-and-recreation/biking>

## 7.4. Monitoring a GTP

There is no standard methodology for monitoring a GTP. Should the development implement a GTP, it is suggested that it be monitored to ensure that it is achieving the desired benefits and modify it if required.

The GTP should be monitored on a regular basis, for example yearly, by carrying out travel mode surveys. Travel surveys will allow the most effective initiatives of the GTP to be identified, and conversely fewer effective initiatives can be modified or replaced to ensure the best outcomes are achieved. It will clearly be important to understand people's reasons for travelling the way they do, such as any barriers to changing their behaviour, and their propensity to change.

To ensure the successful implementation of the GTP, the operational building management would need to be appointed as a Travel Plan Coordinator (TPC) to ensure the successful implementation of the GTP.

## 7.5. Conclusion

This section is provided to guide any future Green Travel Plan to reduce car-based travel to and from the site, while leveraging the available public transport in close proximity to the site.

## 8. CONCLUSION

08

Based on the analysis and discussions presented within this report, the following conclusions are made:

1. The 7 City View Road Pennant Hills planning proposal involves increasing the floor space ratio of the existing site and facilitating a future commercial (office) and residential redevelopment of the site. A concept scheme incorporating these proposed planning instrument changes has been prepared, including 79 residential apartments, 28 independent living units, 3,089m<sup>2</sup> of commercial space and 931m<sup>2</sup> of community space.
2. The concept scheme generates a nominal car parking requirement of 206 spaces, with the opportunity for shared parking and ancillary nature of the community facilities reducing the expected parking demand to 187 spaces. The plans for the concept scheme allow for a three-level basement car park which is considered to be adequate to accommodate the parking requirements of a future development proposal.
3. The concept scheme will continue to utilise the existing shared vehicle access ramp (shared between 1 City View Road, 3 City View Road, 5 City View Road and the subject site) for access to the basement car park. This arrangement will continue to operate satisfactorily, noting the similar intensity of use.
4. A loading dock has been provisioned within the concept scheme and can accommodate Council's design waste collection vehicle, equivalent to a 12.5m Heavy Rigid Vehicle. The loading dock would have direct access from Wongala Crescent, with a turntable allowing safe and efficient forward entry and exit movements. The turntable and waste collection point would be internal and accessed via a roller shutter mitigating noise and visual impact.
5. The on-site provision of bicycle spaces is required by the Hornsby Development Control Plan 2013 for use by residents, tenants and visitors. End-of-trip facilities (including showers and lockers) should also be provided for tenant and visitor use.
6. Internal footpaths and bicycle access routes would be provided to building accesses, internal open space and bicycle parking facilities with the adjacent street network. In particular a through site connection will be provided between City View Road and Wongala Crescent which will provide utility to public transport users accessing Pennant Hills Station.
7. Although there is limited existing bicycle infrastructure in the local area, there are opportunities to provide or contribute to additional shared paths on City View Road and Pennant Hills Road, for connectivity to the Pennant Hills town centre and railway station, as well as more broadly to Thornleigh Marketplace, Beecroft local shops and several schools. Improved cyclist connectivity and pedestrian amenity along Pennant Hills Road would be of significant public benefit.
8. The site is expected to generate up to 102 and 88 vehicle movements in the AM and PM peak hours respectively. These traffic volumes are a minor reduction compared to the existing traffic generation of 116 and 88 vehicle movements (in the AM and PM peak hours respectively) which could be expected if the site was currently occupied.
9. Further to this, the proposal could result in a reduction of around 54 and 37 trips in the AM and PM peak hours respectively compared to the maximum existing permissible commercial development (maximum allowable FSR) on the site.
10. A cumulative assessment considering the potential similar redevelopment of surrounding sites has identified a potential total net decrease in traffic of 71 trips during the AM peak period and 61 trips during the PM peak hour. This overall reduction in traffic volumes (with minor individual increases for exit movements in the AM peak period and entry movements in the PM peak period) would be expected to have negligible traffic impacts.
11. Green travel planning which has been initiated as part of this Transport Impact Assessment would be further developed with any development application to encourage mode shift to sustainable transport options (particularly the available public transport services in close proximity to the site).

