9-15 COLUMBIA WAY, NORWEST

PLANNING PROPOSAL,
TRANSPORT IMPACT ASSESSMENT

PREPARED FOR GTL PROPERTIES
14 JULY 2022 | 301400297

Stantec

Revision	Description	Author	Quality Check	Approver	Date
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1 Introduction

1.1 Background

A Planning Proposal was lodged with The Hills Shire Council for a proposed commercial mixed-use development at 9-15 Columbia Way, Norwest. A preliminary assessment of the proposal was completed by Council, with feedback documented in a letter dated 19 January 2022. Arris Property Group and GTL Properties engaged Stantec to update the transport assessment to accompany a revised Planning Proposal that now considers a revised maximum floor space ratio of 2.36:1 and incorporates potential road network modifications being considered across the local area. This includes new road alignments, intersection upgrades and specific turn bans.

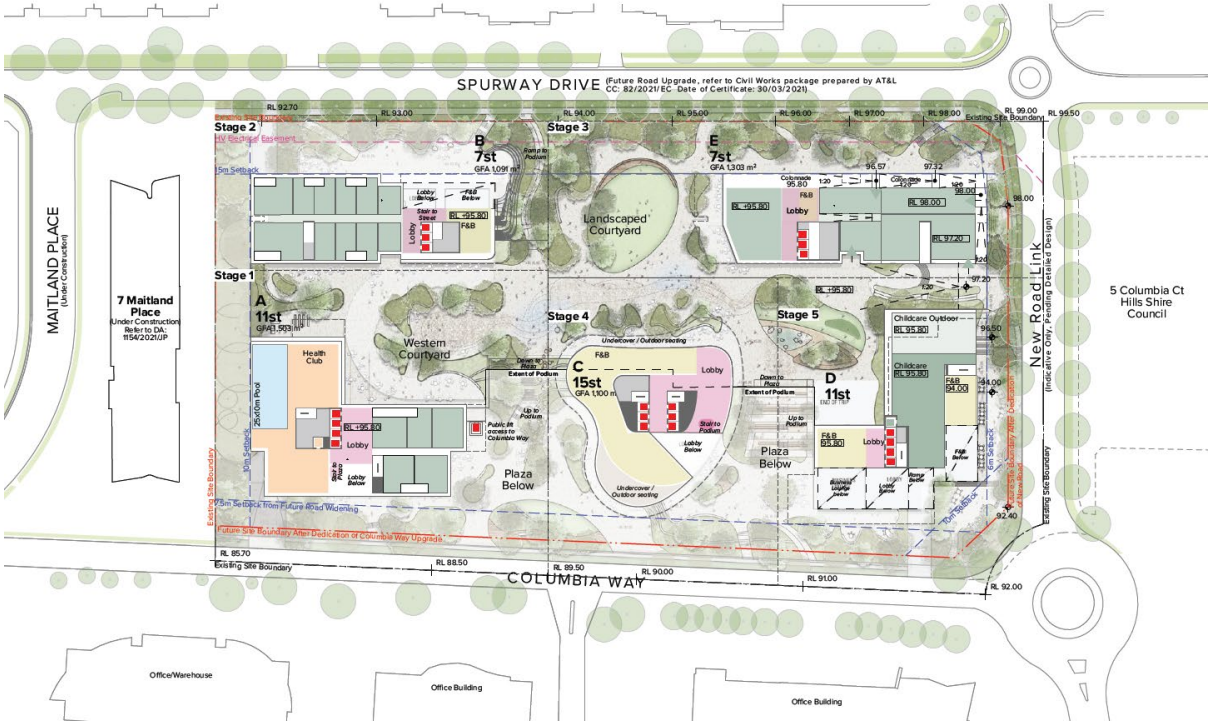
1.2 Development Proposal

The Planning Proposal incorporates the staged delivery of a commercial mixed-use development that seeks to amend the existing B7 Business Park planning controls to permit an increase in the maximum floor space ratio of 2.36:1 which represents a reduction on the previous proposal for 2:5:1. This approach is consistent with broader planned growth in Norwest largely triggered by the opening of Sydney Metro services in 2019. A potential new road connection between Columbia Court and Spurway Drive is also considered to the east and will necessitate some land dedication along the eastern boundary. The recently extended Maitland Place is also being considered to facilitate another connection with Spurway Drive further to the west.

Figure 1 shows the proposed podium level layout with the indicative yield for the overall proposal covering 71,516 square metres of gross floor area (GFA) across the podium and five towers. The breakdown includes:

- 64,033 square metres for commercial office space
- 2,128 square metres for ancillary commercial lobby and business lounge space
- 2,958 square metres of food and beverage
- 795 square metres of health club
- 455 square metres for a 45 to 65-place childcare centre
- 1,147 square metres for end of trip facilities.

Figure 1 Podium floor



Source: Turner, Drawing No. 20079-DA-110-008 Rev. C, issued 12/07/2022

1.3 Purpose of this Report

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

- existing transport services surrounding the site
- pedestrian and bicycle considerations and requirements
- suitability of proposed parking in terms of supply and indicative layout
- suitability of future access arrangements for the precinct
- traffic generating characteristics of the proposal
- transports impact of the proposal on the surrounding network.

1.4 References

In preparing this report, reference has been drawn from several background sources, including:

- inspection of the site and its surrounds
- The Hills Local Environmental Plan (LEP) 2012
- The Hills Development Control Plan (DCP) 2012
- The NSW Government's Future Transport 2056 Strategy 2018
- Greater Sydney Commission's Our Greater Sydney 2056 Central City District Plan 2018
- The NSW Government's Greater Sydney Services and Infrastructure Plan 2018
- The Hills Shire Council's The Hills Corridor Strategy 2015
- Australian Standard/ New Zealand Standard, Parking Facilities, Part 1: Off-Street Car Parking AS/NZS2890.1:2004
- Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS2890.2:2018
- Australian Standard/ New Zealand Standard, Parking Facilities, Part 6: Off-Street Parking for People with Disabilities AS/NZS2890.6:2009

- plans for the proposal prepared by Turner, dated 12 July 2022
- other documents and data as referenced in this report.

2 Strategic Context

2.1 Overview

The following key strategies and plans have influenced development opportunities in the strategic centre of Norwest and broader north-west growth area, together with real effects on future worker travel demand and mode splits.

A trigger for real growth in Norwest is the introduction of Sydney Metro, Australia's biggest public transport project which will ultimately operate as a standalone railway covering more than 66 kilometres with 31 new metro stations. Sydney Metro Northwest is the first stage of the project linking Rouse Hill and Chatswood via Norwest, Castle Hill and Epping with services having commenced in May 2019. Sydney Metro improves travel time, reliability and reduce costs compared with bus and private car travel to key employment areas including Macquarie Park, Chatswood, North Sydney and Sydney CBD.

Sydney Metro has greatly improved the 30-minute coverage for Norwest with commuters travelling as far east as Chatswood by public transport compared with the coverage in the past that only expanded to Castle Hill (within 30-minutes). The 30-minute coverage has also expanded for areas to the north and south of the metro line including towards Hornsby and Rhodes via The Northern heavy rail line.

2.2 Relevant Strategies and Plans

2.2.1 THE NSW GOVERNMENT FUTURE TRANSPORT 2056 STRATEGY

Future Transport 2056 provides a 40-year strategy for how transport will be planned, amended and forecasted within NSW, both regional and metropolitan, for the expected 12 million residents within the state. Future Transport 2056 follows from the 2012 Long Term Transport Master Plan which listed over 700 transport projects, the majority of which are completed or in progress. It also ties in with the Greater Sydney Region Plan and the subsequent district plans to support the three cities metropolis vision.

Future Transport 2056 is supported by two key documents, Greater Sydney Services and Infrastructure Plan and Regional NSW Services and Infrastructure Plan, which provide guidance and planning for these areas.

From a metropolitan view, Future Transport 2056 and associated plans include the 30-minute city where jobs and services are within 30-minutes of residents with Greater Sydney. Strategic transport corridors to move people and goods are outlined between metropolitan and strategic centres, clusters and surrounds. The Movement and Place framework is also emphasised to support liveability, productivity and sustainability.

2.2.2 THE GREATER SYDNEY REGION PLAN 2018

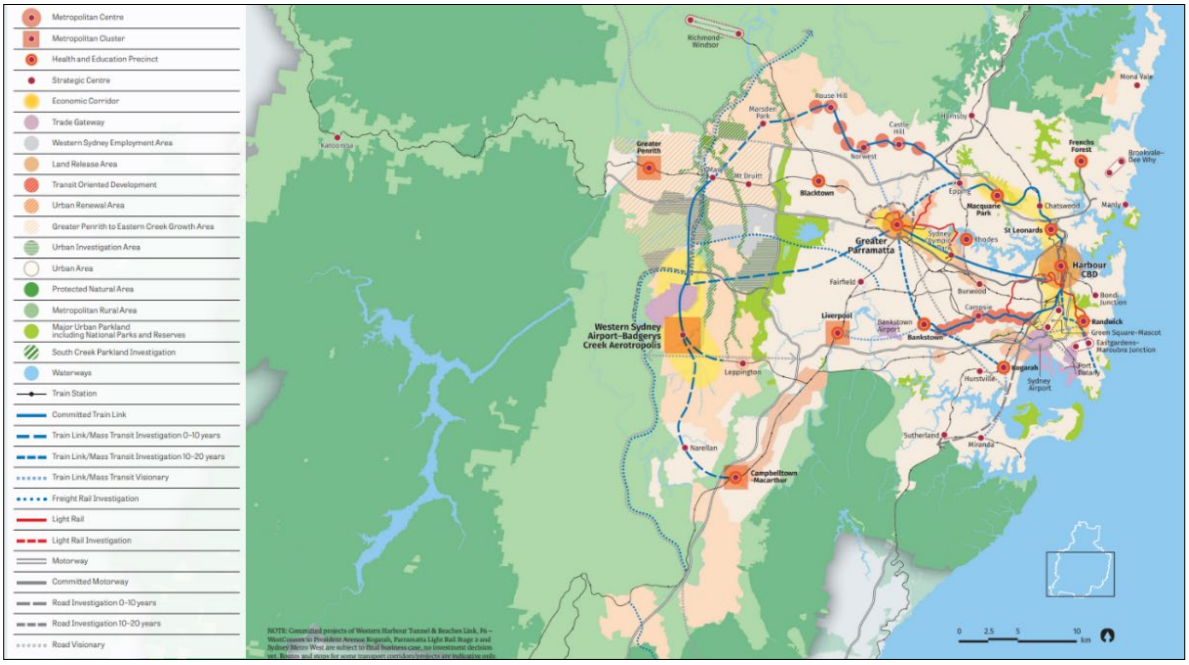
The Greater Sydney Commission (GSC) is an independent organisation that leads metropolitan planning for Greater Sydney. It has been prepared the Greater Sydney Region Plan which outlines how Greater Sydney will manage growth and guide infrastructure delivery. The plan has been prepared in conjunction 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 Westlink 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 jobs, schools, 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 in Figure 2 with Norwest highlighted on the Metro line and recognised as a strategic centre.

Figure 2 Greater Sydney Structure Plan 2056 – The Three Cities



Source: Greater Sydney Commission

2.2.3 CENTRAL CITY DISTRICT PLAN

The vision for Greater Sydney as a 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 Central City District will have quicker and easier access to a wider range of jobs, housing types and activities as part of the overall transformation. The vision will improve the district's lifestyle and environmental assets.

The Central City District is the central and major component of the Central River City. The Central City District will grow substantially, capitalising on its location close to the geographic centre of Greater Sydney. Unprecedented public and private investment is contributing to new transport and other infrastructure leading to major transformation.

The Plan puts emphasis on developing the economy with jobs and skills growth from infrastructure investment. Norwest is identified as a strategic centre for urban growth with a balance of mixed-use development to allow new residents the opportunity to benefit from access and services provided within the centre.

New safe walking and cycling connections will be provided between parks, bushland, playgrounds and waterways. The Central District will be supported by cohesive and socially dynamic communities with new social infrastructure like schools and community services, new cultural and sporting facilities.

The Central City District is shown in Figure 3.

Figure 3 The Central City District

Source: Greater Sydney Commission, accessed 15 April 2020

2.2.4 GREATER SYDNEY SERVICES AND INFRASTRUCTURE PLAN

Greater Sydney's population is forecast to grow from five million to eight million people over the next 40 years. To address the challenges and opportunities facing Sydney and the GSC's vision of a metropolis of three cities where people have access to jobs and services within 30-minutes by public transport, the Services and Infrastructure Plan was developed to plan for future transport in Sydney. Building on the Future Transport Strategy 2056, the Plan establishes specific transport outcomes for Greater Sydney and identifies policies, services and infrastructure initiatives to achieve these.

The plan puts emphasis on requiring more efficient modes of transport, specifically public transport, shared transport and walking and cycling. To support this, the NSW Government will invest in new transport links, such as Sydney Metro, utilising existing capacity, designating road space for more efficient vehicles and ensuring the transport network sustains the liveability and sustainability of centres it passes through.

2.2.5 THE HILLS CORRIDOR STRATEGY

With the introduction of Sydney Metro Northwest, over 50,000 new residents are expected to move to The Hills over the next 20 years. Council drafted the Hills Corridor Strategy to create a plan that creates a vision for the Shire's suburbs in the future.

The strategy looks specifically at measures to meet the future housing and employment growth expected for Cherrybrook, Castle Hill, Showground, Norwest, Bella Vista, Kellyville and Rouse Hill stations while maintaining sustainable and liveable suburbs.

The vision for Norwest is reproduced below:

"A specialised employment retail and entertainment centre with some opportunity for higher density residential living around the Norwest Lake Precinct"

The vision includes potential growth for approximately 5,650 dwellings and 26,200 jobs in Norwest, which is 2,200 dwellings and 16,050 jobs more than the planned growth under current controls.

2.2.6 NORWEST TRAFFIC MODEL

As part of Sydney Metro, strategic traffic modelling is currently being completed for Norwest (and other surrounding centres) with this to capture future growth and traffic conditions generally. Such modelling is key and allowing the precinct to develop over time in an environment in which metro services and other targeted transport initiatives will transform how people move.

Council and TfNSW have been approached to obtain an update on the future scenario modelling, specifically relating to the broader model parameters in terms of uplift on the site and how the traffic generation was calculated. Feedback received indicates that the future scenario modelling has been delayed with findings expected in the last quarter 2022. It is however understood that the modelling has considered the applicable future FSR allowance of 1.5:1 on the site and it was suggested to adopt future mode share targets for private vehicle trips set out in the Bella Vista Station Precinct Transport Plan prepared by TfNSW and dated December 2015 (even though concerns have been raised about the age of this study).

Also understood is that the roundabout at the Norwest Boulevard/ Columbia Court/ Brookhollow Avenue intersection forms a key intersection in the model and may be replaced with traffic signals, with reliance on achieving appropriate coordination with the Windsor Road/ Norwest Boulevard signalised intersection. With potential for right turn bans at this intersection to include the Norwest Boulevard into Columbia Court turn, this Planning Proposal has also considered the impacts of such measures on arrival and departure routes and the surrounding road network.

The findings of the strategic model will inform the assessment of all planning proposals and subsequent apportionment of any such necessary transport upgrades in the area.

2.2.7 MULPHA DEVELOPMENTS – NORWEST CITY

Mulpha Norwest Pty Ltd (Mulpha) has been granted approval to undertake master planning for Lot 2107 of DP 1216268, otherwise known as 40 Solent Circuit, Norwest. Mulpha has identified intention to create a mixed-use residential and commercial development, similar to other developments in Norwest which include multi-storey residential or commercial buildings. This could include up to 864 apartments and 6,000 square metres commercial. The proposal seeks a 'incentivised' FSR of 2.9:1 with a maximum height control of RL 176 metres (26 storeys).

Integral to the planning conditions include the development of 'The Hub', a publicly accessible pedestrian area, providing better pedestrian connectivity to the surrounding Norwest environment.

Additionally, as part of pedestrian volume preparation regarding ‘The Hub’ and surrounding developments, Council has expressed intention to install traffic lights and improved pedestrian amenity.

3 Existing Conditions

3.1 Site Location

The site is at 9-15 Columbia Way, Norwest within the Hills Shire Council Local Government Area, approximately 10 kilometres north of the Parramatta CBD and 30 kilometres northwest of the Sydney CBD. The site of 30,320 square metres has 230-metre frontages to Columbia Way/ Columbia Court along its southern boundary and Spurway Drive to the north. The site is zoned as B7 – Business Park.

Norwest is undergoing extensive redevelopment with a range of residential and commercial developments either in planning or under construction. This is largely triggered by the opening of Norwest Metro services (and Norwest station) to the southwest, with significant over-station development proposed.

Sydney Metro Northwest commenced services in May 2019 for commuters travelling between Schofields and Chatswood via Castle Hill and Epping. Services operate at four-minute frequencies during peak periods, vastly improving the level of public transport accessibility across northwest Sydney. The station is within an approximate 850-metre, or 10-minute walk of the site.

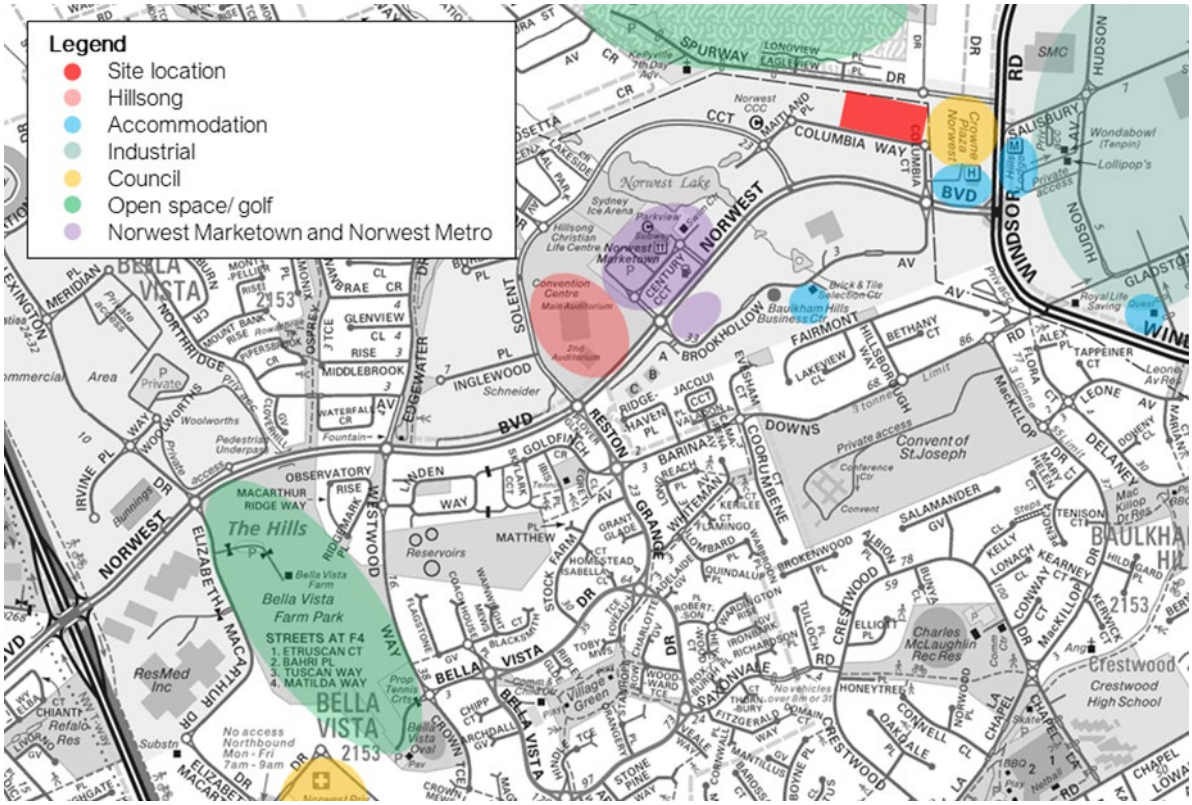
Norwest Marketown shopping centre is within a 700-metre walk to the southwest. It includes a Coles supermarket, pharmacy, business services and food offerings and is the key local centre. Other existing and planned developments ensure a range of business, retail, restaurant and residential land uses deliver a diverse mix of activity within a commercial and increasingly residential precinct.

The location of the site and its surrounding environs is shown in Figure 4 and Figure 5. The walking catchments are shown in Figure 6.

Figure 4 Norwest aerial view

Source: Nearmap (image date 4 June 2022)

Figure 5 Site location and surrounds



Source: Sydway

Figure 6 Site location and walking catchments

Base image source: Nearmap

3.2 Road Network

Roads are classified according to the functions they perform. The main purpose of defining a road's functional class is to provide a basis for establishing the policies which guide the management of the road according to their intended service or qualities.

In terms of functional road classification, State roads are strategically important as they form the primary network used for the movement of people and goods between regions, and throughout the State. Transport for NSW (TfNSW) is responsible for funding, prioritising and carrying out works on State roads. State roads generally include roads classified as freeways, state highways, and main roads under the Roads Act 1993, and the regulation to manage the road system is stated in the Australian Road Rules, most recently amended on 19 March 2018.

TfNSW defines four levels in a typical functional road hierarchy, ranking from high mobility and low accessibility to high accessibility and low mobility. These road classes are:

Arterial Roads – Controlled by TfNSW, typically no limit in flow and designed to carry vehicles long distance between regional centres.

Sub-Arterial Roads – Managed by either Council or TfNSW under a joint agreement. Typically, their operating capacity ranges between 10,000 and 20,000 vehicles per day, and their aim is to carry through traffic between specific areas in a sub region or provide connectivity from arterial road routes (regional links).

Collector Roads – Provide connectivity between local sites and the sub-arterial road network, and typically carry between 2,000 and 10,000 vehicles per day.

Local Roads – Provide direct access to properties and the collector road system and typically carry between 500 and 4,000 vehicles per day.

The key roads surrounding the site include Brookhollow Avenue, Norwest Boulevard and Windsor Road, with a summary of the surrounding road network provided in Table 1.

Table 1 Surrounding road network

Road	Road classification and function	Characteristics
Windsor Road	State Road - Arterial Road	• North-south road travelling between Kellyville and Parramatta • Approximately 22m carriageway width with two through lanes and additional turning lanes in each direction near the site • 70km/h posted speed limit near the site • Parking not permitted on either side of the road
Norwest Boulevard	State Road – Sub-Arterial Road	• East-west road travelling between Windsor Road and the Westlink M7 • 9m carriageway width in each direction with a central median separating the directions of travel • 70km/h posted speed limit • Parking not permitted on either side of the road
Columbia Court	Local Road	• North-south road connecting Columbia Way and Norwest Boulevard • 10.6m carriageway width • Single lane northbound, double lane southbound • 50km/h speed limit • Parking permitted on the west side of the road
Columbia Way	Private Road	• East-west private road connecting Columbia Court and Maitland Place • 7.8m carriageway width • Single lane, two-way configuration • 50km/h speed limit • Parking is permitted on the south side of the road • Potential for dedication to Council in the future to improve capacity

Road	Road classification and function	Characteristics
Spurway Drive	Local Road	• East-west road no through road, currently linking Windsor Road (via Stone Mason Drive) with Castle Hill Country Club for the east portion and Fairway Drive and The Orchards Residential Development for the west portion. • 7-9.5m carriageway width • Single lane, two-way configuration • 50km/h speed limit

Figure 7 Columbia Court, looking south

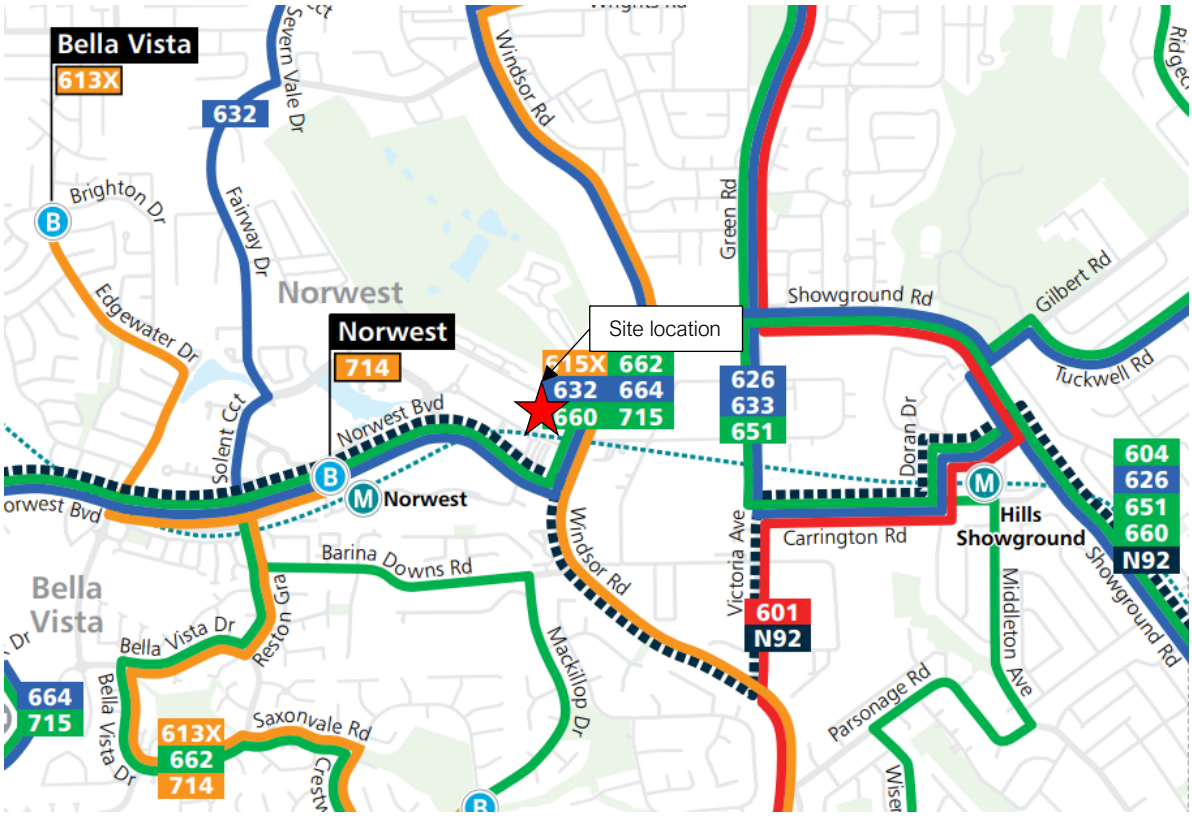
Figure 8 Columbia Way, looking west

3.3 Public Transport

3.3.1 BUSES

The site is near several bus routes (613X, 632, 660, 662, 664, 714, 715, 730) that service Norwest Boulevard and combine to link the immediate area with the broader Hills LGA, Westmead, Parramatta and Sydney CBD via the Hills M2 Motorway. The surrounding extensive bus network is shown in Figure 3.6, with the closest bus stops located on Norwest Boulevard near Columbia Court and at Norwest Metro Station.

Figure 9 Surrounding bus network



Source: cdcbus.com.au/wp-content/Region_4_Network_Map.pdf accessed July 2022

3.3.2 METRO RAIL

Stage 1 of Sydney Metro Northwest extends from Tallawong Station, Schofields to Chatswood. Stage 2 of Sydney Metro will extend south from Chatswood, through Crows Nest and North Sydney under Sydney Harbour via new underground station precincts within the CBD and stretching through the existing heavy rail line to Bankstown.

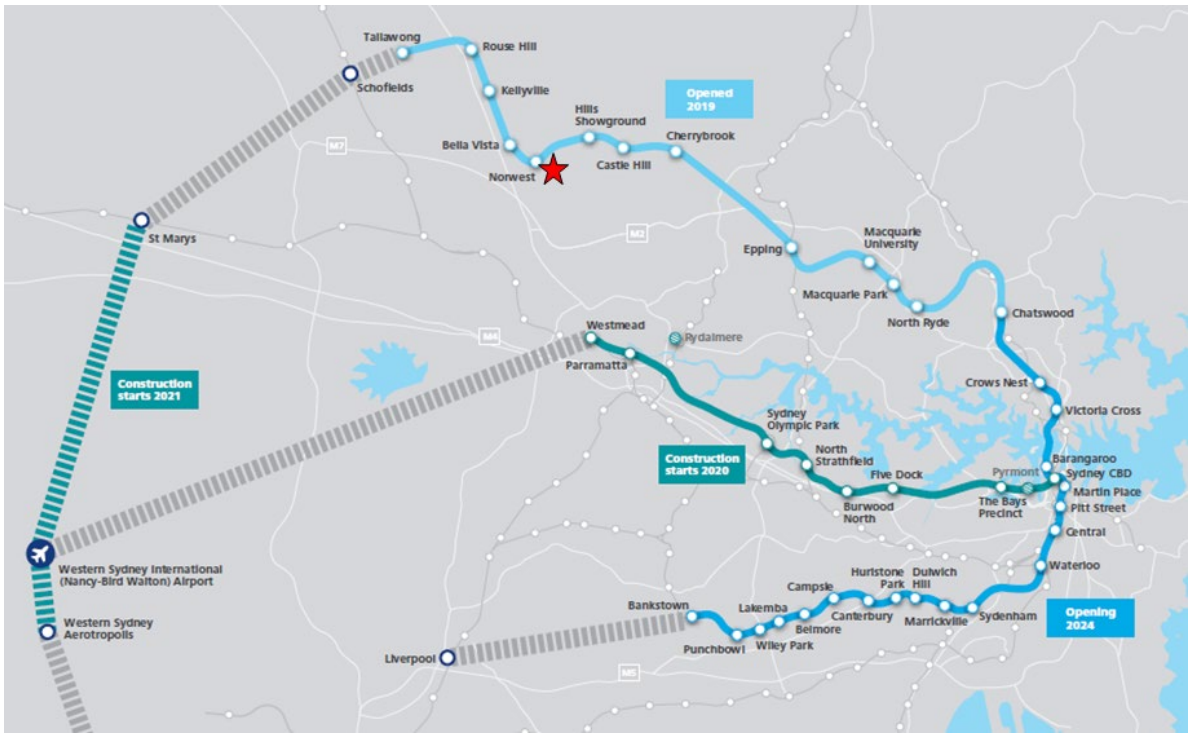
Sydney Metro Northwest has delivered eight new railway stations and 4,000 commuter parking spaces to Sydney's growing Northwest. Trains run every four minutes in the peak; that is 15 trains an hour operating as a walk up 'no timetable' service. With metro services already running, ongoing planning for the site includes an over-station mixed-use development comprising commercial and hotel towers.

Sydney Metro Stage 2 is also under construction and when completed in 2023 will further improve accessibility and travel time to areas beyond Chatswood including North Sydney and Sydney CBDs (and onto south-west Sydney suburbs). These connections provide rapid connection to residential

areas across northwest Sydney, creating real opportunities to change travel behaviour for existing and future workers.

An overview of the Sydney Metro route alignment is shown in Figure 3.7.

Figure 10 Sydney Metro route alignment



Source: Sydney Metro (sydneymetro.info/)

3.4 Traffic Volumes

Stantec commissioned two-way counts on all existing site accesses to understand current vehicle movements generated by the site. Two-way Columbia Way traffic volumes were also counted to understand adjacent traffic conditions along the private road. These counts were completed on Wednesday 2 June 2021 from 7:00am to 10:00am and 3:00pm to 6:00pm.

Overall, Columbia Way carries 250 vehicles (160 westbound and 90 eastbound) in the AM peak hour commencing 8:15am and 325 vehicles (190 westbound and 135 eastbound in the PM peak hour commencing 4:30pm. There is slightly higher traffic (about 10 to 20 per cent) at the eastern end when compared with the western end.

The existing site also generates about 120 to 140 vehicle trips in the both the AM and PM peak hours. With about 20 per cent of the existing floor space being vacant, the site could theoretically generate between 150 and 175 vehicle trips in the peak hours when fully occupied.

3.5 Pedestrian and Cycle Access

3.5.1 PEDESTRIAN AMENITY

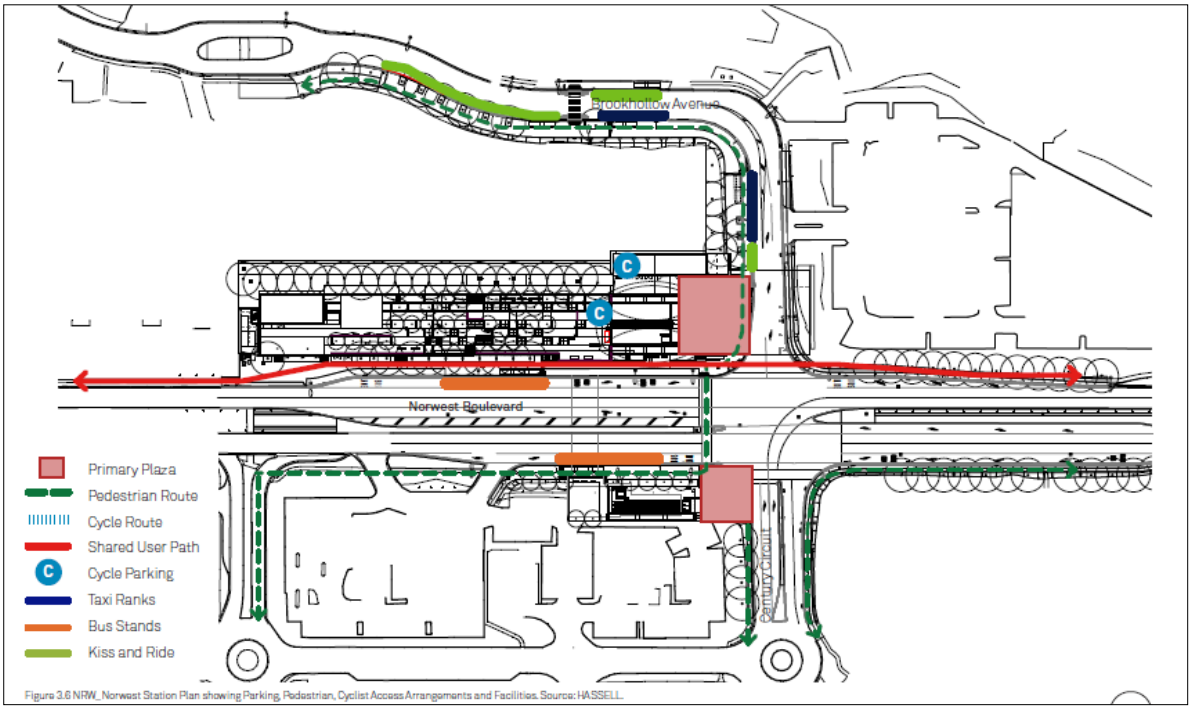
The introduction of Sydney Metro has greatly improved pedestrian amenity in Norwest, including the environment along Norwest Boulevard. A range of initiatives formed part of the metro station delivery

and enhances the connectivity in the immediate vicinity. These include the following transport facilities:

- Norwest Boulevard/ Brookhollow Avenue intersection (western end of Brookhollow Avenue) upgraded from roundabout to traffic signals with formal pedestrian crossings
- pedestrian link under Norwest Boulevard to improve access and safety between the metro station and bus stops and Norwest Marketown
- kiss and ride facilities and taxi rank on Brookhollow Avenue.

The layout of the Norwest Metro Station precinct in shown in Figure 3.8, with platform access also available from the west side of Norwest Boulevard. This means people that live or work west of the road (including from the subject site) do not need to cross Norwest Boulevard to access the station.

Figure 11 Norwest Metro Station precinct

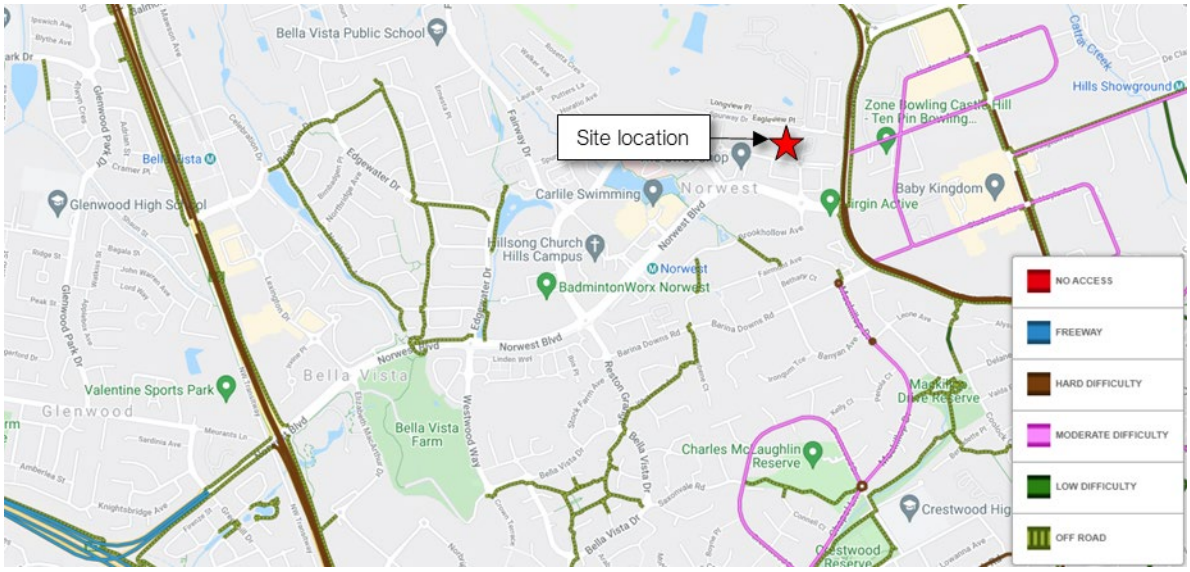


Source: Sydney Metro (https://www.sydneymetro.info/sites/default/files/2021-09/8.SM-NW-UDCLP-Precinct-Plan-Norwest.pdf)

3.5.2 CYCLING FACILITIES

Figure 3.9 highlights the cycling network within the local and regional area. Cycling infrastructure is generally limited through Norwest, evidenced by the absence of an east-west path along Norwest Boulevard between Windsor Road and Old Windsor Road. Alternative off-road cycleways south of the site combine to allow a level of amenity however their remains opportunity for improvements.

Figure 12 Existing cycling routes



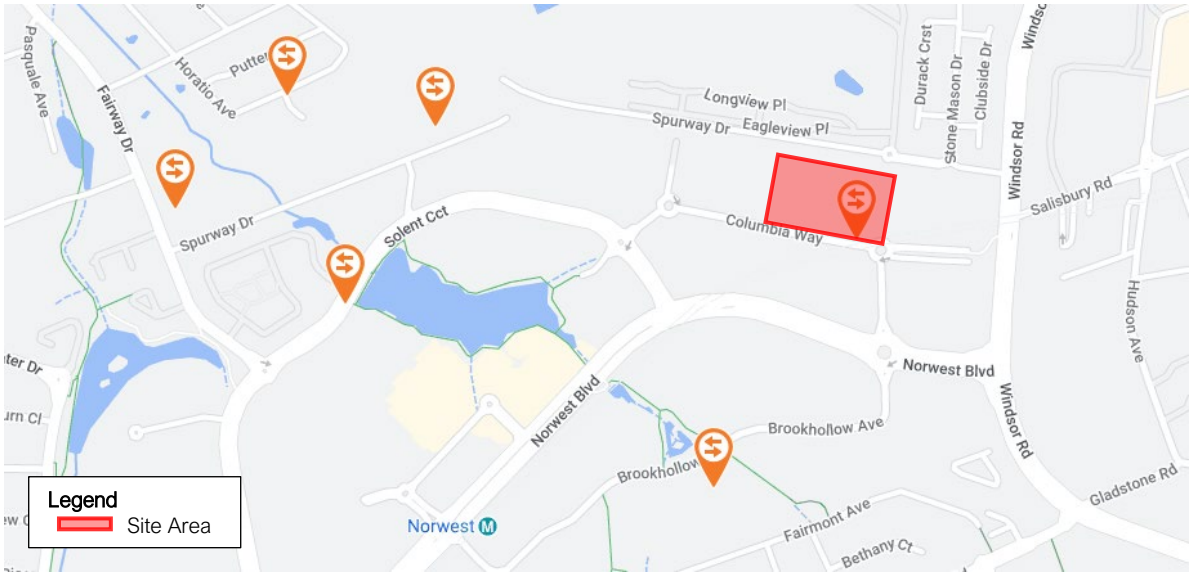
Source: NSW Cycleway Finder (accessed June 2021)

3.6 3.6. Local Car Sharing Initiatives

Car share schemes have become increasingly common throughout Sydney and are now recognised as a viable transport option for drivers throughout Sydney. They offer a viable alternative to the private car for trips where distances are short and are likely to be of benefit to future tenants of the proposed development. Whilst car share is in relative infancy in the local and regional area, they will form an integral part of the ongoing transformation of Norwest.

GoGet car share does have select share pods close to the site, shown in Figure 3.10, including a van adjacent to the site on Columbia Way.

Figure 13 GoGet car share pods



Source: GoGet, accessed 04 July 2022

4 Sustainable Transport Assessment

4.1 Active and Public Transport

The site is within a 10-minute walk of Norwest Metro station and associated bus facilities that conveniently connect employees throughout the Hills District and broader Sydney. With Sydney Metro greatly increasing the coverage and convenience to access the Greater Sydney region, there will be a natural reduced reliance on private car use which is a fundamental aspect of employment growth in the area.

The increased public transport services can accommodate significant volumes of people during peak periods, including the increase in public transport use generated by the proposal.

Norwest on demand bus services also operate in the area. The services are run by CDC Hillbus MetroConnect with the on-demand buses picking up customers from an agreed point and travel between Norwest Station, Bella Vista Station and Hills Showground Station, making it easier to connect with Sydney Metro. It operates during weekday peaks between 6am and 10am, and between 4pm and 9pm. Cost varies and depends on distance travelled.

4.2 Bicycle Parking and Associated Facilities

The bicycle parking requirements for various land uses are set out in DCP 2012. The DCP recommends bicycle parking be provided at a rate of two spaces, plus five per cent of the total car parking spaces for commercial and retail uses. 2,043 on-site parking spaces are envisaged for the proposal and on this basis, the site would require 104 bicycle parking spaces.

Notwithstanding, to facilitate the desire for workers and visitors to make regular use of more sustainable and active travel modes, it is recommended that bicycle parking be provided at a rate of one space per 200 to 300 square metres GFA. Bicycle parking should be provided in secure area for use by employees, while any visitor bicycle parking should be provided in the public domain to encourage use.

The recommended bicycle rate has been determined with consideration to commercial rates adopted in other Council DCPs, as summarised in Table 2. The recommended rate is considered appropriate for the proposal without representing an oversupply in an area that currently has a low active travel mode share.

Table 2 Comparison of DCP commercial bicycle parking requirements

Council	Commercial Rate
The Hills	2 + 5% of car parking supply
Parramatta	1 space per 200sqm
Canada Bay	1 space per 200sqm for staff plus 1 space per 750sqm for visitors
North Sydney	1 space per 150sqm for staff plus 1 space per 400sqm for visitors
Sydney	1 space per 150sqm for staff plus 1 space per 400sqm for visitors

Based on the rate of one bicycle space per 200 to 300 square metres, it is recommended that the proposal include between 240 to 360 bicycle parking spaces. Appropriate end of trip facilities including showers and lockers for the commercial uses would be incorporated into the proposal as part a future development application.

4.3 Travel Demand Management Initiatives

Transport is a necessary part of life, but it has economic, public health and environmental consequences. The transport sector is one of the fastest growing emissions sectors in Australia, and therefore is one of the key opportunities for reducing greenhouse gases. As well as delivering better environmental outcomes, providing a range of travel choices with a focus on walking, cycling and public transport will have major public health benefits and will ensure a strong and prosperous community.

The physical infrastructure being provided as part of the development is only part of the solution. A green travel plan (GTP) will ensure that the transport infrastructure, services and policies both within and external to the site are tailored to the users and co-ordinated to achieve the most sustainable outcome possible.

A GTP is a package of measures aimed at promoting sustainable travel and reducing reliance on private vehicles. It is not designed to be 'anti-car', however aims to encourage and support people's aspirations for carrying out their daily business in a more sustainable way. Travel plans can provide measures to:

- restrict car use (disincentives or 'sticks').
- encourage or support sustainable travel, reduce the need to travel or make travelling more efficient (incentives or 'carrots').

A site specific GTP would promote more sustainable and environmentally friendly travel choices for employees. As discussed, there will be a range of "non-car" transport options available near the site, specifically Sydney Metro.

The key objectives of GTPs are to:

- to encourage walking
- to encourage cycling
- to encourage the use of public transport
- to reduce the use of the car, in particular single car occupancy
- encourage more efficient use where it is necessary to use the car.

It is the intention therefore that the travel plan will deliver the following benefits:

- enable higher public and active travel mode share targets to be achieved
- contribute to greenhouse gas emission reductions and carbon footprint minimisation
- contribute to healthy living for all
- contribute to social equity and reduction in social exclusion
- improve knowledge and contribute to learning.

The following potential measures and initiatives could be implemented to encourage more sustainable travel modes:

- Limit on-site parking provision.
- Provide a Travel Access Guide (TAG) which would be provided to all residents and staff and publicly available to all visitors. The document would be based on facilities available at the site and include detail on the surrounding public transport services and active transport initiatives. The TAG would be updated as the surrounding transport environment changes.
- Provide public transport information boards/ apps to inform staff and visitors of alternative transport options (the format of such information boards would be based upon the TAG).
- Provide a car sharing pod(s) on-site or nearby and promoting the availability of car sharing pods for trips that require the use of private vehicles.
- Provide bicycle facilities including secure bicycle parking for staff, bicycle racks/ rails for visitors and shower and change room facilities.

- Encourage staff that drive to work to carpool through creation of a carpooling club or registry/ forum.
- Regularly promote ride/ walk to work days.
- Provide a regular newsletter to all staff members bringing the latest news on sustainable travel initiatives in the area.

With the successful implementation of a Green Travel Plan, there is a real opportunity to realise mode share targets and potentially exceed targets for non-car-based trips. This specifically includes single occupancy car trips given the site's key location near Norwest Metro Station.

5 Parking and Loading Assessment

5.1 Design Review

The proposal envisages 2,043 parking spaces, with the indicative car park layouts shown in Figure 14 and Figure 15. The car park layout has been designed to allow for staged delivery while permitting internal vehicle connections. The west car park is expected to have 634 parking spaces with the remaining 1,409 spaces to be within the east car park.

A total of three vehicle accesses are proposed with two being on Columbia Way and one on Spurway Drive. With Spurway Drive being a private road and therefore not permitting direct access, short term opportunities in this regard are not possible. However, a five-to-seven-year timeline could see Spurway Drive delegated to Council as a public road, with access opportunities then likely.

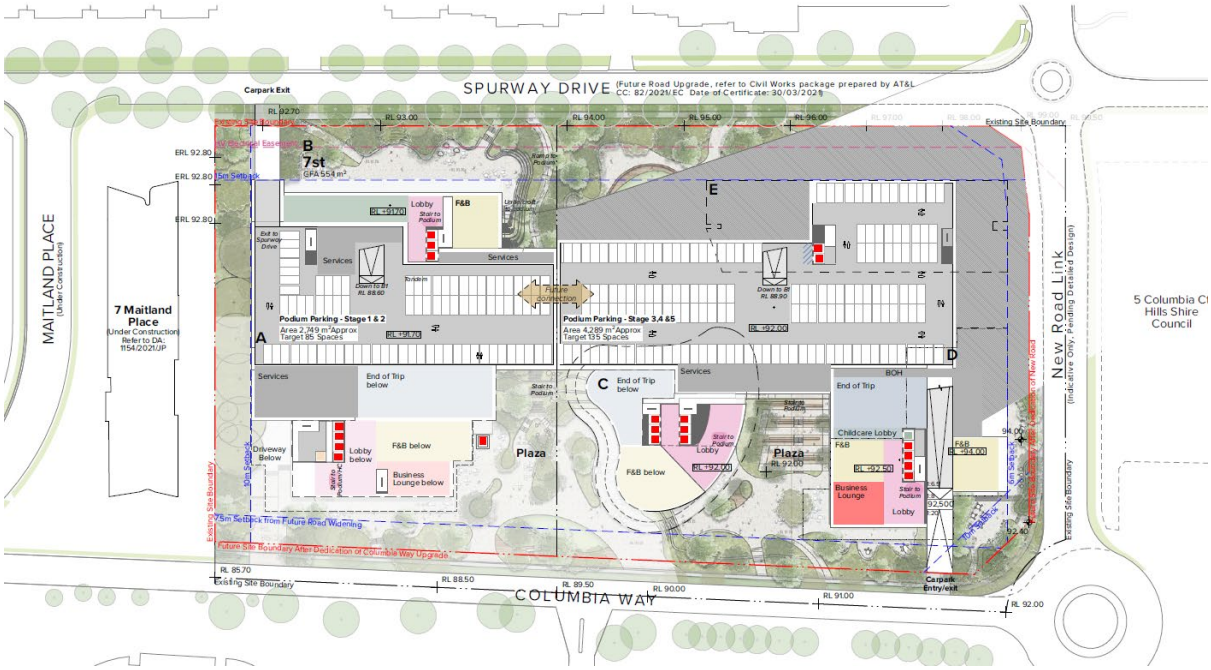
The proposed access arrangements reduce the number of vehicle crossovers on Columbia Way from the existing six to the proposed two. Potential use of a future Spurway Drive access would also further alleviate the concentration of traffic using Norwest Boulevard. In any event, a future connection via Maitland Place and Columbia Court to connect with Spurway Drive will similarly provide for such moderate demand.

A loading dock is proposed on the lower ground level in each car park with capacity for all vehicles up to 12.5 metre heavy rigid vehicles (HRV).

The ground floor (podium) design provides convenient pedestrian connectivity between Columbia Way and Spurway Drive via an expansive public domain. Vehicle accesses are retained on the eastern and western peripheries and ensure good separation of vehicles and pedestrians across the site. Ground floor activation with open space and adjacent to the food and beverage tenancies (with outdoor seating) will also encourage use.

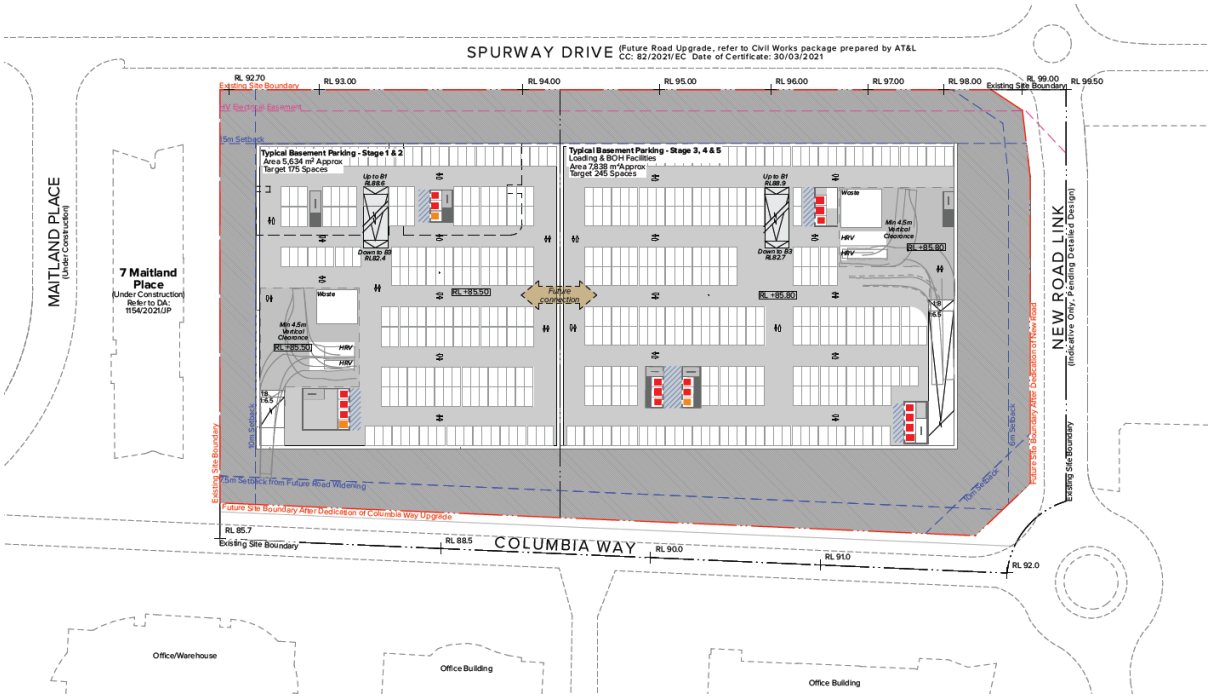
A detailed compliance review assessed against the relevant Australian Standards and Council DCP will be completed as part of any future development applications.

Figure 14 Indicative Upper Ground Floor layout



Source: Turner, Project No. 20079-DA-110-007 Rev. C, issued 12/07/2022

Figure 15 Indicative Basement 1 layout



Source: Turner, Project No. 20079-DA-110-005 Rev. C, issued 12/07/2022

5.2 Car Parking

5.2.1 HILLS DCP 2012

The car parking requirements for different development types are set out in Hills DCP 2012. The resultant car parking requirement based on the proposed land use mix is presented in Table 3, with the ancillary commercial lobby and business lounge area excluded from the analysis.

Table 3 Hills DCP 2012 Parking Requirement

Land Use	Size	DCP Parking Rate	DCP Parking Requirement
Commercial	64,033sqm	1 space/ 25sqm GFA	2,561
Food and Beverage	2,958sqm	1 space/ 18.5sqm GFA	160
Health Club	795sqm	1 space/ 25sqm GFA	32
Childcare Centre	7-9 employees 45-65 children	1 space per employee 1 space per 6 children	15-20
		Total	**2,768-2,773 spaces**

Table 3 indicates that the proposal would require around 2,770 spaces to comply with Hills DCP 2012.

This parking provision is considered excessive for several reasons though especially considering the proximity to Norwest Metro station and the future vision for the surrounding area as a key employment precinct. Also recognised is recent applications and support for lower parking provision in an ever-changing Norwest precinct.

5.2.2 PROPOSED PARKING PROVISIONS

With the Hills DCP parking rates not considered sustainable for future development in Norwest and the proposed vision for Norwest being a strategic centre with a key objective of encouraging a mode shift towards more sustainable modes of travel, a more manageable parking provision, and hence, travel mode share is appropriate.

As such, it is proposed to provide car parking at a rate of one space per 35 square metres for proposed GFA. With a total of 71,516 square metres GFA proposed, this equates to 2,043 spaces. This represents an almost 30 per cent reduction on the Hills DCP 2012 requirement. Such a reduction of the DCP rates and considering the proposed commercial development, this quantum of parking tends to strike a positive balance between current DCP parking rates and the more progressive parking rates prevalent in development sites very close to (or above) Norwest metro station. It also recognises the emerging Norwest precinct and changing demographics.

5.3 Accessible and Motorcycle Parking

Hills DCP 2012 requires two per cent of the total parking supply to be accessible spaces. Based on 2,043 spaces, 41 accessible spaces would be required as part of any future development application.

Motorcycle parking is also required at a rate of one space per 50 car parking spaces for developments with over 50 spaces. Similarly, this results in the need to provide 41 motorcycle spaces.

5.4 Loading and Servicing

Stantec's experience with calculating loading requirements for new large-scale commercial developments have shown the Hills DCP 2012 and TfNSW Guide 2002 rates generally result in an excessive recommended loading dock provision.

Loading docks play an important role for the function of most commercial spaces. In the case of office space, it is typically acknowledged that one loading space for every 10,000 to 15,000 square metres of GFA is appropriate. This approach is consistent with TfNSW data. Application of this to the Planning Proposal results in the need for about five or six loading bays.

For commercial tenancies, deliveries are typically by vans and rigid trucks (mostly 6.4m and 8.8m small and medium rigid trucks), with the exception of tenancy turnover periods and for delivery of large furniture and appliances when large rigid trucks may be necessary. Deliveries are typically couriers, postal services, food and other day-to-day commercial business-related activity. All are generally infrequent.

Stantec's database of loading demand associated with food and beverage stores indicates that they typically receive an average of one to two deliveries per day per tenant. Considering the proposed 10 retail tenancies and including the fitness club, this would likely result in about 15 deliveries per day. Applying a 50 per cent contingency results in 22 deliveries per day. The childcare centre is also expected to generate one to two deliveries per day (mostly for food deliveries).

Based on similar developments, waste collection for all uses may be in the order of 15 trucks per week.

With indicative planning allowing for some four loading bays that are suitable for 12.5-metre-long heavy rigid trucks in two separate loading areas, it is expected that the commercial demands of the site will be able to be adequately accommodated.

On this basis, and an anticipated average 30-minute duration of stay across a 12-hour daily operation, the loading docks could accommodate up to eight service vehicles in any peak hour and 96 vehicles across the day. Such capacity would readily accommodate the loading demands of the site. Nonetheless, as part of design development and any future DA, additional capacity in the loading areas to allow for use by smaller service vehicles, including vans and utes will be assessed.

The proposed loading docks are shown in Figure 15.

6 Transport Assessment

6.1 Trip Generation

To understand the transport demands generated by the proposal, a person trip assessment has been completed that considers the anticipated population.

Based on a ratio of one person per 15 square metres, the proposed GFA could generate a theoretical maximum building population of 4,550 people. This assumes all GFA is commercial (noting that the commercial space makes up more than 90 per cent of the GFA) and excludes the end of trip facility space and ancillary commercial lobby and business lounge space. Assuming 35 per cent of the population arrives and departs in the morning and afternoon peak hours, this equates to 1,590 person trips per hour.

TfNSW Land Use Planning team suggested to use the future mode share targets from the Bella Vista Station Precinct Transport Plan (TfNSW, 2015). The Transport Plan indicates that private vehicle trips (driver or passenger) will account for 47 to 48 per cent of future trips with the remaining 52 to 53 per cent split between public transport, walking and cycling.

Therefore, the corresponding person trip generation by transport mode is summarised in Table 4, which indicates that trips by vehicle (as driver or passenger) would likely account for 750-person trips, or approximately 625 vehicle trips per hour. The assessment also indicates that approximately 470 and 210 trips will occur via train and bus respectively, with some 80 active travel trips and 80 people working from home.

Assuming too that only 85 per cent of the building population travel to/ from work on any single day, vehicle trips would reduce to 530 and public transport trips to about 580 trips.

Table 4 Trip generation by transport mode

Travel Mode	Mode Split Target	Trips (AM or PM)
Vehicle (driver or passenger)	47%	750 (625 vehicles) [1]
Train	30%	470
Bus	13%	210
Walking and cycling	5%	80
Work from home/ did not work	5%	80
	Total	**1,590-person trips**

[1] Based on 1.2 people per vehicle.

6.2 Traffic Generation

The conventional approach to calculating traffic generation is to adopt the rates derived from the TfNSW Guide to Traffic Generating Developments 2002 (the Guide) and TDT 2013/ 04a and assess against the applicable GFA. Given the proposal includes a reduced parking rate (and with parking rates varying greatly across Sydney), traffic generation based on turnover of each parking space is more appropriate.

Considering the site's proximity to Norwest Metro Station and future transport aspirations across the broader precinct, in combination with the proposed reduced parking provision in relation to commercial GFA, a trip generation rate of 0.49 trips per car space in the AM peak hour and 0.33 trips per space in the PM peak hour has been adopted for this assessment. This is slightly lower than the

Sydney sites average as referenced in TDT 2013/ 04a (0.69 and 0.53 trips per space respectively) due to the removal of one outlier study site included in the document, which does not share similar access properties to the site and Norwest in general.

The adopted rates are still appropriately higher than other sites around Sydney including North Sydney, Chatswood and Parramatta, as these areas are more established centres with lower car parking requirements (average of 0.38 and 0.25 trips per space respectively).

The anticipated traffic generation of the proposal is summarised in Table 5.

Table 5 Anticipate Traffic Generation

Land Use	Size/ Parking Spaces	Traffic Generation Rates		Vehicle Trips	
		AM Peak	PM Peak	AM Peak	PM Peak
Commercial	1,830 spaces	0.49 trips/ space	0.33 trips/ space	896	604
Health Club	23 spaces	0.25 trips/ space [1]	0.25 trips/ space [1]	6	6
Food and Beverage	2,958 sqm	0.009 trips/ sqm [1][2]	0.18 trips/ sqm [1]	26	52
Childcare	45-65 children	0.2 trips/ child [3]	0.18 trips/ child [3]	9-13	8-12
			Total	**937-941**	**670-674**

[1] Assumes 50 per cent of trips will be linked trips (i.e. not new trips)
[2] Assumes the food and beverage will be operating at 50 per cent in the AM peak
[3] Assumes 75 per cent of trips will be linked trips.

Table 5 indicates that the proposal could generate some 940 and 675 vehicle trips in the weekday AM and PM peak hours, respectively. This represents an increase of 790 and 500 vehicle trips in the AM and PM peak hours over the existing site use (as detailed in Section 3.4).

The trip generation assessment by transport mode detailed in Section 6.1 concluded that the proposal could generate up to 625 vehicle trips per hour based on the mode share targets. This is lower than the findings of this traffic-based assessment, which is influenced by the quantum of on-site parking.

6.3 Distribution and Assignment

The directional distribution and assignment of traffic generated by the proposal will be influenced by several factors, including the:

- configuration of the arterial road network near the site
- existing (and future) arrangement and operation of intersections and road links providing access between the local and arterial road network
- surrounding employment centres, retail centres and schools in relation to the site
- likely distribution of employee's residences in relation to the site
- configuration of access points to the site.

The Bella Vista Station Precinct Transport Plan (TfNSW, 2015) estimates the following directional distribution of trips to the precinct:

- North – 22 per cent
- East – 55 per cent
- South – 15 per cent
- West – 8 per cent.

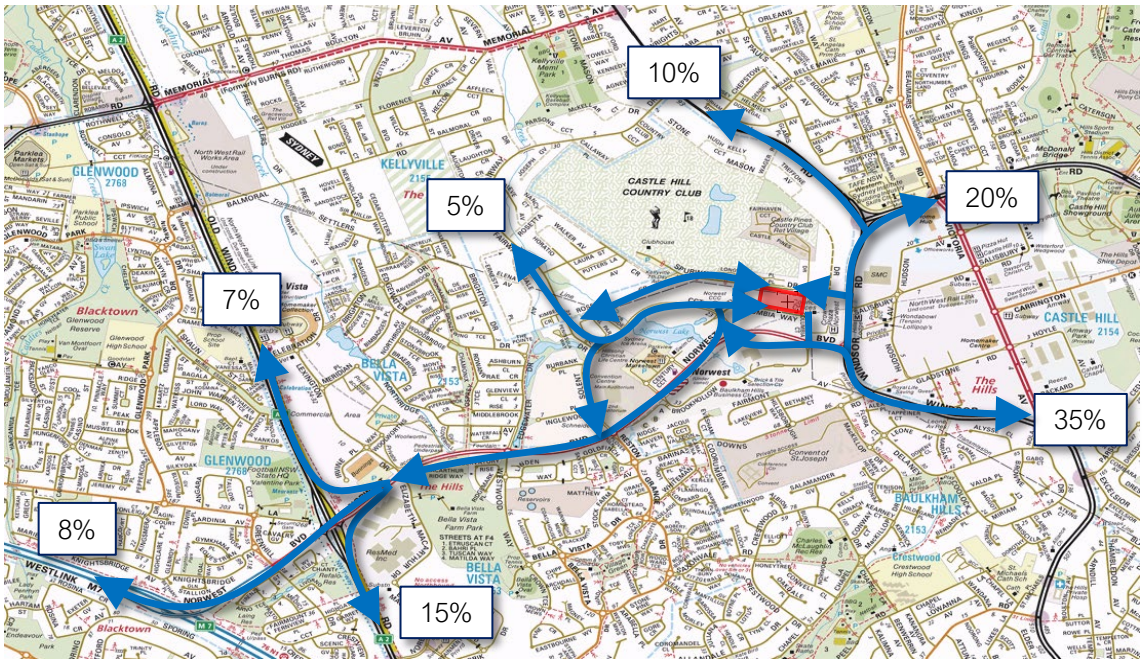
Council has advised the proponent of the following road changes being investigated near the site:

- New road link between Columbia Court and Spurway Drive
- New connection between the recently extended Maitland Place and Spurway Drive
- Dedication of Columbia Way to a public road
- Signalisation of Norwest Boulevard/ Brookhollow Avenue/ Columbia Court
- Banned right turn from Norwest Boulevard to Columbia Court.

A potential right turn ban from Norwest Boulevard into Columbia Court will require vehicles approaching from Windsor Road to travel further west and turn right at the Solent Circuit signalised intersection to access the site via Maitland Place. Alternatively, northbound vehicles along Windsor Road can use Stone Mason Drive and Spurway Drive to access the site via the potential new road links or the car park access.

Further to the above, car park access for the development is also proposed via Spurway Drive (once it becomes a public road). These future road modifications and site access arrangements have the potential to redistribute more than 25 per cent of development traffic away from Norwest Boulevard, noting that Spurway Drive has always been planned to connect Windsor Road with Fairway Drive. On this basis, the anticipated distribution of traffic on the surrounding road network is shown in Figure 16, with the resultant two-way traffic estimates shown in Figure 17 and Figure 18 for the weekday AM and PM peak hours, respectively.

Figure 16 Traffic Distribution



Base map source: Sydway

Figure 17 Two-way Traffic Distribution – Weekday AM

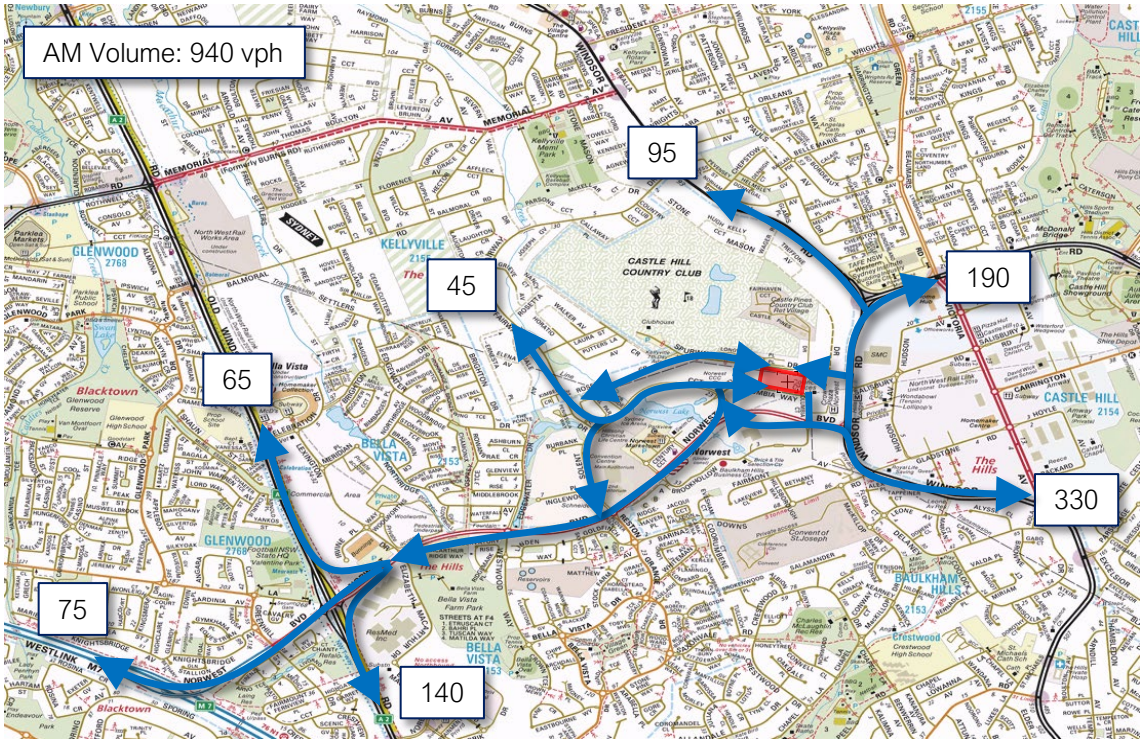
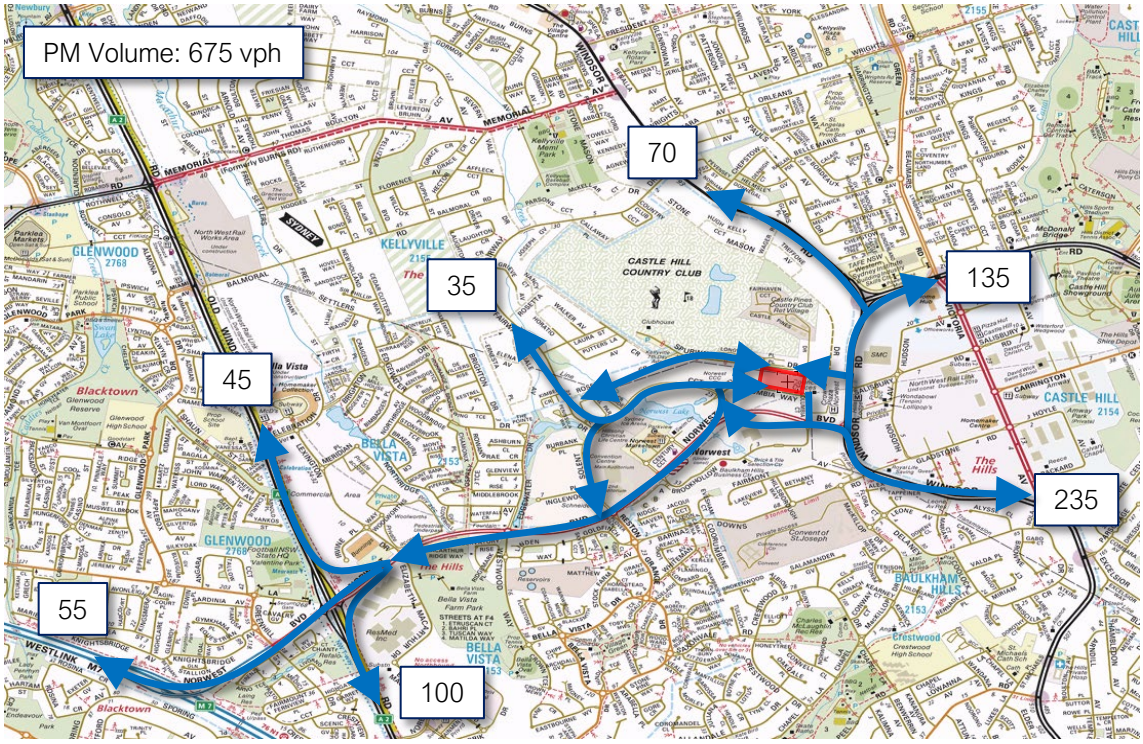


Figure 18 Two-way Traffic Distribution – Weekday PM



Based on the anticipated distribution, 70 per cent of site generated traffic is expected to use Windsor Road and 30 per cent Old Windsor Road/ Westlink M7. As discussed, some traffic will use Fairway Drive and Spurway Drive which will benefit distribution of traffic not only for the site, but the precinct

generally. Traffic will also use Solent Circuit and of course the key intersections on Norwest Boulevard at Columbia Court and Solent Circuit.

The anticipated direction split will be 80:20 split in the peak direction of travel (80 per cent inbound in the AM peak, reverse in the PM).

6.4 Transport Impacts

The introduction of Sydney Metro to Norwest and the greater northwest Sydney region is likely to continually shift travel behaviour of both the existing and future workforce. Furthermore, ongoing COVID-19 circumstances will likely materially change how often people travel to work, when they travel and with greater proportions expected to work from home at least some of the week. The above trip assessment assumed five per cent work from home, although this could realistically be significantly higher. These factors will result in a significant shift in traffic congestion, as even with Metro services commencing, traffic congestion has been a steadily increasing issue over many years.

It is worth also noting that with more residents and mixed-use developments in the area, the very much 'tidal' flow of traffic in the peak direction will also tend to dissipate over time. Less reliance on travel (alone) by private vehicle will also further benefit future traffic conditions.

It is widely recognised that existing traffic conditions through Norwest (and Bella Vista, Castle Hill, etc.) are not completely representative of future conditions, which has been further impacted by legacy work from home arrangements as a result of COVID-19. Upgrades to the Norwest Boulevard/ Brookhollow Avenue intersection (at the metro station) from a roundabout to traffic signals has also altered how traffic moves through the area. Pedestrian amenity has also improved with provision of formal and safe crossing points in an area that has long been dominated by the car. On this basis and given the soon to be released strategic traffic model, assessing the traffic generation of the proposal against current conditions would not provide meaningful results to inform future traffic conditions. It is also important to consider all other planned and future growth in the area as part of any traffic study.

As discussed, strategic traffic modelling is currently being completed for Norwest (and other surrounding centres) with the intent to capture future growth and traffic conditions generally. Such modelling is key to allowing the precinct to develop over time in an environment in which metro services and other targeted transport initiatives will transform how people move. Such change will take time and as such, agreement on the timing and extent of any such site-specific traffic modelling (if any) can be confirmed as part of a future DA.

The strategic model is understood to be based on the applicable future 1.5:1 FSR for site and equates to some 45,500 square metres GFA. Applying the DCP parking rate of one car space per 25 square metres equates to 1,820 parking spaces and with the same traffic generation rates as detailed above, the model could have considered 892 and 600 trips in each peak hour. This equates to between 50 and 75 trips less than the proposal. Equally, if the strategic model is based on the traffic generation rates contained in TDT 2013/ 04a, (1.6 and 1.2 trips per 100 square metres in the AM and PM peak hours, respectively), the potential site traffic generation could have been assessed as 728 and 546 trips.

With the future road and site access connections to Spurway Drive reducing the reliance on Norwest Boulevard to provide access to/ from the site, the marginal higher traffic generated by the proposal will be further dispersed across the road network, with any additional traffic impacts at key Norwest Boulevard intersections likely to be manageable.

Furthermore, the proposal is estimated to generate some 470 and 210 trips by train and bus, respectively. These estimated peak hour trips would likely equate to less than 20 people on any metro

train or individual bus service. The current public transport services will be readily capable of accommodating significant volumes of people during the peak periods with the numbers generated by the proposal representing a minor proportion of the overall demand.

7 Conclusion

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

- A revised Planning Proposal is to be lodged for the redevelopment of 9-15 Columbia, Norwest which incorporates around 71,516 square metres GFA of primarily commercial space across five towers.
- The proposal supports the future vision for the surrounding area as a mixed-use precinct, with several other developments currently in planning or under development following the introduction of Sydney Metro.
- The proposal looks to provide supporting commercial and food and beverage land uses to support future housing growth in the surrounding growth precinct and encourage trip containment in the surrounding Norwest area.
- The parking requirements in the existing planning controls for the site are high and do not take into consideration the significant improvements in public transport provision surrounding the site. This includes Metro service and on demand buses.
- The proposal includes a provision of 2,043 parking spaces, equating to a rate of about one space per 35 square metres and represents a significant reduction on the Hills DCP 2012 requirements.
- The site access arrangements, including opportunity for a Spurway Drive access are considered appropriate and able to better distribute the anticipated peak traffic volumes across the road network and limit traffic impacts at any one location.
- The proposed parking layout is expected to be consistent with the dimensional requirements as set out in the Australian/New Zealand Standard for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009) with further refinement as part of any future development application.
- It is recommended that the development provide between 240 and 360 bicycle spaces consistent with higher bicycle provision requirements for other councils considering the future vision for the surrounding precinct and to further encourage a mode shift towards active travel. This would be supported by high quality end-of-trip facilities and lockers.
- The provision of pedestrian links between the site and surrounding area is expected to be of benefit and provide for improved pedestrian amenity and connectivity throughout.
- Loading and servicing will occur on-site and within the lower ground level with allowance for all vehicles up to 12.5-metre-long heavy rigid trucks. Demand is expected to be moderate with the loading areas expected to readily accommodate demand for the proposed uses.
- The site is expected to generate up to 940 and 675 vehicle trips in the AM and PM peak hours respectively, or an increase of 790 and 500 trips over existing conditions.
- Based on a person-trip based assessment that considers future mode share targets set by TfNSW, the traffic generation could be around 625 vehicles in any peak hour.
- Existing traffic conditions in Norwest are in transition and impacted by COVID-19 and is therefore not representative of future conditions. As such, an assessment based on current conditions and intersection configurations would not provide meaningful results to inform the Planning Proposal.
- Strategic precinct wide traffic modelling is being completed to better understand future traffic conditions and inform the assessment of Planning Proposals and the apportionment of any transport network upgrades across future development in the precinct. Results are expected in late 2022 with these expected to inform the potential of development sites, in consideration to travel mode share, to realise their development potential.