asongroup

Transport Assessment

Proposed Bridge Road Micro Hub
93 Bridge Road, Westmead

Ref: 0898r01
14/03/2019

Document Control

Project No: 0898

Project: 93 Bridge Road, Westmead

Client: 93 Bridge Road Pty Ltd atf Bridge Road Unit Trust

File Reference: 0898r01v2 TA 93 Bridge Road, Westmead, Issue II

Revision History

Revision	Date	Details	Author	Approved by
-	26/02/2019	Draft	A. Tan	R. Butler-Madden
I	14/03/2019	Issue	R. Butler-Madden	J. Mulhaire
II	14/03/2019	Issue	R. Butler-Madden	R. Butler-Madden

Table of Contents

1 Introduction

1.1 Overview

Ason Group has been engaged by Lane Associates on behalf of 93 Bridge Road Pty Ltd atf Bridge Road Unit Trust (the Proponents) to prepare a Transport Assessment (TA) in support of a Planning Proposal (PP) for a proposed mixed-use development (known as the Bridge Road Micro Hub) at 93 Bridge Street, Westmead (the Site). The PP seeks to modify the maximum permissible Floor Space Ratio (FSR), the maximum building height and provide an Additional Permitted Use (APU) than that permitted by the Parramatta Local Environment Plan (2012).

The proposed rezoning intends to facilitate the future development of the Site for residential accommodation and allied health and education uses. Building heights up to 130m (40 storeys) and a 6:1 FSR are required to support the creation of a micro innovation centre on the Site to complement the Westmead Health and Education Precinct.

For the purpose of this high level traffic assessment, the adopted "reference scheme" and indicative development yield could accommodate:

- 424 residential units;
- 300 Student rooms (7,606m^2 GFA);
- Community Centre with 1,000m^2 GFA;
- NDIS Respite / Medical Stay Housing (approximately 23 units);
- Medical Centre with 929m^2 GFA;
- A total 756m^2 GFA of speciality retail; and
- A food alley with 441m^2 GFA.

The Site is located within the Parramatta Council Local Government Area and is therefore subject to that Council's controls.

1.2 Document References

This TA report addresses the relevant traffic, transport and parking implications of the Proposal, including compliance with relevant State and Local Government controls and Australian Standards. The Site is located within the Local Government Area (LGA) of Parramatta Council and is therefore subject to that Council's controls. In preparing this TA report, Ason Group has referenced the following key planning documents that are relevant to development at the Site:

- Parramatta Development Control Plan 2011 (PDCP)
- Parramatta Local Environmental Plan 2011 (PLEP)

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

- RMS (then RTA) Guide to Traffic Generating Development; October 2002 (RMS Guide)
- RMS Technical Direction TDT 2013/04a, *Guide to Traffic Generating Developments – Updated traffic surveys* (RMS Guide Update).
- Australian Standard 2890.1 (2004): *Off-street car parking* (AS2890.1).
- Australian Standard 2890.2 (2002): *Off-street commercial vehicle facilities* (AS2890.2).
- Australian Standard 2890.6 (2009): Off-street parking for people with disabilities (AS2890.6).
- *Integrated Public Transport Service Planning Guidelines*, Sydney Metropolitan Area Transport for New South Wales (TfNSW, December 2013)

1.3 Study Objectives

This TA report seeks to achieve and demonstrate the following key objectives:

1) Undertake a traffic generation assessment to identify the traffic generating capabilities of the scheme and any resulting impacts on the road network.
2) Review the parking provision for the Proposal to confirm the Site's capability to accommodate compliance with Council's Development Control Plan and therefore appropriate levels of car parking could be provided.
3) Assess the Site's accessibility to public transport and demonstrate that the Site is strategically well located to achieve the public transport goals of the Greater Sydney Region Plan, in particular the 30-minute City principles
4) Evaluate the Site's ability to align with the objectives of the Westmead Precinct objectives.

1.4 Report Structure

The report is structured as follows:

- Section 2 provides a summary of the Proposal.
- Section 3 describes the existing Site and traffic generation.
- Section 4 details the strategic context of the Site.
- Section 5 describes the existing traffic conditions.
- Section 6 details the existing public transport.
- Section 7 identifies the parking requirements for the Site.
- Section 8 details the likely traffic impacts of the Proposal.
- Section 9 examines the Proposal's alignment with the relevant strategic context.
- Section 10 provides relevant design commentary and Section 11 provides a summary of the key conclusions of the TA.

2 Overview of Proposal

2.1 Summary of Proposed Development

A detailed description of the Proposal is included in the Planning Proposal Report, prepared separately by Willowtree Planning. **Table 1** provides a summary of the reference design for the purposes of this assessment.

Table 1: Reference Design

Land Use	Yield	Description
Residential	424 Units comprising of: 77 one-bed units 225 two-bed units 122 three-bed units	Traditional residential flat buildings to contribute to meeting housing supply targets. 5% of units would be affordable apartments.
Student Accommodation	300 Rooms (total 7,606m^2)	Traditional style student accommodation to service Western Sydney University and The Sydney University campuses in close proximity to the Site.
Community Centre	1000m^2	A multi-functional facility for the community
NDIS Respite / Medical Stay Housing Hub	2,262m^2 (approximately 23 units)	A hybrid of accommodation with The NDIS Respite housing to provide accommodation for those with disabilities who have a level of independence alongside housing for families of patients at the Hospital with no other local accommodation.
Medical Centre	929m^2	For the purposes of this assessment, it assume that the Medical Centre would accommodate 7 consulting rooms.
Speciality Retail and Cafes	756m^2	Purpose of the speciality retail and cafes would be to service the medical centre and other visitors (i.e. through premises such as pharmacies) to the Site.
Food Alley	441m^2	Purpose of the proposed Food Alley is to service the students and residents on the Site.

3 The Existing Site

3.1 Site & Location

The Site is situated at 93 Bridge Road, Westmead and is legally described as SP 31019. It is located on the eastern side of Bridge Road and is within the area identified as the Westmead health, education and research precinct. Vehicular access is from a private road which forms a roundabout intersection with Bridge Road. The Site has a total area of 8,663m^2 and is currently occupied by 31 semi-detached single storey dwellings.

Westmead Private Hospital is located to the north-east of the Site and Mother Teresa Primary School to the east. Generally, the other developments in the vicinity are primarily residential in nature.

At a regional level, the Site is located approximately 22 kilometres west of the Sydney CBD and 2.6 kilometres north-west of the Parramatta CBD and is zoned R4 High Density Residential. A Site Plan is presented in **Figure 12** which provides the existing conditions.

3.2 Existing Traffic Generation & Distribution

3.2.1 Traffic Generation

Based on the RMS guide medium density trip rate of 0.5 vehicles per hour, the existing Site could generate 16 vehicles during the peak hours.

3.2.2 Trip Distribution

The direction of the traffic which exits the Site access road is relatively evenly split in the morning peak, with 42% of traffic travelling northbound on Bridge road and the remaining 58% travelling southbound. At Bridge Road based on survey, and then at the north and southern intersection based on surveys.

Of the traffic entering the Site in the morning peak, 67% approach from the south and 33% approach from the north. As expected, the predominant traffic flow peak for the site access road is westbound (exiting) traffic during the AM and eastbound traffic (entering) during the PM peak period.

In the afternoon peak, a greater proportion of traffic travels from the south (61%) than the north to access the Site. Of the traffic exiting the Site in the afternoon peak, 62% travel southbound and 38% travel northbound.

4 Strategic Context

4.1 Introduction

Given the significance of the Westmead Precinct (the Precinct), as identified by the Department of Planning & Environment, reference has been made to the state, regional and local planning documents that are considered relevant to the context of the Site. These key, reference documents and policies are discussed in the following sections.

4.2 Future Transport Strategy 2056

Future Transport Strategy 2056 was released in March 2018. It is an update of the 2012 Long Term Transport Master Plan for NSW. Future Transport 2056 is supported by a suite of plans for regional NSW and for Greater Sydney. As shown in **Figure 1**, the Strategy identifies that planning and investment for Greater Sydney will focus around the three cities concept – the Western Parkland City, the Central River City and the Eastern Harbour City, where people can access the majority of jobs and services within 30 minutes. It will require a sustained and staged investment program to protect corridors and then develop an integrated transport system that includes:

- City-shaping corridors: Major trunk road and public transport corridors providing higher speed and volume connections between our cities and centres that shape locational decisions of residents and businesses.
- City-serving corridors: Higher density corridors within 10km of metropolitan centres providing high frequency access to metropolitan cities/centres with more frequent stopping patterns
- Centre-serving corridors: Local corridors that support buses, walking and cycling, to connect people with their nearest centre and transport interchange
- Freight network: The most significant corridors that support the movement of goods.

The Site is located within Greater Parramatta region, which is at the core of the Central River City. The development of the Central River City will require improved 30 minute public and active transport access to Greater Parramatta. To support this, the focus will be on new city-shaping connections, particularly from the north and south. A new light rail network for Greater Parramatta will also support local access and urban renewal.

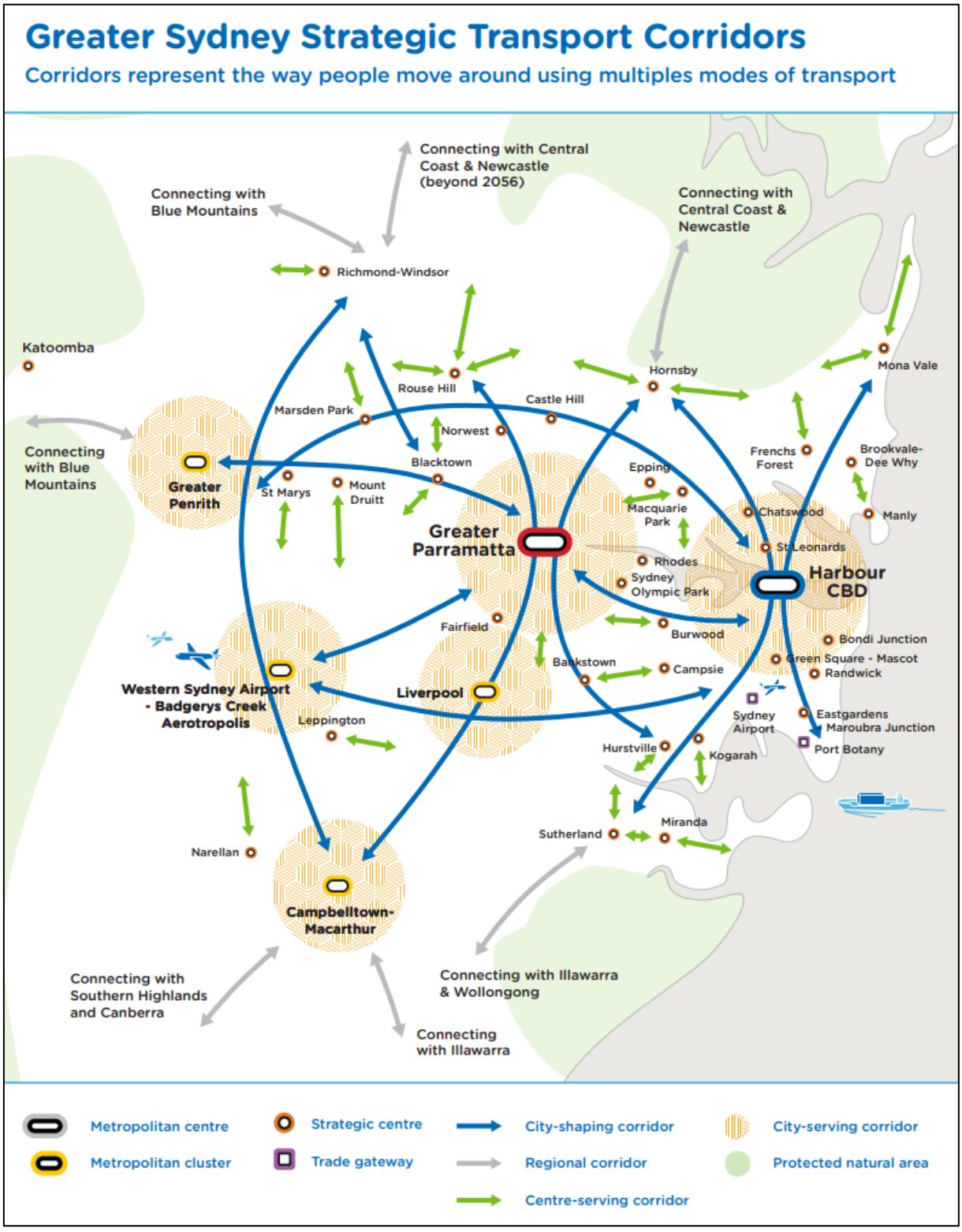

Figure 1: Greater Sydney Strategic Corridors

4.3 Greater Sydney Regional Plan (2018)

The Greater Sydney Region Plan: *A metropolis of Three Cities – connecting people* (2018) has been produced by the Greater Sydney Commission. Its purpose is to:

"…rebalance growth and deliver its benefits more equally and equitably to residents across Greater Sydney. The plan aligns land use, transport and infrastructure planning to reshape greater Sydney as three unique cities"

Based on a vision of three connected cities – the Eastern Harbour City, the Central River City and the Western Parklands City – the Region Plan is structured around strategies for infrastructure, collaboration, liveability, productivity, sustainability and implementation across Greater Sydney. **Figure 2** identifies the key strategies to achieve the outcomes for the Central River City, where the Site is located.

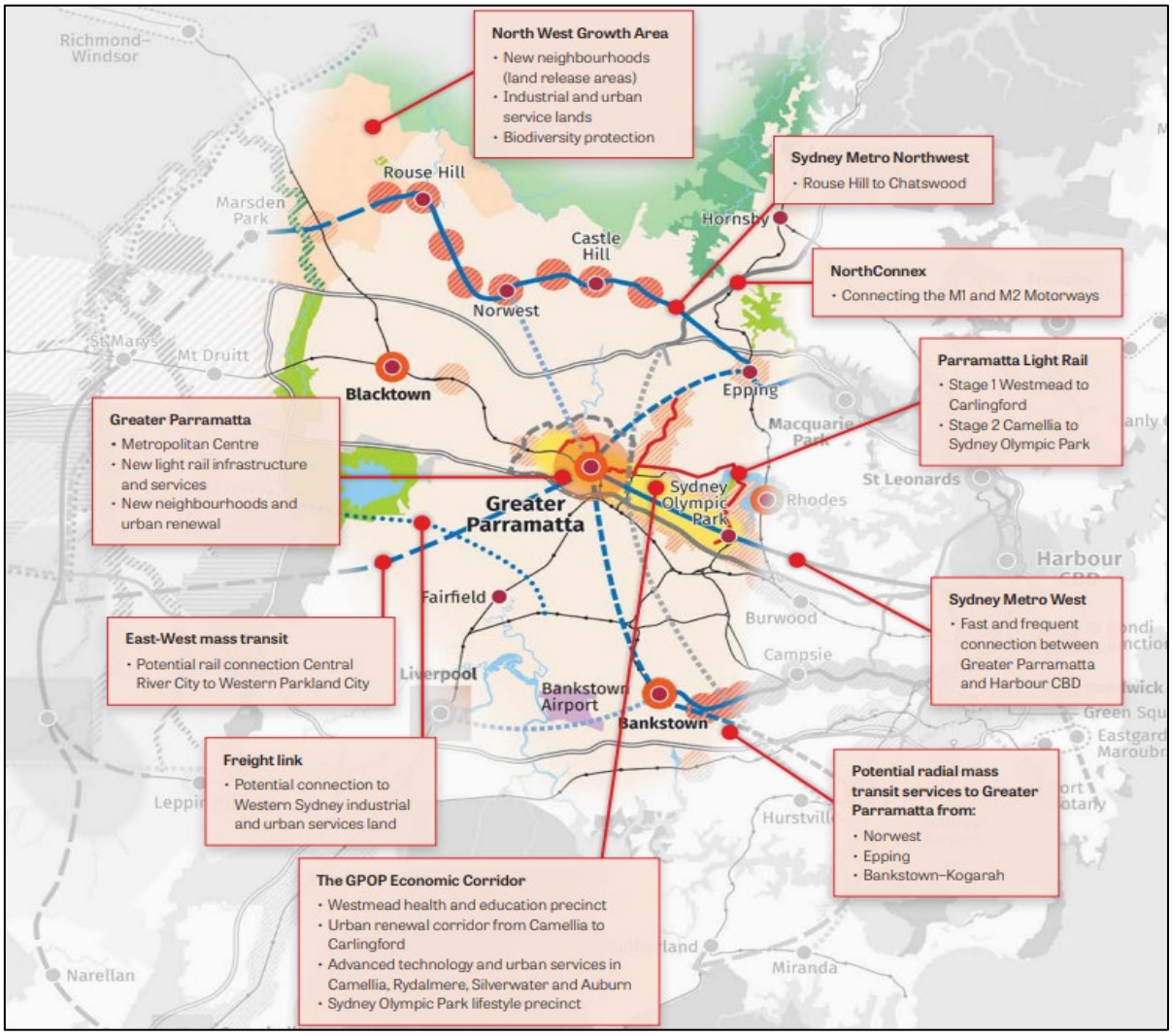

Figure 2: Central River City – Key Strategies

The Region Plan was prepared concurrently with the future Transport Strategy 2056 and the State Infrastructure Strategy to ensure the alignment of land use, transport and infrastructure outcomes for Greater Sydney. It seeks to encourage residential development in close proximity to employment areas to deliver a series of 30-minute cities, providing better access to jobs, schools, and health within 30 minutes of people's homes.

Objective 10 of the Region Plan focuses on "*housing the city*", with 0-5 year housing supply targets (2016-2021) for the Central City District set at 53,500 and the 20-year strategic housing target (2016-2036) set to 207,500. As is noted by the Region Plan, good strategic planning can provide new homes in the right places linked with infrastructure:

"Accommodating homes needs to be linked to local infrastructure – both to optimise existing infrastructure and to maximise investment in new infrastructure."

Objective 14 of the Region Plan aims to integrate land use and transport to create walkable and 30-minute cities. One element required to achieve this aim is to co-locate activities in metropolitan, strategic and local centres and attract housing in and around centres to create walkable neighbourhoods.

The Site is ideally located to align with the aims of the Region Plan as it located close to Westmead's residential areas, is within the Westmead Precinct which is working to deliver "*world-class health, education and research services*" (Westmead Alliance) and is less than kilometres from Parramatta CBD making it readily accessible by bus and train. The Site's relationship with the surrounding land uses mean that travel by non-car modes can easily be encouraged with access to jobs and key services possible within 30 minutes.

Further, a key consideration in the design of the Proposal was creating an enhanced walkable and permeable network. As discussed in the Urban Design report prepared by RobertsDay, a key vision for the Site is to enhance the Green Grid:

"At the forefront of our proposal is to positively contribute to the community life and liveability factor of Westmead, improving the overall quality of life for future and existing residents. Enhancing the existing green grid connections identified in the Parramatta Ways Walking Strategy and the relationships between open spaces within WID at a micro scale. This will create a more liveable, comfortable and enjoyable places. ***New public open spaces, additional tree canopy and improved pedestrian connections will provide greater access to green spaces & promote happier and healthier communities****."*

4.4 Superseded Policies

Prior to implementation of the Future Transport Strategy and Greater Sydney Regional Plan, the NSW Government began implementing the vision for a 30-minute city through a Plan for a Growing Sydney and NSW Long Term Master Plan, which are referenced in the following sections.

4.4.1 A Plan for Growing Sydney

A Plan for Growing Sydney was released in December 2014, identifying four goals required to deliver the 20 year vision outlined in the NSW Long Term Transport Master Plan. The Plan identifies a range of actions and directions to achieve the above, which include the following relevant actions:

- Expansion of the Global Economic Corridor to Parramatta
- Growing Parramatta as Sydney's second CBD by connecting and integrating Parramatta CBD, Westmead, Parramatta North, Rydalmere and Camellia
- Growing the specialised health and education precincts at Westmead and Rydalmere.

The Site is located within the West Central Subregion and will be a significant focus for infrastructure investment and intensive growth over the next 20 years. Greater Parramatta will continue to be Sydney's second CBD and a focus for jobs growth and services delivery in Sydney's west.

Figure 3 provides an overview of the major transport projects, which are expected to assist in the successful growth of the West Central Subregion and the greater Sydney region. In this context, the Site is an essential element of the broader Westmead redevelopment which provides health infrastructure for the rapidly growing Western Sydney region.

4.4.2 NSW Long Term Transport Master Plan

The NSW Government released the NSW Long Term Transport Master Plan (LTTMP) in December 2012, with annual updates released in December 2013 and 2014. The LTTMP presents a 20 year vision for transport planning through to 2031 and sets out 220 short, medium and long term actions to integrate, grow, modernise and manage the transport network across NSW.

The LTTMP provides integrated advice with regards to transport policy; identifying solutions to develop and manage the NSW's transport system. Forming part of the LTTMP is Sydney's Rail Future, a long-term plan to increase the capacity of Sydney's rail network and update existing infrastructure. The importance of Westmead as part of the broader Parramatta region was recognised, with the following relevant transport actions identified:

- Improved cycleways and better connections developed through or around Cumberland Hospital to Westmead.

- Better public transport links to Westmead Hospital and Cumberland Hospital and Heritage Precinct.
- Improved frequency of public transport services between Parramatta CBD and Westmead.

The above actions have significant emphasis on non-car travel modes, with the overall intention to improve the competitiveness of public transport compared to car travel.

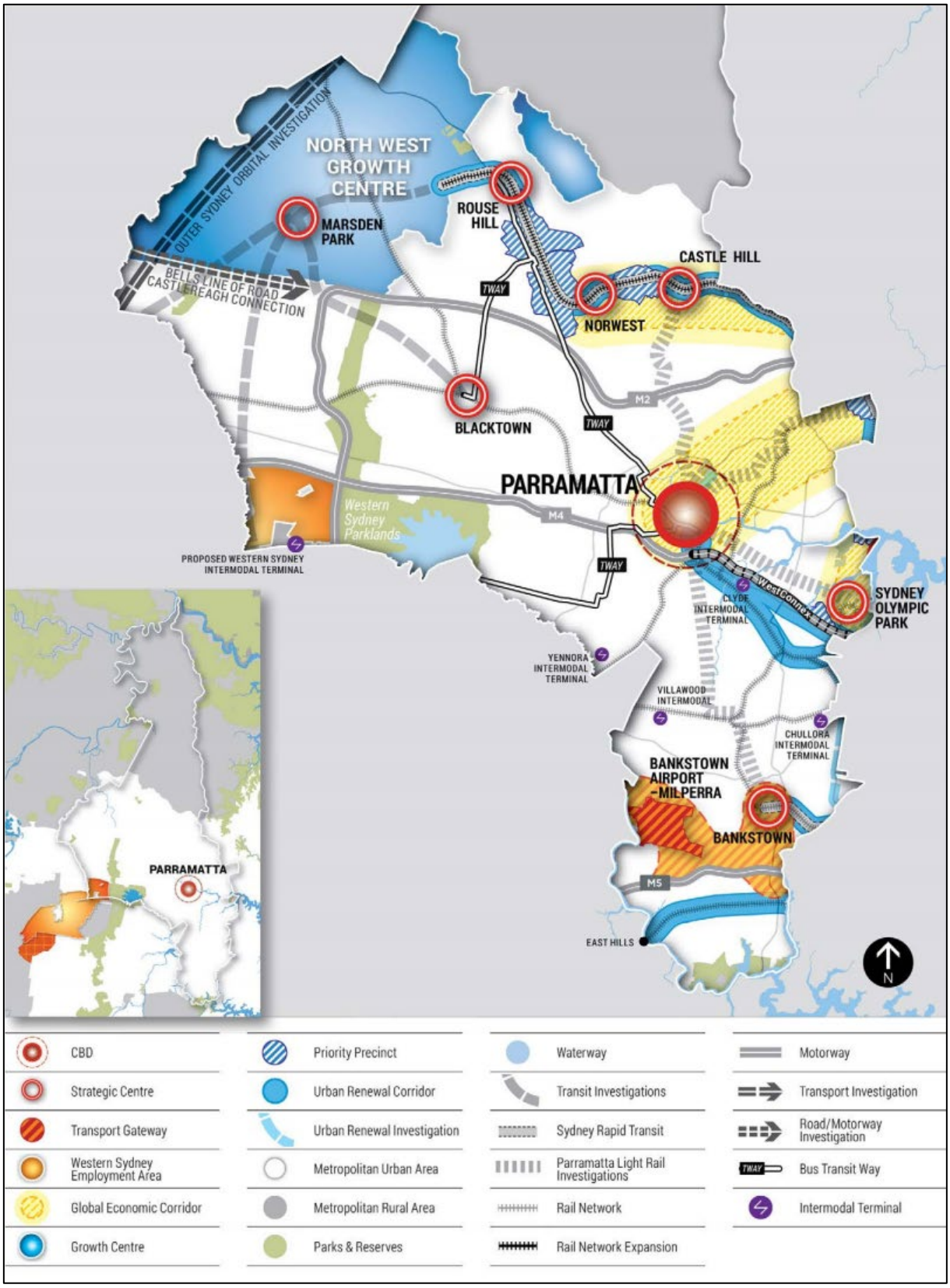

Figure 3: West Central Subregion Major Projects

4.5 Sydney's Bus Future

Sydney's Bus Future, December 2013 outlines the NSW Government's long term plan for the bus network to meet customer needs. The proposed upgrade for the Sydney bus network will include the addition of new rapid bus routes while maintaining and improving elements of the existing bus network, such as cross-city services on Metro bus routes.

Rapid bus routes will offer faster and more reliable bus travel for commuters between major city centres as extra services are planned to be implemented and bus stops to be further dispersed along routes (generally spaced 800 metres to one kilometre apart). Existing suburban and local service routes will continue to provide commuter access to local, neighbourhood destinations. An additional 20 suburban routes are to be introduced. Proposed network upgrades would fill the gaps in the heavy rail network, strengthening links from the Parramatta region to areas including Norwest, Castle Hill, Macquarie Park, Ryde, Bankstown, and Liverpool.

The proposed rapid bus routes include:

- Castle Hill to Liverpool via Parramatta
- Parramatta to Sydney CBD via Ryde
- Rouse Hill to Hurstville via Parramatta and Bankstown
- Mona Vale to Sydney CBD
- Maroubra Junction to the Sydney CBD
- North Bondi to the Sydney CBD
- Castle Hill to the Sydney CBD.

The proposed rapid bus routes connecting with Parramatta are shown in **Figure 4.**

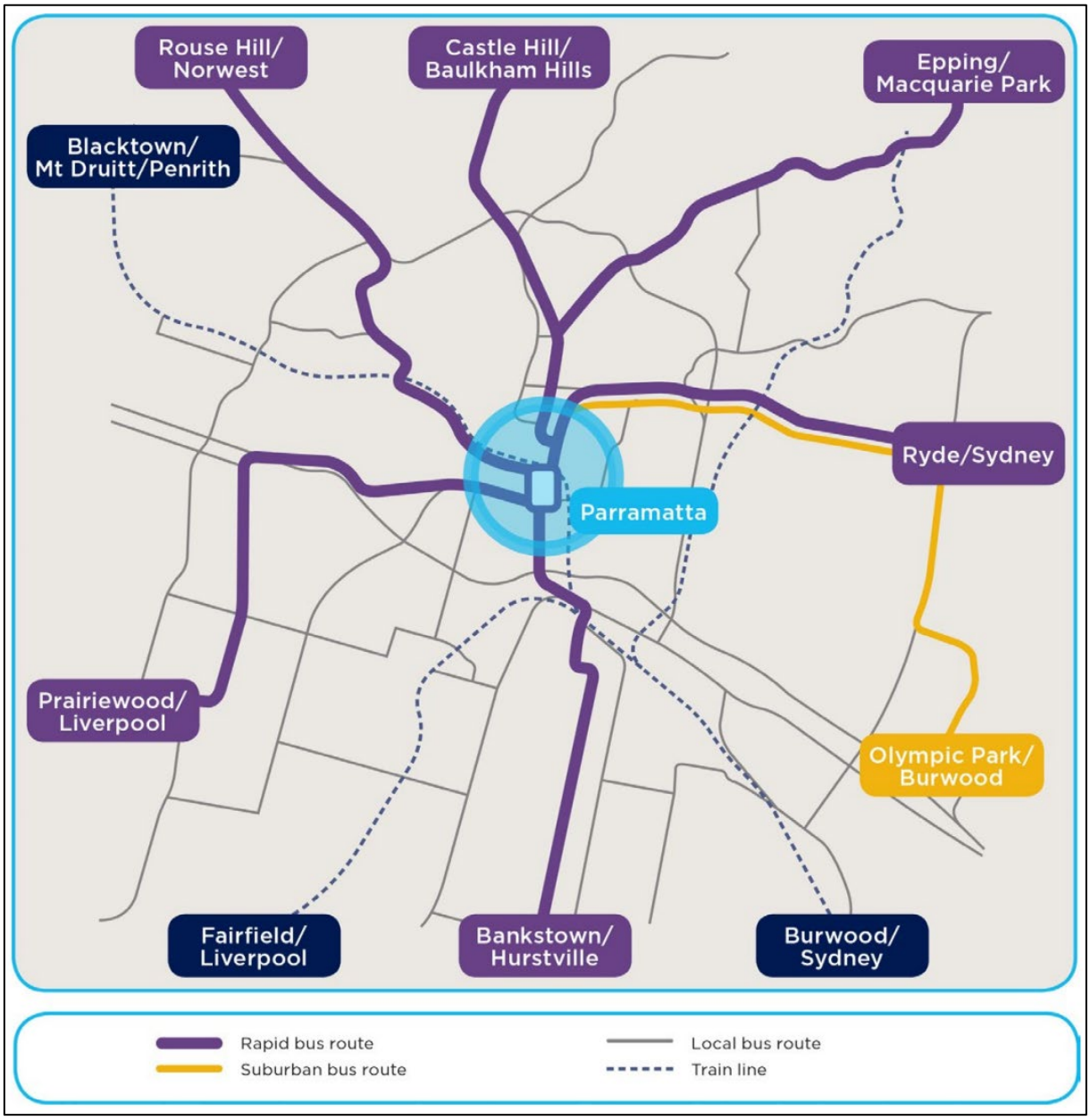

Figure 4: Rapid and Suburban Bus Routes Supporting Parramatta

Transport for NSW (TfNSW) has indicated that future bus timetabling is expected to include significant increases to the number of bus services along the North-West T-way, which extends along Mons Road, east of the Site, and continues down Darcy Road towards Parramatta.

4.6 Parramatta Light Rail

Parramatta Light Rail (PLR) is one of the NSW Government's latest major infrastructure projects being delivered to serve a growing Sydney. Stage 1 will connect Westmead to Carlingford via Parramatta CBD and Camellia with a two-way track spanning 12 kilometres. This will be the first stage of the Parramatta

Light Rail project and is expected to open in 2023. The route will link Parramatta's CBD and Train Station to the Precinct, Parramatta North Urban Transformation Program, the new Western Sydney Stadium, the Camellia Precinct, the new Powerhouse Museum and Riverside Theatres Cultural Hub, the private and social housing redevelopment at Telopea, Rosehill Gardens Racecourse and three Western Sydney University campuses.

Figure 5 shows the proposed stops in relation to the Precinct and Site in Stage 1.

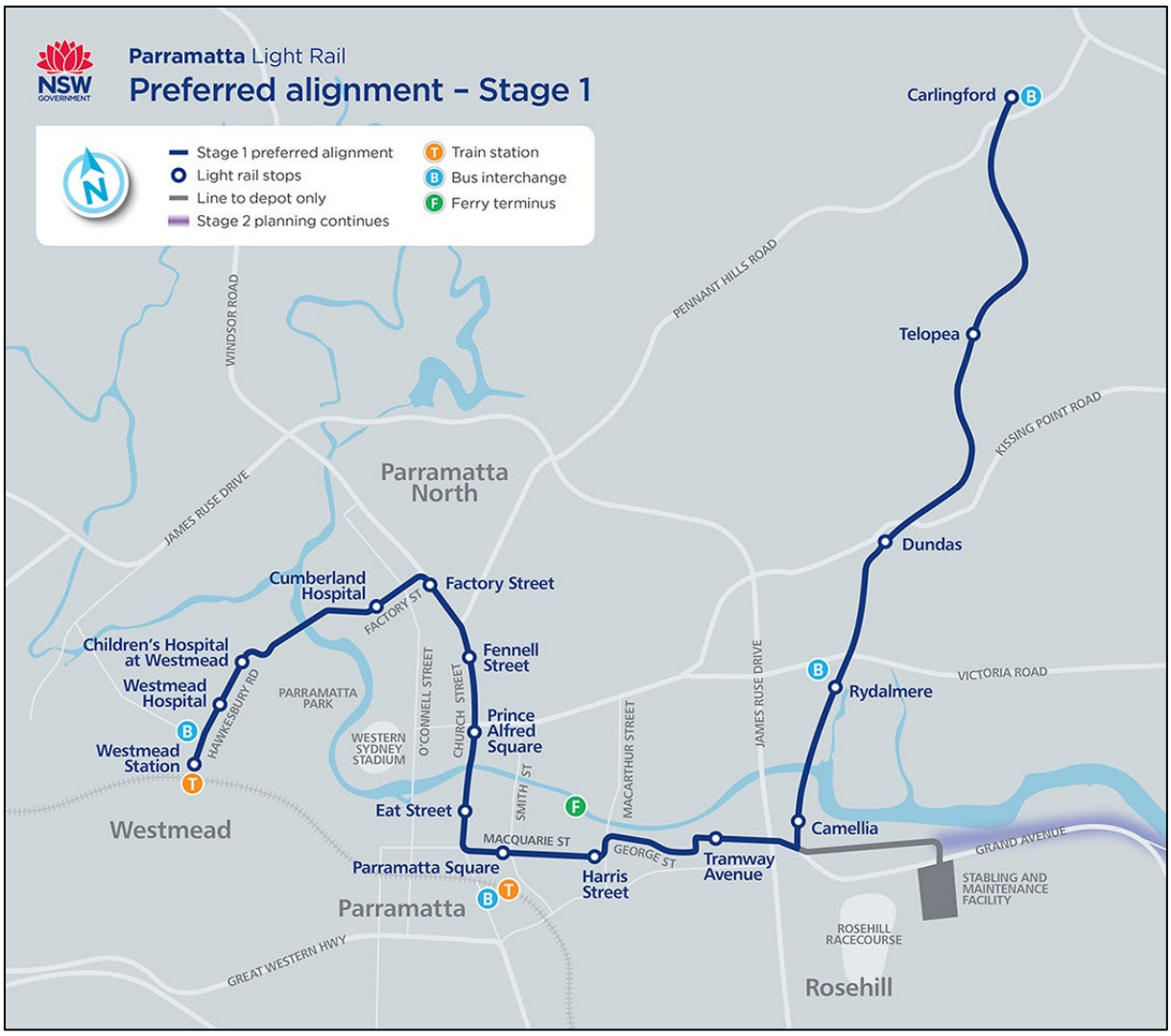

Figure 5: Parramatta Light Rail – Stage 1

In October 2017 the NSW government announced the preferred route for PLR Stage 2, which will connect to Stage 1 and run north of the Parramatta River through the rapidly developing suburbs of Ermington, Melrose Park and Wentworth Point to Sydney Olympic Park, providing a new public transport option to this booming sport, entertainment and employment hub. An option for extending east through Camellia before crossing the Parramatta River to Rydalmere is being considered. Stage 2 will be further developed through consultation with the community and stakeholders. A final business case for Stage

2 is expected to be completed in 2018, with an investment decision and details on the timing of construction to follow.

Figure 6 shows the proposed routes for Stages 1 and 2.

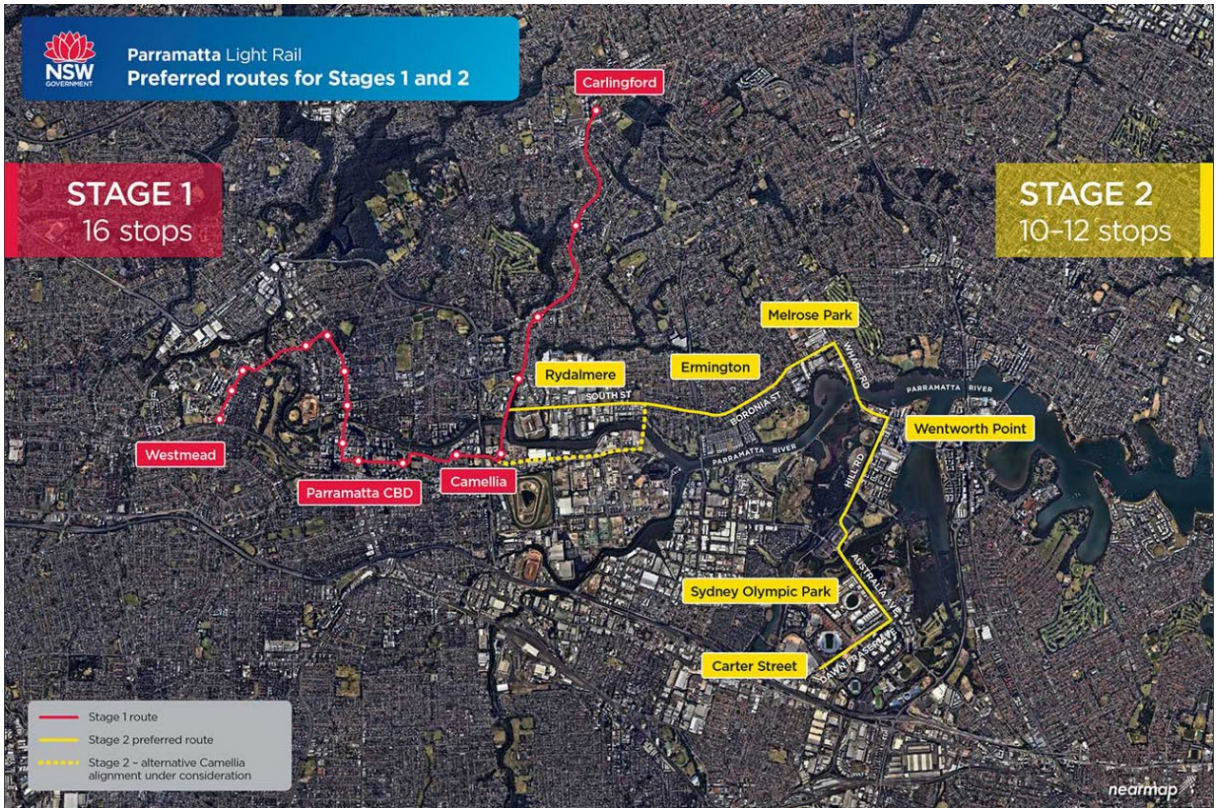

Figure 6: Parramatta Light Rail – Stages 1 and 2

4.7 Sydney Metro West

The Sydney Metro West is underground rail system announced by the NSW Government on November 2016. The project aims to provide a high level of connectivity between the key precincts of Greater Parramatta, Sydney Olympic Park, The Bays Precinct and the Sydney CBD.

At a local context, the Sydney Metro West system will provide a new underground station at Westmead, which seeks to support the growth and development of the Westmead Precinct. Noting that the project is still at a planning stage, the precise location of the new station is yet to be confirmed. **Figure 7** identifies the study area for the Sydney Metro West network and the approximate locations of the stations.

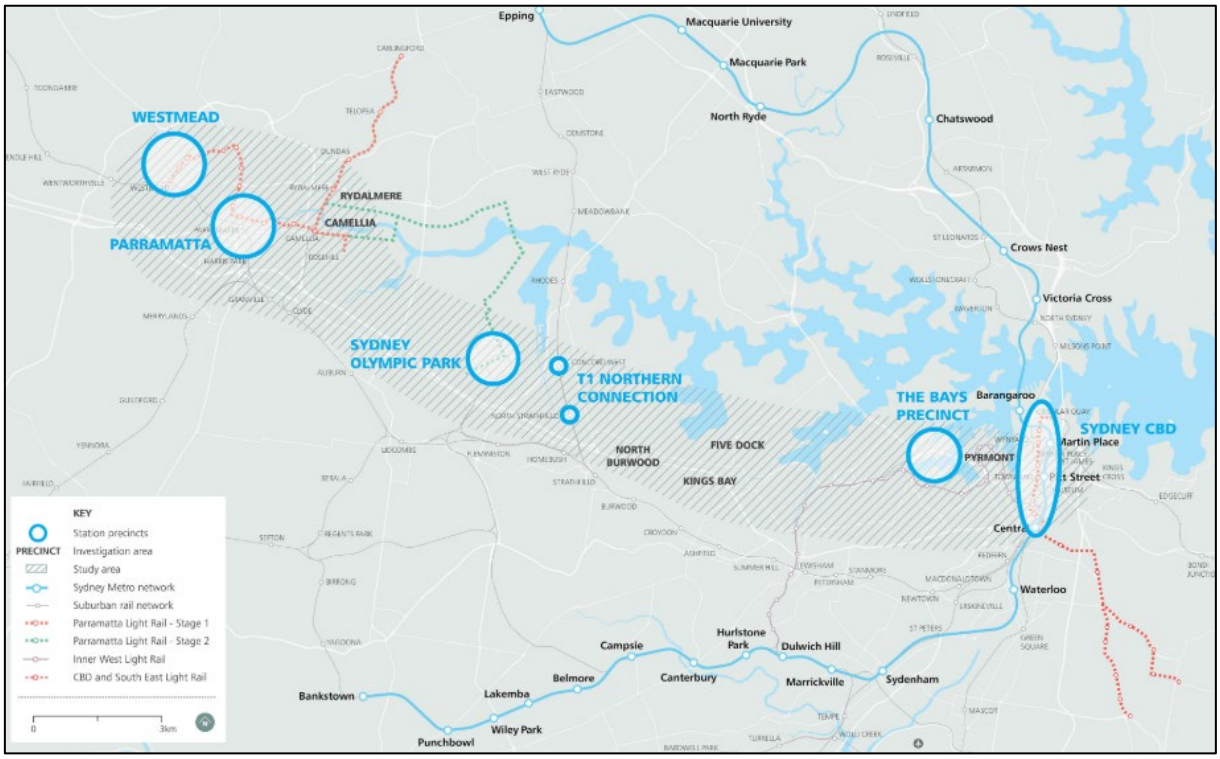

Figure 7: Sydney Metro West Study Area

4.8 Westmead Precinct

West Precinct (the Precinct) is one of the largest health, education, research and training precincts in Australia and a key provider of jobs for the greater Parramatta and Western Sydney region. The Precinct includes the following key services as shown in **Figure 8**:

- Westmead Hospital
- The Children's Hospital at Westmead
- Cumberland Hospital
- Pathology West - ICPMR Westmead
- The University of Sydney
- The Westmead Institute for Medical Research
- Children's Medical Research Institute
- Westmead Research Hub
- Westmead Private Hospital
- Western Sydney University
- Ronald McDonald House at Westmead

The Precinct is located in the south-east section of the Western Sydney Local Area Health District (WSLHD), with the associated primary health catchment currently extending to the west and north.

An increasing number of specialist services and expanding state-of-the-art research and teaching facilities planned for the Precinct would attract staff, students and visitors from a broader catchment, including areas on a regional, national, and global scale.

The development of the public transport facilities would ultimately provide the Site with better access to public transport.

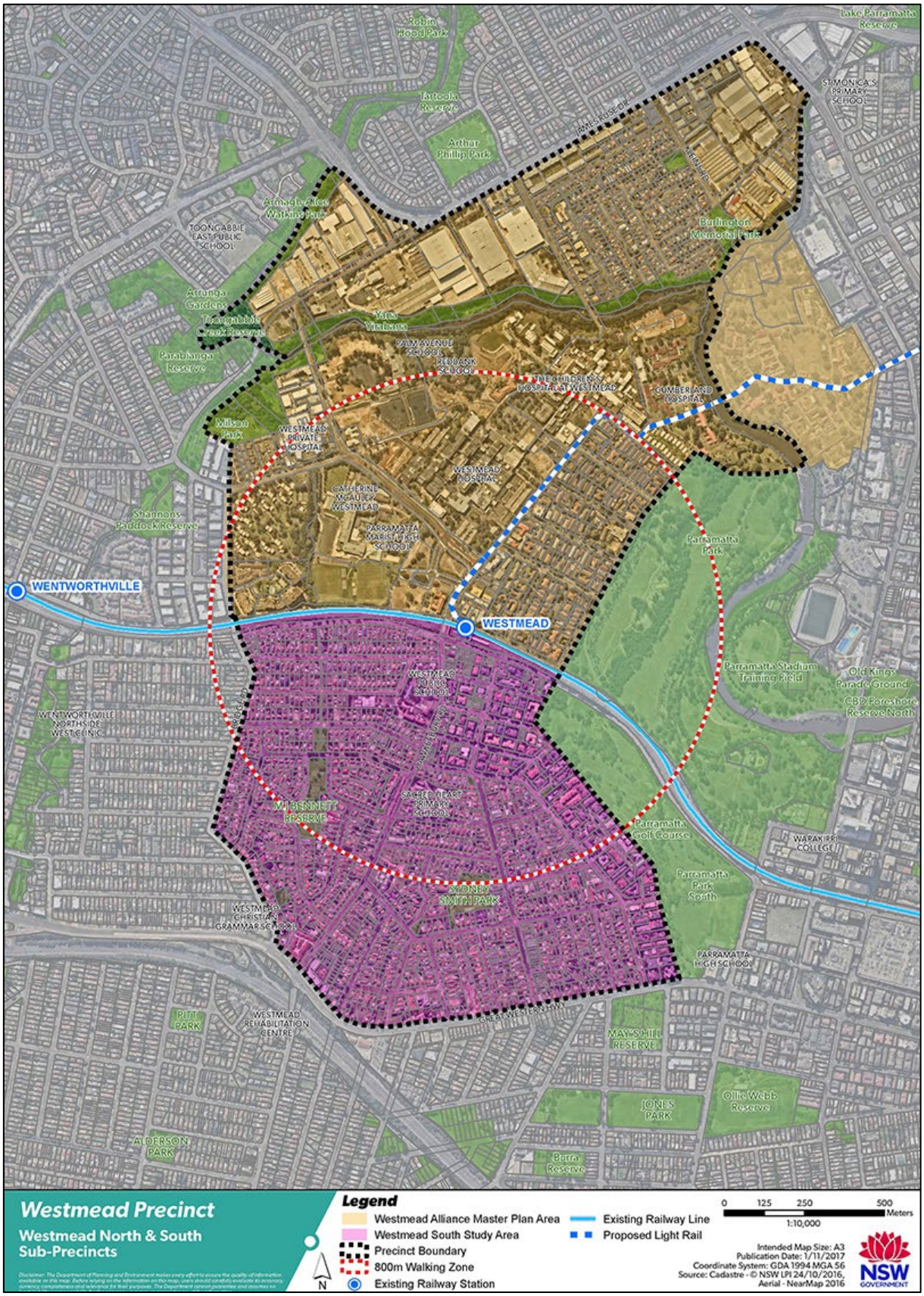

Figure 8: Westmead Precinct Key Services

4.9 Westmead Hospital Redevelopment

At the local, precinct wide level, more than $3 billion has been committed by government, universities and the private sector to upgrade and expand the Precinct's health services, education and medical research facilities over the coming years.

Westmead has been identified by the NSW Government as a State Significant Development site due to the size, economic value and importance to Parramatta and Western Sydney. By 2036 the number of full-time staff working across Westmead will increase to more than 30,000 and the number of students will expand to more than 10,000.

An important part of the Westmead Redevelopment is developing a transport solution that makes Westmead more workable, liveable and accessible. Throughout 2015 a comprehensive review of transport options was undertaken across the Precinct and the region. A range of future transport solutions are being analysed against the needs of the Precinct including the Parramatta Light Rail, City of Parramatta's proposed Western Sydney Regional Ring Road, cross-regional bus routes to strengthen the reach of public transport as well as improvements to the walking and cycling networks with a focus on connecting the Precinct with the Westmead train station and Parramatta CBD.

A local, long term solution for the car parking at Westmead Hospital is currently being sought to reduce the need to park onsite and increasing the use of public transport. **Figure 9** shows the new numbering system for car parks across the Precinct announced by NSW Government in January 2018.

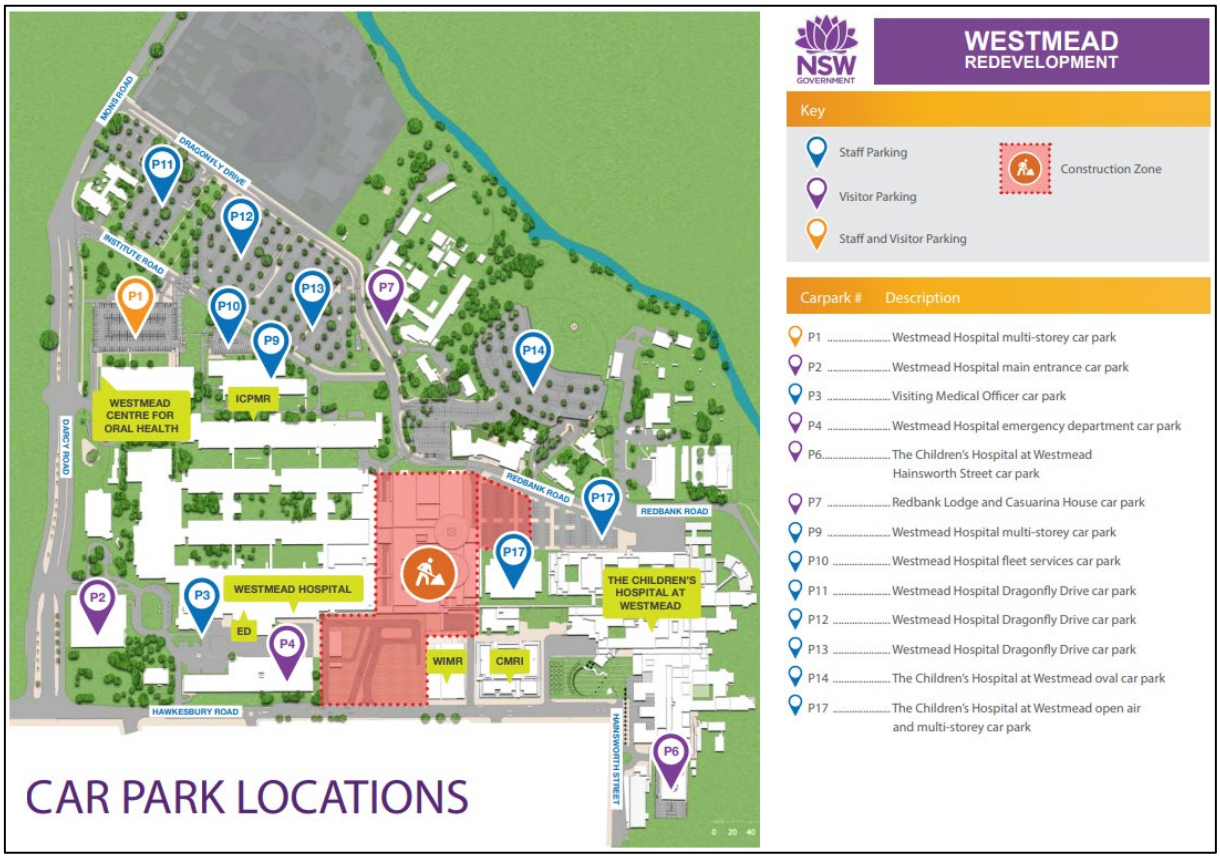

Figure 9: Car Park Locations in Westmead Precinct

4.10 Greater Parramatta Growth Area

Greater Parramatta has been recognised as undergoing rapid growth and being currently planned for within the Interim Land Use and Infrastructure Implementation Plan (the Interim Plan). This document was developed in conjunction by the Department of Planning and Environment (DPE), Parramatta Council and the Greater Sydney Commission (GSC). The Interim Plan recognises the strategies, plans and policies to provide a connected, vibrant city with emphasis on homes, jobs, infrastructure, public and active transport.

Locally, Westmead is one of the twelve precincts identified as part of the Greater Parramatta Growth Area to be investigated. The Interim Plan forecasts an increase of approximately 30,000 jobs by 2036 but did not include housing forecasts, noting that planning for the Westmead District is ongoing. For the purpose of consistency, the Interim Plan proposes to establish the Greater Parramatta Priority Growth Area (shown in **Figure 10**) by including it in the State Environmental Planning Policy (Sydney Region Growth Centres) 2006.

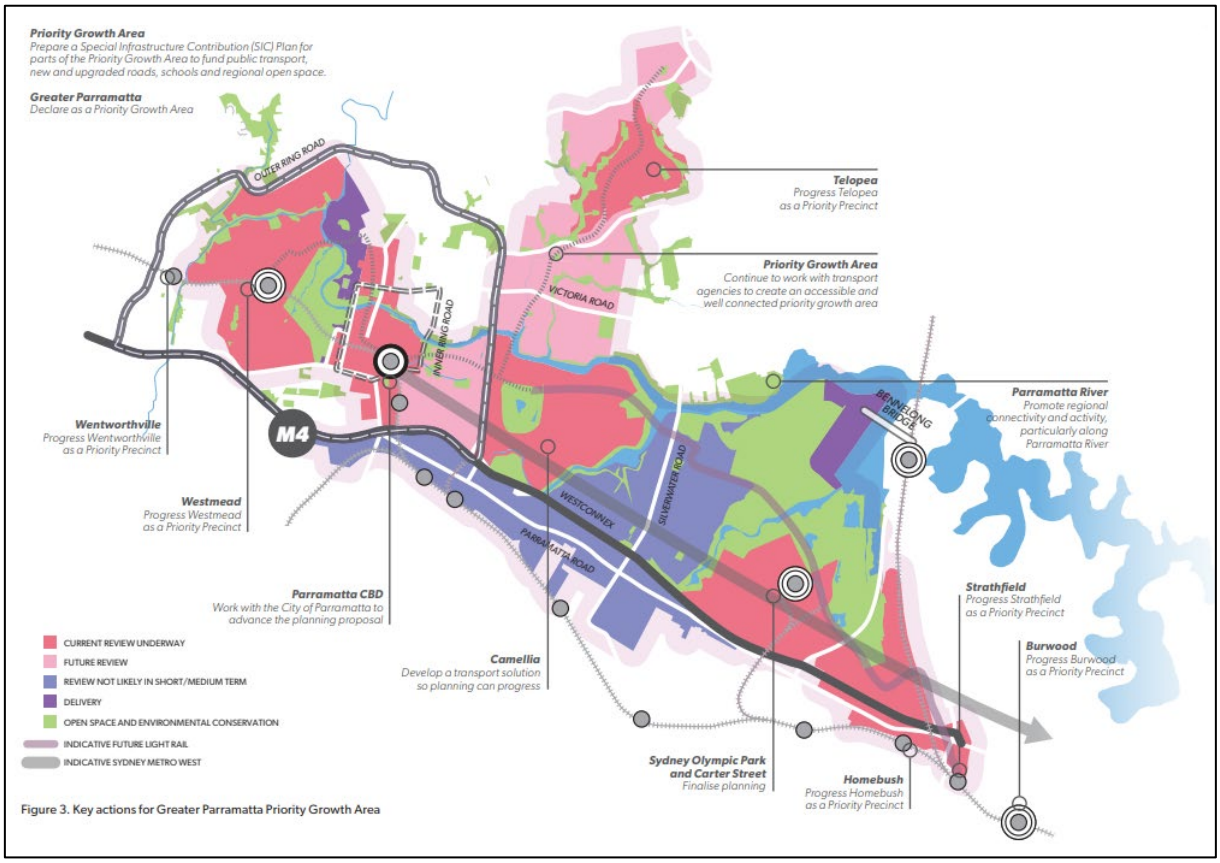

Figure 10: Great Parramatta Growth Area

4.11 Greater Parramatta to the Olympic Peninsula (GPOP)

The Greater Parramatta to the Olympic Peninsula (GPOP) has been recognised as a growing city by the Greater Sydney Commission (the Commission), with the intention of providing a 20 year plan to unsure that the area can be a successful inner-urban hub. The GPO area is divided into four areas, as outlined in **Figure 11**:

- Parramatta CBD and Westmead Health and Education Super Precinct;
- Next Generation Living from Camellia to Carlingford;
- Essential Urban Services, Advanced Technology and Knowledge Sectors in Camellia, Rydalmere, Silverwater and Auburn; and
- Olympic Park Lifestyle Super Precinct.

The Commission has collaborated with City of Parramatta Council, institutions, business and the local community throughout 2016 to gather input and feedback for future planning. This approach, named the Growth Infrastructure Compacts, intends to prepare for forecast job and housing growth with a timely and cost effective delivery method.

The Site is located in the Parramatta CBD and Westmead Health and Education Super Precinct. A key objective of the area is to create a '30-minute city,' which is characterised by providing strong connectivity to all areas within the catchment area. It is planned to utilise all forms of transport, such as heavy rail, metro, light rail, road, ferry, cycling and walking.

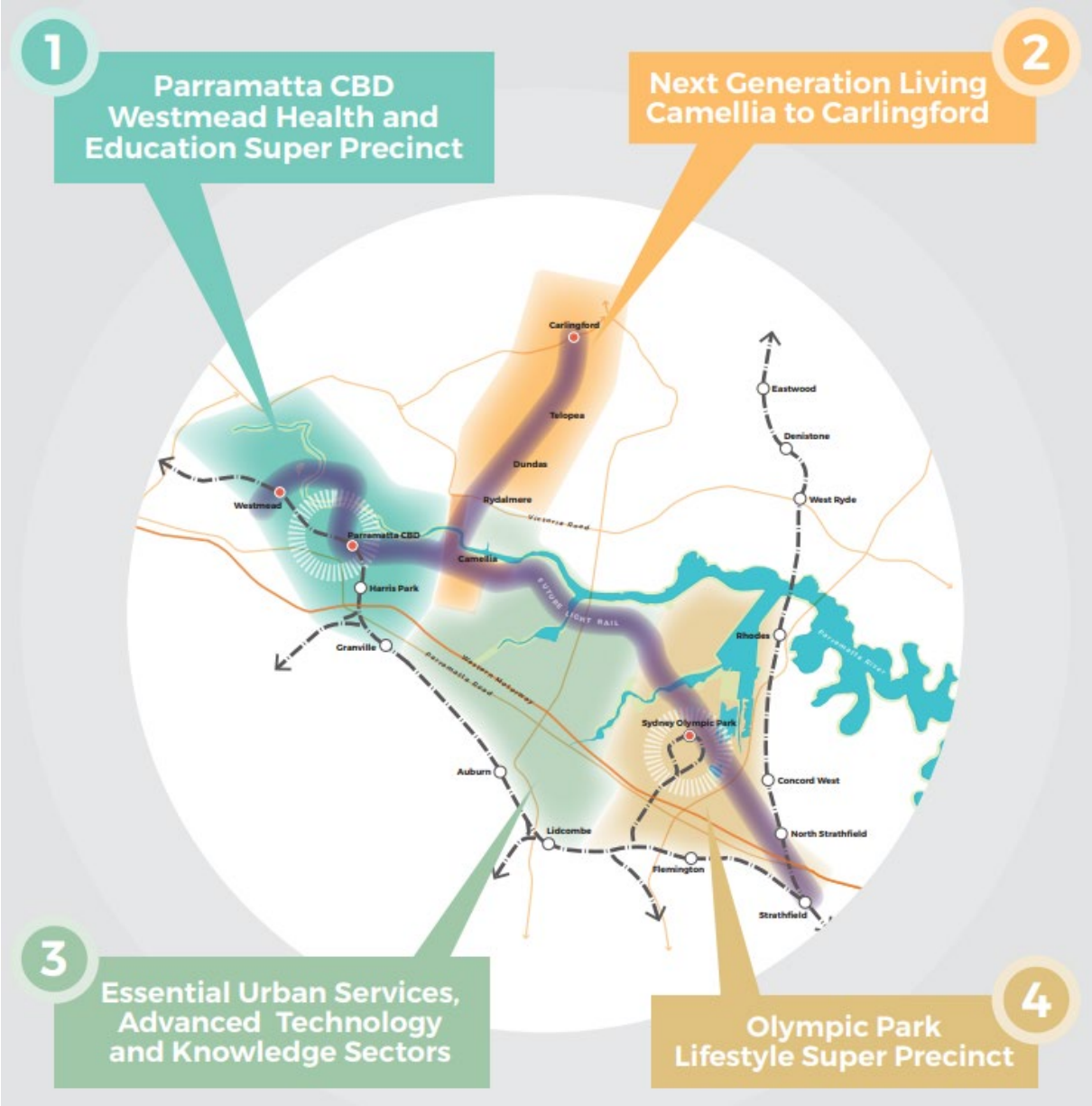

Figure 11: Greater Parramatta to the Olympic Peninsula (GPOP)

5 Road Network Operations

5.1 Road Hierarchy

The key roads in the vicinity of the site are shown in **Figure 12** and summarised below:

- **Bridge Road** – a Collector Road that runs in the north-south direction along the western frontage of the Site. This road connects Darcy Road to the north to the Great Western Highway to the south and generally provides two lanes of unrestricted parking and two lanes of traffic bidirectionally with a speed limit of 50km/h.
- **Darcy Road** – a Regional Road which generally runs in the east-west direction. It is a two-way, four lane road. This road connects to Hawkesbury Road to the south with an additional Transit Way (T-Way) running through the median between Institute Road and Hawkesbury Road. It is restricted to a speed limit of 50km/h in the vicinity of the Site.
- **Byrne Street** – a local road which provides two travel lanes and two parking lanes bidirectionally and is subject to a speed limit 50 km/h. There are unrestricted parking opportunities on both sides of the road.
- **Access Road** – a privately owned road that provides vehicular access to the Site and other properties, effectively operating as a Right of Way. This road runs along the southern boundary of the Site and forms a roundabout intersection with Bridge Road.

Figure 12: Site and Road Hierarchy

5.2 Existing Traffic Flows

In order to establish a base case of existing conditions, surveys were undertaken in February 2019 at the following key intersections during extended weekday AM and PM peak periods:

- Darcy Road / Bridge Road
- Bridge Road / Access Road
- Bridge Road / Alexandra Avenue
- Bridge Road / Veron Street / Grand Avenue

The survey data is summarised in **Figure 13** below.

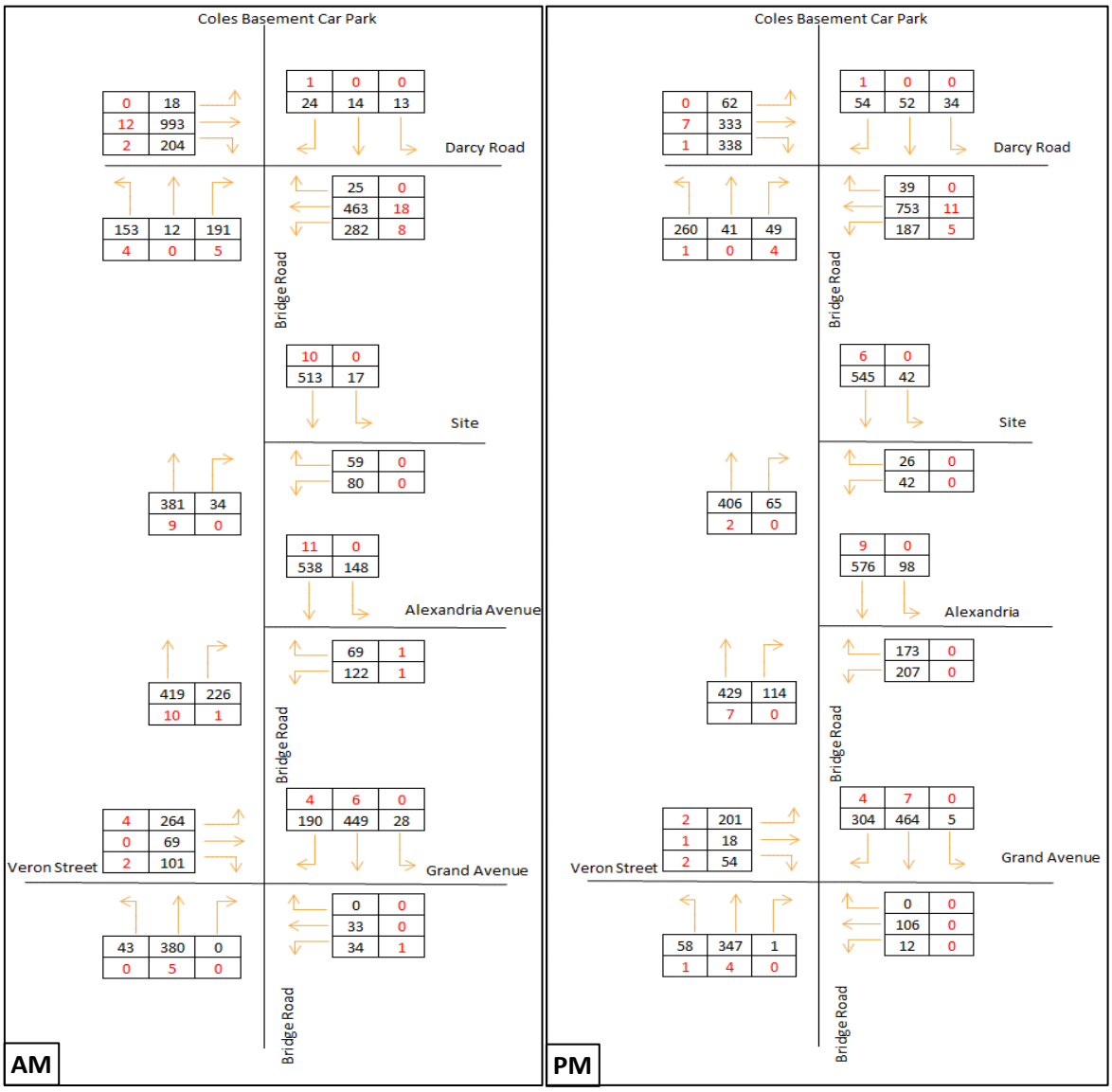

Figure 13: Existing Traffic Volumes

5.3 Existing Intersection Operations

5.3.1 SIDRA Intersection Model

The performance of the key intersections detailed above has been analysed using the SIDRA Intersection computer program. SIDRA modelling outputs a range of performance measures, in particular:

- Average Vehicle Delay (AVD) – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance of an intersection and is used to determine an intersection's Level of Service (see below). For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For priority (Give Way, Stop & Roundabout controlled) intersections, the AVD reported is that for the movement with the highest AVD.
- Level of Service (LOS) – This is a comparative measure that provides an indication of the operating performance, based on AVD.

Table 2 provides a recommended baseline for assessment as per the RMS Guide:

Table 2: RMS Level of Service Summary

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

5.3.2 Existing Intersection Operations

With reference to the above, and the peak period traffic flows as provided in Figure 13, **Table 3** provides a summary of the SIDRA analysis of existing intersection operations.

Table 3: Existing Intersection Operation

Intersection	Control Type	Period	Degree of Saturation	Average Delay	Level of Service
Darcy Rd / Bridge Rd / Coles carpark	Signals	AM	1.013	28.5	B
		PM	0.946	31.1	C
Bridge Rd / Access Rd	Roundabout	AM	0.426	4.8	A
		PM	0.502	4.7	A
Bridge Rd / Alexandra Ave	Roundabout	AM	0.741	7.3	A
		PM	0.621	7.0	A
Bridge Rd / Vernon St / Grand Ave	Signals	AM	0.697	19.1	B
		PM	0.680	17.8	B

With reference to **Table 3**, the roundabout intersections of Bridge Road / Access Road and Bridge Road / Alexandra Avenue operates at LoS A (good operation) under existing traffic conditions during the AM and PM peak hours. The signalised intersections operate at LoS B (good to acceptable conditions) except for the Darcy Road / Bridge Road / Coles carpark intersection which performs at LoS C (satisfactory). Overall, the existing traffic network generally operates well with minimal delays.

6 Public & Active Transport

6.1 Public Transport

The Site's proximity to public transport is shown in **Figure 14**, while public transport services are summarised in sections below.

6.1.1 Rail

The Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area (Transport for NSW, December 2013) state that rail services influence the travel mode choices of areas within 800m walk (approximately 10 minutes) of a railway station. The Site is located approximately 700m to the north-west of Westmead Railway Station and 700m north-east of Wentworthville Railway Station. These two stations are serviced by Airport, Inner West & South Line services and provide connections to the Liverpool, Campbelltown, Fairfield, Bankstown, and Sydney CBD areas.

6.1.2 Bus

The TfNSW guidelines states that bus services influence the travel mode choices of areas within 400 metres walk (approximately 5 minutes) of a bus stop. In this regard, the bus services within walking distance to the Site are as follows:

- Bus route 705
  - Parramatta to Blacktown via Seven Hills – operates every 30 minutes and 60 minutes during the morning and evening peak periods respectively.
  - Blacktown to Parramatta via Seven Hills – operates every 30 minutes during the morning and evening peak periods.
- Bus route 708
  - Parramatta to Constitution Hill via Pendle Hill – one service operates during the morning period.
  - Constitution Hill to Parramatta via Pendle Hill – one service operates during the evening period.
- Bus route 711
  - Parramatta to Blacktown via Wentworthville – operates every 30 minutes during the morning and evening peak periods.
  - Blacktown to Parramatta via Wentworthville – operates every 30 minutes during the morning and evening peak periods.
- Bus route 818

- Merrylands to Westmead – operates every 60 minutes during the morning peak period.
- Westmead to Merrylands – operates every 60 minutes during the morning and evening peak periods.

Furthermore, the Site is located approximately 800m from Westmead train station and Wentworthville train station. Both stations are serviced by the T1 Western Line and T5 Cumberland Line services and provide connections to the Liverpool, Campbelltown, Fairfield, Bankstown, and Sydney CBD areas.

6.2 Active Transport

The City of Parramatta is planning to deliver active transport infrastructure through the release of the Parramatta Bike Plan and the Parramatta Ways Walking Strategy. The flat surrounds and connecting cycleways of Parramatta's CBD and suburbs make it relatively easy to travel by bicycle.

Parramatta has an extensive network of cycleways including the:

- The Parramatta Valley Cycleway which follows the Parramatta River from Parramatta Park to Morrison Bay Park in Ryde and heads west along dedicated bike paths. Cyclists can continue to Parramatta CBD or utilise the connection to Sydney Olympic Park via the Silverwater Bridge.
- Transitways to the North-West and Liverpool both include shared pedestrian and cycle paths offering a good route to Liverpool via Wetherill Park and Rouse Hill adjacent to Old Windsor Road.
- M4 Motorway Viaduct Route links Auburn, Granville, Holroyd and the Parramatta CBD via Good Street or Mays Hill.
- Parramatta to Liverpool Rail Trail is nearly 17km long and runs parallel to the railway line through Merrylands, Yennora and Fairfield to Liverpool.

The local bicycle network is illustrated in Figure 14.

Currently, Wentworth Avenue is an on-street cycle route providing connectivity to Wentworthville railway station. It is noted that the draft Parramatta Bike Plan 2017 nominates this route to be upgraded as part of the Toongabbie to Parramatta CBD proposed cycle route. The proposed route includes upgrades to Wentworth Avenue (bi-directional separated bike lane) and the development of Bridge Road (shared path) and Alexandra Avenue (shared path) which would provide a link to Westmead railway station.

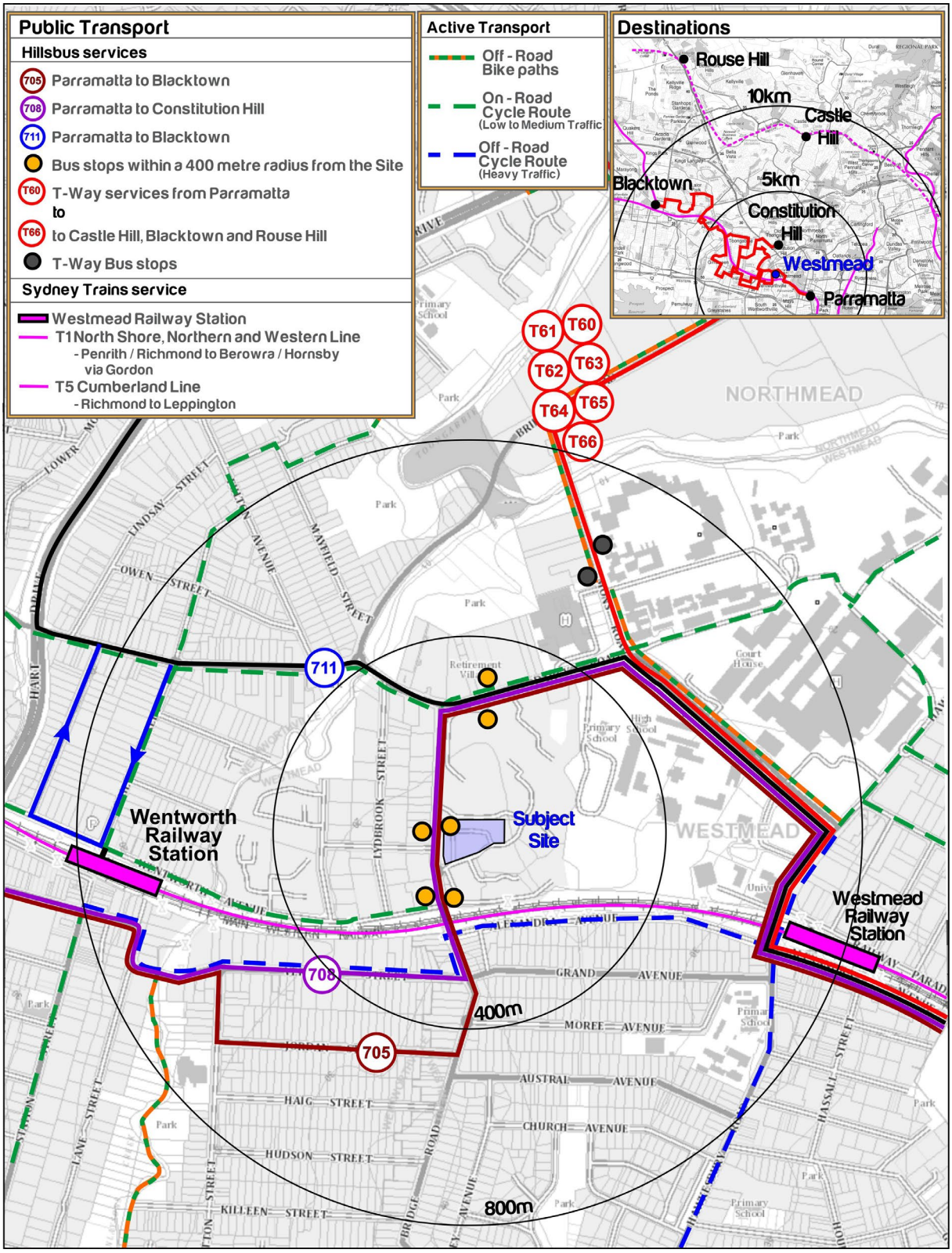

Figure 14: Existing Public and Active Transport Network

7 Parking and Servicing Requirements

7.1 Car Parking Rates

Parking rates applicable to the Proposal have been sourced from Part 3.6 of the PDCP, RMS Guide and other if relevant and are summarised in sections below.

7.1.1 Residential Units

Parking for the residential element of the development can be assessed with reference to Part 3.6 of the PDCP. **Table 4** provides an overview of the current *minimum* parking requirements for residential flat buildings *not within 400m of a transitway bus stop with a service frequency of an average of 10 minutes or less during the morning peak hour (7am-9am) in either direction, or of a railway station*.

Table 4: Parramatta DCP Parking Requirement

Land Use	Minimum Parking Rate	Yield	Parking Requirement
Studio	0.6 spaces per unit	-	-
One Bedroom	1.0 space per unit	77	77
Two Bedroom	1.25 spaces per unit	225	281
Three Bedroom	1.5 spaces per unit	122	183
Four or more Bedroom	2 spaces per unit	-	-
Visitor	0.25 spaces per unit	-	106
Car Wash	A car wash bay which may also be a visitor space	-	1
Total	-	**424**	**648**

Application of Council's rates to the proposed development yield results in a requirement of 648 car parking spaces.

Importantly, the parking requirement for the Site can also be assessed with reference to SEPP 65: Apartment Design Guide, which provides the following:

For development in the following locations:

- *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*

the minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, ***whichever is less****.*

In turn, reference to the RMS Guide provides the following parking rates for Regional Centres (which are described as centres that *provide high levels of local employment as well as access to rail and bus services and therefore may have less parking requirements*; these are certainly characteristics of Westmead Precinct.

The RMS Guide parking rates for such centres are:

- 0.4 spaces per 1 bedroom unit;
- 0.7 spaces per 2 bedroom unit;
- 1.20 spaces per 3 bedroom unit; and
- 1 space per 7 units (visitor parking).

Table 5 below provides a summary of the resulting parking requirement further to the application of these RMS rates.

Table 5: RMS Guide Parking Requirement

Land Use	Minimum Parking Rate	Yield	Parking Requirement
One Bedroom	0.4 spaces per unit	77	31
Two Bedroom	0.7 spaces per unit	225	158
Three Bedroom	1.2 spaces per unit	122	146
Visitor	1 spaces per 7 units	- -	61
Total	-	**424**	**396**

While the Site is capable of accommodating the (substantially higher) parking requirement determined with reference to the PDCP, it is the opinion of Ason Group that the provision of parking more in line with the RMS Guide rates provides a more sustainable approach, particularly given the potential for integration of the proposed Site components within the broader Westmead Precinct; and key transport projects such as PLR1 and Sydney Metro West in close proximity to the Site.

The parking provisions for the residential component of the Site will be further developed during the Development Application stage.

7.1.2 Student Accommodation

The PDCP does not included parking rates for student accommodation, therefore the parking requirement for boarding houses has been referred to which is as follows:

- 1 space per 10 boarding rooms.

Based on the provision of 300 student rooms, the Site would need to accommodate 30 car parking spaces.

As is the trend for many university students, it is not expected that students located on the Site would have cars during term time. This is notable given the students would be attending facilities within walking distance at either the Western Sydney University facilities at Westmead Hospital or the existing University of Sydney facilities at Westmead and / or the planned campus on the Cumberland Hospital Site.

7.1.3 Community Centre

The PDCP does not include parking rates for community centres. The exact use for the community centre is still being developed, however it will provide a multi-functional space with learning, commercial multi-purpose space to service the local community. It is anticipated that the centre would generate a large number of walking trips. However, to ensure appropriate provision is planned for, Austroads *Guide to Traffic Management, Part 11: Parking* has been referred to, which provides a summary of car parking rates for different land uses implemented across Australia.

While it does not specifically reference community centres, a range of community uses are referred to (such as a library or museum) which provide a consistent parking rate of:

- 1 space per 50m^2 GFA.

Based on a community centre with a GFA of 1,000m^2 this rate, the community centre would need to provide 20 car parking spaces.

This provision would need to be reviewed at the relevant DA stage once the use of the community centre is better understood. However, for the purposes of this high level assessment, it is proposed to provide 20 spaces for the community centre.

7.1.4 NDIS Respite / Medical Stay Housing

The PDCP does not included parking rates for NDIS Respite or Medical Stay Housing. Therefore, the State Environmental Planning Policy (Affordable Rental Housing) 2009 (ARHSEPP) for an

understanding of the requirements for the Medical Stay Housing and the State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2009 (SPDSEPP) has been referred to.

On 1 June 2018, car parking standards were increased for boarding houses delivered under the State ARHSEPP. Car parking standards for boarding houses, except where provided by a Social Housing Provider, are now:

- 0.5 spaces per room in all locations.

This standard is contained at Clause 29(2)(e) of the ARHSEPP and remains a 'standard which cannot be used to refuse consent'. This means councils cannot refuse a boarding house proposal if it meets this standard, but that they may consider a lower car parking rate if appropriate.

For self-contained dwellings, Councils cannot refuse development (except if delivered by a social housing provider) if it at least meets the following standard:

- 0.5 paces per room in all locations.

The current Proposal includes a total GFA for the NDIS Respite/Medical Stay Housing Hub of 2,262m^2. Assuming units were provided at an average size of 100m^2, the Proposal could accommodate 23 units. If each unit provides between 1-2 bedrooms, the Proposal could provide some 34 rooms; 17 for the NDIS Respite Housing and 17 for the Medical Stay Housing.

Based on this rate, the Site would need to provide:

- 17 spaces for the NDIS Respite Housing and the Medical Stay Housing.

7.1.5 Speciality Retail and Cafes / Food Alley

The speciality retail and cafes are designed to complement the other uses on the Site, such as chemists to serve the Medical Centre. Similarly, the Food Alley is designed to cater for students and residents on the Site. Therefore, these uses would not generate any car trips themselves and subsequently only a small amount of parking is to be provided for staff use.

7.1.6 Consulting Suites

The PDCP does not have specific parking rates for Medical Centres however, Part 7.3 of the PLEP provides a rate for health consulting rooms of:

- A maximum of 1 parking space to be provided for every 300 square metres of gross floor area.

The proposed Medical Centre would include a total of 929m^2 GFA, requiring a total of 3 car parking spaces. However, the Proposal currently includes an allowance for some 7 consulting rooms. Therefore, a rate per room is deemed to be more appropriate to take account of the number of practitioners and provide adequate patient parking.

To ascertain a parking rate per room, the City of Sydney Local Environment Plan 2012 (SLEP) has been referred to as an LGA with similar characteristics to Parramatta. The SLEP requires the following parking to be provided for medical centres:

- The maximum number of car parking spaces for a building used for the purposes of health consulting rooms or medical centres on any land is 2 spaces for every consulting room.

Therefore, the Proposal would be required to accommodate 14 car parking spaces.

7.2 Total Parking Provision

With reference to sections above, based on the reference design the Proposal would be required to provide a total of 725 parking spaces. As this is a Planning Proposal, the design would be developed further at the relevant DA stage and thus, the parking provision would amend accordingly. However, the Site can accommodate car parking in full compliance with the relevant standards if required. **Table 6** provides parking required to service the refence design and proposed provision.

Table 6: Reference Design Required Parking Provision

Land Use	Yield	Parking Required
Residential	424 Units	396-648
Student Accommodation	300 Rooms	30
Community Centre	1,000m^2	20
Medical Stay Housing	17 Rooms	17
NDIS Respite Housing	17 Rooms	
Medical Centre	7 Consulting Rooms	14
Total	-	**477-729**

7.3 Car Parking Summary

With regard to Study Objective 2, the Site is capable of providing compliance with the relevant rates of Council's DCP, the RMS Guide and other relevant guidance and therefore appropriate levels of car parking could be provided. As discussed, it may be appropriate to revise the residential parking rates

at the relevant DA stage to take account of the upgraded non-car travel options. However, for the purposes of this Planning Proposal, compliant car parking can be provided if it is deemed to be required.

7.4 Additional Parking Considerations

7.4.1 Accessible Parking

Under C.13 in Part 3.6 of PDCP, the number of accessible carparking spaces are to be provided as prescribed in Table D3.5 of the Building Code of Australia. **Table 7** provides a summary of the relevant rates within the Building Code of Australia.

Table 7: Accessible Parking Requirements

Land Use	Yield	Building Class	Reference Design Parking Provision
Residential	424 Units	Class 2	N/A
Student Accommodation	300 Rooms	Class 3	1 per 100 spaces
Community Centre	1,000m^2	Class 9b (most applicable)	1 space for every 50 carparking spaces or part thereof
Medical Stay Housing	17 Rooms	Class 3	1 per 100 spaces
NDIS Respite Housing	17 Rooms	Class 3	1 per 100 spaces
Medical Centre	7 Consulting Rooms	Class 9	1 space for every 50 carparking spaces or part thereof

Table D3.5 does not provide guidance for the residential element however, the PDCP does require at least 10% of the dwellings to be provided as adaptable housing. This would result in 42 units required to be adaptable. It is proposed to therefore provide 1 disabled space per required adaptable unit.

Further, the Building Code of Australia does not specially refer to community centres, therefore the Class 9b requirements which apply to a "*building of a public nature – an assembly building*" referred to.

Table 8 provides the subsequent accessible parking requirements.

Table 8: Reference Design Required Accessible Parking Provision

Land Use	Yield	Rate	Reference Design Provision
Residential	42 Adaptable Units	1 per dwelling	42
Student Accommodation	30 spaces	1 per 100 spaces	1
Community Centre	20 spaces	1 space for every 50 carparking spaces or part thereof	1
Medical Stay Housing	17 spaces	1 per 100 spaces	1
NDIS Respite Housing		1 per 100 spaces	1
Medical Centre	14 spaces	1 space for every 50 carparking spaces or part thereof	1
Total	-	-	**47**

7.4.2 Motorcycle Parking

The PDCP refers to motorcycle parking for boarding houses only. The requirement for boarding house is as follows:

- 1 motorcycle space per 5 rooms

Application of the above rate to 300 student rooms results in the requirement of 60 motorcycle parking spaces.

As a guide, the Sydney Development Control Plan has been referred to for the residential element of the scheme which provides the following requirement:

- In all buildings that provide onsite parking, 1 motorcycle parking space for every 12 car parking spaces is to be provided as separate parking for motorcycles.

For the remaining requirement of ~700 spaces (excluding students), the reference design would be required to provide 58 motorcycle parking spaces based on the above rate.

The motorcycle parking provision would be developed further at the relevant DA stages. However, the Site is capable of accommodating motorcycle parking suitable to serve the development.

7.4.3 Bicycle Parking

Part 3.6 of the PDCP provides the following requirements for bicycle parking:

- The rate for residential flat buildings is 1 bicycle space per 2 dwellings.

- The rate for boarding houses is 1 bicycle space per 5 boarding rooms.

Based on the above rates, the Site would be required to provide the following bicycle parking spaces:

- Residential – 212 spaces.
- Student accommodation – 60 spaces.

7.5 Servicing and Waste Collection

7.5.1 Servicing Requirements

The PDCP does not provide any guidance for servicing requirements however the loading docks would be designed to accommodate up to 8.8m Medium Rigid vehicles (MRV) trucks. The loading bay spaces would be provided with a clear width of 3.5m and a length of up to 13 metres, which meets the minimum requirements of AS 2890.2.

With regard to waste collection, garbage storerooms are to be provided on the basement levels. Prior to collection, it would be ensured that the waste is in a location appropriate for collection. In accordance with Councils DCP, the proposed development can demonstrate access via an 8.8m MRV as defined by the Australian Standards (AS2890.2). In summary, it is considered the reference design is capable of compliance with servicing and loading facilities, and this will be demonstrated in a future DA.

7.6 Parking & Service Area Design

Section 9 provides a detailed review of the design of all parking and servicing areas with reference to the appropriate Australian Standards.

8 Traffic Assessment

8.1 Residential

As per the RMS Guide Update, the average traffic generation rates for high density residential developments are:

- 0.19 trips per unit during the AM peak; and
- 0.15 trips per unit in the PM peak.

The application of these standard rates would generate a total of:

- 82 trips in the AM peak hour; and
- 65 trips in the PM peak hour.

8.1.1 Student Housing

Currently, no traffic data is available for student housing in the RMS Guide or in subsequent updated rates in accordance with Technical Direction 04a. As discussed, it is the trend for many university students to have cars during term time. It is expected that the students at this accommodation would either be located at the Western Sydney University or The Sydney University campuses in close vicinity to the Site. Thus, most of the trips would be undertaken on foot.

To provide a conservative assessment it has been assumed that of the 30 student vehicles that could be parked on the Site, 50% of these would be undertaking car trips during the peak periods.

Therefore, the student accommodation would generate a total of 15 vehicle trips during the peak hours.

8.1.2 Community Centre

There is currently no data available for community centres in the RMS Guide or in subsequent updated rates in accordance with Technical Direction 04a. In this regard, it is assumed that the parking on the site would be used employees located at the community centre rather than visitors. Given that the community centre would largely be used by those already in the local vicinity, it is expected that it would generate a large number of walk trips.

Based on a First Principles Assessment of the 20 parking spaces, there would be 20 employees travelling to the Site in the morning peak and 20 employees departing in the evening peak.

Therefore, the Site would generate 20 vehicle trips during the morning and evening peak periods respectively.

8.1.3 Speciality Retail and Cafes / Food Alley

Retail and food services are provided with the intention of servicing patrons, visitors and residents of the proposed development components, described below:

- Speciality retail shops and cafes (such as chemists) are proposed to service visitors to the medical centre and residents on the Site;
- The proposed Food Alley is designed to students and residents on the Site.

Due to the overlap in intended users, it is important to note that that the retail and food components of the development is ancillary in nature and therefore would not generate any standalone traffic.

8.1.4 NDIS Respite and Medical Stay Housing

It is understood that the NDIS Respite Housing would be specialist housing for those with disabilities who can either live by themselves but need extra care (on-site carer) but also hospice style accommodation. This would function akin to a seniors living development, which accommodates the same users. As such, the trip rates from the RMS Guide Update for seniors living (0.4 trips per unit) has been adopted. This results in a traffic generation of:

- 7 veh/hr in the AM peak; and
- 7 veh/hr in PM peak

Moreover, the Medical Stay Housing is designed to serve those who have relatives who are staying for a longer period at Westmead Hospital but have nowhere to stay locality. Given the proximity of the Site to the Hospital, it is expected that those staying at the housing would walk to and from the Hospital, as such they are not expected to generate any traffic in the peak hours.

8.1.5 Medical Consulting Rooms

There is no data available for professional consulting rooms in the RMS Guide or in subsequent updated rates in accordance with Technical Direction 04a. For the purpose of this analysis, traffic generation rates for medical centres have been extracted from a separate Traffic Impact Assessment prepared by GTA Consultants (GTA) for a private hospital. The trip rate analysis, which was based on surveys undertaken by GTA of 7 different medical centres within Greater Sydney, determined a trip rate of 1.4 and 1.7 trips per consulting room in the AM peak hour and PM peak hours, respectively.

Application of these rates result in a future traffic generation of:

- 10 veh/hr in the AM peak hour; and
- 12 veh/hr in PM peak hour.

8.1.6 Traffic Generation Summary

A summary of the forecast traffic generation of the Site is provided in **Table 9** below.

Table 9: Proposal Traffic Generation

Land Use	Yield	AM Peak		PM Peak	
		Trip Rate	Trips (veh/hr)	Trip Rate	Trips (veh/hr)
Residential	424 units	0.19 per unit	81	0.15 per unit	64
Student Housing	300 units	N/A	15	N/A	15
Community Centre	1,000m^2	N/A	20	N/A	20
NDIS Respite	18 units	0.4 per unit	7	0.4 per unit	7
Medical Centre	7 consulting rooms	1.4 per room	10	1.7 per room	12
		Total	133		118

Taking into account the existing traffic generation of the Site (16 veh/hr in the peak period), the Proposal could generate the following total trips:

- 117 veh/hr during the morning peak; and
- 102 veh/hr during the evening peak.

8.2 Trip Distribution

8.2.1 Directional Distribution

Based on a review of the road network layout and the likely direction of travel of residents and visitors to the Site, it is expected that very little traffic travelling northbound would do so by going eastbound at the Darcy Road / Bridge Road intersection. Given the proximity of the Site to the Hospital (around a 10 minute walk), those wishing to travel between the two would are expected to walk.

For those travelling further afield, the fastest route to the external road network is either via Briens Road to the north of the Site, which provides access to the A28 Cumberland Highway or via Bridge Road to the south of the Site, which provides access to the A44 Great Western Highway.

Beyond that, there is no information available which would suggest a different distribution of traffic to / from the Site than that previously surveyed. As such, these directional splits have been applied to the traffic generated by the Proposal.

8.3 Trip Assignment

With reference to sections above, the traffic generation of the Site further to the Proposal has been assigned to the key intersections in the Base AM and PM peak hours. It is noted that the total future flows – shown in **Figure 15** below – include the removal of existing Site trips.

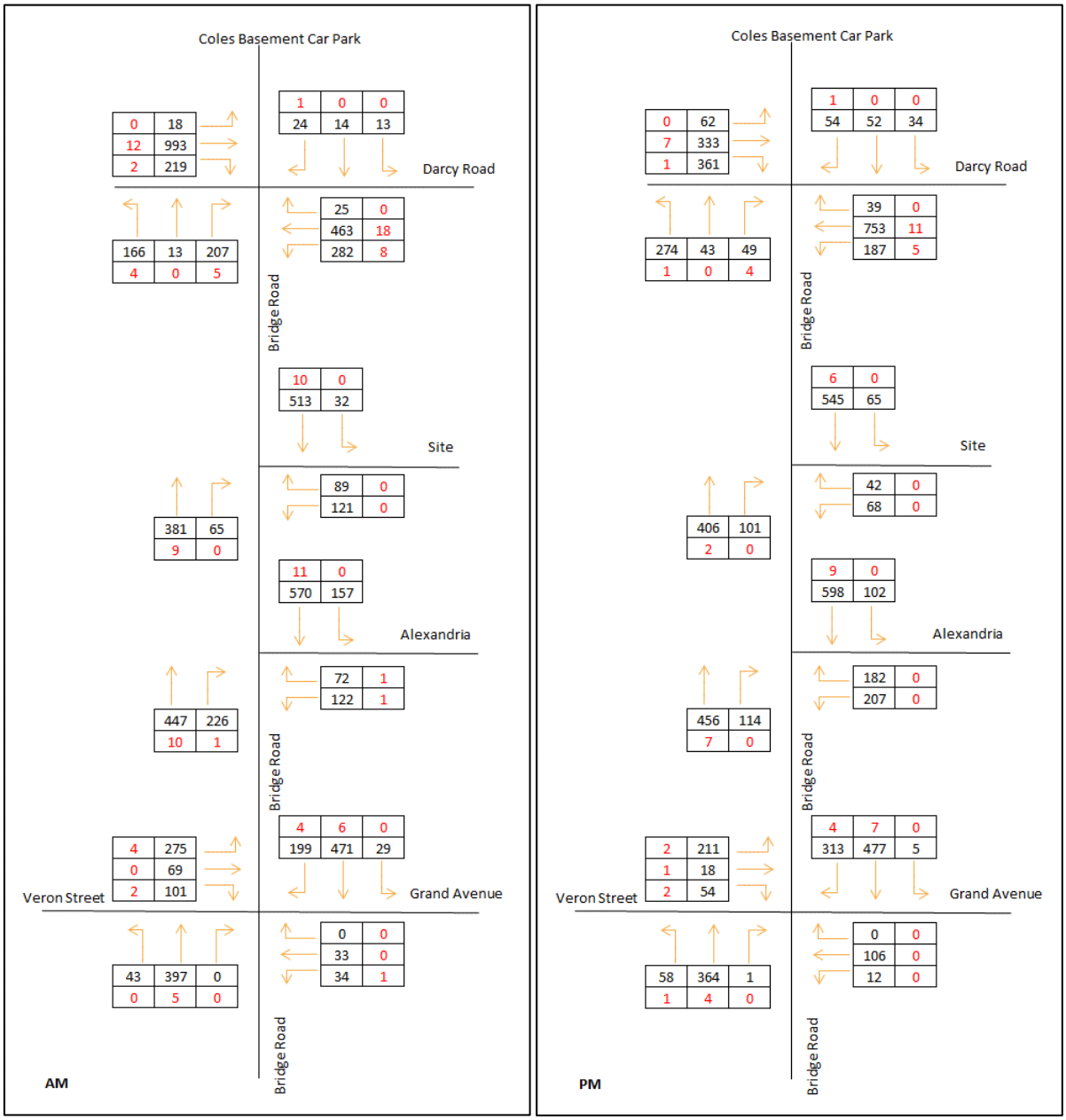

Figure 15: Proposal Total AM Peak Hour Traffic Flows

8.4 Traffic Impacts

The operation of the key intersection in 2029 further to the introduction of the Proposal's traffic flows has again been assessed using the SIDRA model. The results of the assessment are summary in **Table 10** below, while detailed SIDRA outputs are provided in **Appendix A**.

Table 10: Base 2019 + Development Intersection Performance

Intersection	Scenario	Period	Degree of Saturation	Average Delay	Level of Service
Darcy Rd / Bridge Rd / Coles carpark	Baseline	AM	1.013	28.5	B
		PM	0.946	31.1	C
	Future	AM	1.094	33.7	C
		PM	1.190	39.8	C
Bridge Rd / Access Rd	Baseline	AM	0.426	10.1	A
		PM	0.502	10.1	A
	Future	AM	0.476	10.3	A
		PM	0.561	10.2	A
Bridge Rd / Alexandra Ave	Baseline	AM	0.741	10.8	A
		PM	0.621	13.9	A
	Future	AM	0.782	11.1	A
		PM	0.644	15.0	A
Bridge Rd / Vernon St / Grand Ave	Baseline	AM	0.697	19.1	B
		PM	0.680	17.8	B
	Future	AM	0.684	17.2	B
		PM	0.859	19.6	B

With reference to **Table 10**, the SIDRA analysis indicates that the LoS for the intersections will generally remain consistent with the existing operation, except for Darcy Road / Bridge Road / Coles carpark intersection which increases in LoS from B to C. Notwithstanding, there are minimal increases to 'degree of saturation' and 'average delay' in the AM peak and PM peak hours across all intersections. As such, the local road network operation will remain consistent with the existing traffic conditions.

It is worthy of note that a traffic study is be undertaken of the Westmead Precinct to identify the required upgrades to enable the desired growth in the Precinct. Further, following the improvement in public transport in the area, traffic conditions are likely to be significantly different than the current situation. Therefore, it is difficult to understand the transport conditions of future years.

The SIDRA analysis illustrates that the network is capable of accommodating the trips generated by the Proposal under the existing conditions. Furthermore, it would not have a material impact on the operation of the network. The traffic conditions in the future would are likely to remain consistent to the existing situation following upgrades to allow continued growth in the area or would be improved. The Proposal is therefore acceptable from a traffic perspective.

9 Strategic Context Transport Assessment

9.1 Introduction

As discussed, the Site is located within the Westmead Precinct (the Precinct). Significant consideration has been given to how the Site can align with the key objectives for the health, education and research precinct as well as the residential precinct to the south of the rail line. The Proposal therefore seeks to align with key objectives of not only the Westmead Precinct but also the wider Government strategic objectives.

9.2 30-Minute City Performance Criteria

A key theme of the strategic documents is to deliver a vision of a 30-minute city, which is guided by the Greater Sydney Commission's Greater Sydney Region Plan.

However, a recent study conducted by Deloitte Access Economics found that only 75 of the 313 Sydney neighbourhoods could currently be deemed to have easy access to major job hubs and other key services within half an hour. Drawing on the findings of the Deloitte study and work undertaken by Arup, a number of key performance criteria have identified in order to achieve a 30-minute city:

- Access to healthcare – hospitals provide an important facility to many people, not just for those who require emergency care, people will regularly visit hospitals for test and procedures and to visit friends or relatives. Hospitals are also an important employment provider and education and training facilities. Parking is often limited at hospitals, thus access via a variety of transport modes is required.
- Access to retail services – access is key when it comes to retail and access to all forms of retail (including supermarkets and specialist stores) is important. There has already been an increase in the number of mixed use developments forming micro-communities, which provide retail services underneath residential uses as well as providing commercial and community spaces. It is necessary to work collaboratively to ensure access within 30-minutes to retail services continues to be increased for Sydney's residents.
- Access to schools – access to good schools relies on housing affordability, which shape where teachers live – teachers will live where they can afford, not necessarily where they are required. Thus, strong transport links are required to connect teachers with their place of residence and work. And, although there are many students who have access to local schools, some have to travel outside of their catchment areas for specialist or selective schools.
- Access to further education facilities – unlike schools which often draw students from local catchments or surrounding areas, TAFEs and universities are specialised, so people travel to them for a specific reason. Public transport links are important for TAFEs and universities as they are often located in area with high property prices and thus students generally live further away from them.

9.3 Measuring Performance

The Proposal seeks to align the objectives of the Sydney Greater Region Plan by contributing towards the creation of a 30-minute city. During the development of the Proposal, the location of the Site was taken into consideration to understand how it could align with these objectives and how it compared to each of the above performance measures.

Deloitte's study, which ranked suburbs according to their accessibility to jobs, shops, hospitals and schools to show where makes the best '30-minute neighbourhoods' gave the Wentworthville and Westmead Area an index rank of 121 out of 313. This illustrates the investment required in the wider area to in terms of achieving a 30-minute city. However, the Site itself is currently well located with regards to public transport access and is well connected to the Parramatta CBD. The Site therefore can contribute to creating a true 30-minute city.

The Arup assessment of Sydney currently as a 30-minute city went into further detail by providing 'cells' in a 300m x 300m grid to illustrate the accessibility of each one by private and public transport. By exploring this data for the Freshwater and Brookvale area, it is apparent that the Site performs better against other surrounding locations when considering travel by public transport and is thus ideally located to help Council align with the aims of the Greater Sydney Region Plan and North City District Plan.

Figure 16 provides the Arup 30-minute map available for access to jobs, which shows how many jobs that can be access in 30 minutes by public transport, leaving from each grid square at 8.00AM.

Noting that the cell containing the Site is identified by a red outline, Figure 16 shows the accessibility to jobs within 30-minutes of public transport travel for the Site which has access to 50,000 to 100,000 jobs. The below Figure does illustrate that the Westemad are does not perform overly well when considered against the rest of Sydney, with the highest pefroming areas providing acces to over 1 million jobs.

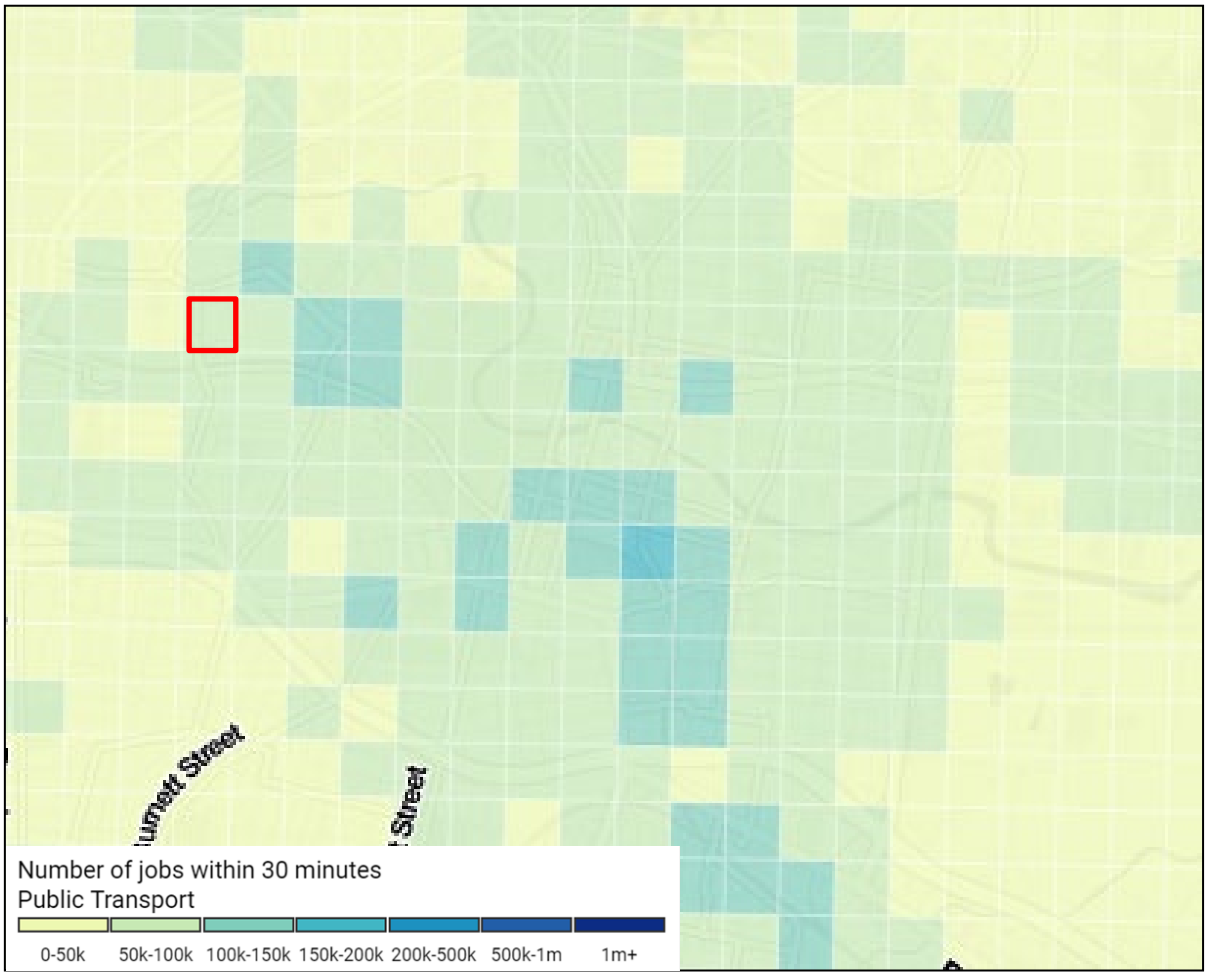

Figure 16: 30-Minute Access to Jobs (Source Arup)

Figure 17 provides the Arup map for accessibility to residents by public transport for the area around the Site. The Site cell containing the Site performs reasonably well, with 30-minute public transport access.

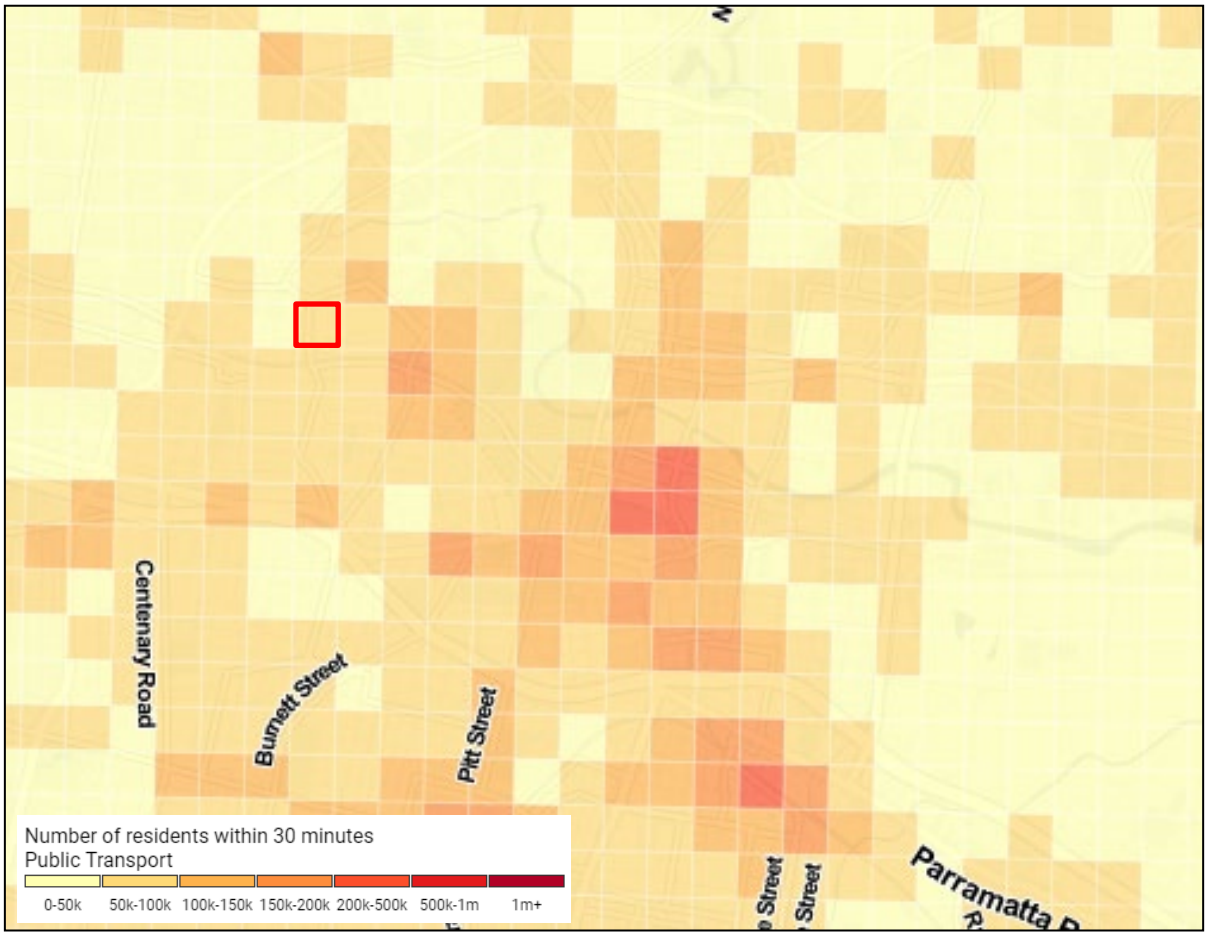

Figure 17: Site Access Accessibility by Public Transport to Residents

9.4 Westmead Precinct

The Planned Precincts identified by the Department of Planning and Environment aim to facilitate growth in housing, jobs, and infrastructure whilst ensuring that the character of the area is not compromised. For each of these Precincts, a Community Statement is to be developed which will guide the future vision for each of the Precincts based on their existing character and nature.

The Proposal responds to the Planned Precinct Themes from a transport perspective by prioritising the Site's existing links to the public and active transport network through the provision of multiple pedestrian through site links to connect people to the wider local network. Of particular importance is the connection to the east and Westmead station.

Further, to respond to the Draft Westmead Innovation District Master Plan, the Proposal dedicates a 12m wide portion of the Site to enable a new street reserve to be provided to the north of the Site. This will eventually provide a direct link to the station.

9.5 Future Public Transport Network

As discussed in Section 8, the public transport connections in the area will greatly improve in the area through the PLR Stage 1 and increase in bus services along the North-West T-way. Further, the Planned Sydney Metro West would improve these connections, and the Planned PLR Stage 2 will provide faster connections to more locations further afield of the Site.

With the PLR Stage 1 stop close to Westmead Station and a possible Sydney Metro West Station planned for Westmead, it is clear that there is a commitment to improve the public transport connections in the area and with the construction of PLR Stage 1 now underway, these improvements will be realised in a similar timeframe to the Proposal. Therefore, the Site is ideally located to align with the strategic objectives for Westmead on a local scale and Greater Sydney on a wider scale.

9.6 Transport Assessment Findings

The Site is ideally located to achieve a 30-minute city and the below confirms that the Proposal aligns with the objectives of the Greater Sydney Region Plan and the vision for the Westmead Precinct.

The Site is ideally located to achieve this and the below confirms that the Proposal aligns with the objectives of the Greater Sydney Region Plan and the Westmead Precinct.

- Notably the Deloitte study and the Arup assessment have identified the cell in particular which the Site is located as being within 30-minutes of jobs and other services by public transport.
- In comparison to other locations in Wentworthville and Westmead, the Site performs well against the performance measures which are key to achieving a 30-minute city.
- The mixed-use nature of the development presents an opportunity to provide residences, retail services, jobs, medical and community uses all in one place. Further, the location of the Site, presents an opportunity to reduce travel distance for visitors / residents of the development.
- The provision of a well-connected pedestrian network will work towards ensuring that all trips undertaken internally within the Precinct are walk / cycle trips.
- It is expected that Green Travel Plans would be produced for each of the uses where appropriate to ensure that sustainable and active travel is the first choice for many of the development's residents/visitors. These documents would respond to the changing nature of the public transport facilities in the area.

Key Study Objectives 3 and 4 of this TA, to demonstrate and evaluate the Site's strategic location so the Proposal can align with the key Government strategic policy as well as the vision for the Precinct, have therefore been achieved.

10 Design Commentary

The site access, car park and loading areas will be designed to comply with the following relevant Australian Standards:

- AS2890.1 for car parking areas;
- AS2890.2 for commercial vehicle loading areas;
- AS2890.6 for accessible (disabled) parking.

The following characteristics are noteworthy and would be accommodated in future detailed designed at the relevant DA stage:

- The main car park aisle designed with a minimum clear width of 5.8m.
- All resident parking spaces are designed in accordance with a User Class 1A and are to be provided with a minimum space length of 5.4m, a minimum width of 2.4m.
- Dead-end aisles are provided with the required 1.0m aisle extension in accordance with Figure 2.3 of AS2890.1.
- All disabled and adaptable parking spaces are to be provided in accordance with AS2890.6, which requires a space with a clear width of 2.4m and located adjacent to a minimum shared area of 2.4m.

It is expected that the Proposal would comply with these Standards. Furthermore, full compliance with the above Standards would be expected to form a standard condition of consent to any development approval.

11 Conclusions

The key findings of this Transport Assessment are:

- Ason Group has been commissioned by Lane Associates on behalf of 93 Bridge Road Pty Ltd atf Bridge Road Unit Trust (the Proponents) to prepare a Transport Assessment (TA) in support of a Planning Proposal (PP) for a proposed mixed-use development at 93 Bridge Street, Westmead (the Site). The PP seeks to modify the maximum permissible Floor Space Ratio (FSR), the maximum building height and provide an Additional Permitted Use (APU) than that permitted by the Parramatta Local Environment Plan (2012).
- The Site is located within the City of Parramatta LGA. It is well serviced by local public and active transport infrastructure and located 700 metres from Westmead train station and the proposed Westmead Light Rail stop.
- The reference design has a requirement of 729 parking spaces based on full compliance with the residential requirements of Council's DCP. Given the improvements expected for public transport, it may be appropriate to revise these rates at the relevant DA stage. However for the purposes of this Planning Proposal, the Site can accommodate the required car parking to service the Proposal.
- Currently, the key intersections in the vicinity of the Site (Bridge Road / Access Road, Darcy Road / Bridge Road, Bridge Road / Alexandra Avenue and Bridge Road / Veron Street / Grand Avenue currently operate with acceptable delays and spare capacity.
- It is forecast that the Proposal would generate 117 additional trips in the morning peak period and 102 additional trips in the evening peak period. This volume of additional trips are of a sufficiently low order that once distributed on to the surrounding road network, the Proposal would not have a material impact on the operation of the road network.
- Further, the SIDRA analysis indicates that these 'net' traffic volumes would result in only moderate changes in DoS and AVD. Importantly LoS would remain unchanged with the exception of Darcy Road / Bridge Road / Coles carpark during the morning peak. During this period, it would increase from a LoS B to LoS C. However, this only reflects an increase in delay of 5.2 seconds, which would not materially impact on the operation of the road network.
- The Site is strategically well located within Westmead Precinct (the Precinct). The Proposal therefore seeks to align with key objectives of not only the Westmead Precinct but also the wider Government strategic objectives.
- With regard for Study Objective 3, the Greater Sydney Region Plan aims to deliver a series of 30-minute cities, providing better access to jobs, schools, and health. The Site is ideally located to

align with these aims as it is located on the edge of Westmead's Health and Research Precinct and is also close to residential areas and public transport connections.

Further, with regard to Study Objective 4, the provision of a well-connected pedestrian network will work towards ensuring that all trips undertaken internally within the Precinct are walk trips, which a key vision for the Planned Precincts.

- The access and basement design would be designed having regard for relevant Australian Standards (AS2890 series). A standard condition of consent requiring compliance with AS2890 would be expected to be attached a Development Application Approval.

In summary, the Proposal is supportable on traffic and transport planning grounds and will not result in any adverse impacts on the surrounding road network or the availability of on-street parking.

Further, the location of the Site means that is ideally placed to encourage travel by sustainable transport and align with key strategic objectives to create a 30-minute city for the residents of Greater Sydney. Following the completion of PLR Stage 1 and other planned public transport improvements, the Site's connectivity would be further enhanced. The Proposal therefore represents the opportunity to create a development which aligns with strategic objectives but is also acceptable from a traffic and transport perspective.