# World Class End of Life Program – Westmead Hospital

## Transport Assessment

Prepared for: Health Infrastructure

Ref: 300305130 | Date: 25 September 2024

# Revision

| Revision | Date | Comment | Prepared By | Approved By |
|---|---|---|---|---|
| A | 15 August 2024 | Final for Submission | [redacted] | |
| B | 2 September 2024 | Construction traffic management section added | | |
| C | 25 September 2024 | Minor consistency updates | | |

[redacted]

**Stantec Australia Pty Ltd**

**L9, 203 Pacific Highway, St Leonards NSW 2065**

## Acknowledgment of Country

In the spirit of reconciliation, Stantec acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples.

### Limitations

# CONTENTS

TRANSPORT ASSESSMENT

## World Class End of Life Program – Westmead Hospital

# Executive Summary

## Summary of Existing Assets

The World Class End of Life (WCEoL) project will be constructed on level 5 of the existing Central Acute Services Building (CASB) within the boundaries of Westmead Hospital, which is located approximately 1.5km north-west of the Parramatta Central Business District (CBD), the primary metropolitan centre of Western Sydney.

Given the strategic context of Westmead in the growth of Parramatta as Sydney's second CBD, there is significant growth and development anticipated for the area, including provision of additional public transport services. The site is therefore well connected and near several existing and future public transport services, including existing high frequency bus corridors and heavy rail, and future Parramatta Light Rail and Sydney Metro West services.

In 2020, the surrounding intersections are generally operating with some spare capacity during peak periods, with the exception of the intersections of Briens Road/ Redbank Road and Darcy Road/ Mons Road/ Institute Road, which are generally operating at capacity during the AM and PM peak hours, respectively.

## Westmead Health Precinct

With consideration for the significant future growth of Western Sydney, it is critical that the Western Sydney Local Health District (WSLHD) and Sydney Children's Hospital Network (SCHN) expand in a manner that ensures future services and resources will continue to be able to cater for the needs of the community.

To facilitate growth of the Westmead Health Precinct, a long-term Masterplan has been prepared. The high-level aim of the Masterplan is to guide development and provide a structure to accommodate upcoming projects and future development on the site.

The approved Children's Hospital at Westmead (CHW) Stage 2 development is currently under construction and will comprise the following works:

- construction of the new Paediatric Services Building (PSB)
- redevelopment of the CHW forecourt and access lines
- refurbishment of the existing facilities
- construction of a new Multi-Storey Car Park (MSCP) on the corner of Redbank Road, at the eastern edge of campus.

Early works have also commenced in preparation for construction of the approved Integrated Mental Health Centre (IMHC), which is located opposite the CASB on Redbank Road.

## World Class End of Life Program

The Westmead Hospital WCEoL Project proposes the delivering world-class facilities for end-of-life care above the plantroom on level 5 of the existing CASB, on the rooftop of the existing hospital. As part of the project, 15 palliative and supportive care beds for Westmead Hospital will be delivered in this new build facility, with the unit being directly linked to the rest of the CASB.

As part of the proposal, the expected impacts on traffic and parking both within the Westmead Campus and on the surrounding road network are expected to be negligible.

# 1. Introduction

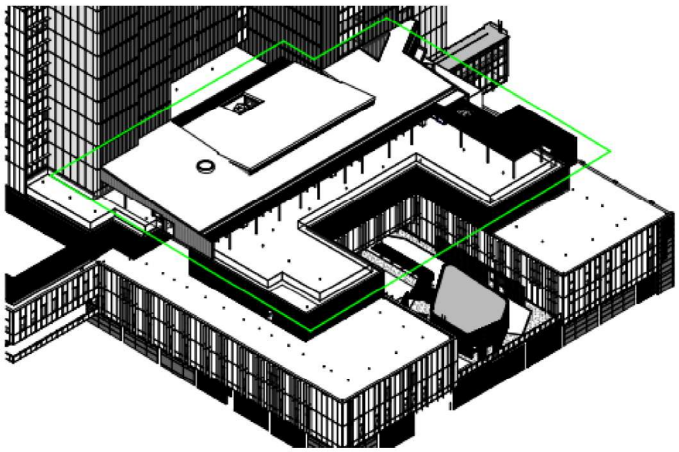
## 1.1 Background and Proposal

The WCEoL Project at Westmead Hospital proposes the delivery of world-class facilities for end-of-life care above the plantroom on level 5 of the existing CASB, on the rooftop of the existing hospital, as indicatively shown in Figure 1.1. As part of the project, 15 palliative and supportive care beds for Westmead Hospital will be delivered in this new build facility, with the unit being directly linked to the rest of the CASB.

The proposed works will be carried out on level 5 of the CASB within the boundaries of Westmead Hospital, which is located approximately 1.5km north-west of the Parramatta CBD, the primary metropolitan centre of Western Sydney.

Stantec was commissioned by Health Infrastructure to prepare a transport impact assessment for the proposed WCEoL Project, to support the Review of Environmental Factors being prepared for the Project.

**Figure 1.1: Proposed WECoL Facility**



## 1.2 Purpose of this Report

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

- existing traffic and parking conditions surrounding the site
- suitability of the proposed parking in terms of supply (quantum) and layout
- the traffic generating characteristics of the proposed development
- the transport impact of the development proposal on the surrounding road network.

## 1.3 References

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

- an assessment of the site and its surrounds
- Parramatta Local Environmental Plan 2023 (PLEP 2023)
- Parramatta Development Control Plan 2011 (DCP 2011)
- Roads and Maritime Services (now Transport for NSW) Guide to Traffic Generating Developments 2002 (TfNSW Guide 2002)
- The Children's Hospital at Westmead Redevelopment Stage 2, Paediatric Services Building, Transport Assessment, WSP, March 2021.
- Westmead Place Based Transport Strategy, Transport for NSW, October 2022
- Westmead Integrated Mental Health Complex Transport Assessment, Stantec, 2022
- Master plan report for the proposed development prepared by BVN, dated 27 September 2023
- other documents and data as referenced in this report.

# 2. Site Context

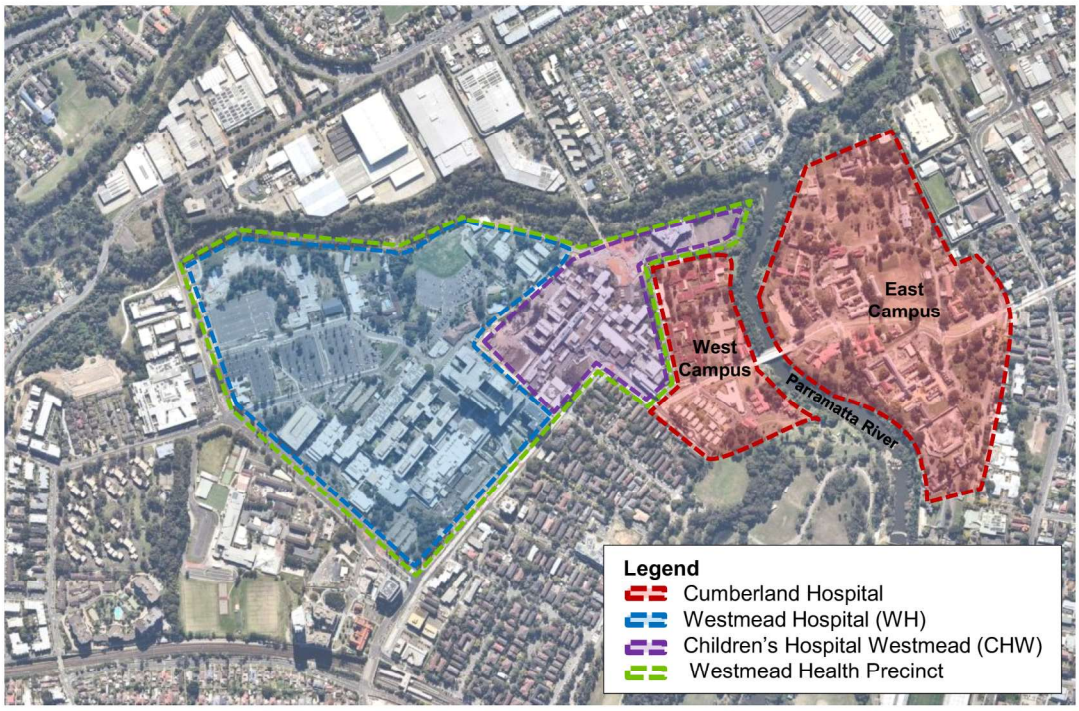
## 2.1 Westmead Health Precinct

The Westmead Health Precinct comprises Westmead Hospital and The Children's Hospital at Westmead (CHW) amongst other specialty health services, however, does not include Cumberland Hospital or the Westmead Private Hospital. The Westmead Health Precinct is directly west of Parramatta CBD and plays a significant role in Sydney's Greater Metropolitan area.

Mental Health services are currently provided on Cumberland Hospital west campus, located between the WHC to the west, and Parramatta River/ Cumberland Hospital east campus to the east, as shown in Figure 2.1. As detailed prior, the WCEoL facilities will be delivered on the rooftop of the existing CASB building of Westmead Hospital.

The location of the subject site and its surrounding environs is shown in Figure 2.1.

**Figure 2.1: Subject Site and Its Environs**




Base image source: Nearmap

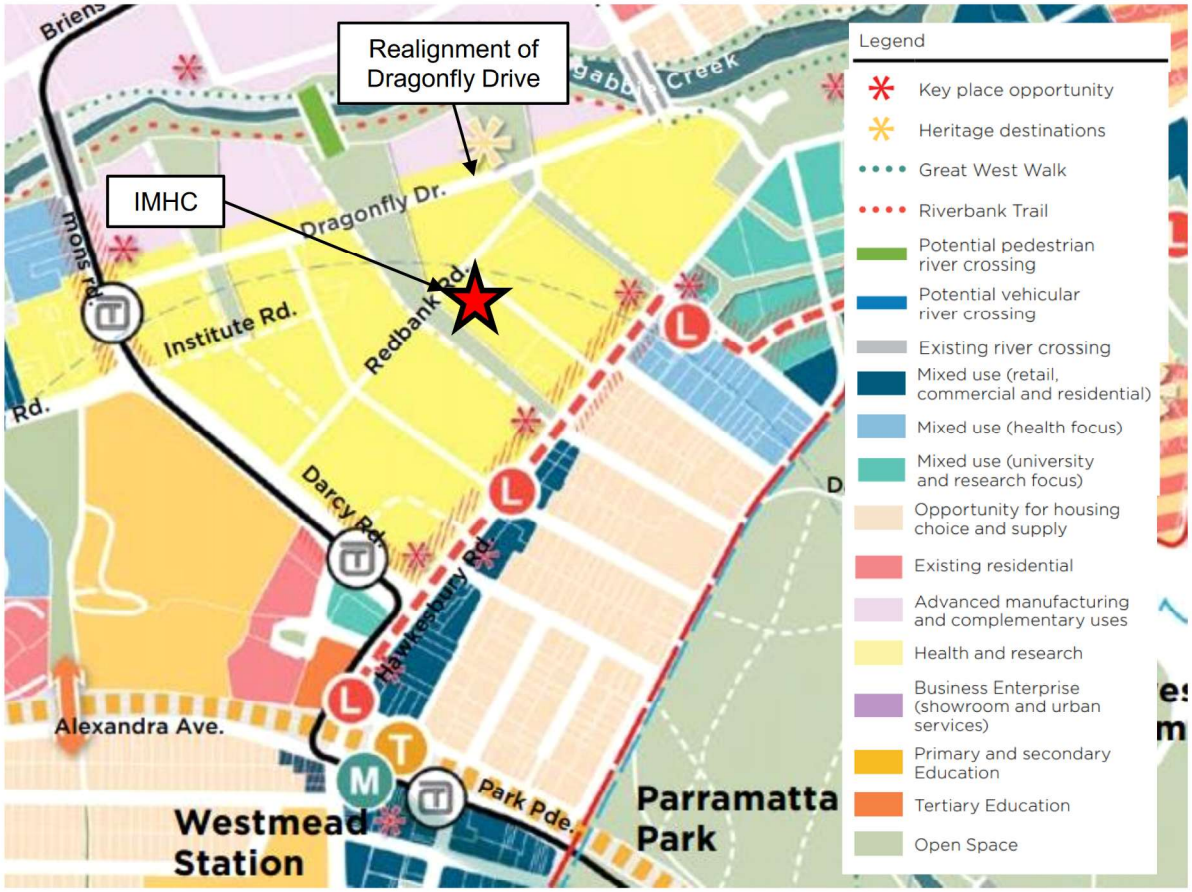
## 2.2 Westmead Health Precinct Master Plan

With consideration for the significant future growth of Western Sydney, it is critical that the Western Sydney Local Health District (WSLHD) and Sydney Children's Hospital Network (SCHN) expand in a manner that ensures future services and resources will continue to be able to cater for the needs of the community.

To facilitate growth of the Westmead Health Precinct, a long-term Masterplan has been prepared, with outcomes incorporated into the Westmead 2036 Draft Place Strategy as shown in Figure 2.2. The high-level aim of the Masterplan is to guide development and provide a structure to accommodate upcoming projects and future development on the site with an agreed approach between the WSLHD and the SCHN[1]. The Masterplan focuses on locating priority health projects within the Westmead Health Precinct and testing the remaining site areas for maximum yield and appropriate uses.

[1] Page 4, Westmead Health Core Master Plan Design Report revision D, Billard Leece Partnership, July 2020.

**Figure 2.2: Westmead 2036 Draft Place Strategy (December 2020)**




Base image source: Page 15, Westmead 2036 Draft Place Strategy, NSW Department of Planning Industry and Environment, December 2020

As shown in Figure 2.2, the Masterplan proposes to re-align Dragonfly Drive based on the following site access principles relevant to the site:

- Dragonfly Drive to provide access to the proposed new uses located to the north of Institute Road.
- Institute Road to be maintained and to continue to be used as the emergency vehicle route while also facilitating access to/from the existing and proposed loading docks that currently front Redbank Road.

## 2.3 Stage 1 and 2 Westmead Redevelopments

### 2.3.1 Overview

The NSW Government is investing more than $1 billion to transform the Westmead health, education and research precinct and deliver an innovative, integrated facility that will continue to deliver high-quality healthcare for decades to come.

The project includes:

- Stage 1 Building K (Central Acute Services Building) including new adult and children's emergency departments, opened 2021
- Stage 2 and 3 projects for Westmead Hospital
- Stage 2 redevelopment for The Children's Hospital at Westmead, expected to be completed by 2025
- partnership projects with the University of Sydney
- car parking.

Stage 1 (opened in 2021) comprised a new central acute services building, which increases integration between Westmead Hospital and The Children's Hospital at Westmead, and includes new operating theatres, surgical suites and state-of-the-art pharmacy and imaging.

Stage 2 (planning underway) involves a significant expansion to paediatric health services in western Sydney. It includes the construction of a new paediatric services building, a new forecourt entry, and a multi-storey car park to serve the existing and expanded hospital.

### 2.3.2 Stage 1 Redevelopment

Stage 1 of the Westmead Health Precinct redevelopment opened in 2021, comprising the following works:

- construction of at-grade parking along Dragonfly Drive
- construction of a new Multi-Storey Car Park on the corner of Darcy Road and Institute Road
- construction of the new Central Acute Services Building (CASB), Innovation Centre and Hawkesbury Road Plaza, opened in 2020
- refurbishment of existing hospital buildings.

The new CASB intends to increase integration between Westmead Hospital, CHW and the University of Sydney. It hosts both adult and children's services, including emergency, pharmacy, imaging and state-of-the art operating suites. Key features of the new building include:

- two new emergency departments — one for Westmead Hospital and one for CHW
- a two-level undercroft car park for use primarily by visitors and patients of the CASB.

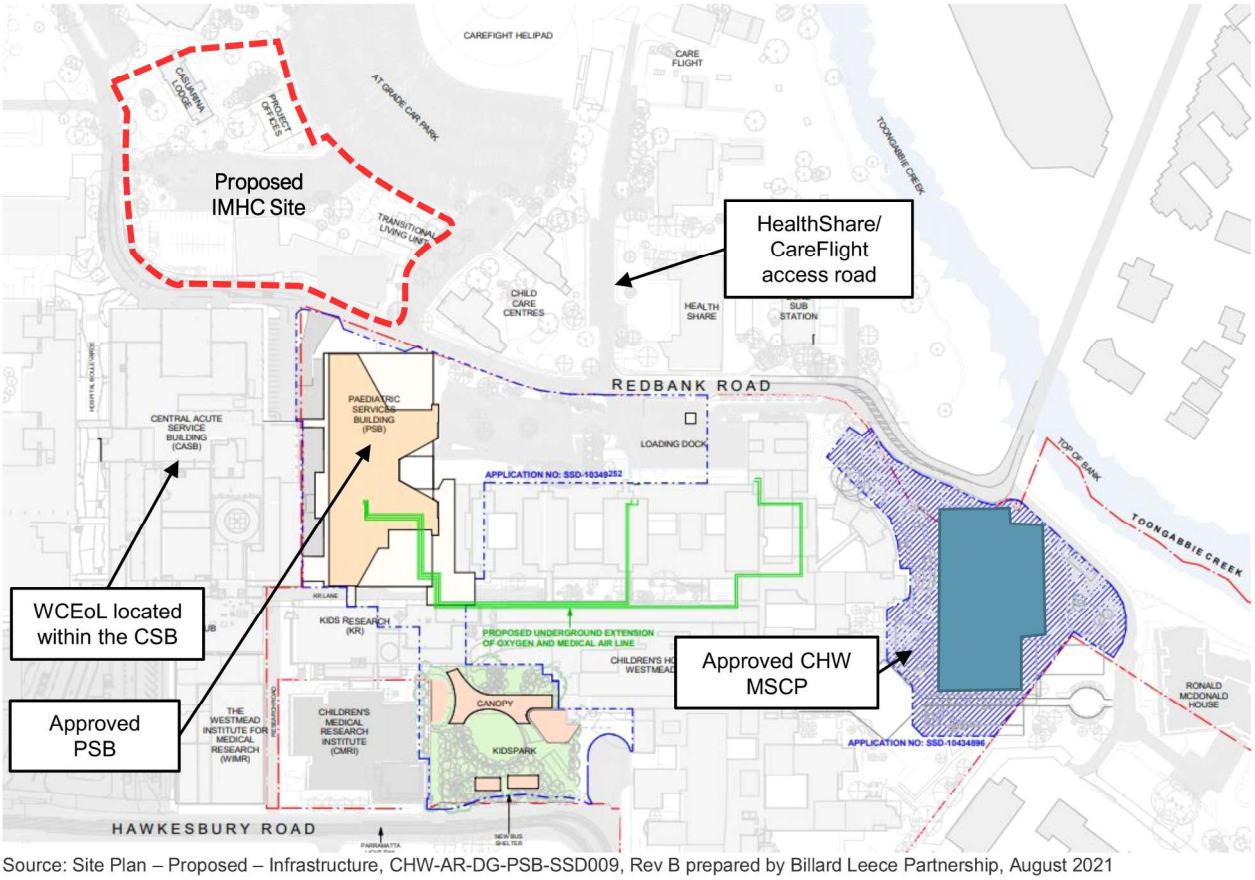
### 2.3.3 Stage 2 Redevelopment

CHW Stage 2 development has been approved and will comprise the following works:

- construction of the new Paediatric Services Building (PSB)
- redevelopment of the CHW forecourt and access lines
- refurbishment of the existing facilities
- construction of a new MSCP on the corner of Redbank Road, at the eastern edge of campus.

Figure 2.3 illustrates the CHW stage 2 redevelopment works comparative to the proposed WCEoL site.

**Figure 2.3: Stage 2 redevelopment site plan overview**




Source: Site Plan – Proposed – Infrastructure, CHW-AR-DG-PSB-SSD009, Rev B prepared by Billard Leece Partnership, August 2021

The new PSB is proposed to be located on the former Car Park 17 MSCP and adjacent at-grade parking. In order to facilitate the construction of the new PSB, former Car Park 17 was demolished in 2020 and replaced by an interim car park (Car Park 23) on the northern edge of Dragonfly Drive near Mons Road (illustrated in Figure 3.2), with capacity for

479 car parking spaces[2]. Due to the extended walking distance from Car Park 23 to CHW, compared with the former staff car park (Car Park 17), HI operates a shuttle bus service to help transfer staff between the interim parking facility and CHW main buildings.

### 2.3.4 Integrated Mental Health Complex

In May 2022, the NSW Government announced the investment of $460 million into the development of a new Integrated Mental Health Complex (IMHC) at Westmead, that will replace the existing mental health facilities at Cumberland Hospital and comprises the construction and operation of a 10 storey Integrated Mental Health Complex along Redbank Road in the centre of the Westmead Health Precinct.

Co-location of mental health services with Westmead Health Precinct, adjacent to the CASB, will provide closer integration between the District's mental health and other clinical services at the Precinct. The new facility will be designed to deliver contemporary, best-practice models of care allowing patients to be treated in a therapeutic environment that supports safe and dignified, trauma-informed, recovery-focused care[3].

## 2.4 Westmead Place Based Transport Strategy (2022)

The NSW Government's vision for Westmead is to be Australia's premier health and innovation district by 2036, with a job creation target of 50,000 or more within Westmead by 2036. The *Westmead Place-based Transport Strategy* is a supporting plan of Future Transport and sits alongside the Westmead 2036 Place Strategy prepared by the NSW Department of Planning and Environment.

The strategy acknowledges existing road network constraints surrounding the Westmead Health Precinct, stating "Westmead faces several challenges, including a limited connectivity across barriers including major roads, rail lines and rivers. The road network is constrained, particularly during peak hours and school pickup and drop-off times. The public transport network could be improved, particularly outside of the peak period and at night. Without a change in course, key road sections, including Hawkesbury Road and Darcy Road are forecasted to be close to, or over, capacity for private vehicles by 2041."

The *Westmead Place-based Transport Strategy* provides the overarching strategic transport network and vision that will guide future transport planning in Westmead. The strategy presents 43 transport initiatives for further investigation, grouped into five strategic directions as follows:

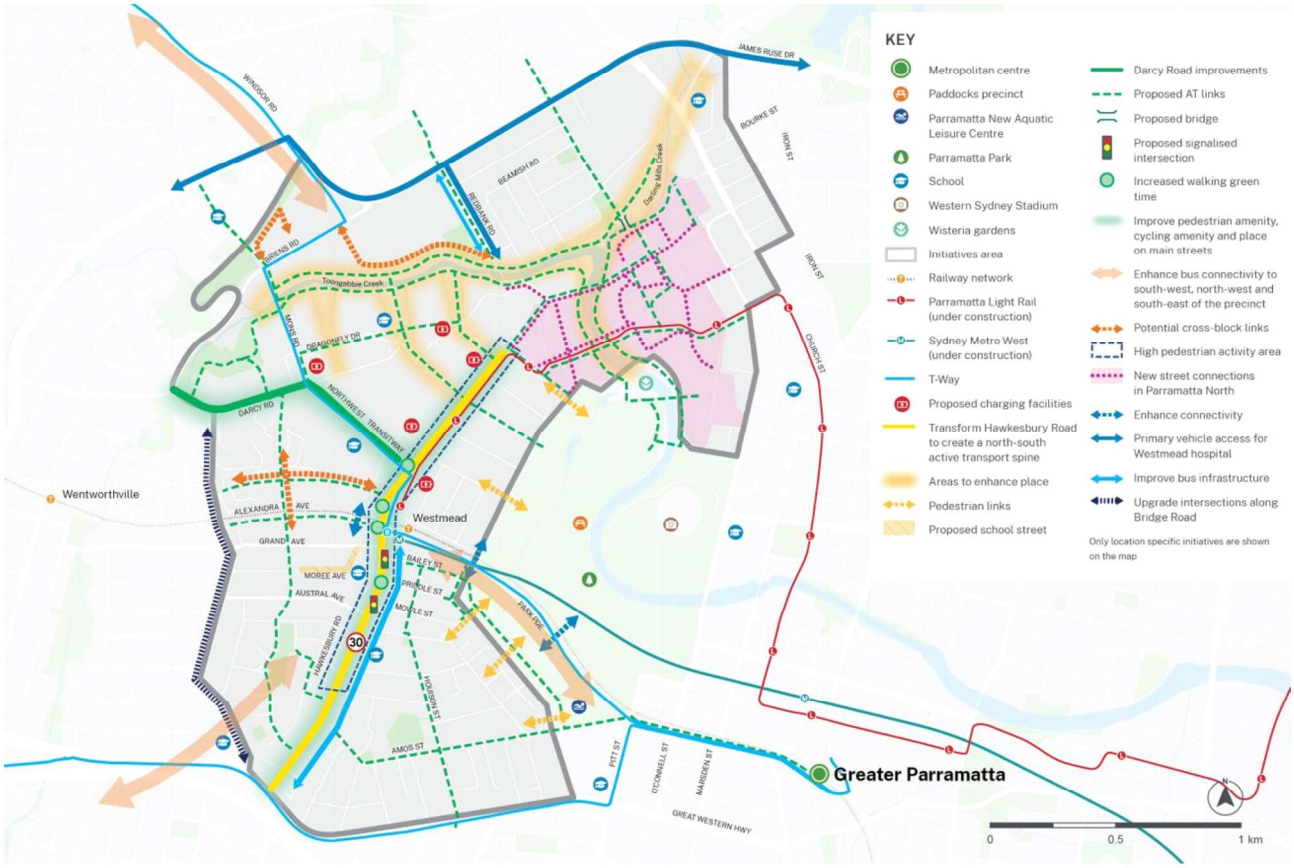
- Support Westmead's transformation into a truly integrated innovation district
- Create vibrant and safe places, leveraging the major movement corridors, parklands and creeks
- Develop sustainable travel networks that are permeable and attractive
- Deliver better public and active transport options for customers of all ages and ability
- Enhance the transport network to optimise and balance movement.

The transport initiatives contained within the Strategy are depicted in Figure 4.

[2] Original design accommodated 481 spaces, with two spaces converted to four motorcycle parking bays resulting in a total of 479 parking spaces

[3] https://www.hinfra.health.nsw.gov.au/projects/project-search/integrated-mental-health-complex-westmead

**Figure 4: Westmead Place Based Transport Strategy transport initiatives**




Source: Page 6, *Westmead Place-based Transport Strategy*, Transport for NSW, October 2022.

The *Westmead Place-based Transport Strategy* identifies the following priority initiatives:

- A connected active transport network, including delivery of a high-quality active transport network
- Implement smart infrastructure and servicing, to improve public services through wayfinding kiosks and improved priority for buses and emergency vehicles
- Night time on demand transport trial to overcome barriers to public transport usage for late shift workers, reducing their dependency on private vehicles
- Deliver the T-way to T-way Link, connecting Liverpool-Parramatta T-way to the North-West T-way, increasing bus accessibility to Westmead from the south-west and enabling new dedicated services traveling between south-west and north-west Sydney via Westmead.

The next steps for implementation of the Westmead Place-based Transport Strategy comprise:

- identification or creation of governance structures to ensure decision-making is coordinated and considered by the relevant areas within NSW Government.
- preparation of a strategic validation and feasibility study along with strategic business cases for capital-intensive transport initiatives, such as new rail crossings, new bridges, major arterial road upgrades, or new public transit infrastructure.
- implementation of funding mechanisms through the planning system, such as Regional Infrastructure Contributions and local contribution plans, to manage the costs of new infrastructure required to respond to growth.

# 3. Existing Conditions

## 3.1 Overview

The proposed works will be carried out within the boundaries of Westmead Hospital, which is located approximately 1.5km north-west of the Parramatta Central Business District (CBD), the primary metropolitan centre of Western Sydney. The site is legally described as Lot 1 DP1194390 and Lot 4 DP 1077852, with works proposed in the central part of the precinct.

## 3.2 Surrounding Road Network

### 3.2.1 Road Hierarchy

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 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 22 November 2019.

Transport for NSW 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 Transport for NSW, typically no limit in flow and designed to carry vehicles long distance between regional centres.

**Sub-Arterial Roads** – Managed by either Council or Transport for NSW 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.

### 3.2.2 Road Network

The Westmead Health Precinct is accessed via several key traffic routes with key access points located along Mons Road, Hawkesbury Road and Redbank Road.

Table 3.1 provides a summary of the characteristics of the surrounding key roads.

**Table 3.1: Surrounding roads network**

| Road | Classification | Authority | Characteristics |
|---|---|---|---|
| Hainsworth Street | Local Road | Council | Two-way, two lane road with kerbside parking. Connecting between Hawkesbury Road and Park Avenue. |
| Hawkesbury Road | Local Road/ Regional Road | Council | Two-way, two lane road with kerbside parking. At intersections, parking is removed to allow additional traffic lanes and bus only lanes. It connects to the Great Western Highway to the south and is an RMS Regional Road west of Darcy Road. |
| Redbank Road | Local Road/ Private Access Road | TfNSW west of Darcy Road | Two-way, 2-lane road with kerbside parking. It connects to Briens Road, located north of the Hospital. |
| Darcy Road | Regional Road | Council, HI/ LHD | Redbank Road is a private access road within the Campus. |
| Institute Road | Private Access Road | TfNSW | Two-way, 4-lane road with an additional Transit Way (T-Way) running through the median. It connects to Hawkesbury Road to the south. |
| Mons Road | Local Road | HI/ LHD | Provides local access into a Hospital staff car park with boom gates limiting access. |

| Road | Classification | Authority | Characteristics |
|---|---|---|---|
| Briens Road | Local Road | Council | Two-way, 2-lane road with marked kerbside parking for the southern portion and is an exclusive T-Way for the northern portion. Mons Road connects to Briens Road to the north and Institute Road and Darcy Road to the south. |

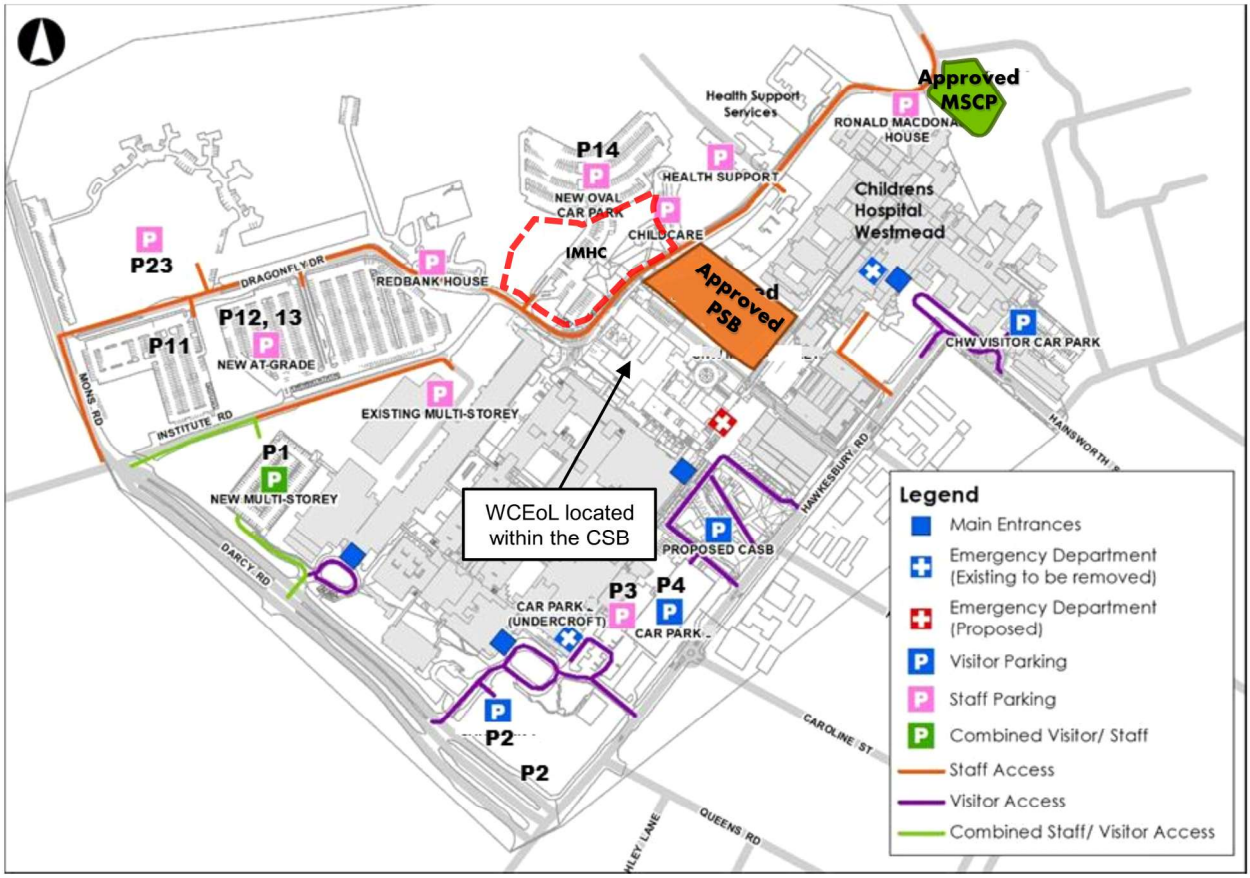
The surrounding local road network connects with the broader arterial network, including connections to the Cumberland Highway (Hart Drive), Great Western Highway, M4 Western Motorway (M4), Old Windsor Road and Pennant Hills Road.

The Great Western Highway and the M4 both provide east-west access to greater Sydney including Sydney CBD, Parramatta, Blacktown and key regional centres. The Cumberland Highway provides a north-south arterial road link to south-west Sydney areas including Liverpool and extending to the M5 South-West Motorway to allow access to Campbelltown, Canberra and southern regional centres. The M2 Hills Motorway and Westlink M7 also combine more broadly to provide a convenient north-south link.

Historically, hospital staff have been accessing the Westmead Health Precinct via a combination of Institute Road, Redbank Road and Hawkesbury Road, while majority of visitor activity occurred along Darcy Road and Hawkesbury Road. Given that there is limited ability to increase network capacity along Hawkesbury Road, the Westmead Redevelopment stage 1 aimed to separate staff and visitor access to the Westmead Health Precinct to accommodate future visitor and patient growth and access to the CASB, as well as the proposed Parramatta Light Rail (which further constrains the operation of Hawkesbury Road).

Following the Westmead Stage 1 redevelopment, visitors to Westmead Hospital and CHW continue to use Hawkesbury Road however staff access is generally limited to Institute Road, Redbank Road and Dragonfly Drive. The location of the Westmead Health Precinct key access locations and typical access routes per user type to the Hospital are shown in Figure 3.1.

**Figure 3.1: Staff and visitor key access routes**



## 3.3 Road Network Performance

As part of the CHW Redevelopment Stage 2, WSP prepared SIDRA Intersection models of the road network surrounding the Westmead Health Precinct, with results outlined in the CHW Stage 2, Paediatric Services Building Transport Assessment report[4]. The intersection modelling results for 2020 indicate the surrounding intersections are generally operating with some spare capacity during the assessed CHW peak hours (7:00am to 8:00am and 4:00pm to 5:00pm) with the exception of the intersections of Briens Road/ Redbank Road and Darcy Road/ Mons Road/ Institute Road, which are generally operating at capacity during the AM and PM peak hours, respectively.

## 3.4 Car Parking

It is noted that the available on- and off-site parking supply is changing periodically as a result of redevelopment works within the Westmead Health Precinct, most recently comprising CHW Redevelopment Stage 2.

### 3.4.1 On-Site Supply

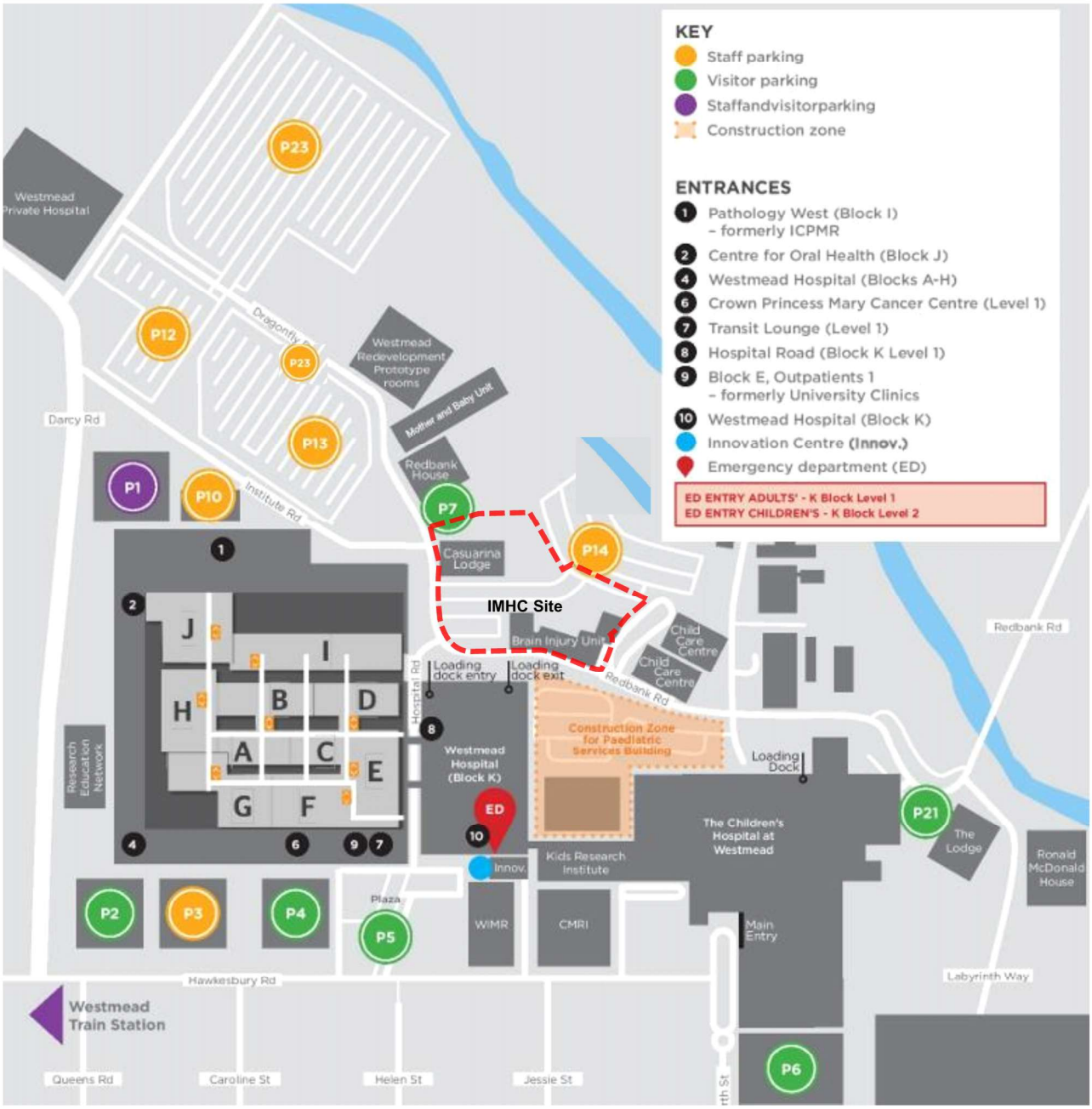
Significant car parking facilities are provided on site, servicing the various components of the Westmead Health Precinct. Car parking is distributed across campus to support separate access arrangements for staff and visitors, as shown in Figure 3.1 and Figure 3.2.

Car Parks 14 and 23 are both at-grade staff parking facilities, with access derived from Dragonfly Drive. A total of 479 parking spaces are provided in Car Park 23 and 422 spaces in Car Park 14 (however supply and access being modified as part of the IMHC and associated works).

In terms of visitor parking, the car park of particular interest to the WCEoL project is Car Park 4, located in proximity to the CASB. Stantec visited site in November 2023 and undertook car parking supply count. In total, it was observed that there were 421 car parking spaces for visitors. Further visitor parking is available in Car Park 5, under the new plaza area.

[4] The Children's Hospital at Westmead Stage 2, Paediatric Services Building Transport Assessment report Revision C, WSP, 16 March 2021

**Figure 3.2: Westmead Health Precinct car parking facilities**




## 3.4.2 On-Street Parking Supply

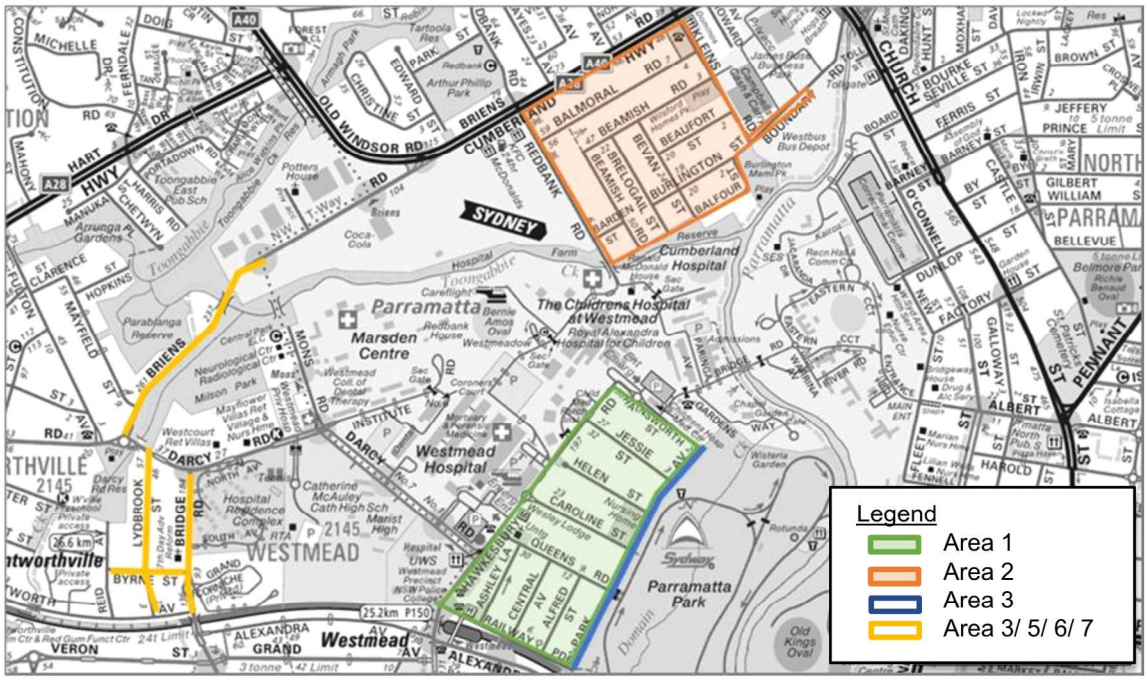
Stantec has historically completed a review of all on-street car parking in the vicinity of the site, noting there have been some subsequent changes as a result of the Parramatta Light Rail project. The parking supply for key areas identified as being most likely used by staff and visitors to the Westmead Health Precinct has been summarised in Table 3.2 and illustrated in Figure 3.3.

**Table 3.2: Relevant on-street parking supply**

| Area # | Location | Unrestricted Spaces | 1P/ 2P | Disabled | Total Estimated Parking Supply |
|---|---|---|---|---|---|
| 1 | Hawkesbury Road and south to Parramatta Park | 263 | 414 | 11 | 688 |
| 2 | South of Cumberland Highway to Toongabbie Creek | 329 | 242 | 1 | 572 |
| 3 | Park Avenue along western side of Parramatta Park | 0 | 140 | 0 | 140 |
| 4 | Briens Road between Mons Road and Darcy Road | 146 | 0 | 0 | 146 |
| 5 | Bridge Road | 76 | 0 | 0 | 76 |
| 6 | Lydbrook Street | 119 | 0 | 0 | 119 |
| 7 | Byrne Street | 28 | 0 | 0 | 28 |
| **Total** | | 961 | 796 | 12 | 1,769 |

Overall, there are approximately 1,770 publicly available spaces in the surrounding area including approximately 960 unrestricted spaces.

**Figure 3.3: Relevant on-street parking areas**




Source: Sydway

# 3.5 Public Transport

Given the strategic context of Westmead in the growth of Parramatta as Sydney's central CBD, there is significant growth and development anticipated for the area, including provision of additional public transport services.

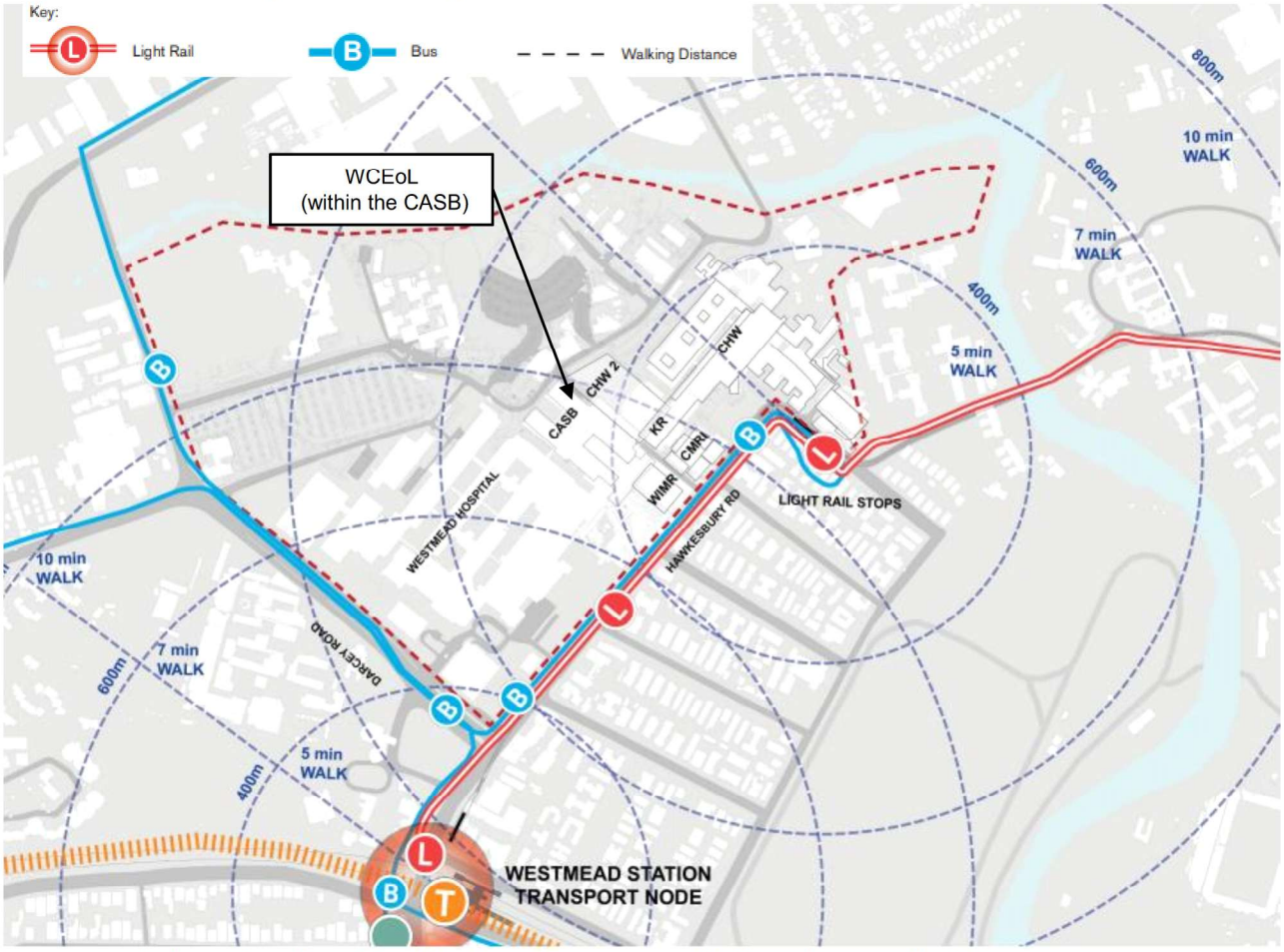
The site is therefore well connected and near several existing and future public transport services, including existing high frequency bus corridors and heavy rail, and future Parramatta Light Rail and Sydney Metro West services. The sites accessibility with regards to the various services is illustrated in Figure 3.4.

## 3.5.1 Overview

Given the strategic context of Westmead in the growth of Parramatta as Sydney's central CBD, there is significant growth and development anticipated for the area, including provision of additional public transport services.

The site is therefore well connected and near several existing and future public transport services, including existing high frequency bus corridors and heavy rail, and future Parramatta Light Rail and Sydney Metro West services. The sites accessibility with regards to the various services is illustrated in Figure 3.4.

**Figure 3.4: Public transport accessibility overview**




Source: Figure 21, Westmead Health Core Master Plan Design Report Revision D, Billard Leece Partnership, July 2020.

### 3.5.2 Existing Services

The proposed WCEoL site is located within 900 metres (10 minute walk) of Westmead Railway Station. The station is serviced by the Western Line (T1) providing frequent services to the Sydney CBD and the Cumberland Line (T5) which provides a north-south link between Campbelltown and Schofields.

Parramatta Railway Station is located one stop to the east of Westmead, providing a number of additional NSW TrainLink services extending to the Blue Mountains, and less regular services to Central West NSW including Orange, Bathurst and Dubbo.

Westmead Health Precinct is also well-served by the North-West T-Way which opened in 2007 and provides regular bus services with significantly increased reliability and good travel times, improving the level of service offered to passengers.

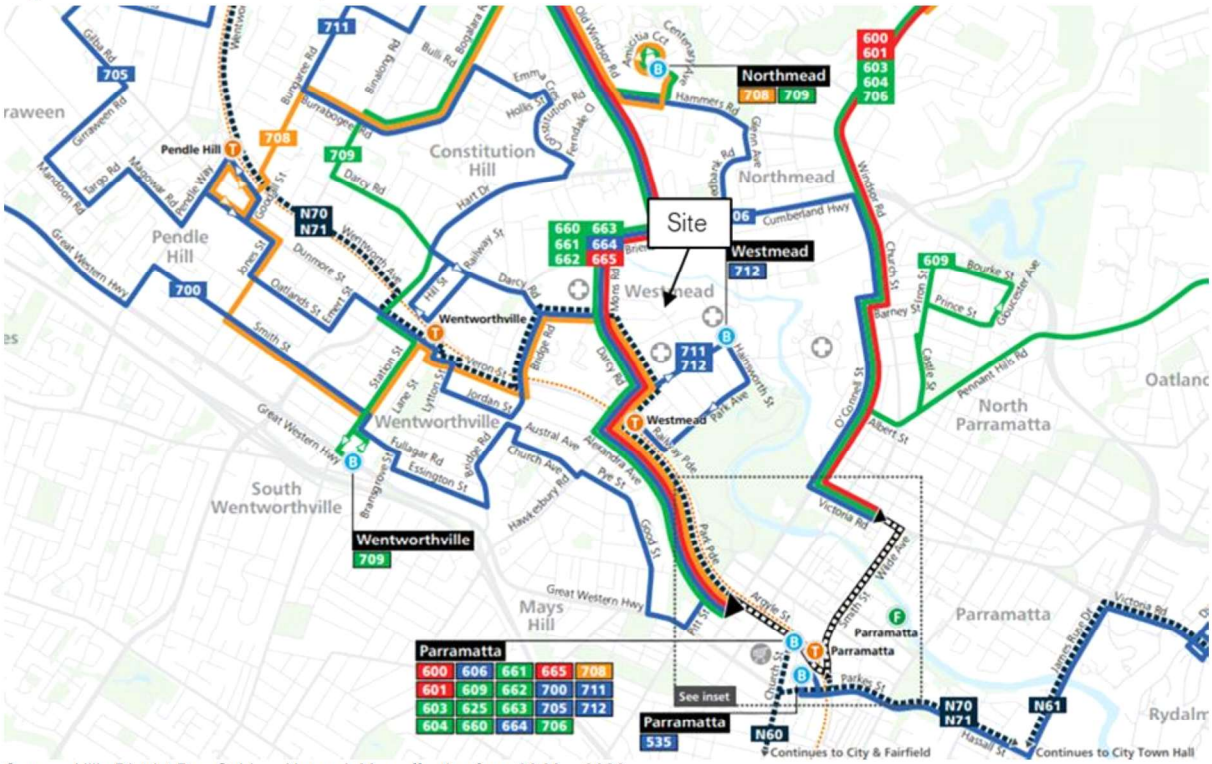
All bus services that pass the Westmead Health Precinct originate or terminate at Parramatta Railway Station with the exception of the 818 Merrylands to Westmead service. The majority of bus services operate as part of the T-Way, which provides direct services to/ from the north-west Sydney growth area that includes Rouse Hill, Glenwood and Bella Vista. There are also limited services which provide local links to Blacktown and Constitution Hill.

The existing public transport services in the vicinity of the Westmead Health Precinct are summarised in Table 3.3 and illustrated in Figure 3.5.

**Table 3.3: Existing public transport services**

| Mode | Route | Location of Stop | Distance | Route | Peak Hour Frequency |
|---|---|---|---|---|---|
| Train | T1 | Westmead | 900m | Penrith/Richmond to Epping/Hornsby | 5-10 mins |
| | T5 | | | Schofields to Campbelltown | 30 mins |
| | Blue Mountains | Parramatta | 2.5km | Sydney to Lithgow | Twice Daily |
| | Regional | | | Sydney to Dubbo | Daily |
| Bus | 711 | Hawkesbury Road | 50m | Parramatta to Blacktown | 30 min |
| | 712 | | | Westmead Children's Hospital to Parramatta | 30 min |
| | 818 | | | Westmead to Merrylands | Hourly |
| | 660, 662 | Darcy Road/ Mons Road T-Way | 550m | Castlewood to Paramatta | 5-15 mins |
| | 661 | | | Castle Hill to Parramatta | |
| | 663, 664, 665, 666 | | | Blacktown to Parramatta | |
| | 708 | | | Rouse Hill Station to Parramatta | 2 services per day (1 during AM peak) |
| | 705 | | | Constitution Hill to Parramatta | 30 min |

**Figure 3.5: Bus network map**




Source: Hills District Bus Guide – Network Map effective from 30 May 2022

## 3.5.3 Future Services

### Parramatta Light Rail

The Parramatta Light Rail Stage 1 route will connect Westmead with Carlingford via the Parramatta CBD. The route will provide a high frequency transport service to support existing residential catchments as well as several priority urban renewal precincts in the greater Parramatta to Olympic Peninsula Priority Urban Renewal Area, including Parramatta North, Camellia, Rydalmere and the Carlingford Corridor (including Telopea and Dundas).

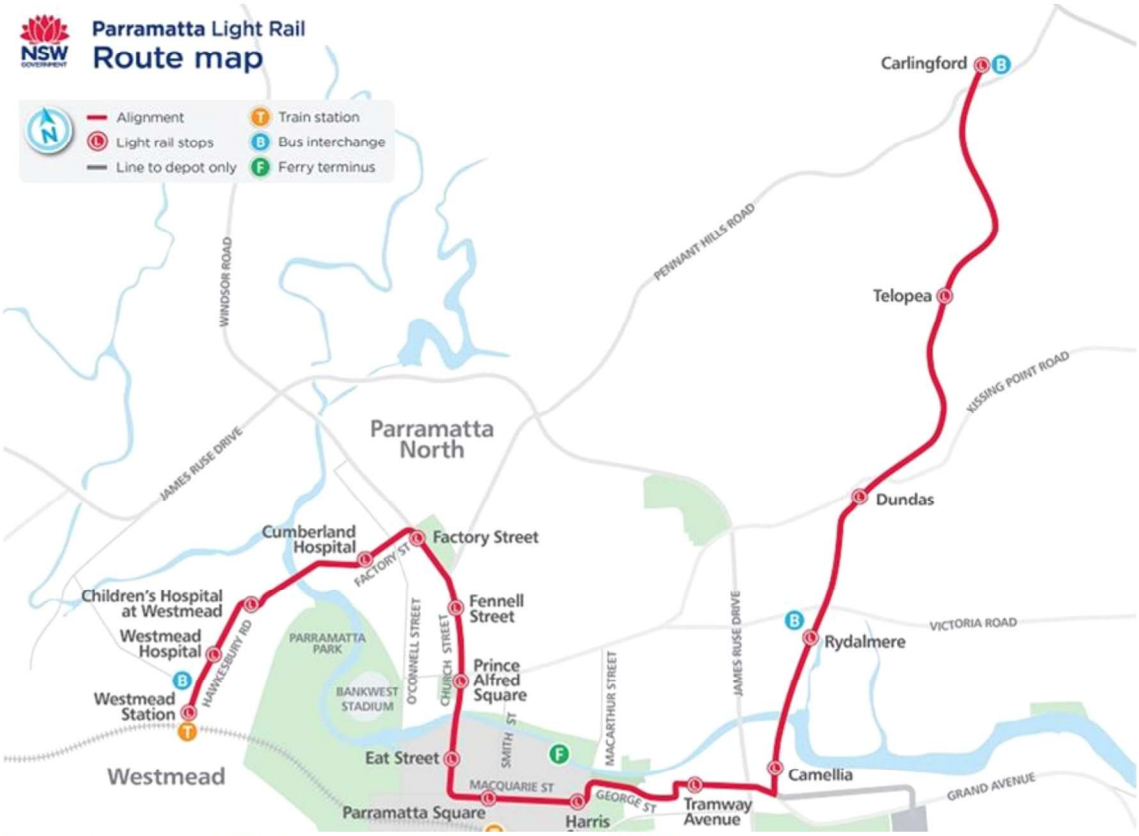
The route includes two stops along the Hawkesbury Road frontage of the Westmead Health Precinct, as shown in Figure 3.6. This would increase public transport accessibility for the whole WHC, providing a convenient connection to the existing Westmead Train Station and future Metro Station. The Light Rail will also have the following benefits:

- improved wayfinding, as the light rail provides a clear desire line towards the precinct

- improved personal security, as users have access to help points and avoid needing to walk adjacent to the road corridor and for those walking, the light rail provides passive surveillance along the corridor
- improved at-grade integration of public transport and Westmead Health Precinct as the light rail negates the requirement for all users to walk from the existing train station, significantly improving accessibility.

The service is expected to commence later in 2024.

**Figure 3.6: Parramatta Light Rail route map**



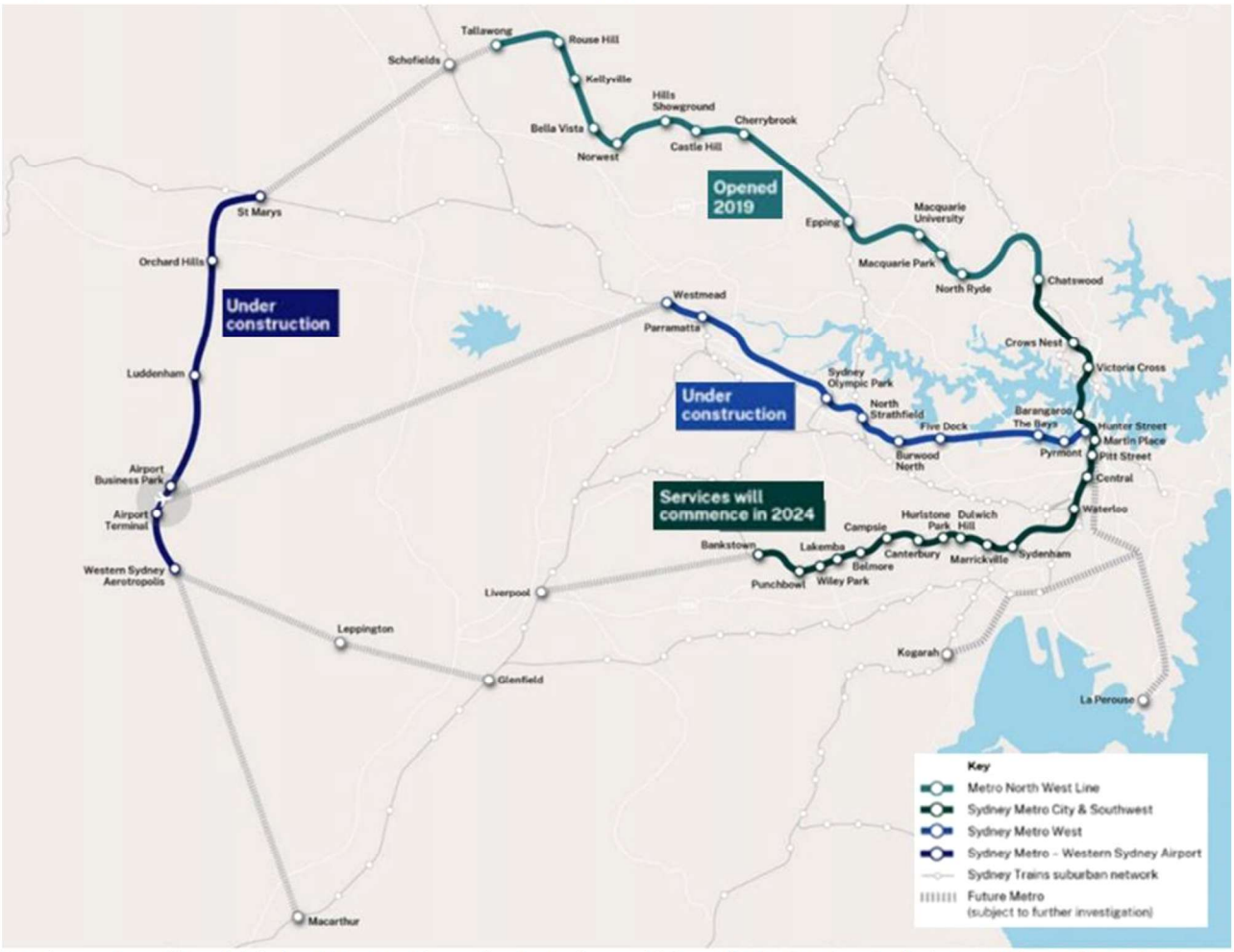

Source: https://www.parramattalightrail.nsw.gov.au/maps, accessed August 2022

### Sydney Metro West

Sydney Metro is currently Australia's largest public transportation project. Stage 1 services began operating in May 2019 using automated metro trains with the expansion into the Sydney CBD and beyond to the south-west expected to be completed later in 2024. Sydney Metro West will comprise a new 24-kilometre metro line with stations confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and the Sydney CBD. The scope of works includes a new underground metro station at Westmead, to support the growing residential area as well as the health, research and education precinct.

The Sydney metro network is illustrated in Figure 3.7.

**Figure 3.7: Existing and planned Sydney Metro route upgrades**




Base image source: Figure 0-1 Sydney Metro network map, Parramatta Over and Adjacent Station Development Environmental Impact Statement, Sydney Metro and Ethos Urban, November 2022

The Westmead metro station will be located south of the existing Westmead Station, on the eastern side of Hawkesbury Road. A station entrance is proposed on Hawkesbury Road, with easy access to Parramatta Light Rail and bus services. Preliminary place and design principles for Westmead metro station include:

- facilitate an integrated transport hub with direct interchange between Sydney Metro and Sydney Trains services and safe, equitable and legible connections with active transport, buses and the future Parramatta Light Rail
- provide a gateway to the Westmead Health and Education Precinct in recognition of its status
- support greater activation along Hawkesbury Road, unifying North and South Westmead.

## 3.6 Active Travel

### 3.6.1 Walking

In general, pedestrians in Sydney experience a low level of priority on the transport network. Pedestrian spaces regularly conflict with driveways and loading zones, and signalised intersections cause lengthy delays in pedestrian journeys.

Such conditions were also common across the Westmead Health Precinct and the broader area however have somewhat improved following Westmead Redevelopment Stage 1 with provision of high-quality public domain, including:

- a Shared Zone along the north-south Hospital Road along the western boundary of the CASB, linking Redbank Road (and the proposed site) with Hawkesbury Road
- a pedestrian forecourt immediately south of the CASB, highlighting the main Campus identity.

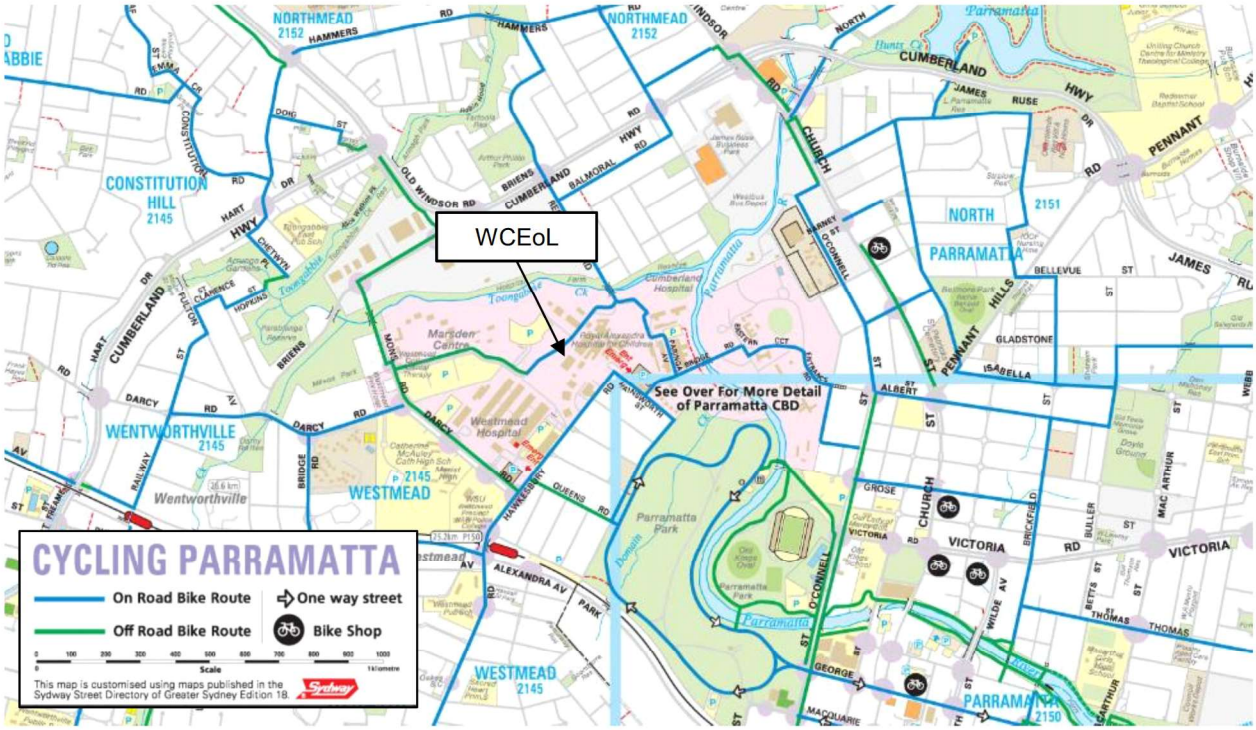
The Parramatta Light Rail will also result in significant improvements to the pedestrian domain along Hawkesbury Road to Westmead Railway Station. Signalised pedestrian crossings will be available at the intersections of Hawkesbury Road with Darcy Road, Caroline Street and the CASB forecourt egress near Helen Street.

### 3.6.2 Cycling

A high-quality shared path is provided across the Mons Road T-Way bridge, linking with a separated cycleway along the Darcy Road frontage of the Campus. A shared path is also provided along the Hawkesbury Road frontage, with all other cycling routes in the vicinity of the Campus, as identified by City of Parramatta Council, classified as on-road routes with limited infrastructure provided.

The City of Parramatta Council's cycling map is shown in Figure 3.8. An existing cycling route is available through the centre of campus via an off-road three-metre-wide shared path along Dragonfly Drive, terminating at Redbank Road and Hospital Boulevarde, and on-road route along Redbank Road.

**Figure 3.8: City of Parramatta Bicycle Network**




Basemap source: L:\DGN\projects\sydney\Parramatta\Parramatta_Bike_2020.dgn (nsw.gov.au), accessed August 2022

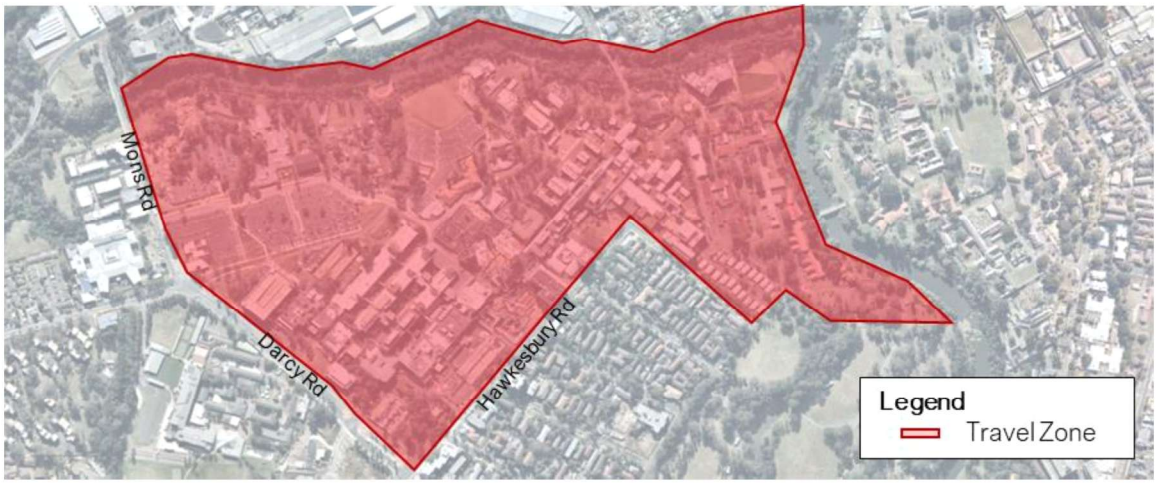
As part of the Westmead Redevelopment stage 1, bicycle parking and associated end of trip facilities were provided within the CASB forecourt level 1. A bike ramp is provided along the northern edge of the CASB forecourt, delivering cyclists safely from Hawkesbury Road to the end of trip facilities.

Publicly accessible bicycle racks were also provided on the first floor of the Darcy Road MSCP development, opened late 2017, near Institute Road. Additional bicycle storage facilities are provided across the Westmead Health Precinct, including a secure bicycle cage for staff, located on the lower level of the Visiting Medical Officers (VMO) car park, and a small amount of unsecure bicycle parking spaces are provided at key entry points, including at the Main Entry and Oral Health access. It is expected additional bicycle parking will be provided with the CHW Redevelopment stage 2.

## 3.7 Travel Patterns

Journey to work (JTW) data has been sourced from the Australian Bureau of Statistics 2016 census and provides an indication of existing travel patterns to/ from the Westmead Health Precinct and Cumberland Hospital west campus. Figure 3.9 details the catchment of census data analysed which corresponds to the Transport for NSW Transport Performance and Analytics geographical area of a Travel Zone (TZ). The relevant TZ used for this assessment is 1045.

**Figure 3.9: Travel zone containing the Westmead Health Precinct and Cumberland Hospital west campus (TZ 1045)**




Destination zone (114913685) corresponds to TZ1045
Base image source: Nearmap

2011 and 2016 JTW data for the travel zone was analysed to gain an initial understanding of any change in staff travel mode share over the five year period, with outcomes summarised in Table 3.4. Sydney was subject to lock-downs during the 2021 census and therefore, 2021 JTW data has not been assessed given travel patterns at that time are not considered to be "typical".

**Table 3.4: Travel characteristics comparison for Westmead Health Campus destination zone (114913685)**

| Mode | 2011 JTW Data Travel Zone | 2016 JTW Data Travel Zone | % Change |
|---|---|---|---|
| Vehicle Driver | 76% | 71% | -5% |
| Vehicle Passenger | 5% | 4% | -1% |
| Train | 10% | 15% | 5% |
| Bus | 2% | 3% | 1% |
| Walk | 5% | 4% | -1% |
| **Other** (100% - sum of other rows) | 2% | 3% | 0% |

Table 3.4 indicates the following:

- Private vehicle mode share (as a driver or passenger) for commuter trips to the Westmead Health Precinct has reduced by 6 per cent between 2011 and 2016.
- These private car trips shifted to public transport, noting commuter trips by train increased by 5 per cent and trips by bus increased by 1 per cent.

# 4. Traffic, Access and Car Parking

## 4.1 Car Parking

The car parking requirements for different development types are set out in City of Parramatta Council's DCP 2023; however, it does not provide any specific guidance for hospitals. The Guide to Traffic Generating Developments (RMS, 2002) is typically referenced in such circumstances, however it is noted that the parking rates presented in the Guide are considered representative of hospitals, rather than expansions of a particular part of a hospital as part of this proposal. As such, an empirical approach to the assessment of parking has been documented for the proposal.

In terms of the assessment for parking demand for staff, the following assumptions have been considered:

- General staff profile: For the proposed facilities, there is an estimated 34 new full-time equivalent (FTE) staff working on site, which are broken down as follows:
  - 7 FTE nursing staff
  - 6 other staff (administration, allied health and support)
  - Based on the above, 21 staff would generate parking demand
- Private vehicle mode share: It is assumed that 65% of staff will drive the site considering the public transport services in proximity to the site.
- Staff changeover: It is expected that there will be some short periods of increased parking demand during shift changeover between staff and with the considering of the 7 nursing staff

Based on the above, the expected parking demand ranges between 13 and 20 parking spaces for staff.

In terms of the assessment for parking demand for visitors, the following assumptions have been considered:

- Bed occupancy: Assumed to be 100%
- Visitors per inpatient: Assumed to be 2 per inpatient. It is noted that it would be likely be greater than 2 visitors per person per day, however, this visitation is expected to be spread through the day and there will be notable "peak" in demand.
- Private vehicle mode share: 83% of visitors driving with 1.8 visitors per car
- As a worst case, it is anticipated that there will be no turnover (all visitors there at once) and all visitors will arrive at the same time

Based on the above and noting the 15 beds proposed, the expected parking demand would be around 14 parking spaces for visitors.

In total, the expected parking demand for the proposal ranges between 27 and 34 parking spaces.

Overall, the generated parking demand as part of the WCEoL project is minor in the context of the substantial parking supply both on site and on-street close to the site, this parking demand is expected to be absorbed into this existing supply.

On-site staff parking demand would be integrated with WSLHD's existing parking permit system, associated eligibility criteria and waiting list arrangements, and subject to the Ministry of Health standard parking charges. The staff parking demand of up to 20 spaces would be readily absorbed into these existing arrangements.

Visitor parking demand would also be absorbed into the existing visitor car parking servicing the CASB, with the demand for around 14 parking spaces within daily fluctuations in visitor parking demand and therefore of no impact on existing arrangements.

## 4.2 Traffic Impact

The WCEoL proposal is expected to result in a very minor uplift in traffic. As such, the overall traffic impact is expected to be negligible and is not expected to not have any adverse impact on the function, operation, or safety of the surrounding road network.

## 4.3 Pedestrian and Cyclist Access

All pedestrians and cyclists are expected to utilise the existing CASB facilities. The WCEoL proposal is therefore expected to not have any impact to pedestrian and cyclist access within the wider Westmead Hospital area.

# 5. Preliminary Construction Traffic Management Plan

## 5.1 Overview

This overview of construction traffic impacts associated with construction activity aims to ensure the safety of all workers and road users in the vicinity of the construction site. Details of the construction work area, staging and timing were not yet available at the time of report preparation. Accordingly, this assessment has been prepared based on Stantec's experience with similar projects and broader involvement across the Westmead Health Precinct. The appointed Principal Contractor will be responsible for developing a detailed Construction Traffic Management Plan in accordance with the relevant conditions of approval.

It is anticipated that other construction activities will be occurring concurrently with WCEoL construction, including but not necessarily limited to the IMHC project. Principal Contractor will be responsible for coordinating with Westmead Health Precinct stakeholders, as well as other construction contractors working in the Precinct.

## 5.2 Key Objectives

The overall principles of traffic management during the construction activity include:

- Provide an appropriate and convenient environment for pedestrians.
- Minimise the impact on pedestrian movements.
- Maintain appropriate capacity for pedestrians at all times on footpaths around the site.
- Maintain appropriate public transport access.
- Maintain current levels of parking within the precinct.
- Maintain permanent access to/ from the hospital accesses for emergency services.
- Restrict construction vehicle movements to designated routes to/ from the site.
- Manage and control construction vehicle activity in and around the site.
- Minimise impacts to general traffic around the site.

## 5.3 Work Hours

The following regular hours of operation are proposed for the works:

- Monday to Friday 7.00am to 6.00pm
- Saturdays 8:00am to 1:00pm
- Sundays and Public Holidays No Work

In addition to regular work hours, there will be occasions where specific out-of-hours works are required. The Principal Contractor will be responsible for instructing and controlling all subcontractors regarding the hours of work. Any work outside the approved construction hours would be subject to specific prior approval from the relevant authorities.

The actual duration of the works is currently unknown and will be scheduled once the contractor is appointed. Works are expected to be completed by the end of 2026.

## 5.4 Construction Worker Parking and Traffic

The number of construction workers is currently unknown and will depend on the methodology of the appointed contractor. However, to provide a preliminary assessment, the average number of workers during peak activities is anticipated to be 20 workers on-site per day across the duration of the project.

Given the known high demand for parking within the Campus associated with Hospital staff and visitors, dedicated construction worker parking will be available within the existing contractors staging area in the northwest corner of the Campus (accessed from Mons Road, see Figure 5.1).

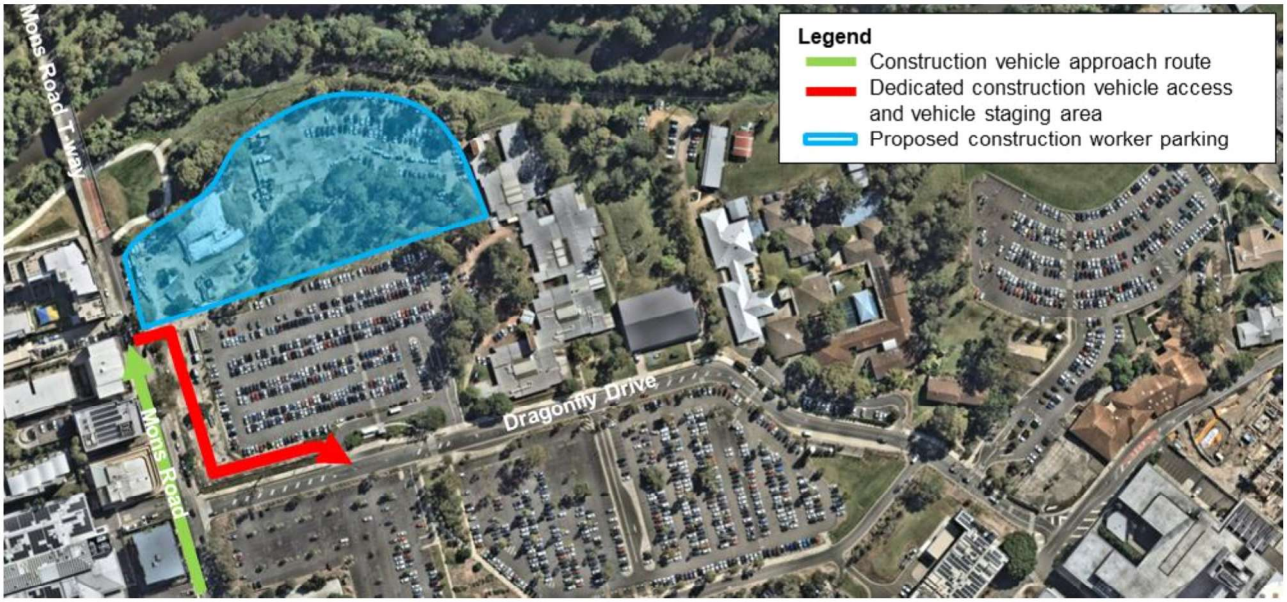
Construction workers who are allocated parking should be encouraged to arrive on-site early, to avoid any significant overlap with peak AM peak Campus staff arrivals (7:00am-8:00am). Likewise, overlap with peak PM staff activity (4:00pm-5:00pm) should be avoided.

Workers should also be encouraged to use public transport to access the site where practical. During site induction, workers should be informed of the existing bus network servicing the site. Appropriate arrangements should be made for any equipment/ tool storage and drop-off requirements.

## 5.5 Construction Vehicle Staging Area

A construction vehicle staging area is available inside the existing contractor's compound, parallel to Mons Road. To limit interaction with the surrounding road network, construction vehicle access to the staging area is from Mons Road via an additional access to the contractor's carpark near the Mons Road T-Way bridge, as shown in Figure 5.1. All construction vehicles will enter and exit the staging area in a forward direction and use the existing Mons Road crossover to travel east towards the site.

**Figure 5.1: Dedicated Construction Vehicle Access and Vehicle Staging Area**




Base image source: Nearmap

## 5.6 Construction Vehicle Volumes and Routes

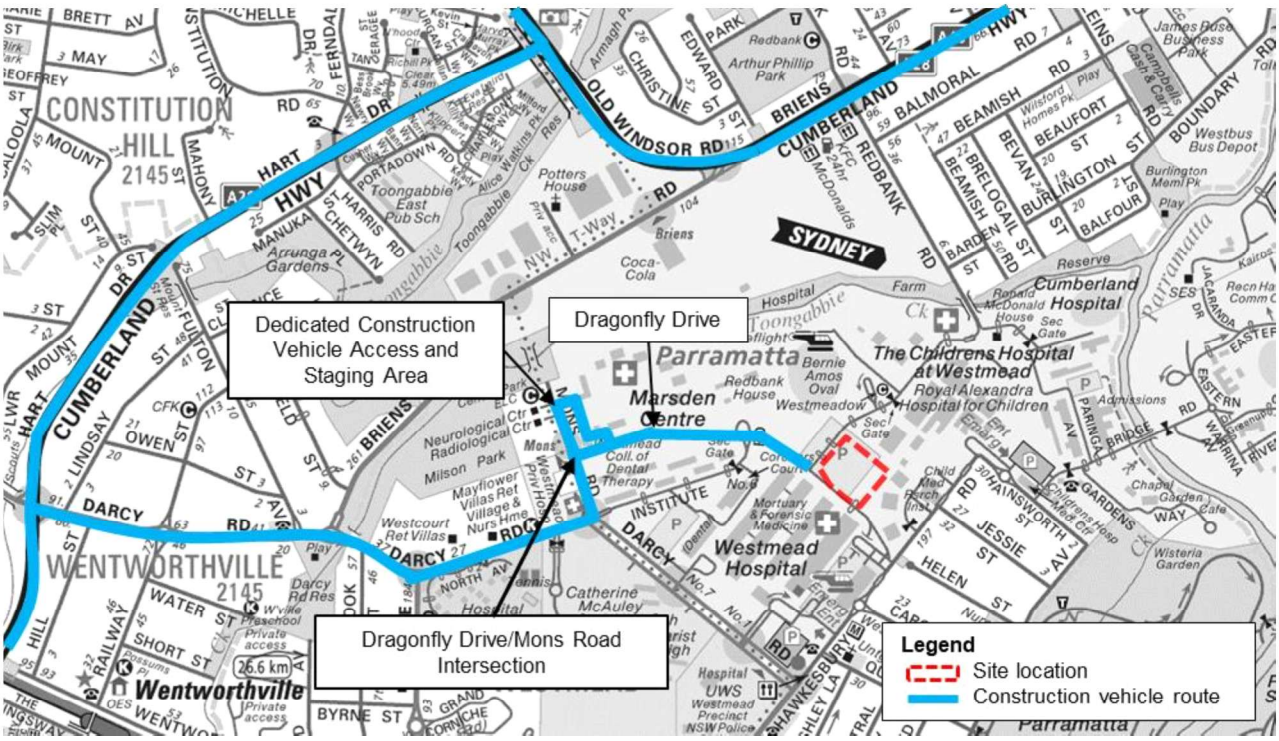
The site will have various types of construction vehicles accessing the site. The largest construction vehicle accessing the site would likely be 20-metre semi-trailers.

It is expected that the peak construction vehicle activity will result in up to 10-15 trucks (maximum 30 two-way movements) in and out of the site per day. These movements are expected to be spread throughout the day and would have a negligible impact on existing traffic volumes both internal and external to the Westmead Health Precinct.

Generally, construction vehicles will have origins and destinations from a wide variety of locations throughout Sydney. However, dedicated construction vehicle routes have been developed with the aim to provide the shortest distances to/ from the arterial road network and therefore minimising the impact of construction traffic on surrounding local roads.

On this basis, it is proposed to use Dragonfly Drive (via Mons Road/ Darcy Road) as the primary construction vehicle access to the site. The proposed construction vehicle access routes are shown in Figure 5.2. This consistent with the construction vehicle routes previously used for the CASB construction, and those currently being used by construction activities associated with CHW Stage 2 Redevelopment and IMHC Early Works.

**Figure 5.2: Construction vehicle routes**




## 5.7 Traffic Guidance Schemes

Detailed information for work site operations is contained in the Traffic Control at Work Sites manual (TfNSW, 2022). The control of traffic at work sites must be undertaken with reference to SafeWork NSW requirements and any other Workplace Health and Safety manuals.

- The Principal Contractor will be required to provide Traffic Guidance Schemes (TGS') for the proposed works which will generally consider the following:
- Construction vehicle activity, including the loading/ unloading of trucks to be conducted within the work site.
- Pedestrians and all passing vehicles will maintain priority.
- Clear definition of the work site boundary to be provided by erection of A Class hoardings/ fencing around the site boundaries.
- All construction vehicle activity will be minimised during peak periods, where possible.

## 5.8 Pedestrian and Cyclist Management

During the construction period, pedestrian and cyclist movements throughout are to be maintained as much as feasible. There is not expected to be any impact to existing pedestrian or cyclist paths by the proposed construction works.

## 5.9 Public Transport

Given the low number of anticipated heavy vehicle movements associated with the construction works, the overall impact to existing public transport services is expected to be negligible. This includes the impact on the identified local area bus services.

## 5.10 Emergency Vehicles

During construction, the Principal Contractor will ensure that there is no disruption to emergency vehicles on public and internal Hospital roads.

# 6. Conclusion

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

- The WCEoL Project at Westmead Hospital proposes the facilities for end-of-life care above the plantroom on level 5 of the existing CASB building with 15 palliative and supportive care beds for Westmead Hospital will be delivered in this new build facility, with the unit being directly linked to the rest of the CASB.
- The proposed facilities are estimated to generate a parking demand between 27 and 34 parking spaces. Given the substantial parking supply both on site and on-street close to the site, the demand is expected to be absorbed into this supply with no impact on existing arrangements.
- It is anticipated that the proposal will generate minor traffic volumes during construction and operation, and is not expected to have any additional impact on the function, operation, or safety of the surrounding road network.
- While limited construction planning detail was available for this report, based on similar projects it is expected that there would be approximately 20 workers and associated vehicle on-site per day, along with 10-15 heavy vehicles (up to 30 heavy vehicle movements across the day), with construction worker parking and a construction vehicle staging area available within the existing contractor's compound in the northwest corner of the Campus.
- The appointed Principal Contractor would be responsible for preparing a detailed Construction Traffic Management Plan and associated Traffic Guidance Schemes, which would be able to appropriately manage and mitigate any potential impacts on traffic, pedestrians, cyclists, public transport and emergency vehicles.

# Appendix A. Architectural Plans

w

Stantec

Connect with us

stantec.com/australia