EARLY WORKS PROJECT AT WESTMEAD HOSPITAL
Review of Environmental Factors
Transport Assessment

March 31, 2023

Prepared for:
Health Infrastructure

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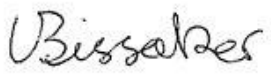
Prepared by: 

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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.

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 Multi-Storey Car Park (MSCP) on the corner of Redbank Road, at the eastern edge of campus.

Proposed Early Works Project

The Early Works Project at Westmead Hospital proposes a series of infrastructure improvements to accommodate the future development of the Integrated Mental Health Complex (proposed separately as part of State Significant Development Application SSD-44034342). Proposed works include:

- Demolition of the existing Brain Injury Rehabilitation Unit building, Casuarina Lodge and office buildings
- Diversion of existing in-ground sewer and water services
- Construction of a new access way to the staff Car Park 14

- Install boom gate plaza to existing HealthShare parking area
- Flood mitigation works
- Bulk earthworks and tree removal to accommodate the carrying out of the above works.

A Car Parking Working Group has been established at the Westmead Health Precinct between WSLHD, SCHN, Westmead Hospital and Western Sydney Mental Health Service representatives, Health Infrastructure and redevelopment project managers and consultants. The following car parking strategy has been agreed for parking displaced as a result of the Early Works Project:

- CareFlight parking supply to be rationalised to four formal parking spaces north-west of the new access ramp to Car Park 14, noting CareFlight currently benefit from use of 22 informal parking spaces along the HealthShare / CareFlight access road, however do not have any agreement to use this land for parking
- displaced CHW staff parking within Car Park 14 to temporarily utilise available capacity within HealthShare car parking areas, noting HealthShare will vacate their tenancy prior to commencement of Early Works
- displaced CHW staff parking within Car Park 14 to ultimately be relocated to CHW MSCP following CHW MSCP opening in early 2024.

The Early Works Project would result in the loss of 12 CHW staff parking spaces. Following opening of the CHW MSCP, this parking demand will be transferred to the MSCP in-line with the broader IMHC car parking strategy and hence there will be no net loss of parking on site. As such, the loss of 12 CHW staff parking spaces is expected to occur for up to a period of around three months. During this time, the demand for 12 spaces can be accommodated within spare capacity for existing parking facilities, noting this is within a reasonable tolerance of day to day fluctuations of parking demand on site.

The existing access from Dragonfly Drive to Car Park 14 is proposed to be closed, with modified vehicular and pedestrian access arrangements proposed from the HealthShare/ CareFlight access road. The modified vehicular access is expected to operate well, with the same serviceability as existing, and additional boom gate queuing capacity on entry ensuring that queueing from the boom gates will not impact general traffic flow along Redbank Road.

The HealthShare tenancy, located east of car park 14 and with vehicular access to allocated parking provided along the HealthShare/ CareFlight access road, is proposed to be vacated prior to the commencement of Early Works, with their parking supply to be transferred back to WSLHD/ SCHN. Following discussions with the Car Parking Working Group, SCHN expressed desire to implement access control to their northern car park and hence the construction of boom gates at the western edge of this car park has been incorporated into the Early Works Project. The works will result in the loss of two formal parking spaces, resulting in a revised supply of 35 spaces (33 formal spaces, two informal spaces).

Review of the revised Car Park 14 access and HealthShare northern car park boom gates indicates that the development is generally in accordance with Australian Standards and Health Infrastructure Guidelines, and is expected to operate satisfactorily.

The Early Works Project will not result in a change in traffic generation of the Westmead Health Precinct. The Project is not expected to result in any change to traffic conditions around the site and could not be expected to compromise the safety or function of the surrounding road network.

1 Introduction

1.1 Background & Proposal

The Early Works Project at Westmead Hospital proposes a series of infrastructure improvements to accommodate the future development of the Integrated Mental Health Complex (proposed separately as part of State Significant Development Application SSD-44034342).

The purpose of the Review of Environmental Factors is to assess the potential environmental impacts which could arise from the proposed works, which include:

- Demolition of the existing Brain Injury Rehabilitation Unit building, Casuarina Lodge and office buildings
- Diversion of existing in-ground sewer and water services
- Construction of a new access way to the staff Car Park 14
- Install boom gate plaza to existing HealthShare parking area
- Flood mitigation works
- Bulk earthworks and tree removal to accommodate the carrying out of the above works.

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.

Stantec was commissioned by Health Infrastructure to prepare a transport impact assessment for the proposed Early Works Project.

1.2 Project Overview

In May 2022, the NSW Government announced the investment of $460 million into the development of a new Integrated Mental Health Complex at Westmead, that will transform the delivery of mental health services across Western Sydney and deliver improved care for patients in line with state and national mental health reforms. The Integrated Mental Health Complex (IMHC) will replace the existing mental health facilities at Cumberland Hospital.

The Early Works Project at Westmead Hospital proposes a series of infrastructure improvements to accommodate the future development of the IMHC.

1.3 Purpose of the Report

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

- a review of existing transport conditions in the vicinity of the works
- suitability of the proposed vehicular and pedestrian access arrangements
- the transport impact of the Early Works Project on the surrounding road network and internal precinct road network.

1.4 References

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

- an assessment of the site and its surrounds
- Parramatta Local Environmental Plan 2011 (LEP 2011)
- 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.
- Other documents and data as referenced in this report.

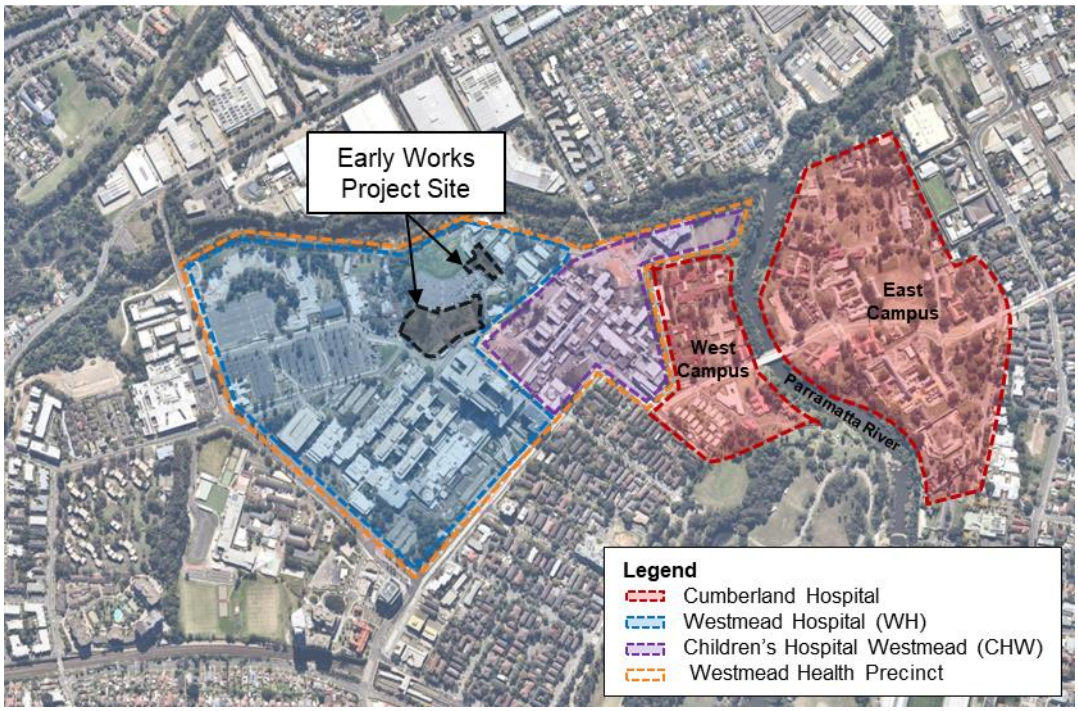
2 Site Context

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 1.

Figure 1: Westmead Health Precinct and Campus



Base image source: Nearmap

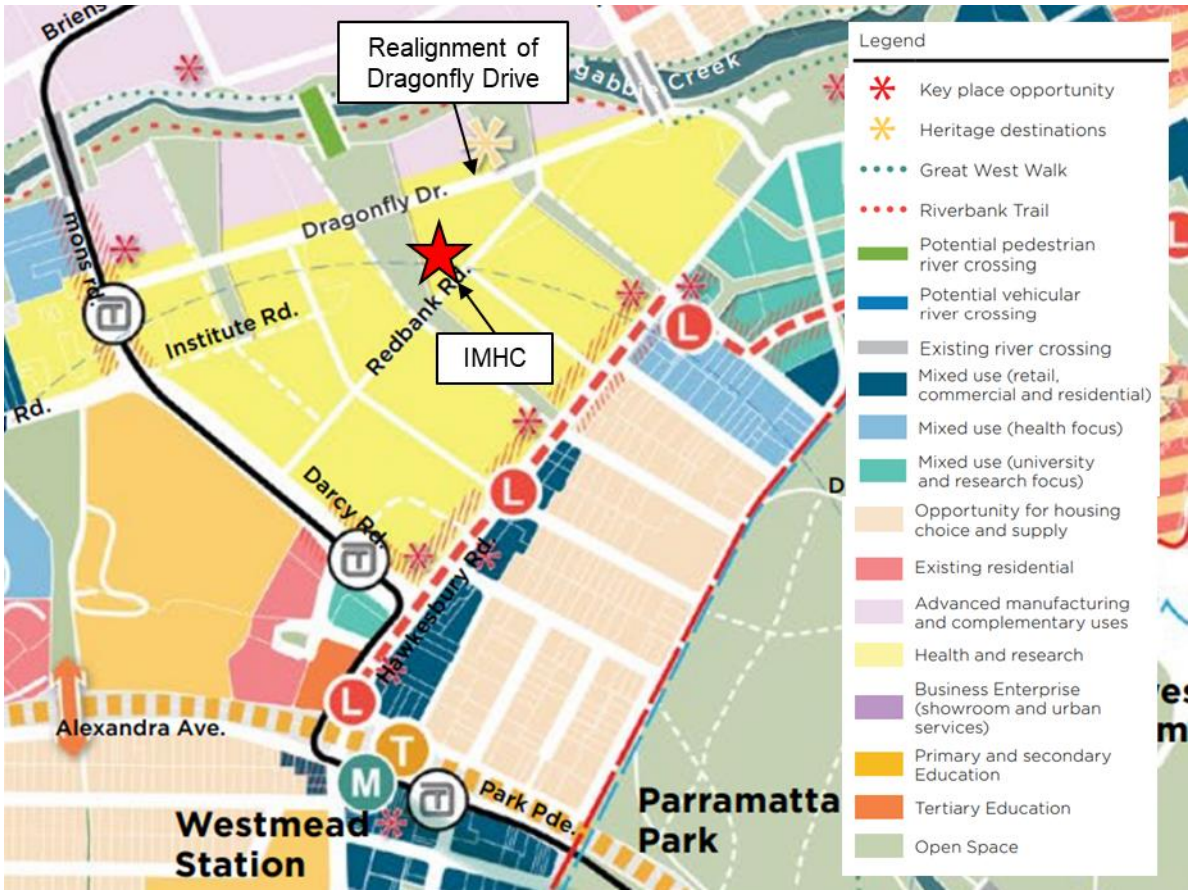
2.2 Westmead Health Precinct Master Plan

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. 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.

Figure 2: Westmead 2036 Draft Place Strategy (December 2020)



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

As shown in Figure 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.

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

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.

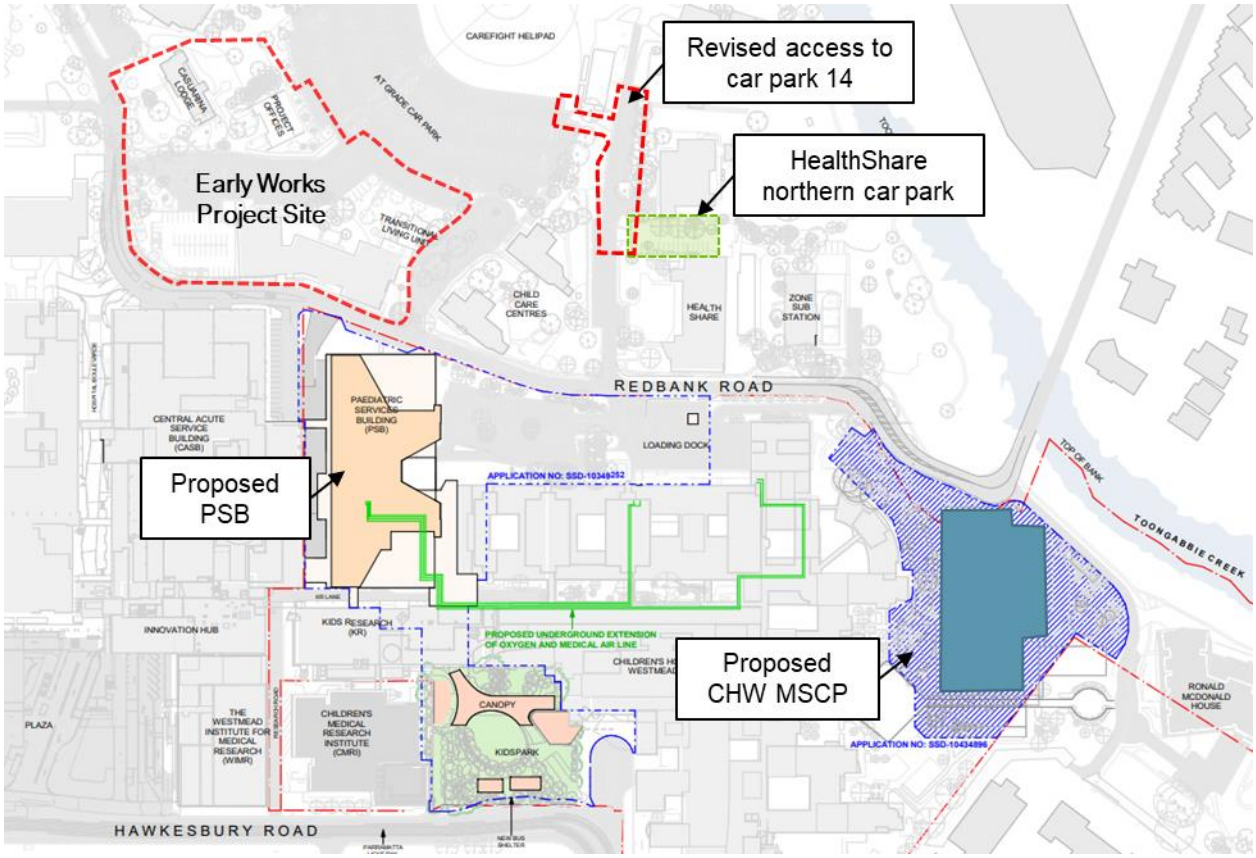
2.3.3 STAGE 2 REDEVELOPMENT

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 3 illustrates the CHW stage 2 redevelopment works comparative to the proposed Early Works Project site.

Figure 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.

2.4 IMHC

The IMHC will replace the existing mental health facilities at Cumberland Hospital. 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] 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

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 1 provides a summary of the characteristics of the surrounding key roads.

Table 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 TfNSW west of Darcy Road	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	Council, HI/ LHD	Two-way, 2-lane road with kerbside parking. It connects to Briens Road, located north of the Hospital. Redbank Road is a private access road within the Campus.
Darcy Road	Regional 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.
Institute Road	Private Access Road	HI/ LHD	Provides local access into a Hospital staff car park with boom gates limiting access.
Mons Road	Local Road	Council TfNSW - T-Way and Bus Lanes	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.
Briens Road	Local Road	Council TfNSW - Bus Lanes	Generally a 4-lane road with bus lanes between Mons Road to the west and Cumberland Highway to the east. Arterial road further to the east (also known as Cumberland Highway) with 3-lanes in each direction.

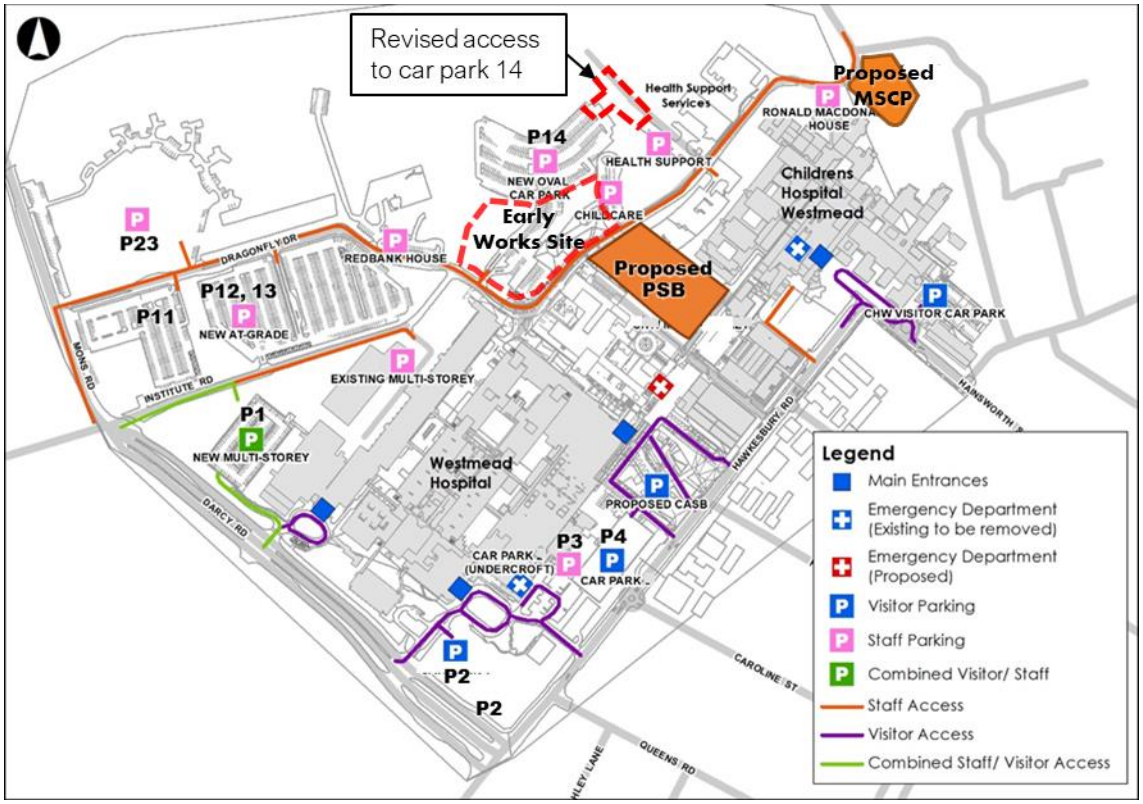
The surrounding local road network connects with the broader arterial network, including connections to the Cumberland Highway (Hart Drive), Great Western Highway, M4 Western Motorway (M4), Old Windsor Road and Pennant Hills Road.

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 4.

Figure 4: 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 report4. 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 4.

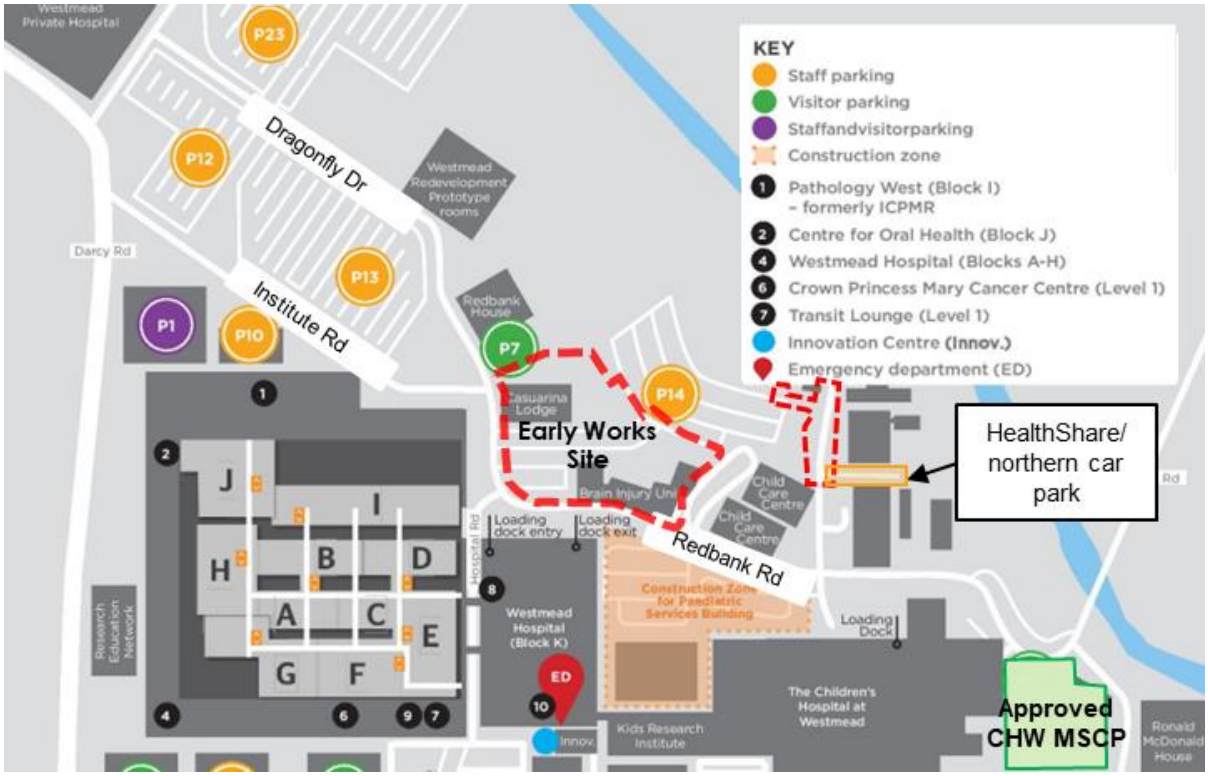
Stantec have previously completed a review of all Westmead Health Precinct car parking in late October 2015, prior to the Westmead Hospital redevelopment works commencing and subsequently in March

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

2019, during construction of the CASB. Due to the changing nature of parking on-site associated with redevelopment works, this report only considers parking facilities directly impacted by the project, including Car Parks 14 and 23 illustrated in Figure 5.

Car Parks 14 and 23 are both at-grade staff parking facilities, with access derived from Dragonfly Drive. A total of 479 parking spaces[5] are provided in Car Park 23 and 422 spaces in Car Park 14. A further four spaces associated with Casuarina Lodge gain access through the Car Park 14 boom gates.

Figure 5: Westmead Health Precinct car parking facilities



A mixture of formal and informal parking is provided along the HealthShare/ Careflight access road, with indicative parking areas and occupancy illustrated in Figure 6. Formal spaces are linemarked and/ or demarcated through kerbs, whereas informal parking includes parking without linemarking or parking on verges etc.

HealthShare currently have access to two parking areas, including a car park to their north that has capacity for 35 formal parking spaces and two informal parking spaces at its eastern edge, as well as 18 formal indented parking bays to their west along the access road. Careflight currently have access to around 22 informal parking spaces.

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

Figure 6: Westmead Health Precinct car parking facilities – HealthShare/ Careflight

Base image source: Nearmap

3.4.2 ON-STREET PARKING SUPPLY

Stantec (formerly GTA) completed a review of all on-street car parking in the vicinity of the site in 2015 and subsequently completed a review of car parking changes in 2019 due to development works in the local area, including the Westmead Hospital redevelopment and Parramatta Light Rail works in 2019. 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 2 and illustrated in Figure 7.

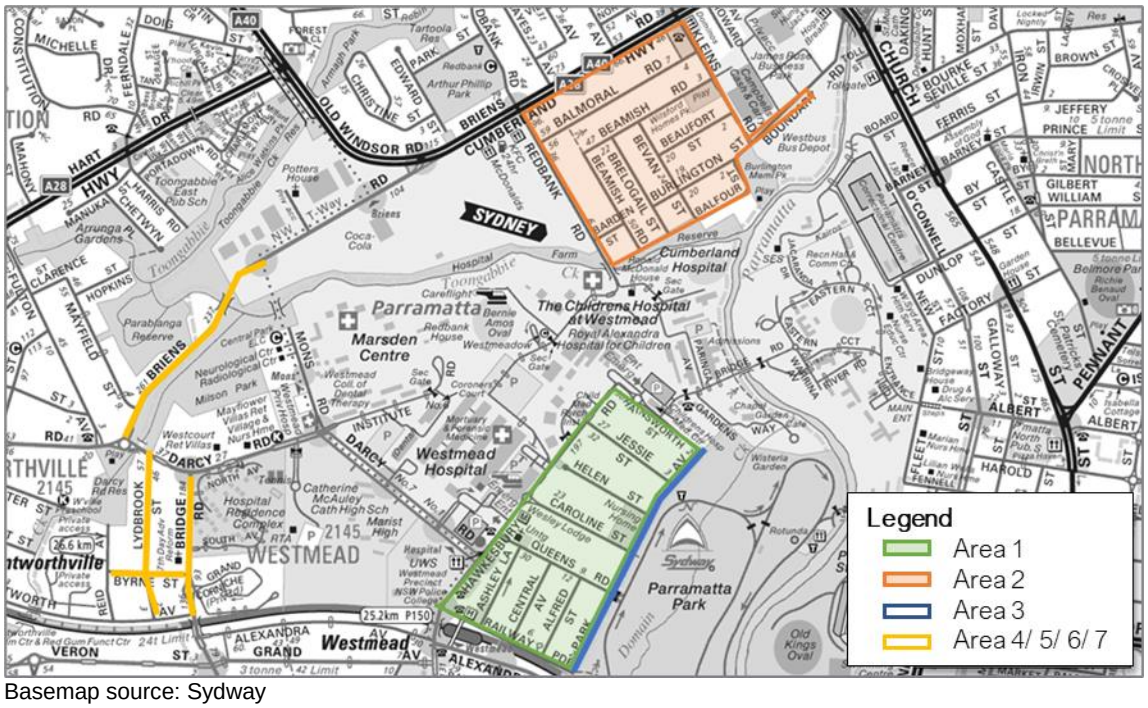
Overall, there are approximately 1,770 publicly available spaces in the surrounding area including approximately 960 unrestricted spaces.

Table 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 [1]	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

[1] Approximately five 2 hour on-street parking spaces were removed from the CASB construction site frontage during construction. Furthermore, from the commencement of Parramatta Light Rail Hawkesbury Road widening works, 57 on-street parking spaces were removed from Hawkesbury Road. 11 disabled and 16 2 hour spaces were relocated to Caroline, Helen and Jessie Street.

Figure 7: Relevant on-street parking areas



Basemap 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.

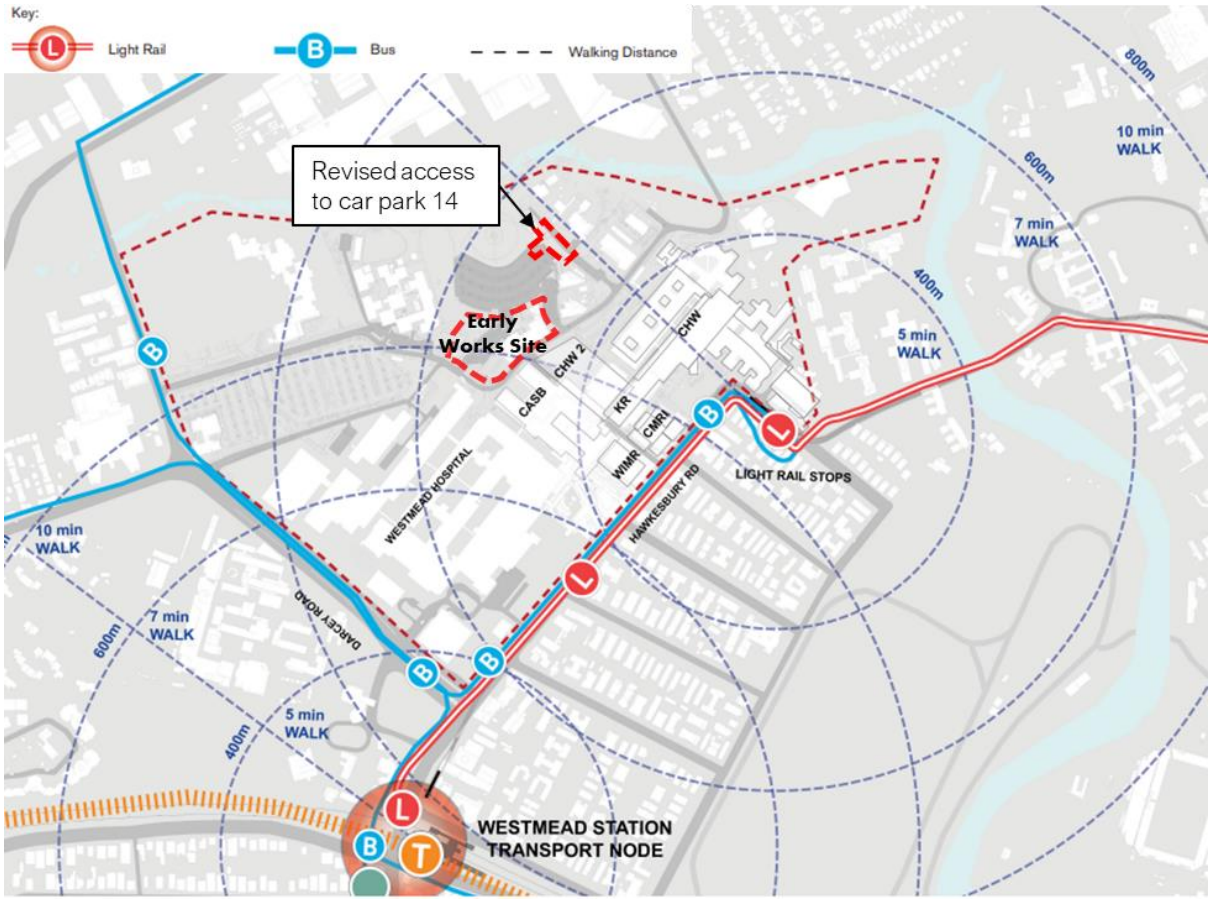
The site is therefore well connected and near several existing and future public transport services, including existing high frequency bus corridors and heavy rail, and future Parramatta Light Rail and Sydney Metro West services. The sites accessibility with regards to the various services is illustrated in Figure 8.

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 8.

Figure 8: 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 IMHC 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.

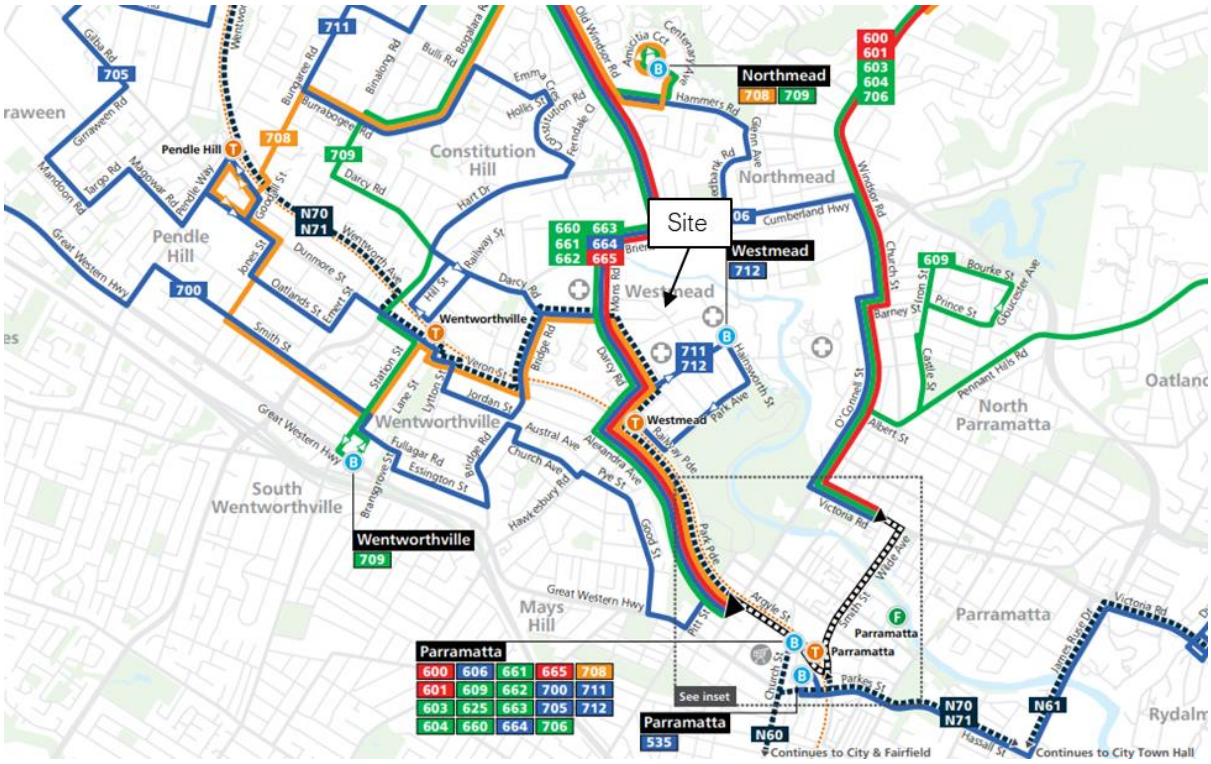
The existing public transport services in the vicinity of the Westmead Health Precinct are summarised in Table 3 and illustrated in

Figure 9.

Table 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 Castle Hill to Parramatta	5-15 mins
	661			Blacktown to Parramatta	
	663, 664, 665, 666			Rouse Hill Station to Parramatta	
	708			Constitution Hill to Parramatta	2 services per day (1 during AM peak)
	705			Blacktown to Parramatta	30 min

Figure 9: Bus network map



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

3.5.3 FUTURE SERVICES

3.5.3.1 Parramatta Light Rail

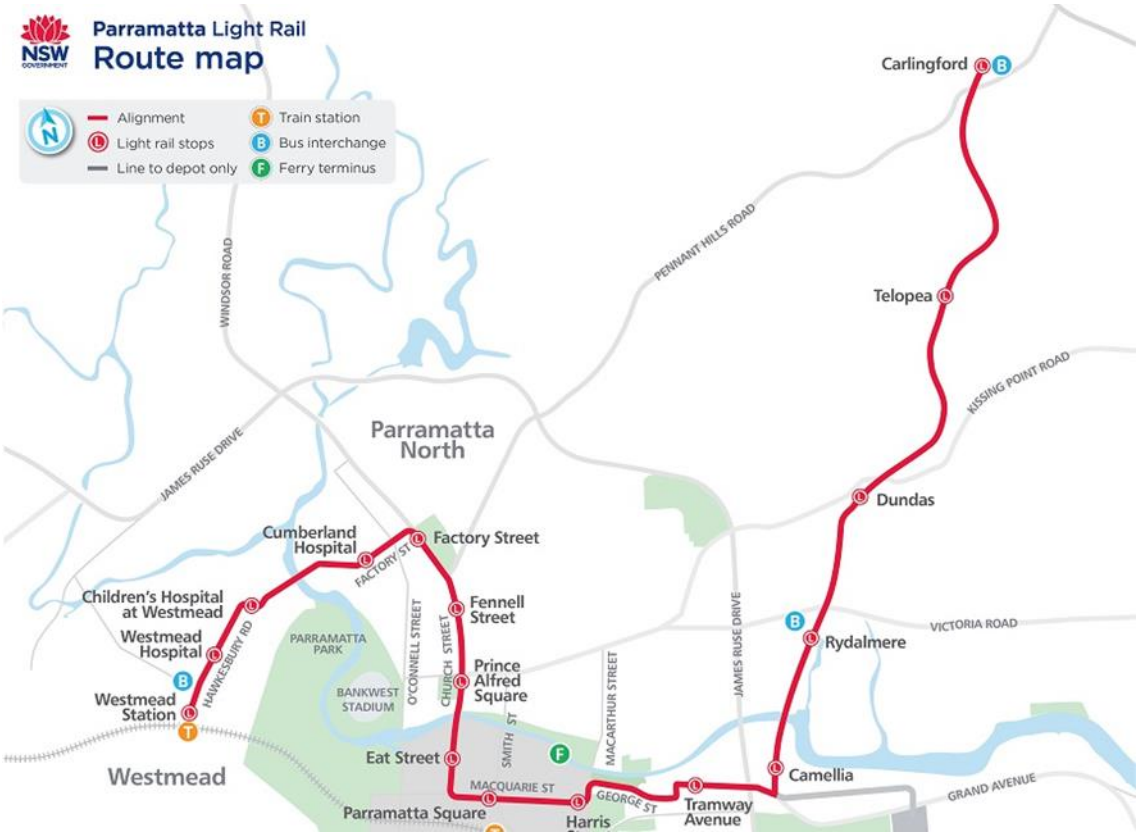
The Parramatta Light Rail Stage 1 route will connect Westmead with Carlingford via the Parramatta CBD. The route will provide a high frequency transport service to support existing residential catchments as well as several priority urban renewal precincts in the greater Parramatta to Olympic Peninsula 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 10. 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 in 2023 and is expected to approximately align with the commencement of the Early Works Project.

Figure 10: Parramatta Light Rail route map



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

3.5.3.2 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 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.

At this time, the Sydney Metro West is not expected to be available during the Early Works construction period.

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.

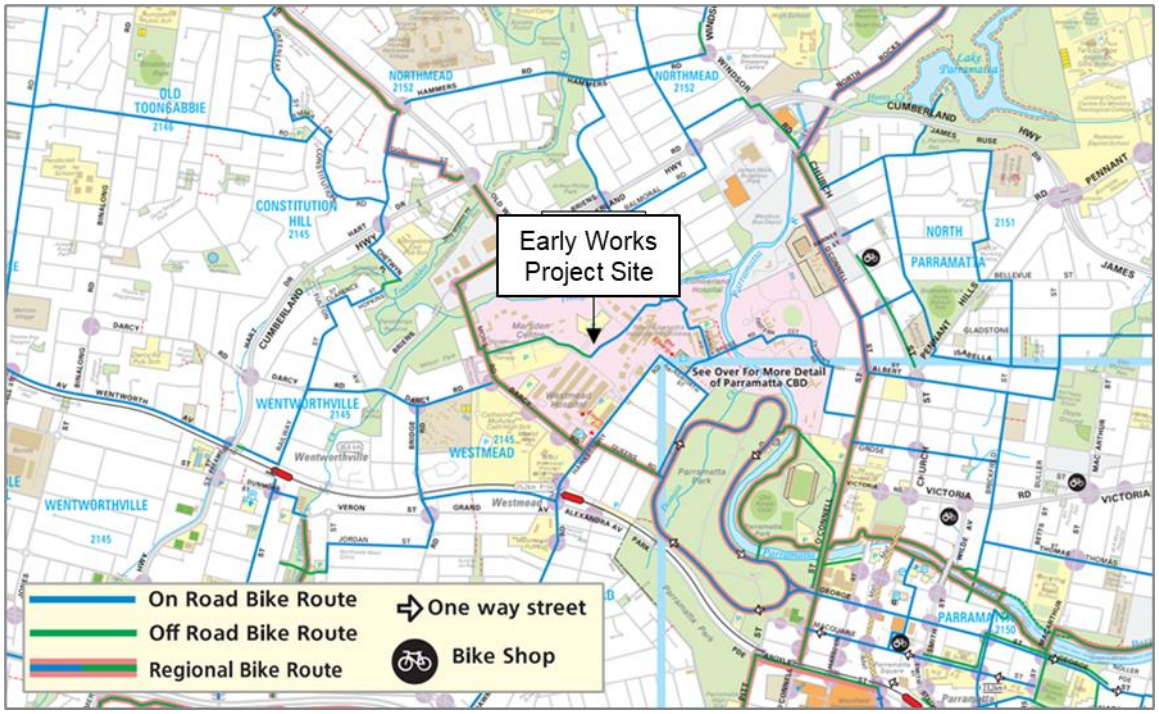
The Parramatta Light Rail will also result in significant improvements to the pedestrian domain along Hawkesbury Road to Westmead Railway Station. Signalised pedestrian crossings will be available at the intersections of Hawkesbury Road with Darcy Road, Caroline Street and the CASB forecourt egress near 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 11. 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 11: 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 12 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 12 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 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 4 Travel characteristics comparison for Westmead Health Campus destination zone (114913685)

Mode	2011 JTW Data Travel Zone	2016 JTW Data Destination 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 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 Development Proposal

5 Traffic, Access and Car Parking

5.1 Car Parking

IMHC (proposed separately as part of State Significant Development Application SSD-44034342)

A parking demand study was prepared to understand the parking requirements of the IMHC (subject to a separate planning pathway), based on the WSLHD Mental Health Clinical Services Plan, resulting in the following car parking requirements:

- 349 staff spaces
- a minimum of 27 short stay visitor parking spaces.

P23 was constructed in 2020 to temporarily relocate parking demand from a CHW staff MSCP demolished as part of early works for the CHW Redevelopment Stage 2. P23 was intended to accommodate CHW staff parking demand for a short period, with the CHW Redevelopment Stage 2 delivering a new MSCP along Redbank Road at the eastern portion of the campus that will accommodate existing parking demand allocated to P23, as well as any uplift in parking demand generated by the redevelopment. Following opening of the new MSCP, all staff parking in P23 will be transferred to the new MSCP and parking spaces in P23 will be unallocated (i.e. the car park will remain empty until a new development requires its use).

With this in mind, a Car Parking Working Group has been established at the Westmead Health Precinct between WSLHD, SCHN, Westmead Hospital and Western Sydney Mental Health Service representatives, Health Infrastructure and redevelopment project managers and consultants. The primary objective of this group is to develop proactive car parking strategies across the Precinct considering the various redevelopment projects, anticipating challenges and enacting mitigation measures.

Following consultation with the car parking working group, the following car parking strategy has been agreed for IMHC (subject to a separate planning pathway):

- IMHC staff to utilise spare capacity in Car Park 23, following CHW staff relocating to the proposed CHW MSCP
- IMHC short stay parking for 28 spaces to be provided on site in the form of a new at-grade car park, with access from Redbank Road
- displaced CHW staff parking within Car Park 14 to ultimately be relocated to CHW MSCP following CHW MSCP opening in early 2024.

This strategy is possible due to P23 becoming vacant following opening of the new CHW MSCP, with all CHW staff currently parking in P23 to relocate into the new MSCP. As P23 will no longer be required to accommodate CHW parking demands, all parking demand generated by IMHC can be accommodated in this car park.

Early Works (subject of this application)

Further to the above and to accommodate the proposed IMHC, early works (subject of this application) will result in the removal and relocation of parking from Car Park 14 and along the HealthShare/ CareFlight access road as discussed below.

CareFlight

This includes the removal of 22 informal parking spaces along the HealthShare / CareFlight access road, currently used by CareFlight employees. Following consultation with the Car Park Working Group, it is understood CareFlight currently benefit from unregulated/ free parking at Westmead Health Precinct, noting they do not have any formal agreement to use this land for parking. As such, the Car Park Working Group agreed for the CareFlight parking supply to be rationalised to four formal parking spaces north-west of the new access ramp to Car Park 14 as part of this project.

HealthShare Car Parking

As discussed in Section 3.4.1, HealthShare currently have access to two parking areas, including a car park to their north that has capacity for 35 formal parking spaces and two informal parking spaces at its eastern edge, as well as 18 formal indented parking bays to their west along the access road, resulting in a total supply of around 55 spaces. The HealthShare tenancy is proposed to be vacated prior to the commencement of Early Works, with their parking supply to be transferred back to WSLHD/ SCHN.

Following discussions with the Car Parking Working Group, SCHN expressed desire to implement access control to the northern car park, noting this is critical to prevent the misuse of parking facilities across campus by staff. As such, the installation of boom gates at the western edge of this car park has been incorporated into the Early Works Project. The works will result in the loss of two formal parking spaces and hence the existing HealthShare parking areas will have a revised supply of 53 parking spaces, including 35 spaces in the northern car park (33 formal spaces, two informal spaces on eastern edge) and 18 formal indented parking bays to the west along the access road.

Car Park 14

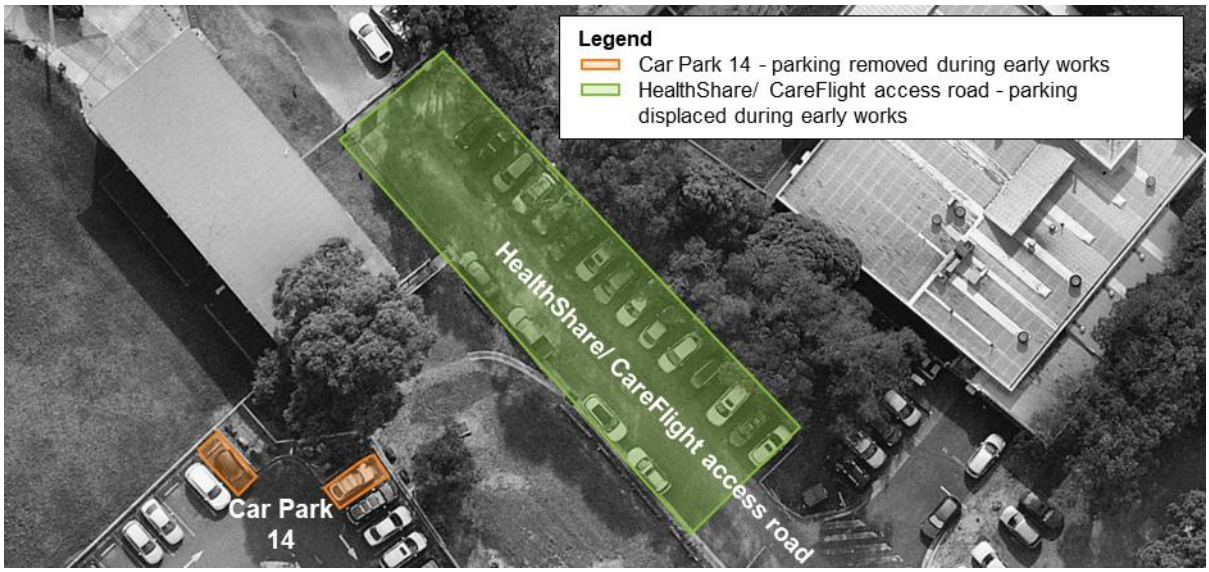
During the Early Works Project, around 87 spaces will be temporarily removed from Car Park 14 as shown in Figure 14 and Figure 15, with 22 spaces reinstated upon completion and hence the Car Park will have a total loss of 65 parking spaces. The HealthShare tenancy is proposed to be vacated prior to the commencement of Early Works, with their parking supply to be transferred back to WSLHD/ SCHN. As such, around 53 parking spaces will be available for use by CHW staff displaced from Car Park 14.

Based on this, the Early Works Project would result in the loss of 12 CHW staff parking spaces. Following opening of the CHW MSCP, this parking demand will be transferred to the MSCP in-line with the broader IMHC car parking strategy and hence there will be no net loss of parking on site. As such, the temporary loss of 12 CHW staff parking spaces is expected to occur for up to a period of around three months. During this time, the demand for 12 spaces could be accommodated within spare capacity for existing parking facilities, noting this is within a reasonable tolerance of day to day fluctuations of parking demand on site.

Figure 14: Parking removed from car park 14 during Early Works [1]

Base image source: Nearmap
[1] The exact number of spaces displaced during Early Works will be determined by the appointed D&C contractor

Figure 15: Parking removed from car park 14 and HealthShare/ Careflight access road during Early Works



Base image source: Nearmap

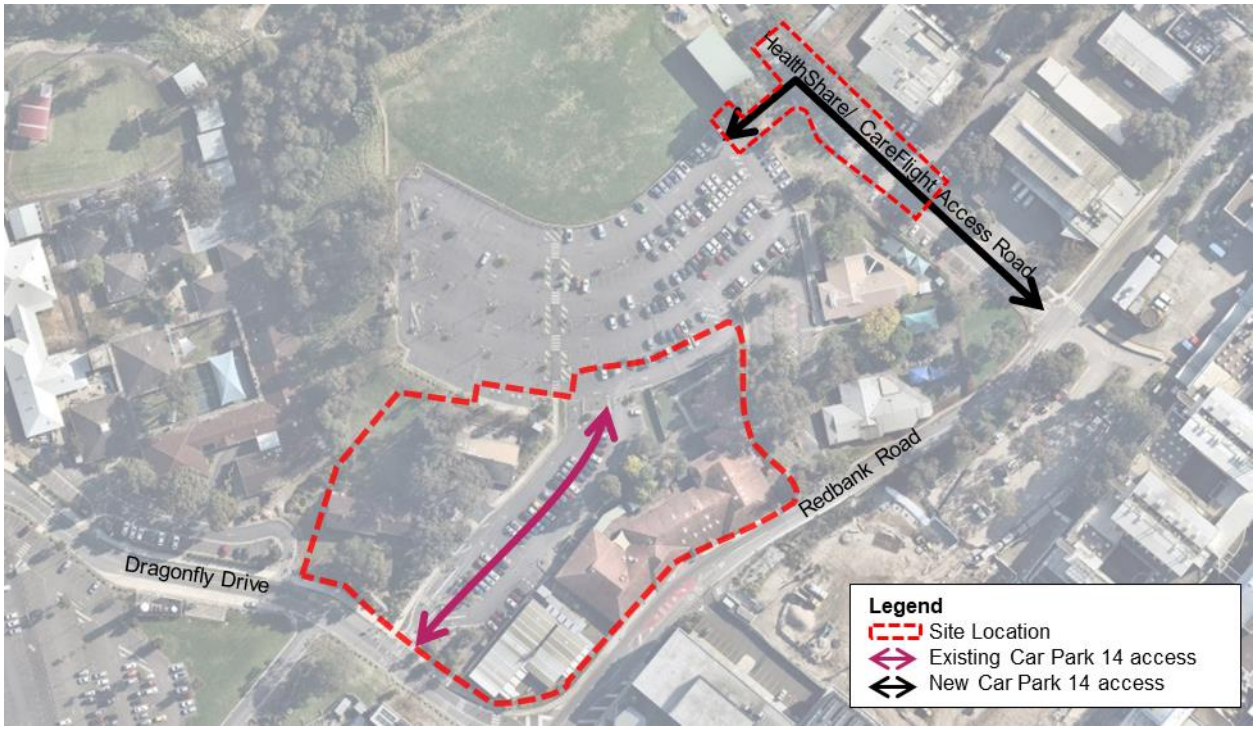
WSLHD and SCHN, in consultation with the appointed contractor, will manage the relocation of CHW staff parking from Car Park 14 to the HealthShare car parking areas.

5.2 Vehicle Access

Car Park 14

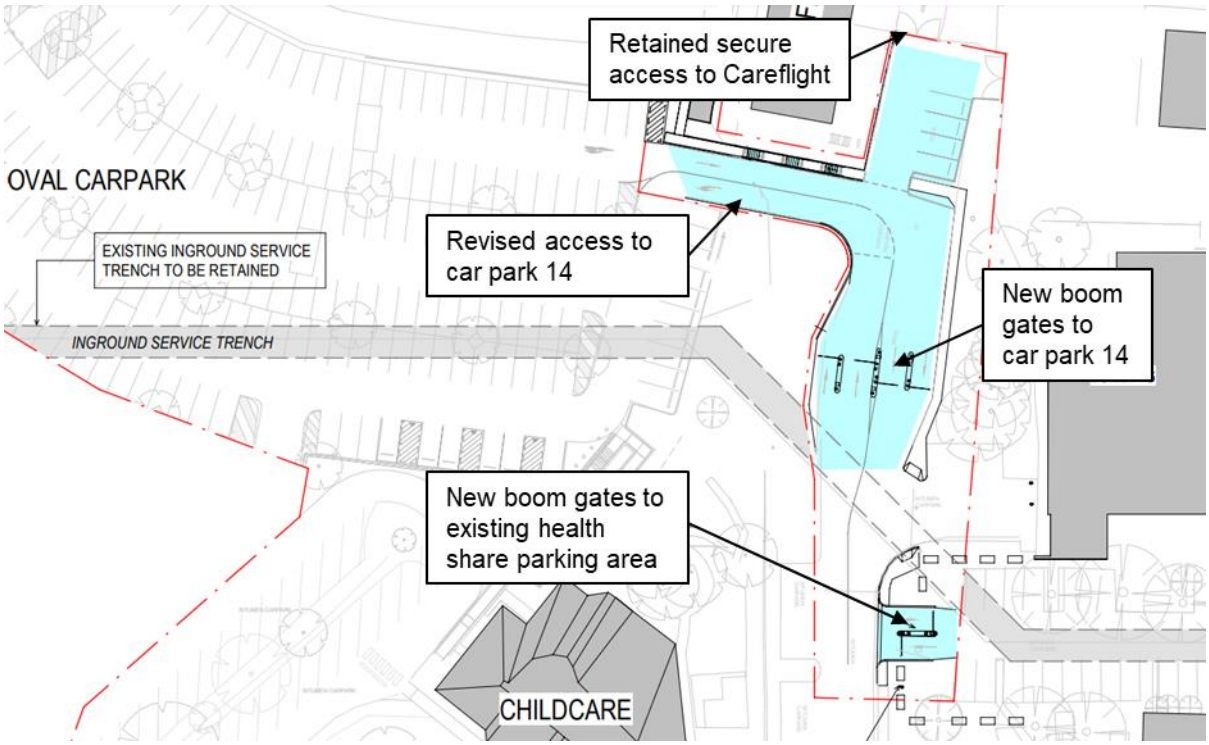
The existing access road from Dragonfly Drive to Car Park 14 is proposed to be closed, with modified access arrangements proposed from the HealthShare/ CareFlight Access Road as shown in Figure 16 and Figure 17.

Figure 16: Revised access route to Car Park 14



Base image source: Nearmap

Figure 17: Revised access to Car Park 14



Key design principles considered during development of the modified access solution include:

- maintain current access and boom gate queueing capacity
- no additional impact on Redbank Road/ Dragonfly Drive.
- maintain access to CareFlight and HealthShare services.

The modified access is expected to operate well, with the same serviceability as existing and additional boom gate queuing capacity on entry ensuring that queueing from the boom gates will not impact general traffic flow along Redbank Road. Access to CareFlight will be retained, with approved users allowed to pass through the boom gates in order to enter the facility. As discussed in Section 5.1, four CareFlight parking spaces will be provided north of the revised P14 access, with approved users of said parking issued permits to pass through boom gates.

As discussed in Section 5.1, following discussions with the Car Parking Working Group, SCHN expressed desire to implement access control to the northern car park. As such, the construction of boom gates at the western edge of this car park has been incorporated into the Early Works Project. Given the low quantum of parking in this area (37 vehicles in total), the boom gates are expected to operate well with minimal (if any) queueing.

The design of the revised P14 access and new HealthShare car park boom gates seek to meet the requirements outlined in the following documents as relevant:

- Australian Standard for Off Street Car Parking (AS/NZS2890.1:2004, AS/NZS2890.2:2018 and AS/NZS2890.6:2009)
- Sustainable Hospital Car Park Investment Program Volume 3, Hospital Car Park Design Guidelines V1.2, Health Infrastructure, May 2019

Review of both accesses indicates they are generally in accordance with the abovementioned Australian Standards and Guidelines and is expected to operate satisfactorily. A swept path assessment has been completed for the revised Car Park 14 access and HealthShare car park boom gates, contained in Appendix A.

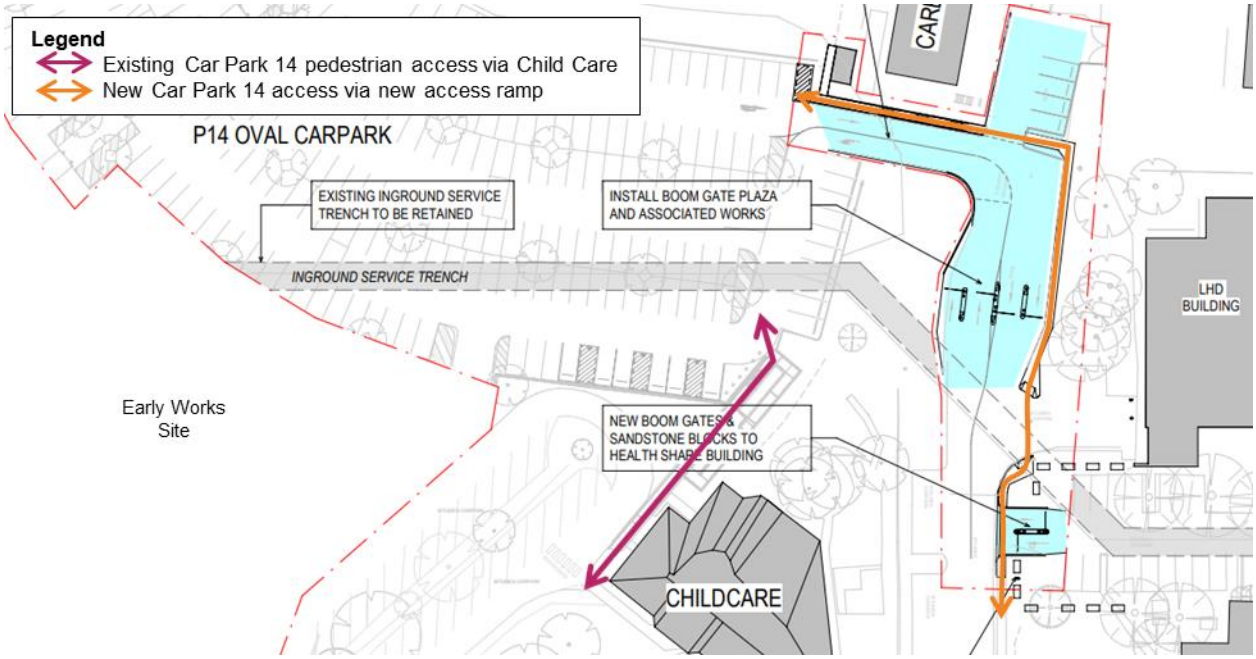
5.3 Pedestrian Facilities

The existing access road (including pedestrian path) from Dragonfly Drive to Car Park 14 is proposed to be closed as shown in Figure 16.

A new pedestrian path is proposed along the northern and eastern edge of the revised access to Car Park 14, connecting into the existing pedestrian footpath on the eastern edge of the HealthShare/ CareFlight access road. The current DDA compliant path from P14 to Redbank Road via the childcare car park will be retained and remains the primary footpath connection in this regard.

Revised pedestrian access into Car Park 14 is shown in Figure 18.

Figure 18: Car park 14 pedestrian access



5.4 Traffic Impact

5.4.1 EXTERNAL TRAFFIC IMPACT

The Early Works Project will not result in a change in traffic generation of the Westmead Health Precinct. Further, it will result in a minor redistribution of vehicular activity internal to the precinct, with only minimal, if any, change expected external to the site.

As such, the Early Works Project is not expected to result in any change to traffic conditions around the site and could not be expected to compromise the safety or function of the surrounding road network.

5.4.2 INTERNAL TRAFFIC IMPACT

Works will result in the minor redistribution of vehicular activity along the Westmead Health Precinct internal road network (namely Redbank Road), as a result of the revised access arrangements into Car Park 14, as well as the relocation of CHW staff parking into the CHW MSCP.

The modified Car Park 14 access has been designed with additional boom gate queuing capacity on entry ensuring that queueing from the boom gates will not impact general traffic flow along Redbank Road.

Redbank Road does not currently have right turn bays at the HealthShare/ CareFlight access road (proposed new P14 access point) and no modifications to Redbank Road are proposed at this location. Given the location is effectively the centre of the campus, any potential delays to through movements may encourage vehicles attempting to travel across the campus to approach their destination via the external road network instead, hence reducing the additional traffic through the centre of the campus. As such, it is considered reasonable to continue not providing right turn bays at this location.

5.5 Construction Traffic Impact

The preparation of a Construction Traffic Management Plan (CTMP) will be undertaken by the appointed contractor, however in order to understand the potential construction impacts, Stantec has prepared a preliminary CTMP contained in Appendix B.

6 Conclusion

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

- The Early Works Project at Westmead Hospital proposes a series of infrastructure improvements to accommodate the future development of the Integrated Mental Health Complex (proposed separately as part of State Significant Development Application SSD-44034342).
- The site is well serviced by both existing future public transport services, including train and bus services, as well as future light rail and metro services, providing convenient connections with key local and regional destinations.
- The key transport elements of the proposal are:
    - removal of some existing parking spaces within staff Car Park 14 and along the HealthShare/ CareFlight access road. The strategy developed in consultation with the Car Parking Working Group relocates displaced car parking elsewhere in the Precinct, such that there is only a temporary loss of parking (12 spaces) for a period of around three months.
    - closure of the existing access road from Dragonfly Drive to Car Park 14, with modified vehicular and pedestrian access arrangements proposed from the HealthShare/ CareFlight access road
    - construction of boom gates at the western edge of the HealthShare car park
- The Early Works Project is not expected to result in any change to traffic conditions around the site and could not be expected to compromise the safety or function of the surrounding road network.
- Review of the revised Car Park 14 access and new HealthShare car park boom gates indicates that the development is generally in accordance with the Australian Standards and Guidelines and is expected to operate satisfactorily.
- A Construction Traffic Management Plan (CTMP) will be developed by the contractor.

APPENDICES

Appendix A Swept Path Assessment

'CAREFLIGHT' DRIVEWAY WIDTH OF IS CONSIDERED SUITABLE FOR FOR TWO-WAY FLOW FOR VEHICLES UPTO AMBULANCES & SRV. AS PER EXISTING ARRANGEMENTS, VEHICLES WILL NEED TO GIVEWAY TO ON-COMING LARGER VEHICLES

RESTRICTED PARKING FOR CAREFLIGHT STAFF COMPLIES WITH AS890.1:2004.
VEHICLE ACCESS TO VIVARIAM SITE RETAINED

KERBLINE AND MEDIAN (TO HOUSE CONTROLS) SHOWN. FINAL LAYOUT OF CONTROLS SUBJECT TO HI SUPPLIERS SPECIFICATIONS)
MAXIMUM GRADE TO BOOMGATE TO BE A MINIMUM 6m@1:20

MINIMUM LANE WIDTH FOR SERVICE VEHICLES OF 3.5m COMPLY WITH AS2890.2:2018 REQUIREMENTS.
LARGER HRV VEHICLES WILL REQUIRE TO TAKE CARE AND APPROACH STRAIGHT TO CENTRAL CONTROLS.

ARTICULATED VEHICLES WILL BE ABLE TO REVERSE THROUGH 4m ENTRY CONTROL. IN REALITY MULTIPLE CORRECTIVE MANOEUVRES MAY BE REQUIRED.
TRAFFIC MARSHALS REQUIRED TO CONTROL OTHER VEHICLES AND ASSIST WITH DIRECTING DRIVER.
DRIVERS TO TAKE CARE AND APPROACH, AT LOW SPEED, STRAIGHT TO CONTROLS TO REDUCE RISK OF CONFLICT WITH MEDIANS AND CONTROL UNIT.

(RELEVANT STAKEHOLDERS TO BE MADE AWARE AND CONFIRM ACCEPTANCE OF ACCESS ARRANGEMENTS), INCLUDING FUEL DELIVERY COMPANY AND CAREFLIGHT

RAMPS GRADES ASSESSED FOR LARGEST DESIGN VEHICLE ACCESSING CAREFLIGHT.
VEHICLES UPTO 20m ARTICULATED HAVE BEEN ASSESSED (DRAWING 301400181-09-P2) FOR ACCESS.
ISSUE P2 SHOWED NO SCRAPING BY ARTICULATED VEHICLES ON ENTRY OR EXIT

RETAIN EXISTING PARKING ARRANGEMENT AND PROVIDE PEDESTRIAN ZONE AT TOP OF STAIRS

RETAIN EXISTING PARKING ARRANGEMENT

BOOMGATE LAYOUT AND OPERATION

3.0m - ENTRY - LEFT LANE - CARS / VANS ONLY
4.0m - ENTRY - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.5m* - EXIT - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.0m - EXIT - LEFT LANE - CARS / VANS ONLY.

* MINIMUM LANE WIDTH FOR SERVICE VEHICLES OF 3.5m HAVE BEEN PROVIDED TO COMPLY WITH AS2890.2:2018 REQUIREMENTS. SWEPT PATHS SHOW ACCESS IS ACHIEVABLE WITH 300mm CLEARANCES

RAMPS GRADES ASSESSED FOR LARGEST DESIGN VEHICLE ACCESSING CAREFLIGHT.
VEHICLES UPTO 20m ARTICULATED HAVE BEEN ASSESSED (DRAWING 301400181-09-P2) FOR ACCESS.
ISSUE P2 SHOWED NO SCRAPING BY ARTICULATED VEHICLES ON ENTRY OR EXIT

ARCHITECTURAL BASE IN BLUE
DRAWING 230216 SK01 Careflight update gates - L0
REVISION -
BY JACOBS
RECEIVED 16.02.2023

U:\301400181\CAD\301400181-03-P7.DWG PLOTTED BY OBERMAIER, HEIKO ON 17/02/2023 AT 13:46

Stantec

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED	DESIGN CHECK
H.OBERMAIER	I.BISSAKER
APPROVED BY	DATE ISSUED
B.MAYNARD	17 FEBRUARY 2023

SCALE A3 0 2 4 8 1:400
CAD FILE NO. 301400181-03-P7.DWG

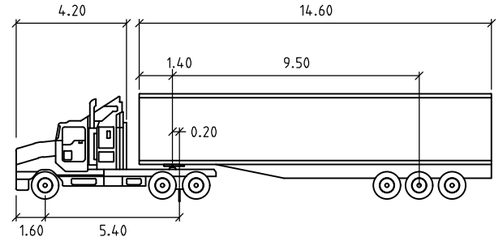
CUMBERLAND - P14 RAMP
CAREFLIGHT ACCESS ASSESSMENT
PROPOSED BOOMGATE LAYOUT
LAYOUT COMPLIANCE AND COMMENTS

DRAWING NO. 301400181-03-01 SHEET 01 OF 06 ISSUE P7

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h



AV AS2890.2 20m

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 28.3
Tractor Track	: 2.50	Articulating Angle	: 72.0
Trailer Track	: 2.50		

N

MAXIMUM GRADE TO CONTROL POINTS 6m@1:20

REVERSE ENTRY UNDER TRAFFIC MARSHAL ASSISTANCE

ARTICULATED VEHICLES WILL BE ABLE TO REVERSE THROUGH CONTROLS. IN REALITY MULTIPLE CORRECTIVE MANOEUVRES MAY BE REQUIRED.
TRAFFIC MARSHALS REQUIRED TO CONTROL OTHER VEHICLES AND ASSIST WITH DIRECTING DRIVER.
DRIVERS TO TAKE CARE AND APPROACH, AT LOW SPEED, STRAIGHT TO CONTROLS TO REDUCE RISK OF CONFLICT WITH MEDIANS AND CONTROL UNIT.

BOOMGATE LAYOUT AND OPERATION

3.0m - ENTRY - LEFT LANE - CARS / VANS ONLY
4.0m - ENTRY - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.5m* - EXIT - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.0m - EXIT - LEFT LANE - CARS / VANS ONLY.

* MINIMUM LANE WIDTH FOR SERVICE VEHICLES OF 3.5m HAVE BEEN PROVIDED TO COMPLY WITH AS2890.2:2018 REQUIREMENTS. SWEPT PATHS SHOW ACCESS IS ACHIEVABLE WITH 300mm CLEARANCES

RAMPS GRADES ASSESSED FOR LARGEST DESIGN VEHICLE ACCESSING CAREFLIGHT. VEHICLES UPTO 20m ARTICULATED HAVE BEEN ASSESSED (DRAWING 301400181-09-P2) FOR ACCESS.
ISSUE P2 SHOWED NO SCRAPING BY ARTICULATED VEHICLES ON ENTRY OR EXIT

Stantec

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
BEWARE OF UNDERGROUND SERVICES
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DESIGNED H.OBERMAIER	DESIGN CHECK I.BISSAKER
APPROVED BY B.MAYNARD	DATE ISSUED 17 FEBRUARY 2023

SCALE A3 0 2 4 8 1:400

CAD FILE NO. 301400181-03-P7.DWG

CUMBERLAND - P14 RAMP
CAREFLIGHT ACCESS ASSESSMENT
PROPOSED BOOMGATE LAYOUT
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. 301400181-03-02 SHEET 02 OF 06 ISSUE P7

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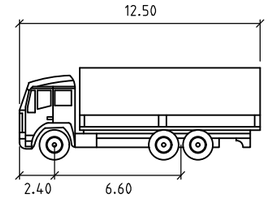
SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 35.2

N

MAXIMUM GRADE TO CONTROL POINTS 6m@1:20

HRV & MRV RIGID VEHICLES VEHICLES WILL BE ABLE TO ACCESS THROUGH CONTROLS. DRIVERS TO TAKE CARE AND APPROACH, AT LOW SPEED, STRAIGHT TO CONTROLS TO REDUCE RISK OF CONFLICT WITH MEDIANS AND CONTROL UNIT.

BOOMGATE LAYOUT AND OPERATION

3.0m - ENTRY - LEFT LANE - CARS / VANS ONLY
4.0m - ENTRY - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.5m* - EXIT - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.0m - EXIT - LEFT LANE - CARS / VANS ONLY.

* MINIMUM LANE WIDTH FOR SERVICE VEHICLES OF 3.5m HAVE BEEN PROVIDED TO COMPLY WITH AS2890.2:2018 REQUIREMENTS. SWEPT PATHS SHOW ACCESS IS ACHIEVABLE WITH 300mm CLEARANCES

RAMPS GRADES ASSESSED FOR LARGEST DESIGN VEHICLE ACCESSING CAREFLIGHT. VEHICLES UPTO 20m ARTICULATED HAVE BEEN ASSESSED (DRAWING 301400181-09-P2) FOR ACCESS.
ISSUE P2 SHOWED NO SCRAPING BY ARTICULATED VEHICLES ON ENTRY OR EXIT

Stantec

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED H.OBERMAIER	DESIGN CHECK I.BISSAKER
APPROVED BY B.MAYNARD	DATE ISSUED 17 FEBRUARY 2023

SCALE A3 0 2 4 8 1:400

CAD FILE NO. 301400181-03-P7.DWG

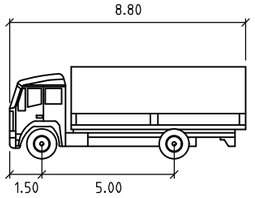
CUMBERLAND - P14 RAMP
CAREFLIGHT ACCESS ASSESSMENT
PROPOSED BOOMGATE LAYOUT
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. 301400181-03-03 SHEET 03 OF 06 ISSUE P7

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h



MRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

N

MAXIMUM GRADE TO CONTROL POINTS 6m@1:20

HRV & MRV RIGID VEHICLES VEHICLES WILL BE ABLE TO ACCESS THROUGH CONTROLS.
DRIVERS TO TAKE CARE AND APPROACH, AT LOW SPEED, STRAIGHT TO CONTROLS TO REDUCE RISK OF CONFLICT WITH MEDIANS AND CONTROL UNIT.

BOOMGATE LAYOUT AND OPERATION

3.0m - ENTRY - LEFT LANE - CARS / VANS ONLY
4.0m - ENTRY - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.5m* - EXIT - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.0m - EXIT - LEFT LANE - CARS / VANS ONLY.

* MINIMUM LANE WIDTH FOR SERVICE VEHICLES OF 3.5m HAVE BEEN PROVIDED TO COMPLY WITH AS2890.2:2018 REQUIREMENTS. SWEPT PATHS SHOW ACCESS IS ACHIEVABLE WITH 300mm CLEARANCES

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APPROVED BY B.MAYNARD	DATE ISSUED 17 FEBRUARY 2023

SCALE A3 0 2 4 8 1:400

CAD FILE NO. 301400181-03-P7.DWG

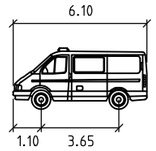
CUMBERLAND - P14 RAMP
CAREFLIGHT ACCESS ASSESSMENT
PROPOSED BOOMGATE LAYOUT
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. 301400181-03-04 SHEET 04 OF 06 ISSUE P7

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h



NSWA Sprinter 2017

	meters
Width	: 2.02
Track	: 1.98
Lock to Lock Time	: 6.0
Steering Angle	: 36.4

N

MAXIMUM GRADE TO CONTROL POINTS 6m@1:20

BOOMGATE LAYOUT AND OPERATION

3.0m - ENTRY - LEFT LANE - CARS / VANS ONLY
4.0m - ENTRY - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.5m* - EXIT - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.0m - EXIT - LEFT LANE - CARS / VANS ONLY.

* MINIMUM LANE WIDTH FOR SERVICE VEHICLES OF 3.5m HAVE BEEN PROVIDED TO COMPLY WITH AS2890.2:2018 REQUIREMENTS. SWEPT PATHS SHOW ACCESS IS ACHIEVABLE WITH 300mm CLEARANCES

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APPROVED BY B.MAYNARD	DATE ISSUED 17 FEBRUARY 2023

SCALE A3 0 2 4 8 1:400

CAD FILE NO. 301400181-03-P7.DWG

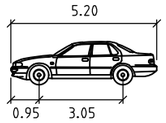
CUMBERLAND - P14 RAMP
CAREFLIGHT ACCESS ASSESSMENT
PROPOSED BOOMGATE LAYOUT
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. 301400181-03-05 SHEET 05 OF 06 ISSUE P7

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

N

MAXIMUM GRADE TO CONTROL POINTS 6m@1:20

BOOMGATE LAYOUT AND OPERATION

3.0m - ENTRY - LEFT LANE - CARS / VANS ONLY
4.0m - ENTRY - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.5m* - EXIT - RIGHT LANE - AMBULANCES / SERVICE VEHICLES / CARS / VANS
3.0m - EXIT - LEFT LANE - CARS / VANS ONLY.

* MINIMUM LANE WIDTH FOR SERVICE VEHICLES OF 3.5m HAVE BEEN PROVIDED TO COMPLY WITH AS2890.2:2018 REQUIREMENTS. SWEPT PATHS SHOW ACCESS IS ACHIEVABLE WITH 300mm CLEARANCES

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APPROVED BY B.MAYNARD	DATE ISSUED 17 FEBRUARY 2023

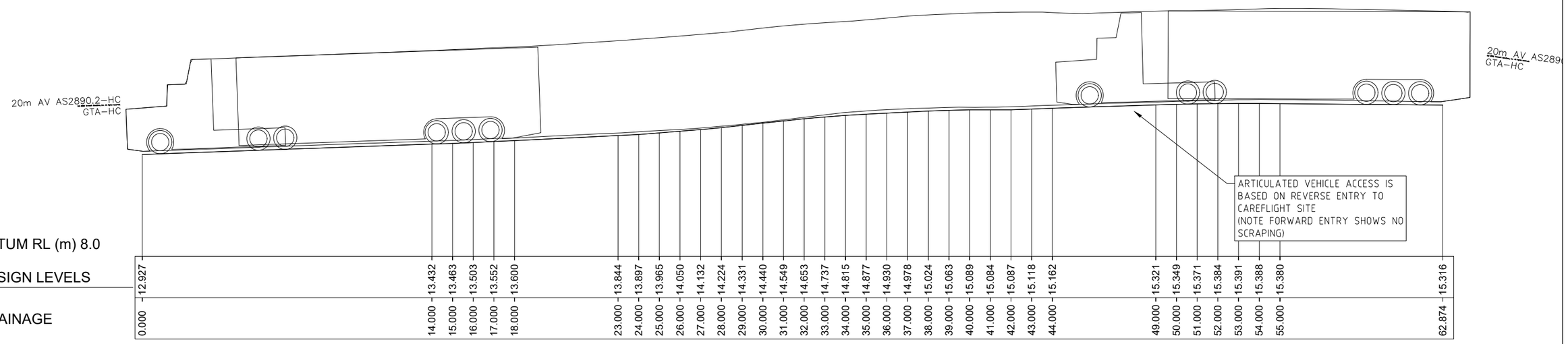
SCALE A3 0 2 4 8 1:400

CAD FILE NO. 301400181-03-P7.DWG

CUMBERLAND - P14 RAMP
CAREFLIGHT ACCESS ASSESSMENT
PROPOSED BOOMGATE LAYOUT
VEHICLE SWEPT PATH ASSESSMENT

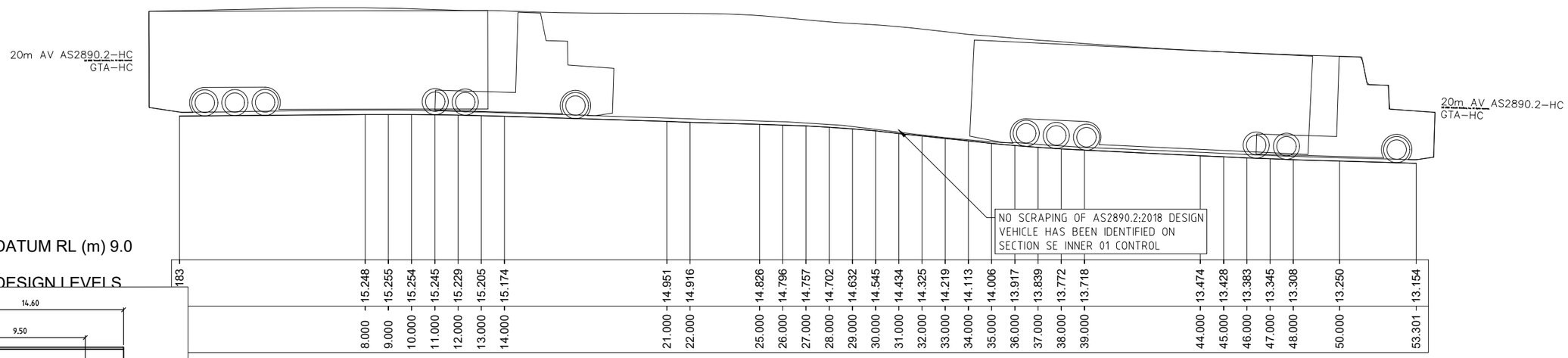
DRAWING NO. 301400181-03-06 SHEET 06 OF 06 ISSUE P7

VEHICLE ENTRY LANE

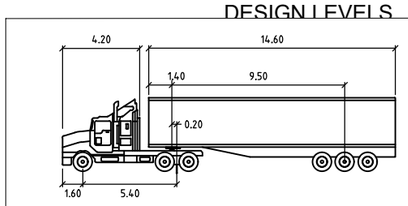


LONGITUDINAL SECTION OF NW INNER 01 CONTROL

VEHICLE EXIT LANE



LONGITUDINAL SECTION OF SE INNER 01 CONTROL



AV AS2890.2 20m

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 28.3
Tractor Track	: 2.50	Articulating Angle	: 72.0
Trailer Track	: 2.50		

ARCHITECTURAL BASE IN BLUE
DRAWING section locations_careflight.dwg
LS_NW INNER 01.dwg
LS_SE INNER 01.dwg
REVISION -
RECEIVED 25.11.2022

Stantec

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DESIGN CHECK -
APPROVED BY B.MAYNARD
DATE ISSUED 30 NOVEMBER 2022
SCALE A3 0 1 2 4 1:200
CAD FILE NO. 301400181-09-P2.DWG

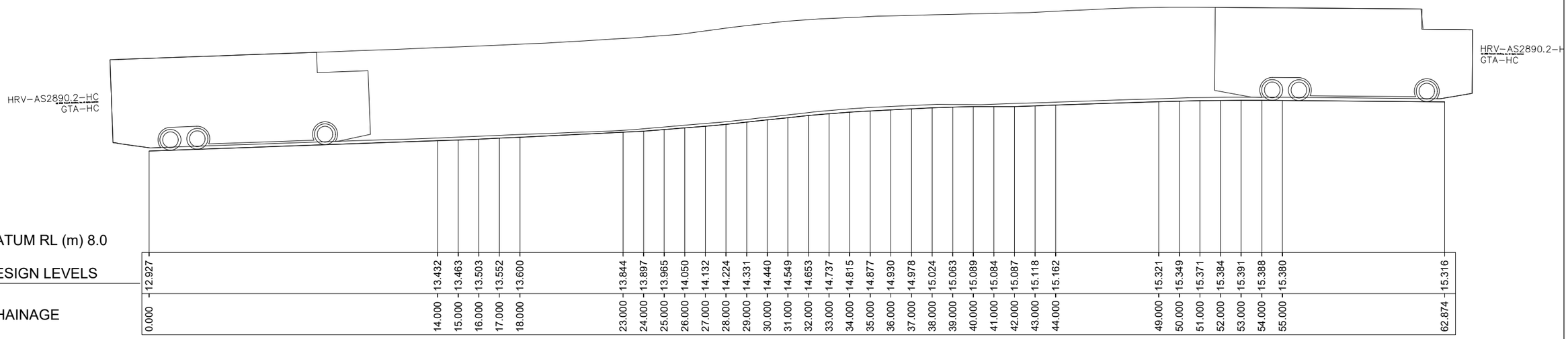
CUMBERLAND - P14 ACCESS RAMP
CAREFLIGHT ACCESS ASSESSMENT

VERTICAL TEMPLATE ASSESSMENT

DRAWING NO. 301400181-09-01 SHEET 01 OF 05 ISSUE P2

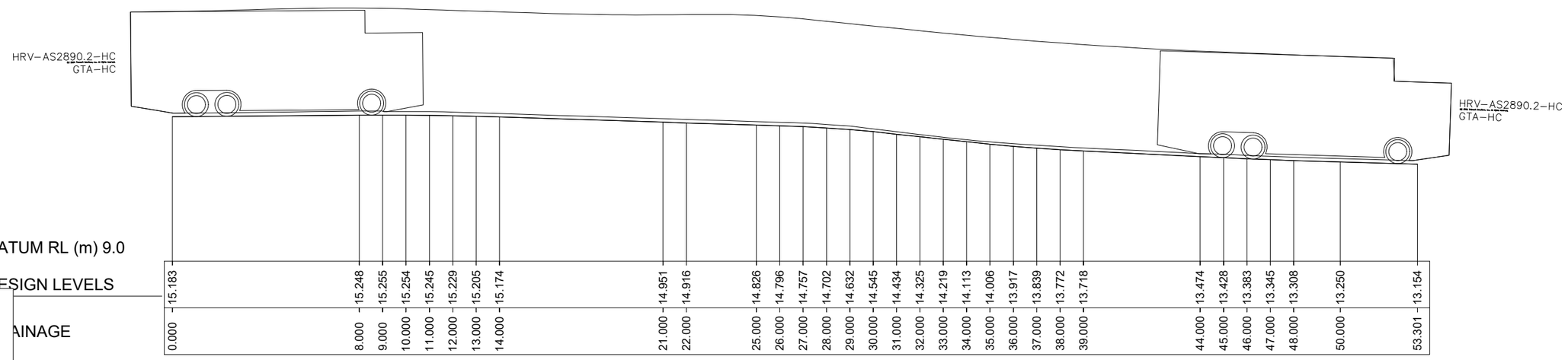
U:\301400181\CAD\301400181-09-P2.DWG PLOTTED BY OBERMAIER, HEIKO ON 30/11/2022 AT 12:14

VEHICLE ENTRY LANE

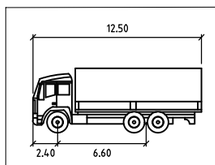


LONGITUDINAL SECTION OF NW INNER 01 CONTROL

VEHICLE EXIT LANE



LONGITUDINAL SECTION OF SE INNER 01 CONTROL



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 35.2

ARCHITECTURAL BASE IN BLUE
DRAWING section locations_careflight.dwg
LS_NW INNER 01.dwg
LS_SE INNER 01.dwg
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CAD FILE NO. 301400181-09-P2.DWG

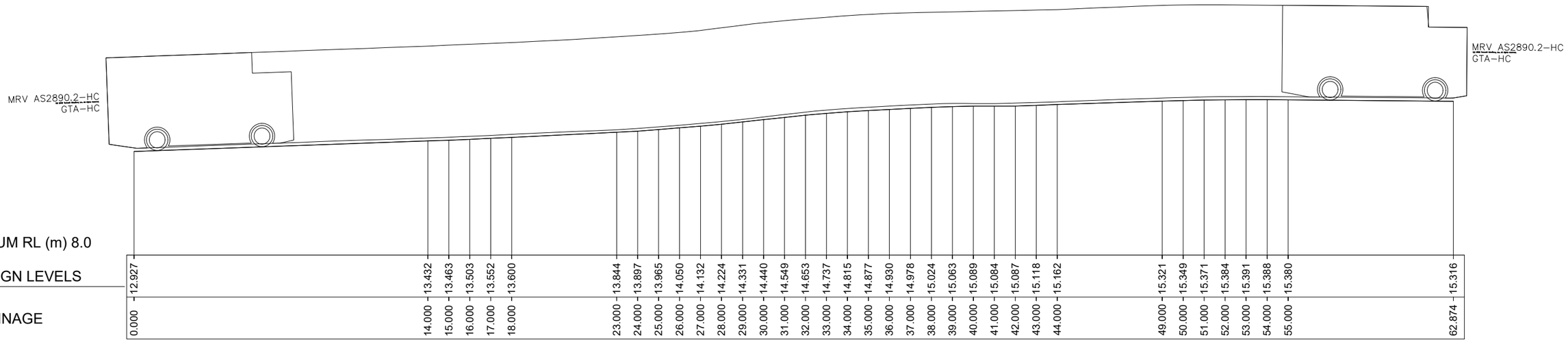
CUMBERLAND - P14 ACCESS RAMP
CAREFLIGHT ACCESS ASSESSMENT

VERTICAL TEMPLATE ASSESSMENT

DRAWING NO. 301400181-09-02 SHEET 02 OF 05 ISSUE P2

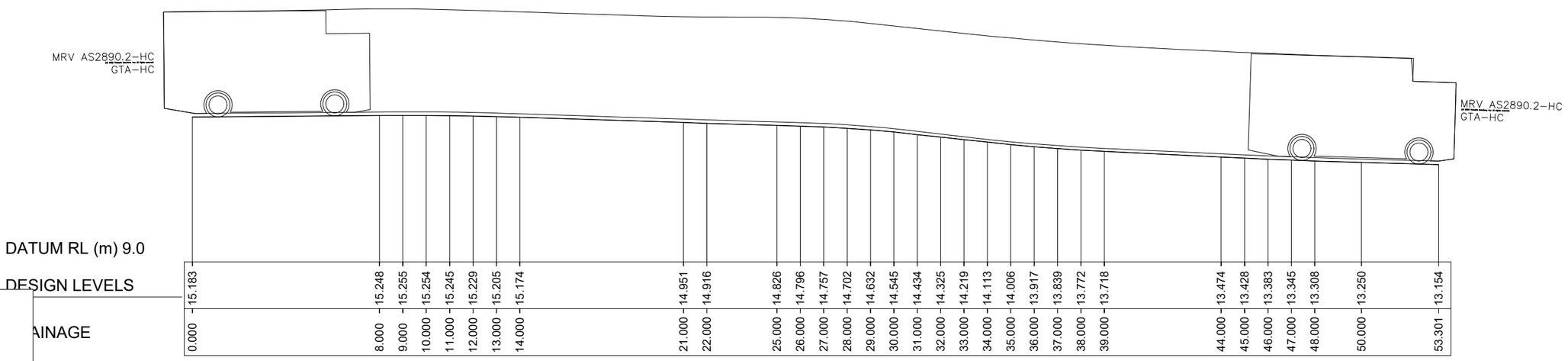
U:\301400181\CAD\301400181-09-P2.DWG PLOTTED BY OBERMAIER, HEIKO ON 30/11/2022 AT 12:14

VEHICLE ENTRY LANE

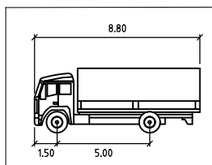


LONGITUDINAL SECTION OF NW INNER 01 CONTROL

VEHICLE EXIT LANE



LONGITUDINAL SECTION OF SE INNER 01 CONTROL



MRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

ARCHITECTURAL BASE IN BLUE
DRAWING section locations_careflight.dwg
LS_NW INNER 01.dwg
LS_SE INNER 01.dwg
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CAD FILE NO. 301400181-09-P2.DWG

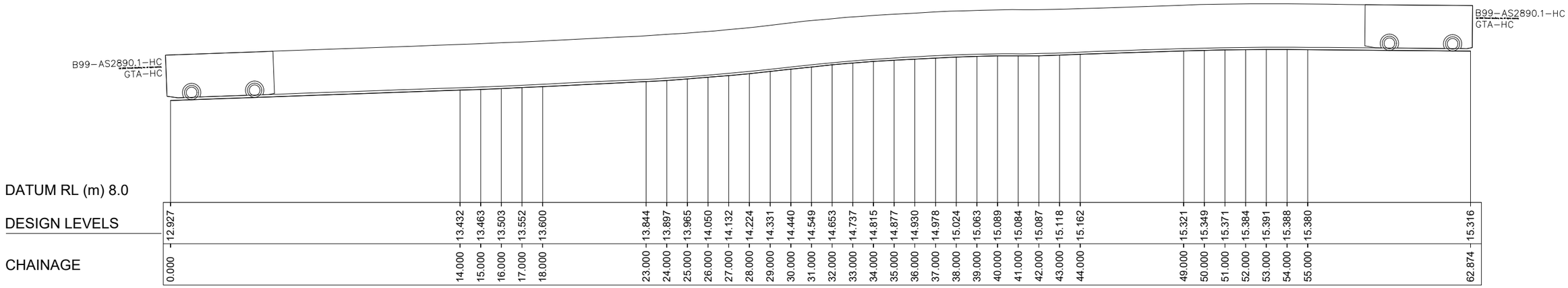
CUMBERLAND - P14 ACCESS RAMP
CAREFLIGHT ACCESS ASSESSMENT

VERTICAL TEMPLATE ASSESSMENT

DRAWING NO. 301400181-09-03 SHEET 03 OF 05 ISSUE P2

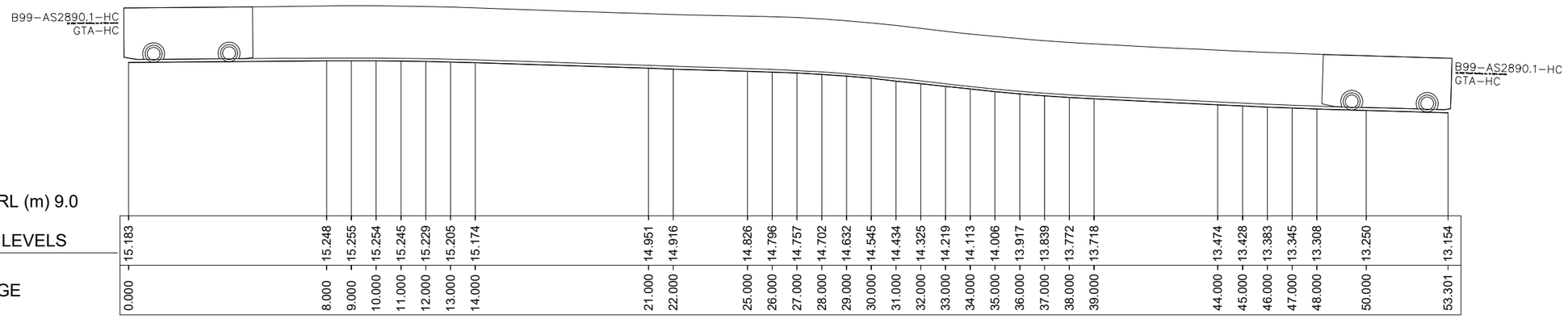
U:\301400181\CAD\301400181-09-P2.DWG PLOTTED BY OBERMAIER, HEIKO ON 30/11/2022 AT 12:14

VEHICLE ENTRY LANE

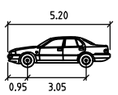


LONGITUDINAL SECTION OF NW INNER 01 CONTROL

VEHICLE EXIT LANE



LONGITUDINAL SECTION OF SE INNER 01 CONTROL



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

ARCHITECTURAL BASE IN BLUE
DRAWING section locations_careflight.dwg
LS_NW INNER 01.dwg
LS_SE INNER 01.dwg
REVISION -
RECEIVED 25.11.2022

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SCALE A3 0 1 2 4 1:200
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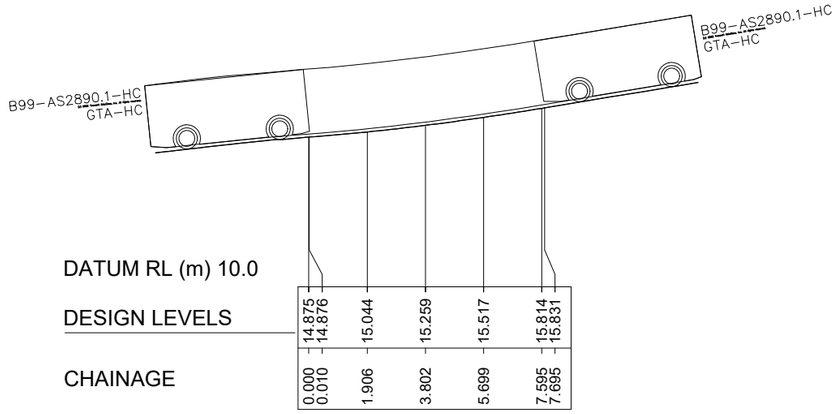
CUMBERLAND - P14 ACCESS RAMP
CAREFLIGHT ACCESS ASSESSMENT

VERTICAL TEMPLATE ASSESSMENT

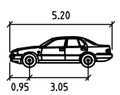
DRAWING NO. 301400181-09-04 SHEET 04 OF 05 ISSUE P2

U:\301400181\CAD\301400181-09-P2.DWG PLOTTED BY OBERMAIER, HEIKO ON 30/11/2022 AT 12:14

VEHICLE ENTRY LANE



LONGITUDINAL SECTION OF MK51 CONTROL



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

ARCHITECTURAL BASE IN BLUE
DRAWING section locations_careflight.dwg
LS_MK51.dwg
REVISION -
RECEIVED 25.11.2022

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DESIGN CHECK	-
APPROVED BY	B.MAYNARD
DATE ISSUED	30 NOVEMBER 2022
SCALE	A3 0 1 2 4 1:200
CAD FILE NO.	301400181-09-P2.DWG

CUMBERLAND - P14 ACCESS RAMP
CAREFLIGHT ACCESS ASSESSMENT

VERTICAL TEMPLATE ASSESSMENT

DRAWING NO. 301400181-09-05 SHEET 05 OF 05 ISSUE P2

U:\301400181\CAD\301400181-09-P2.DWG PLOTTED BY OBERMAIER, HEIKO ON 30/11/2022 AT 12:14

WASTE BIN RELOCATION
(PROPOSED LOCATION TBC)

ACCESS TO CAREFLIGHT & P14
CARPARK (AS PER DESIGN)

EXISTING PARKING ARRAIGNMENT.
SOME 6.0m AISLE (TO BE RETAINED)

PROPOSED ACCESS CONTROLS, PROVIDES;
- STOPPED VEHICLE, ON ENTRY, CLEAR OF ROADWAY CARRIAGE
- COMPLIANCE TRAFFIC LANES
  - 3.0m KERB-TO-KERB
  - 3.3m KERB-TO-BARRIER
- ALIGNMENT WITH EXISTING PARKING AISLE
- SEPARATION BETWEEN CONTROLS AND FIRST PARKING BAY TO AVOID VEHICLE CONFLICT

DRIVEWAY, FOOTPATH AND SERVICES TO BE REDESIGNED TO ACCOMMODATE ACCESS CONTROLS

BITUMEN CARPARK

BITUMEN CARPARK

BITUMEN CARPARK

BITUMEN

ROADWAY

2.60
2.60
2.60
2.60
2.60
2.60
2.60
3.00
3.00
7.00
3.00
3.30
3.00
3.30

N

ARCHITECTURAL BASE IN BLUE
DRAWING 230324 EW Add Boom Gate
REVISION -
BY JACOBS
RECEIVED 24.03.2023

U:\301400181\CAD\301400181-10-P2.DWG PLOTTED BY OBERMAIER, HEIKO ON 27/03/2023 AT 08:29

Stantec

PRELIMINARY PLAN
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DESIGNED H.OBERMAIER	DESIGN CHECK I.BISSAKER
APPROVED BY B.MAYNARD	DATE ISSUED 27 MARCH 2023

SCALE A3 0 1 2 4 1:200

CAD FILE NO. 301400181-10-P2.DWG

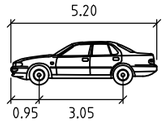
CUMBERLAND - P14 RAMP
HEALTHSCOPE ACCESS
PROPOSED BOOMGATE LAYOUT
LAYOUT COMPLIANCE AND COMMENTS

DRAWING NO. 301400181-10-01 SHEET 01 OF 03 ISSUE P2

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

N

BITUMEN CARPARK

BITUMEN CARPARK

BITUMEN CARPARK

BITUMEN

BITUMEN CARPARK

ROADWAY

2.60

B99 STANDARDS 2004 (AU_NZ)

U:\301400181\CAD\301400181-10-P2.DWG PLOTTED BY OBERMAIER, HEIKO ON 27/03/2023 AT 08:29

Stantec

PRELIMINARY PLAN
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APPROVED BY B.MAYNARD	DATE ISSUED 27 MARCH 2023

SCALE A3 0 1 2 4 1:200

CAD FILE NO. 301400181-10-P2.DWG

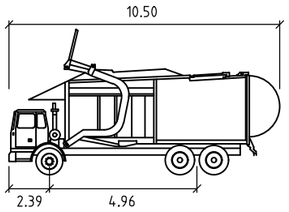
CUMBERLAND - P14 RAMP
HEALTHSCOPE ACCESS
PROPOSED BOOMGATE LAYOUT
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. 301400181-10-02 SHEET 02 OF 03 ISSUE P2

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 600mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h



Garbage 10.5m - Front

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 4.0
Steering Angle	: 34.4

U:\301400181\CAD\301400181-10-P2.DWG PLOTTED BY OBERMAIER, HEIKO ON 27/03/2023 AT 08:29

Stantec

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED H.OBERMAIER	DESIGN CHECK I.BISSAKER
APPROVED BY B.MAYNARD	DATE ISSUED 27 MARCH 2023

SCALE A3 0 1 2 4 1:200

CAD FILE NO. 301400181-10-P2.DWG

CUMBERLAND - P14 RAMP
HEALTHSCOPE ACCESS
PROPOSED BOOMGATE LAYOUT
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. 301400181-10-03 SHEET 03 OF 03 ISSUE P2

Appendix B Construction Traffic Management Plan

Stantec Australia Pty Ltd
Level 16, 207 Kent Street
Sydney NSW 2000
AUSTRALIA
ABN 17 007 820 322

31 March 2023

Project/File: 301400181/ N156192

Katie Babula

Health Infrastructure
1 Reserve Road
ST LEONARDS NSW 2065

Dear Katie,

Reference: Early Works Project at Westmead Hospital - Review of Environmental Factors Preliminary Construction Traffic Management Plan

Stantec has been commissioned by Health Infrastructure to provide transport advice and documentation as part of a Review of Environmental Factors for the Early Works Project, including preparation of a preliminary Construction Traffic Management Plan (CTMP).

The Early Works Project at Westmead Hospital proposes a series of infrastructure improvements to accommodate the future development of the Integrated Mental Health Complex (proposed separately as part of State Significant Development Application SSD-44034342).

The purpose of the Review of Environmental Factors is to assess the potential environmental impacts which could arise from the proposed works, which include:

- Demolition of the existing Brain Injury Rehabilitation Unit building, Casuarina Lodge and office buildings
- Diversion of existing in-ground sewer and water services
- Construction of a new access way to the staff Car Park 14
- Install boom gate plaza to existing Health Share parking area
- Flood mitigation works
- Bulk earthworks and tree removal to accommodate the carrying out of the above works.

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.

This preliminary CTMP has been prepared to examine the impacts of the construction works on the surrounding road network and to detail the proposed construction traffic and pedestrian management measures.

Specifically, the preliminary CTMP considers the following:

- construction site access arrangements
- anticipated truck volumes during construction stages
- truck routes to/ from the site
- requirements for a works zone
- pedestrian and cyclist access
- site personnel parking
- traffic control measures.

1 Site Context

1.1 Overview

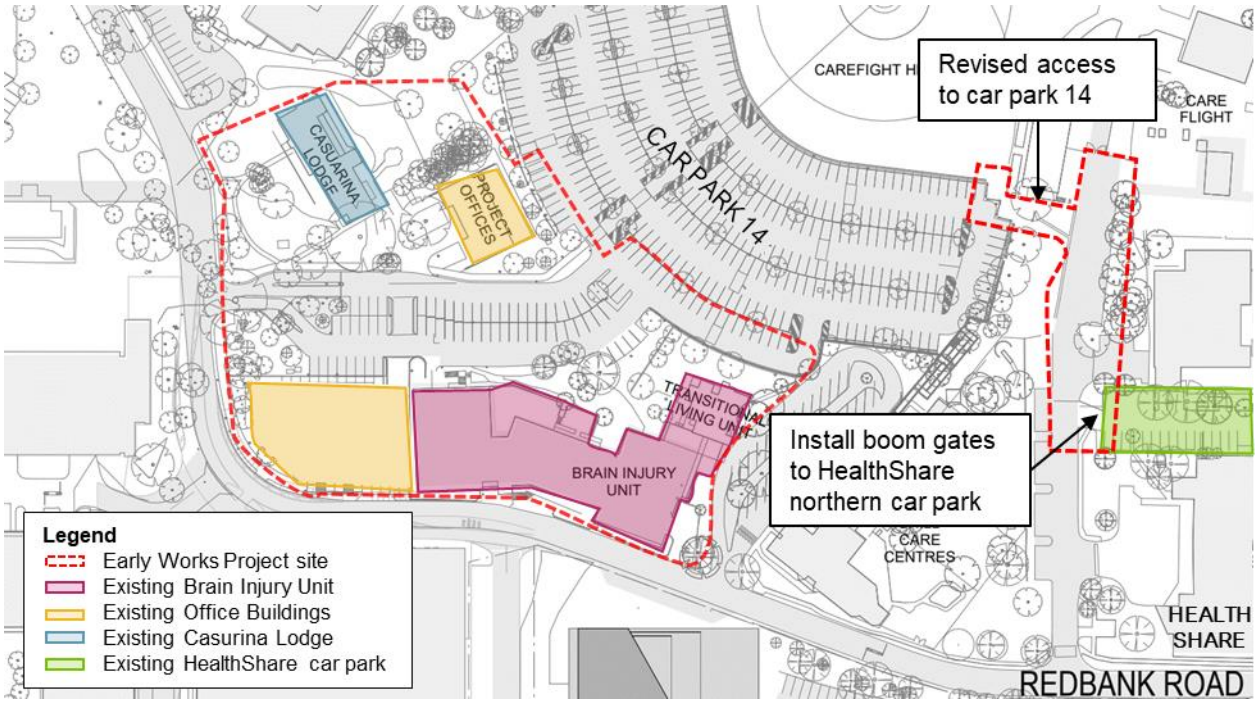
In May 2022, the NSW Government announced the investment of $460 million into the development of a new Integrated Mental Health Complex (IMHC) at Westmead, that will transform the delivery of mental health services across Western Sydney and deliver improved care for patients in line with state and national mental health reforms. The IMHC will replace the existing mental health facilities at Cumberland Hospital.

The Early Works Project at Westmead Hospital proposes a series of infrastructure improvements to accommodate the future development of the IMHC. Proposed works include:

- Demolition of the existing Brain Injury Rehabilitation Unit building, Casuarina Lodge and office buildings
- Diversion of existing in-ground sewer and water services
- Construction of a new access way to staff Car Park 14
- Install boom gate plaza to existing Health Share parking area
- Flood mitigation works
- Bulk earthworks and tree removal to accommodate the carrying out of the above works.

Figure 2 illustrates the Early Works Project site.

Figure 1: Early Works Project site overview



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

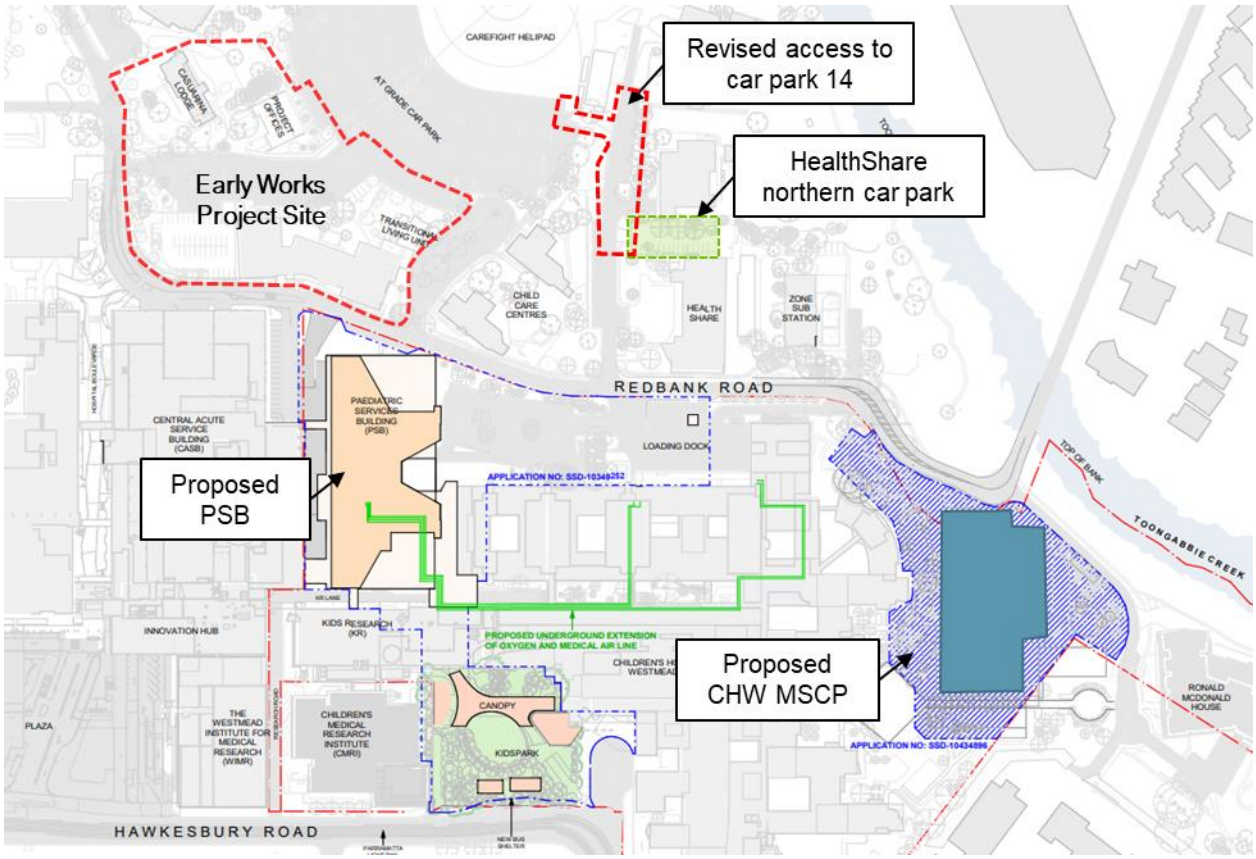
1.2 Other Precinct Construction Activities

Other nearby planned construction works include the Children's Hospital at Westmead (CHW) Stage 2 redevelopment, primarily comprising two works packages:

- construction of the new Paediatric Services Building (PSB)
- construction of the new Multi-Storey Car Park (MSCP) on the corner of Redbank Road, at the eastern edge of Westmead Health Precinct.

Figure 2 illustrates the CHW stage 2 redevelopment works in relation to the proposed Early Works Project site. The proposed MSCP is expected to be completed in early 2023, prior to commencement of the Early Works Project. The PSB construction works will extend through to the end of 2024 and overlap with the Early Works Project.

Figure 2: Early Works Project and CHW 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.

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 1 provides a summary of the characteristics of the surrounding key roads.

Table 1: Surrounding roads network

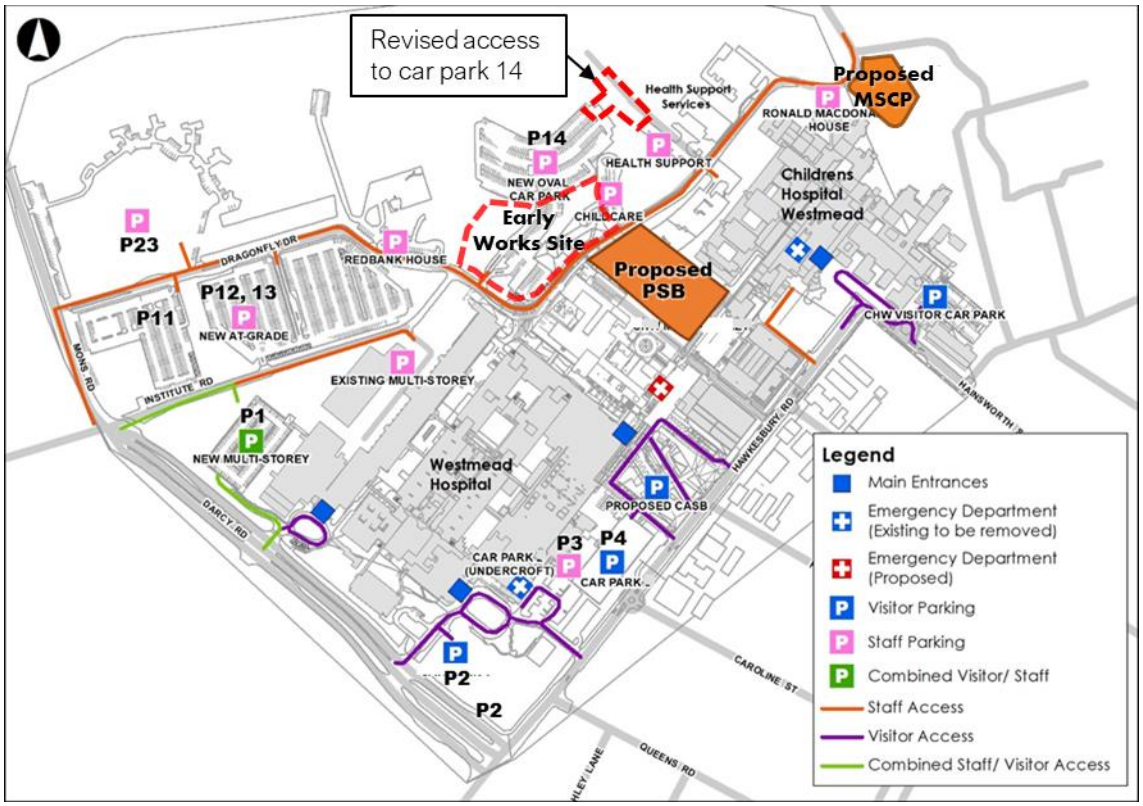
Road	Classification	Authority	Characteristics
Hainsworth Street	Local Road	Council	Two-way, two lane road with kerbside parking. Connecting between Hawkesbury Road and Park Avenue.
Hawkesbury Road	Local Road/ Regional Road	Council TfNSW west of Darcy Road	Two-way, two lane road with kerbside parking. 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	Council, HI/ LHD	Two-way, 2-lane road with kerbside parking. It connects to Briens Road, located north of the Hospital. Redbank Road is a private access road within the Campus.
Darcy Road	Regional 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.
Institute Road	Private Access Road	HI/ LHD	Provides local access into a Hospital staff car park with boom gates limiting access.
Mons Road	Local Road	Council TfNSW - T-Way and Bus Lanes	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.
Briens Road	Local Road	Council TfNSW - Bus Lanes	Generally a 4-lane road with bus lanes between Mons Road to the west and Cumberland Highway to the east. Arterial road further to the east (also known as Cumberland Highway) with 3-lanes in each direction.

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.

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.

Figure 3: Staff and visitor key access routes



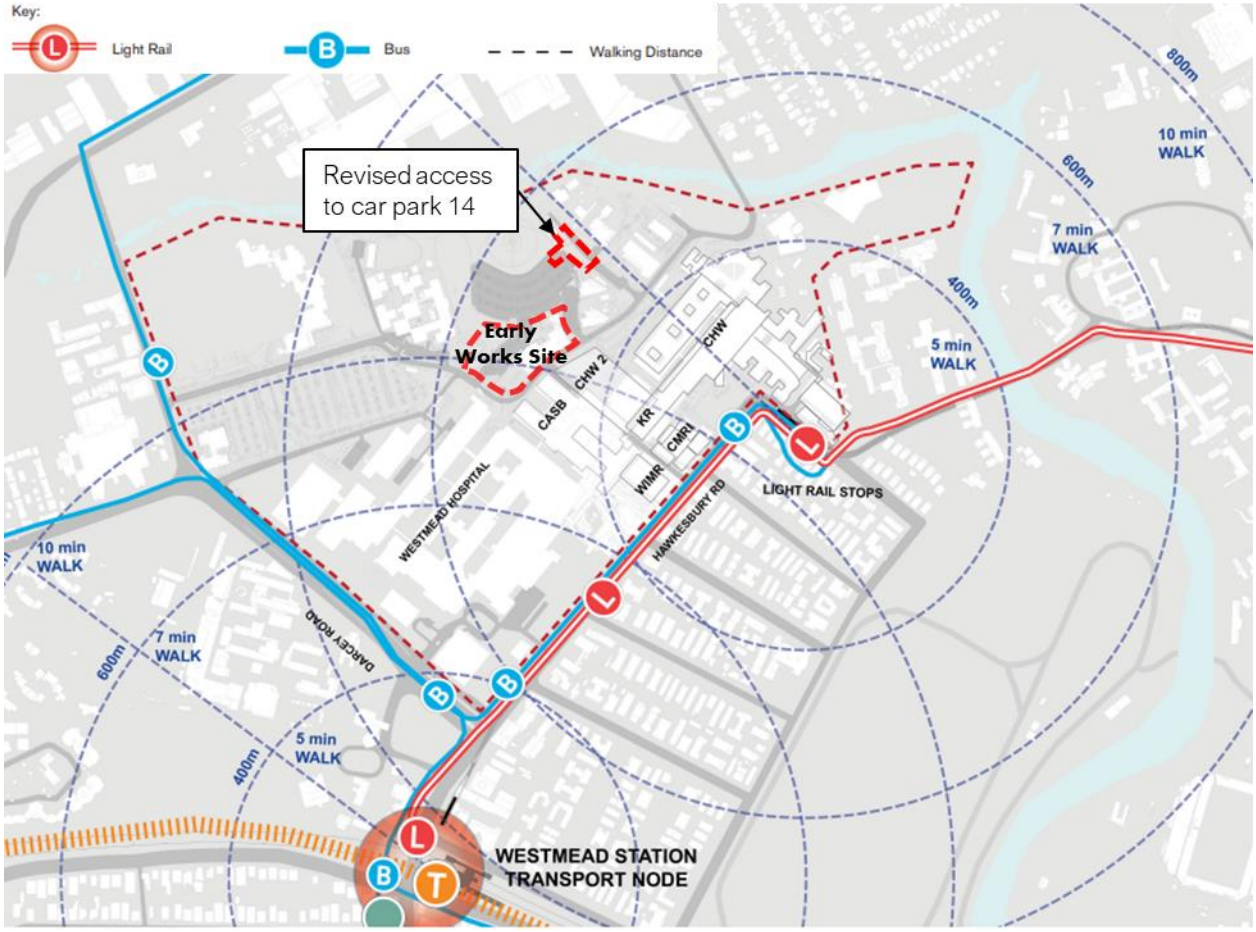
2.1 Public Transport

2.1.1 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 4.

Figure 4: Public transport accessibility overview



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

2.1.2 EXISTING SERVICES

The 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 Heath 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.

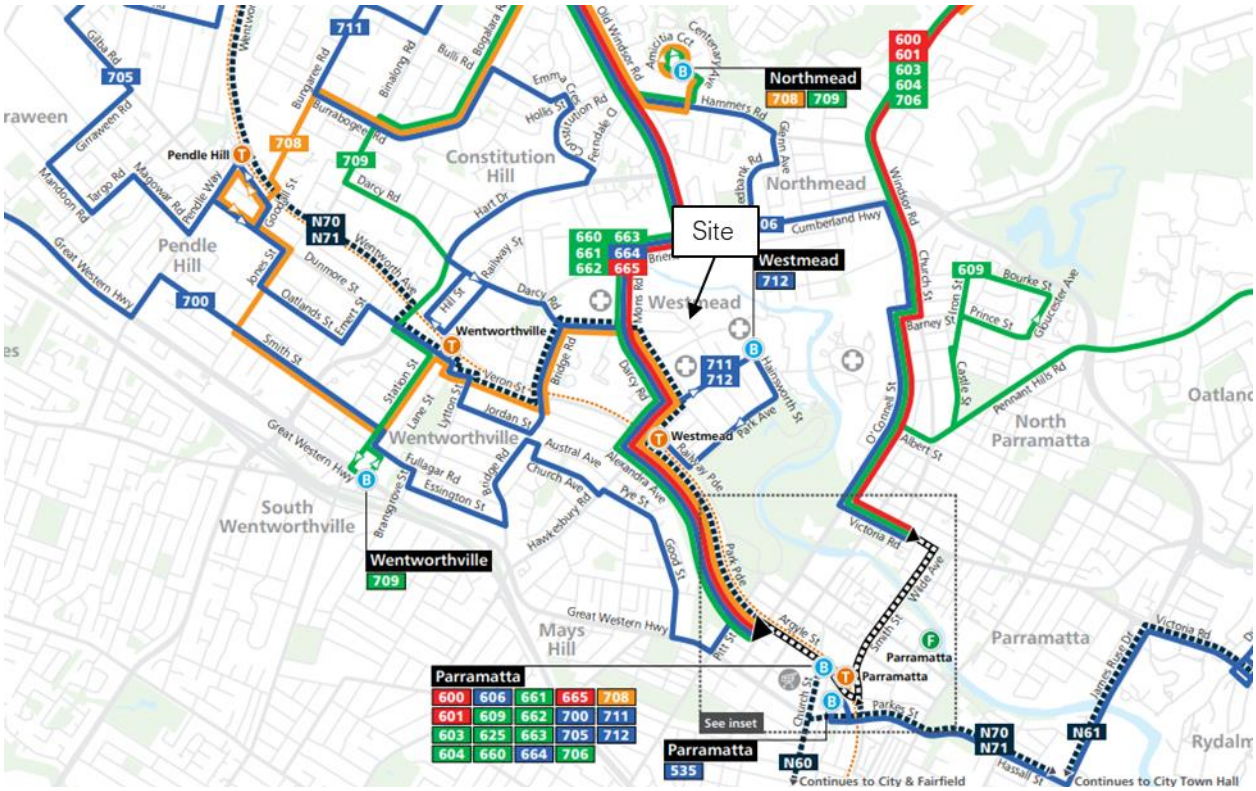
All bus services that pass the Westmead Heath Precinct originate or terminate at Parramatta Railway Station with the exception of the 818 Merrylands to Westmead service. The majority of bus services operate as part of the T-Way, which provides direct services to/ from the north-west Sydney growth area 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 Heath Precinct are summarised in Table 2 and illustrated in Figure 4.

Table 2: 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 Castle Hill to Parramatta	5-15 mins
	661			Blacktown to Parramatta	
	663, 664, 665, 666			Rouse Hill Station to Parramatta	
	708			Constitution Hill to Parramatta	2 services per day (1 during AM peak)
	705			Blacktown to Parramatta	30 min

Figure 5: Bus network map



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

2.1.3 FUTURE SERVICES

2.1.3.1 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, as shown in Figure 4. The service is expected to commence in 2023 and is expected to approximately align with the commencement of the Early Works Project.

2.1.3.2 Sydney Metro West

Sydney Metro is currently Australia's largest public transportation project. 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 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.

At this time, the Sydney Metro West is not expected to be available during the Early Works Construction.

3 Principles of Traffic Management

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

- provide an appropriate and convenient environment for pedestrians
- minimise the impact on pedestrians and cyclists
- maintain appropriate capacity for pedestrians on footpaths around the site
- maintain appropriate public transport access
- minimise the loss of on-street parking
- maintain access to/ from adjacent buildings
- restrict construction vehicle movements to designated routes to/ from the site
- manage and control construction vehicle activity near the site
- carry out construction activity in accordance with Council's approved hours of works.

This preliminary CTMP has been prepared by engineers who hold the Transport for NSW (TfNSW) Prepare a Works Zone Traffic Management Plan certification. Details of the accredited engineers are provided below:

- Brett Maynard – Authorisation No. 0052374425
- Ingrid Bissaker – Authorisation No. TCT0029970.

4 Construction Details

4.1.1 DESCRIPTION OF WORKS

The project is seeking approval for a Review of Environmental Factors Application. The proposed works include:

- Demolition of the existing Brain Injury Rehabilitation Unit building, Casuarina Lodge and office buildings
- Diversion of existing in-ground sewer and water services
- Construction of a new access way to the staff Car Park 14
- Flood mitigation works
- Bulk earthworks and tree removal to accommodate the carrying out of the above works.

A range of separate but related infrastructure improvement works are occurring across the Hospital campus under a separate application. This report considers works proposed under the Early Works Project only.

The expected duration of Early Works is one year. The key milestones for the project are shown in Table 3, with details of the duration for each stage/ works package.

Table 3: Key milestones for early works

Works	Description	Start Date	End Date	Duration
Early Works	Staff Car Park 14 access ramp	Q3 2023	Q4 2023	1-2 months
	Diversion of Sydney Water portable water mains	Q3 2023	Q4 2023	1 month
	Demolition BIRS/ Westmead Redevelopment Project Office and Casuarina Lodge	Q3 2023	Q2 2024	6-9 months
	Bulk excavation	Q4 2023	Q3 2024	9 months

4.1.2 CONCURRENT CONSTRUCTION ACTIVITIES

The timing of early works construction will overlap with other construction works, including IMHC main works and CHW Stage 2 Redevelopment, with key milestones each project shown in Table 4.

Table 4: Stages of IMHC main works and CHW Stage 2 redevelopment project

Project	Description	Start Date	End Date	Duration
IMHC	Main Works	Q3 2023	Q1 2026	2 years, 8 months
CHW Stage 2	Enabling Works	Q4 2021	Q2 2023	1 year, 6 months
	PSB Construction	Q1 2022	Q4 2024	2 years, 9 months

4.1.3 ANTICIPATED WORK HOURS

The works will be carried out during the approved work hours. Indicative work hours based on approved work hours for the construction of the Westmead Central Acute Services Building are as follows:

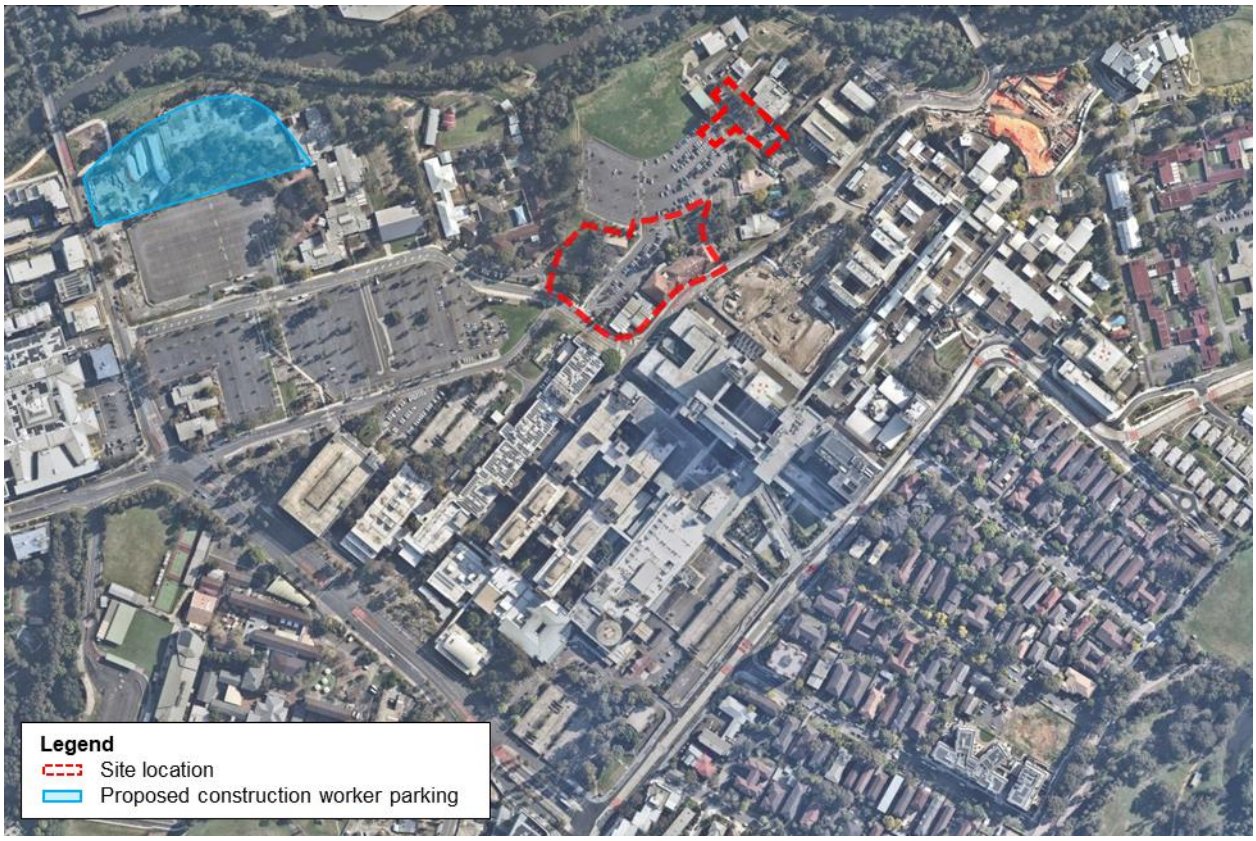
- Weekdays: 7:00am – 6:00pm
- Saturdays: 8:00am – 1:00pm
- Sundays and public holidays: no work permitted.

Workers would be advised of the approved work hours during induction. Any works outside of the approved work hours would be subject to specific prior approval from the appropriate authorities. Such works may include delivery of cranes, large plant or equipment required on the site that require oversize vehicle access.

4.1.4 CONSTRUCTION WORKER PARKING

It is anticipated that there will be up to a maximum of approximately 50 workers on-site at any given time during the main works construction activities. The existing contractor parking area, illustrated in Figure 6, will be utilised for construction worker parking. Workers would not be permitted to park outside of designated areas within the Westmead Health Campus. The cumulative construction worker parking demand would be assessed once a contractor is appointed and the detailed construction workforce profile for both the Early Works and PSB are known.

Figure 6: Proposed construction worker parking area



Base image source: Nearmap

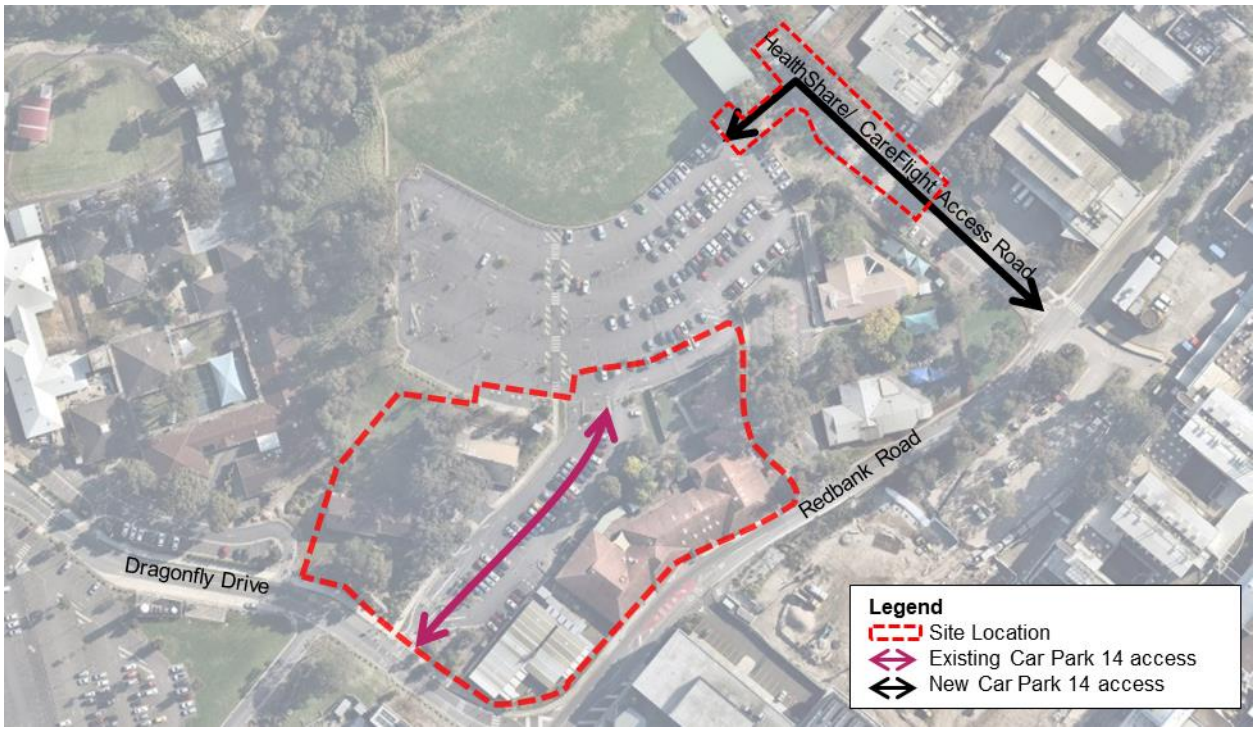
Given the site's proximity to high frequency public transport services, all workers will be encouraged to use public transport to access the work site. The contractor would be responsible for encouraging public transport use, car-pooling and any shuttle bus opportunities, therefore minimising the number of workers travelling to the site by private vehicles. Appropriate arrangements would be made for on-site equipment/ tool storage. Any tool drop-off activity would occur outside road network peak hours.

4.1.5 SITE ACCESS AND LOADING

The first stage of construction involves construction of the Car Park 14 access ramp along the HealthShare/ CareFlight access road. At this time, all construction vehicle access will be via the HealthShare/ CareFlight access road.

Following completion of the revised access, the existing access road from Dragonfly Drive to Car Park 14 will be closed with modified access provided at the HealthShare/ CareFlight access road as shown in Figure 7. At this stage, construction vehicle access will primarily be via the existing access road from Dragonfly Drive.

Figure 7: Car Park 14 general vehicle access



Base image source: Nearmap

4.1.6 LIGHT AND HEAVY VEHICLE TRAFFIC GENERATION

Traffic generated by the construction works include light vehicles (vans, utes etc.) associated with construction workers and smaller deliveries, together with heavy vehicles for the periodic delivery and removal of materials, including plant and equipment. Light vehicle traffic generation will vary with worker numbers and the transport strategy implemented by the contractor.

Construction (heavy) vehicles generated by the site would generally include vehicles up to 19m semi-trailers. There is expected to be up to 40 trucks per day or eight trucks per hour accessing the site during peak activities. The peak hourly volumes are anticipated to be associated with bulk excavation. All construction vehicles will be contained wholly within the site and vehicles will enter the work site before stopping. Construction vehicle movements will be minimised/ avoided during road network peak hours where possible.

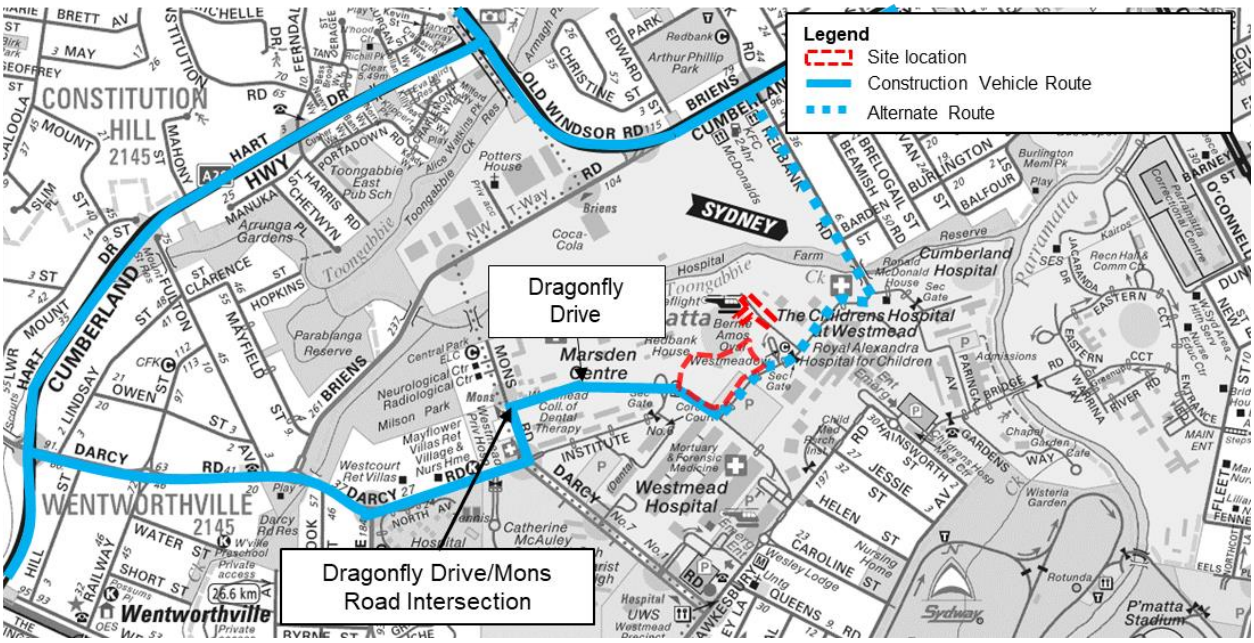
4.1.7 HEAVY VEHICLE ACCESS ROUTES

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.

Alternative construction vehicle routes would not be used without specific prior approval from stakeholders. 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 8 and includes an alternate access route from Briens Road to Redbank Road. These are consistent with the construction vehicle routes used for the CASB construction.

Figure 8: Construction vehicle routes



Base image source: http://www.street-directory.com.au/, accessed 29 October 2021

5 Transport Impacts

5.1.1 PEDESTRIAN AND CYCLIST ACCESS

Overview

Pedestrian movements throughout the Campus are to be maintained as much as possible during the construction period. Where works require the closure of an existing pedestrian route, a suitable alternative is to be provided and signposted with directional signage. Hoarding will be provided around the work site at all times to ensure separation of pedestrians from the work site. Traffic controller(s) will generally be present at each site access on Redbank Road, Dragonfly Drive and HealthShare/ CareFlight access road when in use.

Truck movements will also be avoided during peak hours where possible to minimise the impact on pedestrians and cyclists.

Car Park 14

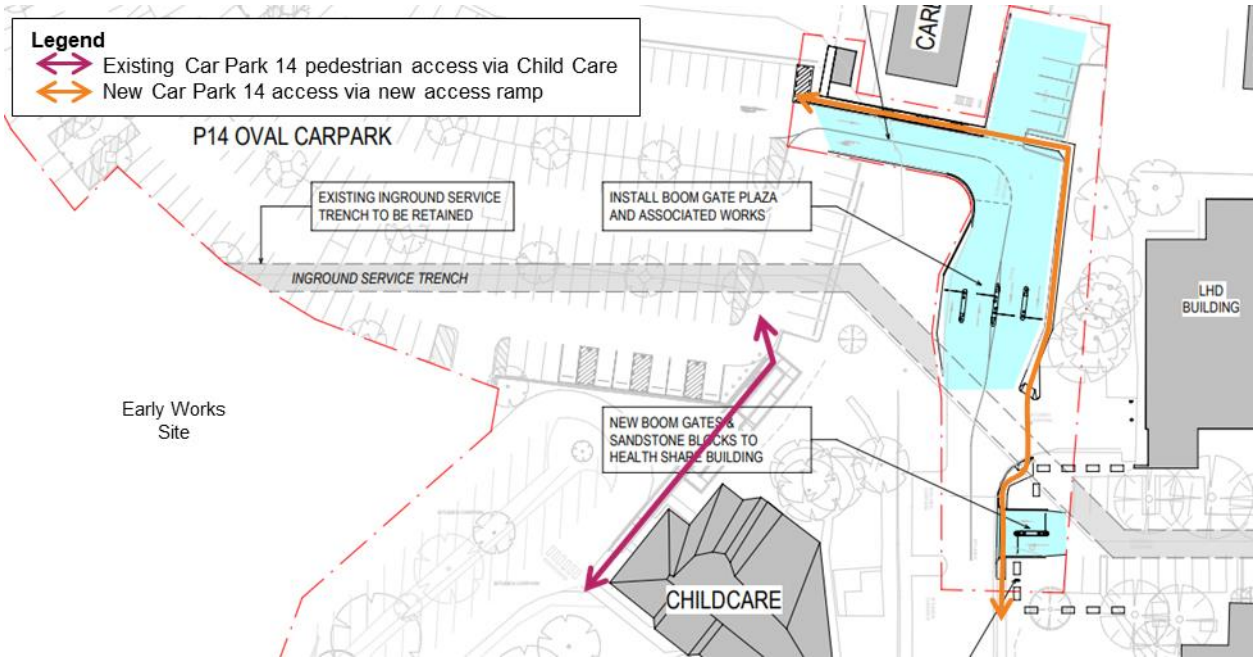
The existing access road (including pedestrian path) from Dragonfly Drive to Car Park 14 is proposed to be closed.

A new pedestrian path is proposed along the northern and eastern edge of the revised access to Car Park 14, connecting into the existing pedestrian footpath on the eastern edge of the HealthShare/ CareFlight

access road. The current DDA compliant path from P14 to Redbank Road via the childcare car park will be retained and remains the primary footpath connection in this regard.

Revised pedestrian access into Car Park 14 is shown in Figure 9.

Figure 9: Car park 14 pedestrian access



5.1.2 CUMULATIVE TRAFFIC IMPACTS

The contractor will coordinate with the adjacent construction site contractors (particularly with CH2 PSB works) to ensure that impact to the surrounding roads, as well as internal road network, is minimised. It is recommended that construction vehicle activity be efficiently managed within each staging area during typical weekday peak hours and staff peak shift changeover times, such that the overall construction vehicle activity would not be expected to significantly impact road network operations.

All works within the site and associated vehicle movements will be restricted to the approved hours of work, noting that it is beneficial for construction workers to arrive to designated parking areas within the Westmead Health Campus early and avoid overlap with the broader road network peaks and peak staff arrivals/ departures.

5.1.3 SITE ACCESS MANAGEMENT

Overview

Two traffic controllers would typically be provided during key periods at each site access point (when in use) along Redbank Road, Dragonfly Drive and HealthShare/ CareFlight access road to manage construction vehicle movements, general traffic (including Campus staff and loading/ service vehicles) and pedestrian movements. It is noted that traffic controllers may not be required outside core construction related activities and key peak periods. These include the staff shift changeover periods and road network peak periods. Overall, it is recognised that the provision of traffic controllers outside the key periods may be reduced and focused at critical locations.

Care Flight

During construction of the new Car Park 14 access along the HealthShare/ CareFlight access road, critical vehicular access to/ from Care Flight will be maintained through the works site. This includes vehicles required within the facility for servicing/ operation. An allocation of parking will be provided within the Car Park 14 (with access from Dragonfly Drive) for any other minor parking requirements, to reduce disruption to the construction site.

5.1.4 PARKING

Construction Worker Parking

The contractor would need to allocate the available contractor parking for specific construction workers and coordinate support measures such as car-pooling, shuttle buses and/or off-site park and ride arrangements. Workers would not be permitted to park outside of designated areas within the Westmead Health Campus.

Construction workers who are allocated parking will 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.

The contractor will be responsible for monitoring compliance with the above requirements. Compliance would result in limited impact to the surrounding road network during peak periods. Furthermore, the above strategy would limit the potential impact to Campus parking availability and/ or on-street parking availability, which would remain available for existing users (staff, visitors and residents).

Car Park 14

Works will result in the removal and relocation of parking from Car Park 14 and along the HealthShare/ CareFlight access road. The following car parking strategy has been agreed for parking displaced as a result of Early Works (and subsequent IMHC main works):

- displaced CHW staff parking within Car Park 14 to temporarily utilise available capacity within HealthShare car parking areas, noting HealthShare will vacate their tenancy prior to commencement of Early Works
- displaced CHW staff parking within Car Park 14 to ultimately be relocated to CHW MSCP following CHW MSCP opening in early 2024.

Westmead Sydney Local Health District and Sydney Children's Hospital Network in consultation with the contractor will manage the temporary relocation of CHW staff parking from Car Park 14 to the HealthShare parking areas, and the ultimate relocation of displaced CHW staff to the MSCP.

5.1.5 EMERGENCY VEHICLE ACCESS

Access to the site and adjacent buildings by emergency vehicles would not be affected by the works as road and footpath frontages would be mostly unaffected. Emergency protocols on the site should include a requirement for any traffic controllers to assist with emergency access from the surrounding road network. All truck movements to the site and/ or incident point would be suspended and cleared.

Consequently, any potential impacts on emergency access would be effectively managed throughout the works.

Liaison would be maintained with the police and emergency services agencies throughout the construction period and a 24-hour contact would be made available for out-of-hours emergencies and access. Thus, there would be no adverse impacts on the provision of existing emergency vehicle access to the Campus or other neighbouring properties as a result of construction activities.

5.1.6 PUBLIC TRANSPORT

The construction activity is not expected to impact existing public transport services near the site.

5.1.7 SITE INSPECTIONS AND RECORD KEEPING

The construction work would be monitored to ensure that it proceeds as set out in the Construction Management Plan provided by the appointed contractor. A daily inspection before the start of the construction activity should take place to ensure that conditions accord with those stipulated in the plan and there are no potential hazards. Any possible adverse impacts would be recorded and dealt with if they arise.

5.1.8 SITE INDUCTION

All workers employed on the site provided by the appointed contractor (including any sub-contractors) would be required to undergo a site induction.

The induction would include permitted access routes to and from the construction site for site workers and delivery vehicles, limited parking arrangements, as well as standard environmental, workplace health and safety, driver protocols and emergency procedures. The approved work hours must be included as part of this induction.

I trust the above is clear. Naturally, should you have any questions or require any further information, please do not hesitate to contact me on (02) 8448 1800.

Yours sincerely

STANTEC AUSTRALIA PTY LTD

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Senior Principal Transport Engineer

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