

# 61-71 Goulburn Street, Liverpool

## Economic Demand Analysis

Sacco Building Group

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# Document Control

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# Executive Summary

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## BACKGROUND

Sacco Building Group (Sacco) are progressing a planning proposal to enable the development of a private health and education facility (the Proposal) at 61-71 Goulburn Street, Liverpool (the Site). The Site is currently improved with two residential flat buildings and does not offer any existing health services.

The Proposal seeks to deliver approximately 32,280sqm of Gross Floor Area (GFA) within a 20-storey development. The proposed medical facilities will comprise a comprehensive range of inpatient and outpatient services including:

- 12,540sqm of consulting and education Gross Floor Area (GFA) across 11 levels.
- 155 hospital beds (including 25 ICU beds).
- 10 operating theatres.
- Ambulatory care and radiation oncology.

The Proposal envisages a building height of 79m and Floor Space Ratio (FSR) of 6.9:1, which exceeds relevant planning controls specified in the Liverpool Local Environmental Plan 2008 (building height 35m/ FSR 3.5:1). Strong interest from a mix of private operators, including a private hospital, education providers and medical research facilities has been received.

The Site is located directly opposite the Liverpool Hospital which is one of NSW's largest hospitals. It is a "Principal Referral hospital" with a Level 6 Emergency Department (ED) classification and is the primary hospital for the South West Sydney LHD. It is tertiary teaching hospital for the University of NSW, University of Wollongong and Western Sydney University. (Principal referral hospitals with Level 6 clinical services delineation are highly specialised and significant health assets and play a major role in the provision of health services across NSW.)

The Site falls within the Liverpool Health and Academic Precinct (LHAP) and part of the Liverpool Innovation Precinct (i.e. the Liverpool City Centre). The Liverpool Innovation Precinct has been a focus of local strategic planning, with the Land Use Analysis and Precinct Strategy identifying the objectives and opportunities for the precinct.

Several studies have been prepared to support the planning proposal, including a Market Needs Analysis (Ethos Urban, 2022). The Market Needs Analysis examined demand for health services at a regional level and concluded there was sufficient demand to support the Proposal, particularly given its location opposite Liverpool Hospital.

Liverpool City Council (Council) have requested that a more refined needs analysis be carried out which instead focuses on the economic need for the Proposal in the context of the Liverpool City Centre.

Atlas Economics (Atlas) is engaged to prepare an Economic Demand Analysis (the Study) that considers demand for health and medical floorspace in the Liverpool City Centre (the Study Area) and whether there is an economic need for the Proposal.

## STRONG REGIONAL DEMAND FOR HEALTH SERVICES

The role for the Proposal in meeting future demand for health services at a regional level (i.e. South Western LHD) was examined in the *Market Needs Analysis* (Ethos Urban, 2022). The Market Needs Analysis concluded there is strong regional demand for health services over the coming years to 2036 as evidenced by:

- Strong population growth (additional 400,000 residents across the LHD) and marked increase in older residents.
- High level of projected hospital admissions at Liverpool Hospital.
- Rising private health insurance coverage.
- Significant employment growth expected in the health and education sectors.
- Strong initial interest in the Proposal from a mix of private hospital providers, medical research facilities, tertiary education providers and Government agencies.

As the largest health and education precinct within the LHD, the Market Needs Analysis concluded that the Precinct would play a significant role in accommodating this demand.

## COMPARISON TO OTHER LOCAL HEALTH DISTRICTS

To supplement the regional demand analysis in the Market Needs Analysis (Ethos Urban, 2022), this Study carries out benchmarking of the provision of hospital beds in Level 6 delineation hospitals against future population projections. This benchmarking compares population projections in the South Western Sydney LHD, Western Sydney LHD, South Eastern LHD and Sydney LHD against existing and future provision of hospital beds with a Level 6 delineation.

**Table ES-1** shows that the South Western and Western LHDs have a much lower provision of hospital beds (Level 6) than the South Eastern and Sydney LHDs. This is even with proposed beds from expansions at Westmead and Liverpool Hospitals.

In the South Western LHD, the ratio of hospital beds (Level 6) is the lowest at 0.84 per 1,000 persons. An additional 175 beds would be required to achieve 1.0 per 1,000 persons (though still below the South Eastern and Sydney LHDs).

**Table ES-1: Hospital Bed (Level 6 Delineation) Provision by Capita (2021-2041)**

	South Western Sydney LHD	Western Sydney LHD	South Eastern LHD	Sydney LHD
<b>Hospital Beds (Level 6 ED)</b>				
Existing	877	958	1,030*	969
Planned	187	-	235	275
Total	1,064	958	1,265	1,244
<b>Population Projections</b>				
2021	1,049,666	1,043,832	947,654	697,359
2041	1,402,699	1,436,966	1,061,807	804,316
<b>Hospital Beds/Capita (per 1,000)</b>				
2021	0.84	0.92	1.33	1.39
2041	0.76	0.67	1.19	1.55

\*Includes Prince of Wales Hospital and St George Hospital

Source: Atlas Economics/DPE (2022)

## EXPECTED GROWTH IN THE STUDY AREA

The Market Needs Analysis (Ethos Urban) focused on demand at the LHD level. Demand at the LHAP level is now examined.

Employment projections carried out by Transport for NSW suggest that the Study Area will accommodate an additional **~7,400 workers** over the 2021-2041 period (excluding industrial sectors). The overwhelming majority of this growth is anticipated to be generated by the health care and education sectors, accounting for 80% of total employment growth.

Based on these generic work space ratios, this expected level of employment growth could require some 166,000sqm of additional floorspace across the Study Area in the coming years to 2041. Approximately **118,000sqm** would be needed to accommodate employment growth in the health and education sectors.

**Table 1.1: Employment Projections by Travel Zone (2021-2041), Study Area**

BIC	2021	2026	2031	2036	2041	Change (2021-41)
Population-Serving	4,399	4,720	4,861	5,314	5,664	1,265
Knowledge Intensive	5,821	6,399	6,475	5,808	6,032	212
Health and Education	10,170	11,224	11,783	14,991	16,070	5,900
<b>Total (ex. Industrial)</b>	<b>20,389</b>	<b>22,343</b>	<b>23,119</b>	<b>26,113</b>	<b>27,766</b>	<b>7,377</b>

Source: TPA (2022)

## TRANSITIONING INTO AN INNOVATION DISTRICT

A key strategic objective is for Liverpool to transition from a 'health and education precinct' into an 'innovation cluster'.

To assess the potential for the LHAP to transition into an innovation cluster, a case study analysis of other health and education precincts across Greater Sydney has been carried out. The characteristics of these precincts – including their size, mix of public and private health services – provides insight into any existing hurdles facing the LHAP.

Three peer health and education precincts are selected for analysis - designated as 'health and education precincts' in strategic planning policy and are anchored by principal referral hospitals:

- **Westmead** Health and Education Precinct (anchored by Westmead Hospital)
- **Randwick** Health and Innovation Precinct (anchored by Prince of Wales Hospital)
- **Camperdown** Health Education Research Precinct (anchored by Royal Prince Alfred Hospital).

The case study analysis demonstrates the LHAP is playing a minor role compared to its peer precincts. There are:

- No specialist public hospitals (e.g. children's hospital, women's hospital).
- No large private hospitals.
- Lower amount and concentration of medical research floorspace.

Notably, there are only 0.14 private to public hospital beds in the South Western LHD. This is well below the other precincts which range from 0.22 to 0.43 of private to public hospital beds.

These three factors are hurdles to the growth of the LHAP and its maturity into an innovation district.

**Table ES.1: Summary of Case Study Analysis, Select Health and Education Precincts**

	Liverpool	Westmead	Randwick	Camperdown
Local Health District	South Western Sydney	Western Sydney	South Eastern Sydney	Sydney
Principal Referral Hospital (Level 6 clinical services)	Liverpool Hospital	Westmead Hospital	Prince of Wales Hospital	Royal Prince Alfred Hospital
Status	Health & Education Precinct	Health & Education Precinct	Innovation District	Innovation District
City	Western City	Central City	Eastern City	Eastern City
Size	53ha	75ha	136ha	73ha
% Government Land	50%	83%	10%	17%
Principal Referral Public Hospitals (beds)	1 (877)	1 (1,544)	1 (731)	1 (969)
Specialist Public Hospitals (beds)	-	3 (586)	2 (281)	-
Private Hospitals (beds)	2 (121)	2 (213)	2 (193)	2 (226)
<b>Private Beds/ Public Beds (Level 6)</b>	<b>0.14</b>	<b>0.22</b>	<b>0.43</b>	<b>0.23</b>
Total Hospital Beds	998	1,757	924	1,195
Universities Campuses (students)	2 (~10,000)	2 (~2,000)	1 (58,000)	1 (~70,000)
<b>Research GFA</b>	<b>~15,000sqm</b>	<b>~50,000sqm</b>	<b>~61,000sqm</b>	<b>~116,000sqm</b>
Jobs	8,700	14,400	20,300	16,100

Source: Atlas Economics

## STRATEGIC NEED FOR THE ROPOSAL

### Strategic Planning Context

The Liverpool Health and Academic Precinct (LHAP) is one of Greater Sydney's major medical precincts. Spanning some 43ha (19.5ha occupied by NSW Health), the Precinct is anchored by Liverpool Hospital, Western Sydney University, South West Sydney Local Health District (LHD), University of Wollongong (Western Sydney Campus) and NSW TAFE.

The NSW Government and Liverpool City Council have been planning for the expansion of the LHAP for several years. The NSW Government is investing \$790 million into the precinct with a major expansion of the Liverpool Hospital.

The *Liverpool Innovation Precinct: Land Use Analysis and Precinct Strategy* was formally adopted in 2019 and identified a need for additional private hospital uses and medical research institutes. The Strategy specifically identified the need to unlock development opportunities proximate Liverpool Hospital.

Notably, the Strategy identified the Site as an existing barrier to the expansion of the LHAP given it is comprised of low rise residential flat buildings directly opposite Liverpool Hospital.

### Role in Liverpool Innovation Precinct

The Liverpool Innovation Precinct is poised to record significant employment growth over the coming decades. Over 2021-2041 period, the Precinct is expected to grow by additional ~7,400 workers (growth of 36%). The health care and education sectors are expected to be the key drivers of this employment growth (accounting for 80% of total employment growth).

The ability for the Liverpool Innovation Precinct to achieve this level of growth will be subject to its ability to mature into an 'innovation district'. Both the NSW Government and Council are actively seeking to support this transition through both direct investment and strategic planning (i.e. the Precinct Strategy).

While government-led investment will play an integral role in Liverpool's successful transition into an innovation district, involvement and investment by the private sector and industry is equally critical. Whilst the Liverpool Innovation Precinct has benefited in recent years from renewed interest from various tertiary education providers (i.e. WSU, UoW), there has been very little new privately-led health or medical-research development. A review of the development pipeline indicates there are no privately-led health or medical developments currently being planned or delivered within the precinct.

The Precinct Strategy identified that **additional private hospitals and medical research facilities** are critical to the future expansion of the LHAP, with opportunities to attract new investors to be encouraged. This Study's comparison against case study precincts finds the LHAP has a notable shortfall in the provision of private hospital and medical research floorspace.

The Proposal has the potential to support the transition of the LHAP into an innovation district, particularly given existing interest from both private hospital operators and medical research institutes.

### Role for the Proposal

The Precinct Strategy specifically identified the Site and other residential flat buildings along Goulburn Street as barriers to growth. The Proposal facilitates removal of one of these "barrier sites", aligning with the objectives of the Precinct Strategy.

It is also important to note that the location of the Site directly adjacent the Liverpool Hospital will present opportunities for shared infrastructure – another key objective of the Precinct Strategy.

If delivered, the Proposal has the potential to:

- Increase the private bed: public bed ratio from 0.14 to 0.31 (though this would still be below its peer precincts).
- Deliver a new pedestrian bridge over Goulburn Street directly connecting the Proposal with Liverpool Hospital.
- Deliver an additional ~12,500sqm of GFA which could be utilised for medical research and education uses (which would still leave Liverpool below its peers in terms of medical research floorspace provision).
- Grow the employment/ jobs base by more than 1,000 jobs. On completion of the Proposal, the jobs base could be increased from 8,700 to approx. 9,800 jobs (though this would still be lower than employment in peer precincts).

Overall, the Proposal assists in strengthening the competitive position of LHAP by providing much-needed private health and medical research floorspace and growing Liverpool's jobs base.

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# 1. Introduction

## 1.1 Background

Sacco Building Group (Sacco) are progressing a planning proposal to enable the development of a private health and education facility (**the Proposal**) at 61-71 Goulburn Street, Liverpool (**the Site**).

The Proposal seeks to deliver a range of medical uses and ground floor retail totalling 32,280sqm of Gross Floor Area (GFA) within a 20-storey development. The proposed medical facilities will comprise a comprehensive range of inpatient and outpatient services including:

- 12,540sqm of consulting and education GFA across 11 levels.
- 155 hospital beds (including 25 ICU beds).
- 10 operating theatres.
- Ambulatory care and radiation oncology.

**Figure 1.1** illustrates an artistic render of the Proposal.

**Figure 1.1: The Proposal**



Source: Hatch RobertsDay (2021)

The Proposal envisages a building height of 79m and Floor Space Ratio (FSR) of 6.9:1, which exceeds relevant planning controls specified in the Liverpool Local Environmental Plan 2008 (building height 35m/ FSR 3.5:1).

Several studies have been prepared to support the planning proposal, including a Market Needs Analysis (Ethos Urban, 2022) and Socio-Economic Impact Assessment (Hill PDA, 2021). The Market Needs Analysis examined demand for health services at a regional level and concluded there was sufficient demand to support the Proposal, particularly given its location opposite Liverpool Hospital.

Liverpool City Council (**Council**) have requested that a more refined needs analysis be carried out which instead focuses on the economic need for the Proposal in the context of the Liverpool City Centre.

Accordingly, Atlas Economics (Atlas) has been engaged to prepare an Economic Demand Analysis (the Study) that considers the demand for additional health and medical floorspace in the Liverpool City Centre (**the Study Area**) and whether there is an economic need for the Proposal.



## 1.2 Scope and Approach

The core objectives of the Study are to examine the market demand and supply of health and medical floorspace within the Study Area and the potential role the Proposal could play. To fulfill the requirements of the brief, the Study has carried out:

- Review of previous relevant studies and literature, including the Liverpool Innovation Precinct Land Use Analysis and Precinct Strategy (NSW Government, 2019) and Market Needs Analysis (Ethos Urban, 2022).
- Desktop analysis of the existing and future supply of medical facilities and medical research floorspace compared to future demand in the Study Area.
- Comparative analysis of the Study Area against peer health and education precincts across Greater Sydney.

The Study concludes by summarising the economic need for the Proposal.

## 1.3 Assumptions and Limitations

Atlas acknowledges several assumptions and limitations associated with the Study.

- At the time of writing, the fallout from the COVID-19 pandemic across the NSW economy is still playing out. The medium to long-term implications for population and employment growth are yet to be fully understood.
- The macro-economic outlook is currently subject to significant uncertainty, with COVID-19, labour shortages, inflation, and war in the Ukraine. Employment projections relied upon were developed by the NSW Government prior to outbreak of COVID-19 and are not reflective of the current economic environment.
- The 2021 Census was administered during the COVID-19 pandemic and at a time of widespread lockdowns across Australia's east coast. Activity recorded at this time may not be accurately representative of employment levels.
- Growth projections relied upon do not necessarily reflect contemporary trends. Population and dwelling projections (by DPE) were released in early 2022 (post-COVID-19) but prior to release of census 2021 data.
- Market research is carried out on a 'desktop' basis without the benefit of site surveys and internal inspections.
- Supply data is sourced from various third party databases and subscriptions and is not validated.

Notwithstanding the above, all due care, skill and diligence has been applied to the Study as is reasonably expected.

## 2. Strategic Context

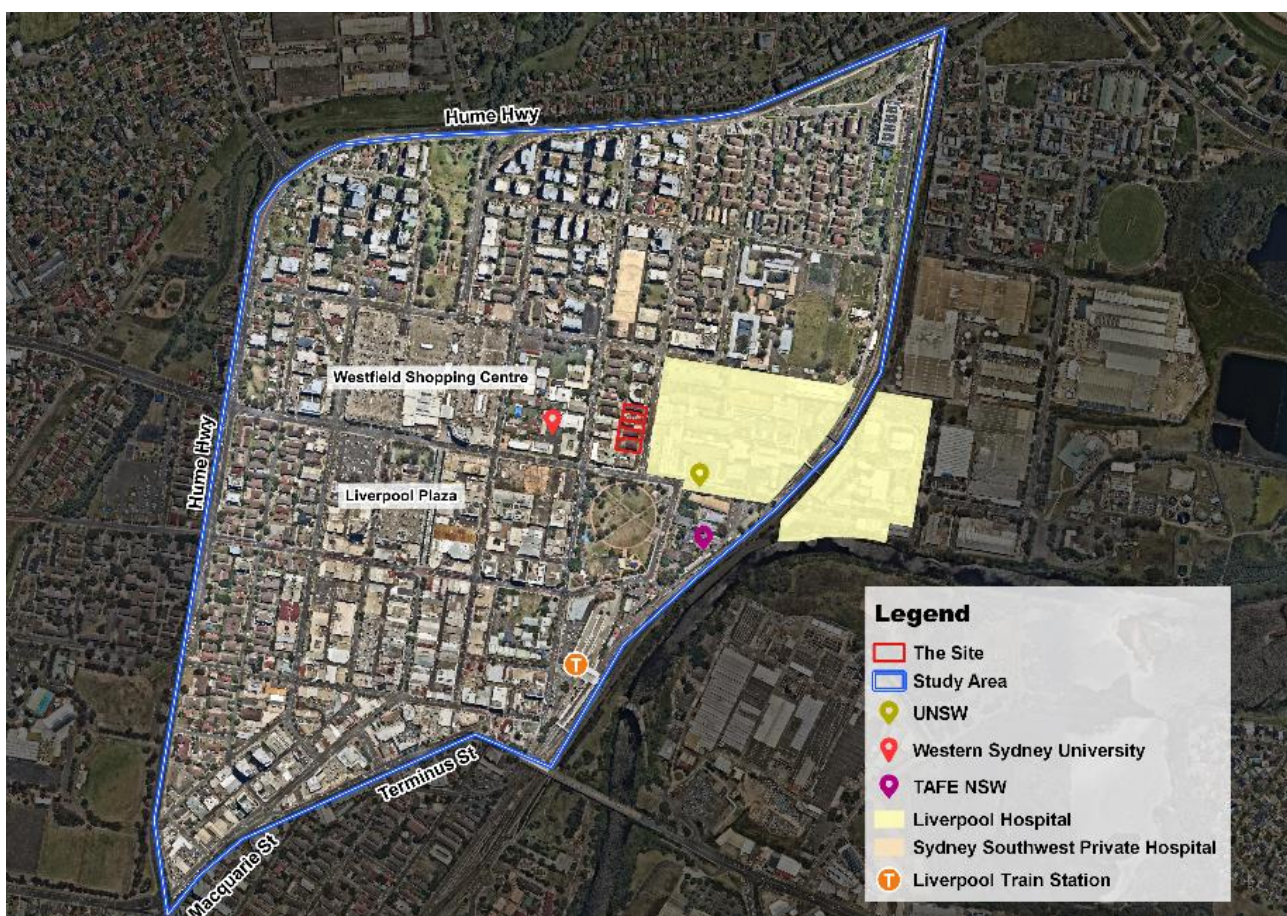
### 2.1 Location

The Site is located approximately 25km west of the Sydney CBD and 14km south of the Parramatta CBD. More particularly, the Site is situated within the Liverpool City Centre, and is the beneficiary of high levels of amenity being close to established retail and public transport networks. The Site is located approximately 500m east of the Westfield Shopping Centre and 600m north of the Liverpool train station.

The Site is located within the Liverpool Innovation Precinct, which aligns with the boundaries of the Liverpool City Centre (the Study Area). The Study Area accommodates a broad mix of land uses, including an established health and education precinct, commercial office buildings, a large enclosed shopping centre (Westfield Liverpool), strip retail and high-density residential uses.

Figure 2.1 provides a locational context of the Site.

Figure 2.1: The Site



Source: Atlas

### 2.2 Site Description

The Site is situated on the western side of Goulburn Street zoned B4 Mixed Use. It is broadly bounded by Campbell Street to its north, Elizabeth Street to its south, Bigge Street to its east and Liverpool Hospital to its west.

The Site measures a site area of 4,674sqm and is comprised of four lots with existing improvements, namely:

- 61, 67-69 and 71 Goulburn Street: improved with older style, residential flat buildings.
- 63-65 Goulburn Street: existing single detached dwellings.

The Proposal includes the demolition of the existing buildings and structures on the Site.

## 2.3 Planning Context

### 2.3.1 Reimagining Liverpool: Liverpool Health, Education and Innovation Precinct (2017)

The Reimagining Liverpool: Liverpool Health, Education and Innovation Precinct report (**the Report**) was commissioned in 2017 by the Liverpool Health, Education, Research and Innovation Precinct Committee. These include stakeholders of the Liverpool Public Hospital, TAFE NSW, UNSW and Ingham Institute.

In collaboration with government stakeholders including the Greater Sydney Commission and NSW Department of Education, the Report set out a vision for the Liverpool City Centre as a collaborative and innovation precinct - to leverage its industry presence in health and education to maximise economic opportunities for Liverpool and the community.

The Report identified key strengths of the Liverpool Health and Innovation Precinct (the Precinct) – its city centre location enabling accessibility to services offered within a major commercial hub, and its established public transport infrastructure. Several actions were identified as being required in the Precinct to leverage these existing advantages to transform into the envisioned innovation district, including:

- **Co-location:** shared facilities among health, education and research institutions. This includes the co-location of private and public hospitals to provide scaled and integrated health services to meet the needs of a rapidly growing local population. Specifically, the Report identifies an opportunity for a new private hospital to be co-located with the Liverpool Hospital to realise greater synergies of shared infrastructure and resources and reduced operating costs.
- **Collaboration:** facilitate sharing of data and collaboration of research across industries and the public/ private sectors.
- **Investment Attraction:** The development of the Precinct requires investment in various asset types across industries. Further development in the health industry requires investment in private hospitals, to be delivered in proximity to public hospitals for synergies across the broader health system.

Overall, the Report envisioned Liverpool as an integrated health, education and research precinct with collaboration at the core. This included integration opportunities across the private/ public sectors with mutually beneficial outcomes for the providers and the broader community.



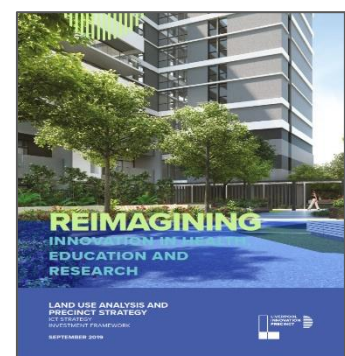
### 2.3.2 Liverpool Innovation Precinct: Land Use Analysis and Precinct Strategy (2019)

The *Liverpool Innovation Precinct: Land Use Analysis and Precinct Strategy* (**the Precinct Strategy**) was launched by the NSW Government and adopted in 2019 to identify land use opportunities across the Precinct.

The Precinct Strategy analysed the distribution of existing anchor institutions across education, health, and research industries within the Precinct to identify key collaboration zones, as well as land use opportunities across these zones.

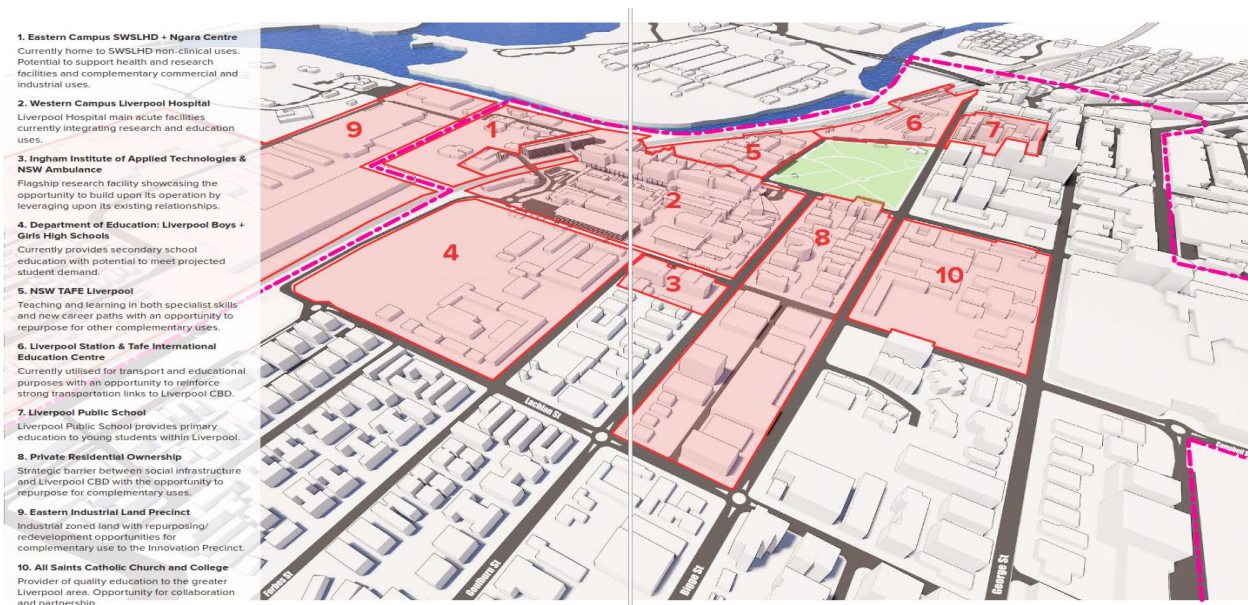
Relevantly, it identified suitable sites for private hospital development, located close to the existing Liverpool Hospital to leverage interconnected clinical facilities and services. Investment in shared infrastructure including pedestrian bridges was considered key in facilitating connectivity between facilities across the Precinct.

Relevantly, the Site was referred to as a strategic barrier between social infrastructure and Liverpool CBD, representing an opportunity to repurpose for complementary uses, such as health and education (**Figure 2.2**).





**Figure 2.2: Primary Site Opportunities (Liverpool Innovation Precinct)**



Source: Liverpool Innovation Precinct Plan

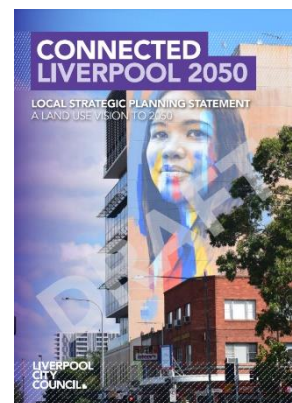
### 2.3.3 Liverpool Local Strategic Planning Statement (2019)

The Liverpool Local Strategic Planning Statement (the LSPS) was prepared by Liverpool City Council in 2019, setting out the long-term plan and land use strategies for Liverpool over the coming years to 2050.

The LSPS anticipates that Liverpool will accommodate substantial population growth, with a resident population estimated to grow by 60% over the coming years to 2036, driven by increased residential development and the expected delivery of the new Western Sydney International Airport in 2026.

The development of Liverpool's health and education innovation precinct is also identified as a key driver of employment, with health and knowledge workers expected to grow beyond the 30,000 workers previously projected to 2036.

The LSPS envisions Liverpool as a global leader in collaboration for health, education and research. A key planning priority identified in the LSPS (Local Planning Priority 10) is to leverage its competitive advantages in health and education, based around the Liverpool Hospital.



### 2.3.4 Liverpool Local Environmental Plan 2008

The Proposal is subject to the Liverpool Local Environmental Plan 2008 (LEP), which specifies that development on the Site is subject to a maximum building height of 35m and base FSR of 2.5:1. Pursuant to Clause 4.4 of the LEP, the Site is subject to a base FSR of 2.5:1, increasing to FSR 3.5:1 under subclause (2C) given the site is zoned B4 in the Liverpool City Centre and site area exceeds 2,500sqm.

The Proposal seeks to deliver a 20-level private hospital comprising 32,280sqm of floorspace, exceeding the building height and FSR planning controls in the LEP. An amendment to the LEP is therefore required to deliver the Proposal.

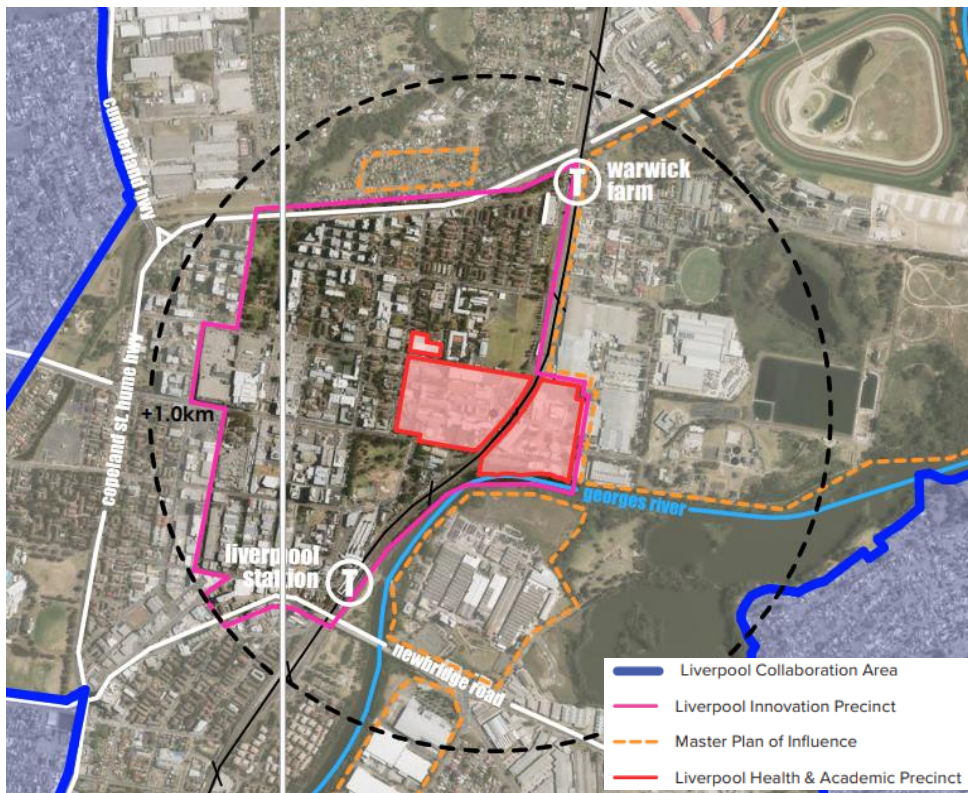
## 3. Liverpool Health and Academic Precinct

### 3.1 Existing Profile and Supply

#### 3.1.1 Overview

The Liverpool Health and Academic Precinct (LHAP) is one of Greater Sydney's major medical precincts. Spanning some 43ha (19.5ha occupied by NSW Health), the LHAP is located within the Study Area and is anchored by Liverpool Hospital, Western Sydney University, South Western Sydney Local Health District (LHD), University of Wollongong and NSW TAFE.

Figure 3.1: Liverpool Health and Academic Precinct



Source: Liverpool Innovation Precinct (2019)

#### 3.1.2 Medical and Healthcare Assets

##### Liverpool Hospital

Liverpool Hospital is one of NSW's largest hospitals. Defined as a Principal Referral hospital with a Level 6 Emergency Department (ED) classification, it is the primary hospital for the South West Sydney LHD which also serves as a tertiary teaching hospital for the University of NSW, University of Wollongong and Western Sydney University.

Comprising comprises 877 beds, 23 operating rooms and 60 critical care (ICU) beds, it provides a range of diagnostic and imaging services, emergency and trauma care, surgical services, maternity, paediatric and cancer care, mental health services and ambulatory care. Liverpool Hospital is one of only three adult Brain Injury Rehabilitation Units in Greater Sydney and also contains the only cyclotron in Western Sydney and one of only four Magnetic Resonance Imaging (MRI) Linear Accelerator research facilities in the world. These facilities provide a mix of NSW-wide services in trauma and neonatal care and brain injury rehabilitation.

Liverpool Hospital underwent a major redevelopment over 2008-2012 to increase the acute services capacity of the facility, including a new nine storey hospital building, major refurbished Clinical Services Building and various other upgrades. The NSW Government has committed \$790m in funding to progress development of the Liverpool Health and Academic Precinct, including a major expansion of Liverpool Hospital.



### Private Facilities

The **Sydney Southwest Private Hospital** is the only private hospital in the Precinct. Comprising 98 patient-beds, it provides a large range of medical and acute services including an Intensive Care Unit, Maternity Unit, Mental Health Unit, Oncology Department, Day Surgery Unit as well as pharmacy and radiology services (though it does not provide emergency services care). The private hospital is not co-located with the Liverpool Hospital and has limited-service integration.

Several specialist medical clinics (both public and privately operated) are also located within the precinct, including the Liverpool Specialist Medical Centre, Liverpool Sexual Health Clinic and Health Services Building which provides child youth and family services, community paediatrics, psychology, community nutrition and sexual assault services.

**Figure 3.2** illustrates the current distribution of health services immediately around Liverpool Hospital, the distance between the existing public and private hospitals and the proximity of the Site to Liverpool Hospital.

**Figure 3.2: Proximity of Existing Private Health Services to Liverpool Hospital**



Source: Atlas Economics

### 3.1.3 Education and Academic Assets

Liverpool Hospital is of NSW's largest teaching hospitals and has partnerships with:

- University of NSW (UNSW).
- University of Wollongong (UoW).
- Western Sydney University (WSU).

The UNSW South Western Sydney Clinical School is located within the hospital, providing internships for medical, nursing and allied health students. WSU and UoW also provide student placements at the hospital.

The Precinct itself comprises several tertiary and vocational education campuses:



- **WSU** - eight-storey, high-rise vertical Liverpool Campus was completed in July 2018. The campus provides a mix of medical and health-related courses, including nursing, social work, anthropology, criminology and policing. It also includes one of Australia's most high-tech nursing laboratories.
- **UoW South Western Sydney Campus** (soon to be known as UoW Liverpool) - currently located across two floors in Liverpool City Council's Moore Street building and offers a mix of courses in business and law, nursing, computer science and information technology, social work and international studies. The campus will soon be relocated to Council's Liverpool Civic Place redevelopment which is expected to be completed by 2023. UoW is also progressing plans to develop a purpose-built nursing training facility to accommodate up to 700 nursing students.
- **The South Western Sydney TAFE** - located within the precinct and occupies approx. 2.3ha of land. Vocational courses provided from the campus are non-medical or healthcare related; primarily being business administration and studies, training and assessment, hairdressing, beauty and nail therapy and accounting and finance.

In Q1 2023, the University of Notre Dame established an educational guidance facility at the All Saints Catholic College within the Liverpool CBD. This has further increased the presence of tertiary education providers within the Precinct.

### 3.1.4 Research Uses

The Ingham Institute for Applied Medical Research (**the Institute**) is the primary medical research facility within the Precinct. Located opposite Liverpool Hospital within a purpose-built, five storey research facility, the Institute has a collaborative relationship with the South Western Sydney LHD, UNSW and WSU. The Institute focuses on five key research streams being cancer research, clinical sciences research, population and health, injury and rehabilitation and mental health.

The Institute also operates the Ingham Institute Clinical Skills and Simulation Centre, incorporating robotic patient mannequins and simulated operating theatres (PWC, 2017). The Institute also accommodates the Centre for Oncology Education and Research Translation, which includes a cancer tissue biobank, imaging facilities and a Clinical Trials Unit.

In addition to the Ingham Institute, other medical research facilities within the Precinct include the:

- Liverpool Education and Research Centre
- Bright Institute of Stem Cell Research Australia
- ARETE Research Global Pty Ltd

**Table 3.1** provides a summary of the key characteristics and assets of the Liverpool Health and Academic Precinct.

**Table 3.1: Liverpool Health and Academic Precinct**

Characteristic	Description
<b>Size</b>	~52.6 hectares
<b>Employment</b>	8,700 jobs
<b>Hospitals</b>	<ul style="list-style-type: none"> <li>Liverpool Hospital (877 beds) – principal referral, tertiary teaching hospital with Level 6 ED Delineation.</li> <li>Sydney Southwest Private Hospital (87 beds) – private hospital providing range of medical services.</li> </ul>
<b>Research Facilities</b>	<p>Circa 15,000sqm of medical research floorspace (GFA). Major research centres and institutes include:</p> <ul style="list-style-type: none"> <li>Ingham Institute for Applied Medical Research, including the Clinical Skills and Simulation Centre</li> <li>Liverpool Education and Research Centre</li> <li>Bright Institute of Stem Cell Research Australia</li> <li>ARETE Research Global Pty Ltd</li> </ul>
<b>Education and Academic Uses</b>	<ul style="list-style-type: none"> <li>The University of NSW (South Western Sydney Clinical School)</li> <li>Western Sydney University (School of Medicine)</li> <li>University of Wollongong (Nursing School)</li> <li>TAFE Liverpool</li> </ul>
<b>Private Health Care</b>	<p>There is a cluster of private medical operators and specialists surrounding the Liverpool Hospital and within the broader Liverpool Innovation Precinct. Some of these include:</p> <ul style="list-style-type: none"> <li>Air Liquide Healthcare</li> <li>Sphere Health</li> <li>Liverpool Eye Surgery</li> <li>The Hand Centre</li> <li>South West Sydney Dermatology</li> <li>Liverpool Women's Health Centre</li> <li>Macquarie Centres of Excellence</li> <li>South Western Endoscopy Centre</li> </ul>
<b>Development Activity</b>	<ul style="list-style-type: none"> <li>Liverpool Hospital Redevelopment to provide an additional 187 additional beds and a new 8-level Integrated Services Building (ISB) providing 23,005sqm of increased GFA. This includes an expanded emergency department, women's and paediatric services, cancer treatment centre and support services. Completion is anticipated to occur in 2026.</li> <li>A new Clinical Skills Training Centre is also proposed as part of the Liverpool Hospital Redevelopment, with estimated completion in 2026. This will deliver an estimated 4,605sqm of integrated research/ medical floorspace including 1x research bunker, 2x radiation treatment bunkers, labs, seminar rooms, consulting rooms, operating theatres and tutorial rooms.</li> <li>New South Western Sydney Health Hub: facility to include cancer care, allied health services, and consulting/ treatment rooms (early planning stages).</li> <li>Liverpool Boys and Girls High School upgrade to provide additional permanent teaching spaces and core facilities (early planning stages).</li> <li>Liverpool Civic Place redevelopment: delivery of new Council offices, recreational facilities, a 22-level mixed-use project comprising commercial, retail and education floorspace (including the new UoW campus) and an 84-room hotel. Completion is expected to occur around Q4 2023.</li> </ul>

Source: Atlas Economics

## 3.2 Regional Demand

### 3.2.1 Hospital Hierarchy

The NSW public hospital system comprises over 150 hospitals and an extensive network of smaller health facilities (i.e. multipurpose services). Public hospitals are delineated into peer groups based on size, activity levels, service provision and role. This hierarchy of peer groups enables comparative reporting and service planning across the network.

Principal Referral Hospitals (A1) are the highest hospital classification in NSW, with a total of 13 across NSW (11 of these located within Greater Sydney). Liverpool Hospital is designated as an A1 hospital – one of the South Western Sydney Local Health District (LHD)'s two A1 hospitals (in addition to Bankstown-Lidcombe).

Table 3.2 provides a general overview of the hospital peer group ranking system.

**Table 3.2: Overview of Hospital Peer Groups**

Peer Group	Description
Principal referral hospitals	Principal referral hospitals are public acute hospitals that provide a very broad range of services, have a range of highly specialised service units, and have very large patient volumes. The term 'referral' recognises that these hospitals have specialist facilities not typically found in smaller hospitals.
Group A hospitals	<p>Public acute group A hospitals are public acute hospitals that provide a wide range of services typically including a 24-hour emergency department, intensive care unit, coronary care unit and oncology unit, but do not provide the breadth of services provided by Principal referral hospitals.</p> <p>Private acute group A hospitals are private acute hospitals that have a 24-hour emergency department and an intensive care unit, and provide a number of other specialised services such as coronary care, special care nursery, cardiac surgery and neurosurgery.</p>
Group B hospitals	<p>Public acute group B hospitals are those public acute hospitals that do not have the service profile of the Principal referral hospitals and Group A hospitals, but do have a 24-hour emergency department; they typically provide elective surgery and have specialised service units such as obstetric, paediatric and psychiatric units.</p> <p>Private acute group B hospitals are private acute hospitals that do not have a 24-hour emergency department, but do have an intensive care unit and a number of other specialised services including coronary care, special care nursery, cardiac surgery and neurosurgery.</p>
Group C hospitals	<p>Public acute group C hospitals include those public acute hospitals that provide a more limited range of services than Principal referral hospitals or Public acute group A and B hospitals, but do have an obstetric unit, provide surgical services and/or some form of emergency facility (emergency department, or accident and emergency service).</p> <p>Private acute group C hospitals are those private acute hospitals that do not provide emergency department services or have an intensive care unit, but do provide specialised services in a range of clinical specialities.</p>
Group D hospitals	<p>Public acute group D hospitals are acute public hospitals that offer a smaller range of services relative to the other public acute hospital groups, and provide 200 or more separations per year. They are mostly situated in regional and remote areas.</p> <p>Private acute group C hospitals are those private acute hospitals that do not provide emergency department services or have an intensive care unit, but do provide specialised services in a range of clinical specialities.</p>

Source: ACSQHC (2023)

In addition to peer groups, the clinical service offering of hospitals is further classified into six delineation levels. Level 1 represents hospitals providing uncomplicated clinical services, with Level 6 hospitals providing highly complex specialist services. NSW currently comprises 12 Level 6 hospitals - Liverpool Hospital the only Level 6 hospital in the South Western Sydney LHD.

Principal referral hospitals with Level 6 clinical services delineation are highly specialised and significant health assets and play a major role in the provision of health services across NSW.

### 3.2.2 Future Demand

The role for the Proposal in meeting future demand for health services at a regional level (i.e. South Western LHD) was examined in the *Market Needs Analysis* (Ethos Urban, 2022). The Market Needs Analysis concluded there is strong regional demand for health services over the coming years to 2036, with the key findings including outlined below.

#### Strong Population Growth

The South Western Sydney LHD is anticipated to record robust population growth over the coming 15 years, rising by 2.1% per annum over 2021-2036 with an additional ~396,000 residents expected (DPE, 2022).

Significant growth in older residents is expected over this period, with the number of residents aged 85 years and over projected to rise by 5.7% per annum. This accelerated rate of population ageing will invariably increase demand pressures on the health system.



#### Hospital Admission Projections

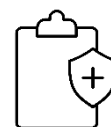
Projections of hospital admissions suggest Liverpool Hospital will experience an additional ~224,000 admissions over the 2021-2036 period, with much of this admission growth to be driven by older residents (75 years and older). This rate of growth represents an increase of more than 70% (Ethos Urban, 2022).



This significant rise in the number of patients being presented to Liverpool Hospital has obvious implications for the need for ancillary and complementary health services within the Precinct.

#### Rising Private Health Insurance Coverage

The Market Needs Analysis concluded that the number of residents across the South Western Sydney LHD with private hospital coverage will increase over the coming decades, driven by population growth, ageing population and rising income levels.



It was conservatively estimated that some 675,000 residents could have some degree of private hospital coverage by 2036 representing an increase of almost 182,00 residents. This has direct implications for the demand for private health services within the LHD and places significant demand on the existing private hospital network in the LHD.

#### Strong Operator Interest

The Proposal has secured significant interest from a mix of private hospital providers, medical research facilities, tertiary education providers and Government agencies. This level of interest is a reflection of the dearth of existing development opportunities within the LHAP amidst growing demand.



#### Need for Health and Education Floorspace

Based on Travel Zone (TZ) projections prepared by Transport for NSW (TZP, 2022), the Market Needs Analysis estimated that an additional 1,000,000sqm of health care floorspace and ~830,000 of education-related floorspace would be required across the South Western Sydney LHD in order to accommodate expected employment growth in these sectors.



As the largest health and education precinct within the LHD, the Market Needs Analysis concluded that the Precinct would play a significant role in accommodating this demand.

The Market Needs Analysis found that there was significant regional demand for additional health service facilities within the South West Sydney LHD, and concluded the Proposal would assist in meeting some of this demand.

The Market Needs Analysis focused on demand at the regional level (i.e. South Western Sydney LHD). This is a sound approach given the regional role that the LHAP is expected to play. To complement this analysis, demand at the local LHAP level is examined in the next section.



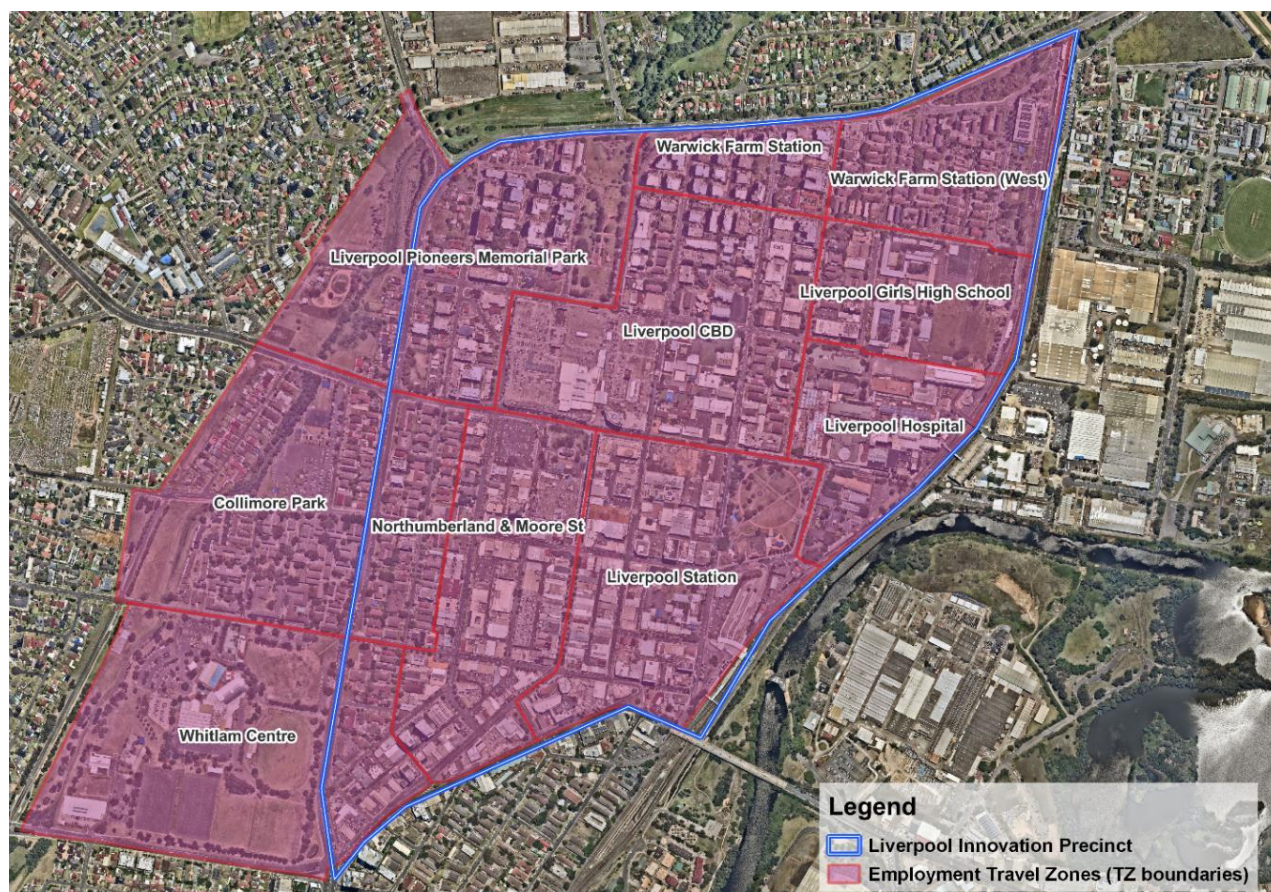
### 3.3 Employment Projections: Liverpool City Centre

This section reviews employment projections for the Liverpool City Centre over the 2021-2041 period and analyses the quantum of floorspace which could be required to support projected employment growth.

#### Employment Projections

Employment projections at the small area level are carried out by Transport for NSW's Transport, Performance and Analytics Division to inform State Government strategic planning. These small area geographies are known as Travel Zones (TZs). The TZs selected for analysis broadly align with the boundaries of the Study Area (**Figure 3.3**).

**Figure 3.3: Travel Zone Boundaries**



Source: Atlas Economics

As shown in **Table 3.3**, an additional ~7,400 workers are anticipated in the Liverpool Innovation Precinct over the 2021-2041 period (excluding industrial sectors). The overwhelming majority of this growth is anticipated to be generated by the health care and education sectors, accounting for 80% of total employment growth.

**Table 3.3: Employment Projections by Travel Zone (2021-2041), Liverpool Innovation Precinct**

BIC	2021	2026	2031	2036	2041	Change (2021-41)
Population-Serving	4,399	4,720	4,861	5,314	5,664	1,265
Knowledge Intensive	5,821	6,399	6,475	5,808	6,032	212
Health and Education	10,170	11,224	11,783	14,991	16,070	5,900
<b>Total (ex. Industrial)</b>	<b>20,389</b>	<b>22,343</b>	<b>23,119</b>	<b>26,113</b>	<b>27,766</b>	<b>7,377</b>

Source: TPA (2022)

### Converting Employment to Floorspace

To understand the likely demand for employment floorspace in the Liverpool Innovation Precinct over the coming decades, employment projections carried out by TPA have been converted into floorspace demand by applying workspace ratios.

The workspace ratios applied to the employment projections include:

- Population-serving: 35sqm of GFA per worker.
- Knowledge-intensive: 20sqm of GFA per worker.
- Health and Education: 20sqm of GFA per worker.

These workspace ratios have been based on industry knowledge and previous analysis of workspace ratios across Australia carried out by Landcom (Landcom, 2018). Using this methodology, approximately 166,500sqm of additional floorspace could be required across the Liverpool Innovation Precinct to accommodate future employment growth to 2041.

**Table 3.4: Employment Floorspace Projections by Travel Zone (2021-2041), Liverpool Innovation Precinct**

BIC	2021	2026	2031	2036	2041	Change (2021-41)
Population-Serving	153,953	165,190	170,122	185,990	198,233	44,280
Knowledge Intensive	116,413	127,979	129,499	116,168	120,646	4,233
Health and Education	203,394	224,481	235,669	299,818	321,392	117,998
<b>Total (excluding Industrial)</b>	<b>473,761</b>	<b>517,650</b>	<b>535,290</b>	<b>601,976</b>	<b>640,271</b>	<b>166,511</b>

Source: Atas Economics

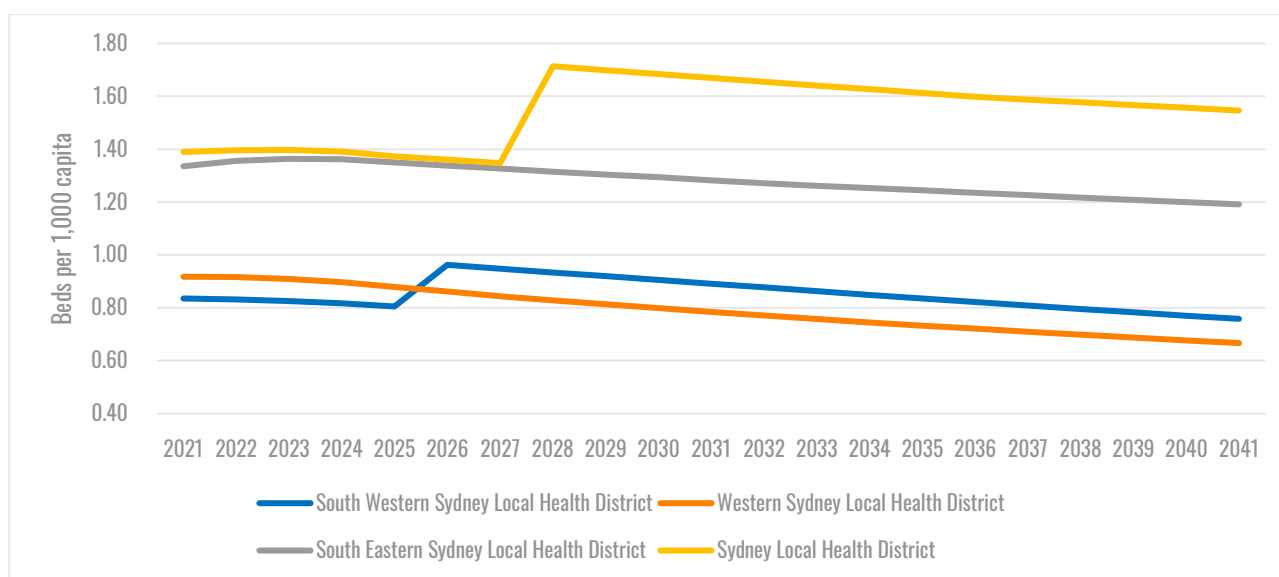
Based on these generic employment floorspace projections, the Liverpool Innovation Precinct could potentially require an additional ~118,000sqm of 'health and education floorspace'. This represents just 6% of the total projected health and education floorspace demand required at the LHD level as assessed in the Market Needs Analysis (Ethos Urban, 2022).

### 3.4 Benchmarking Analysis

To complement the regional demand analysis in the Market Needs Analysis (Ethos Urban, 2022), benchmarking of hospital beds in Level 6 delineation hospitals against future population projections has been carried out. This benchmarking has compared population projections in the South Western Sydney LHD, Western Sydney LHD, South Eastern LHD and Sydney LHD against existing and future provision of hospital beds with a Level 6 delineation.

As shown in **Figure 3.4** and **Table 3.5**, the South Western and Western LHDs have a much lower provision of hospital beds with a Level 6 delineation compared to the South Eastern and Sydney LHDs. This is even after including new/ proposed beds from the large expansions planned for Westmead and Liverpool Hospitals.

**Figure 3.4: Hospital Bed (Level 6 Delineation) Provision by Capita (2021-2041)**



Source: Atlas Economics



**Table 3.5: Hospital Bed (Level 6 Delineation) Provision by Capita (2021-2041)**

	South Western Sydney LHD	Western Sydney LHD	South Eastern LHD	Sydney LHD
<b>Hospital Beds (Level 6 ED)</b>				
Existing	877	958	1,030*	969
Planned	187	-	235	275
Total	1,064	958	1,265	1,244
<b>Population Projections</b>				
2021	1,049,666	1,043,832	947,654	697,359
2041	1,402,699	1,436,966	1,061,807	804,316
<b>Hospital Beds/Capita (per 1,000)</b>				
2021	0.84	0.92	1.33	1.39
2041	0.76	0.67	1.19	1.55

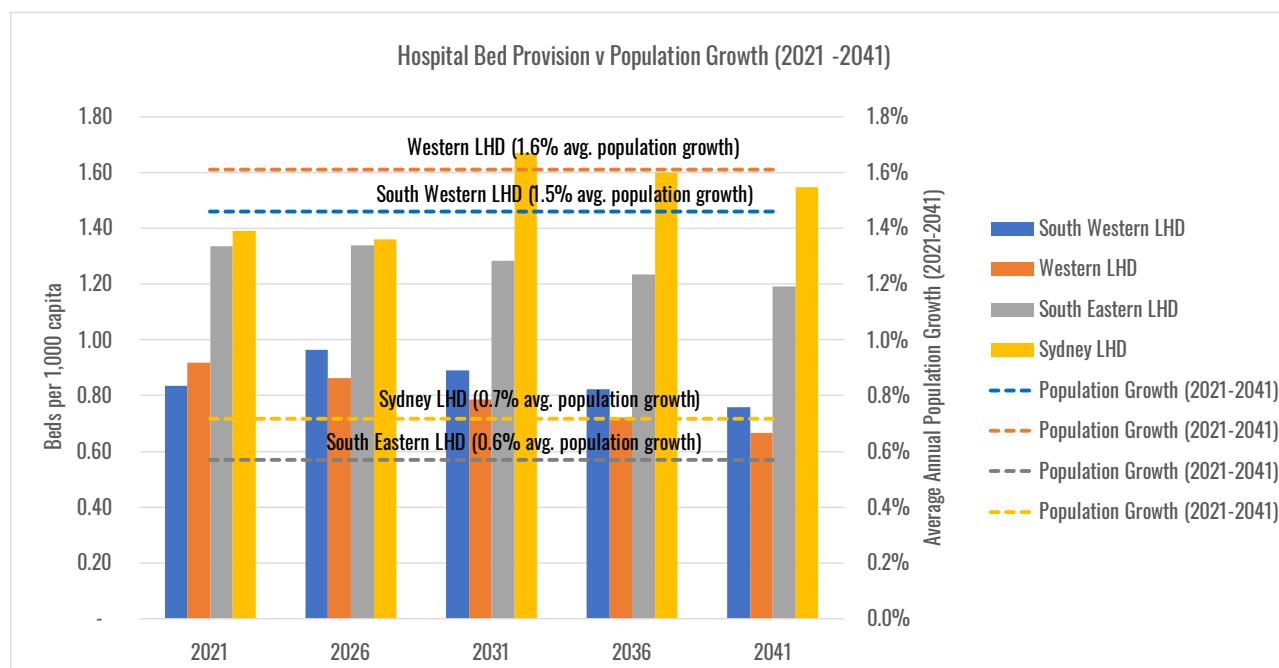
\*Includes Prince of Wales Hospital and St George Hospital

Source: Atlas Economics/DPE (2022)

In the South Western LHD, the ratio of hospital beds (Level 6) is the lowest at 0.84 per 1,000 persons. An additional 175 beds would be required to achieve 1.0 hospital bed (Level 6) per 1,000 persons (though this would still be below the ratios observed in the South Eastern and Sydney LHDs).

**Figure 3-5** overlays the ratios of bed provision (hospital beds per 1,000 residents) against the expected rate of future population growth (DPE, 2022).

**Figure 3-5: Hospital Bed Provision v Population Growth (2021-2041)**



Source: Atlas Economics/DPE (2022)

It is evident that the lowest hospital bed provision is in LHDs that expect the highest rate of population growth.

The South Western LHD and Western LHDs are projected to grow their resident population base by an average annual rate of 1.5% and 1.6% respectively (2021-2041). In contrast, the South Eastern LHD and Sydney LHD rate of population growth is projected to be lower - at 0.6% and 0.7% average annual growth respectively.

Even after including planned hospital bed additions, the levels of bed provision in the South Western LHD and Western LHD will still fall well below the South Eastern LHD and Sydney LHD.

### 3.5 Growth Outlook

A significant number of proposed developments are being progressed within the Liverpool Innovation Precinct. Notable projects include the Liverpool Hospital upgrade and extension, new public schools, hotels, and several large-scale commercial developments in the pipeline.

Proposed commercial projects include the 'Liverpool Quarter', a 23-level A grade office tower situated across the Liverpool train station with ground floor retail and a 36-level mixed-use development 'The Liverpool' to provide 5,500sqm of A-grade office space. An approved development site at 431 Macquarie Street, Liverpool is also being offered for sale, with approval for a 31-storey mixed-use development including some 38,500sqm of commercial space.

The development pipeline indicates that the Liverpool Innovation Precinct is highly attractive to private and institutional investors, with many proposed projects expected to be delivered over the coming years to 2026.

The establishment of additional businesses, health services and education facilities will further attract skilled employment into the Precinct. It will therefore be critical to provide complementary land uses to leverage these investments and resources to create an interconnected ecosystem for inter-disciplinary integration and collaboration, as envisioned in the Precinct planning framework.

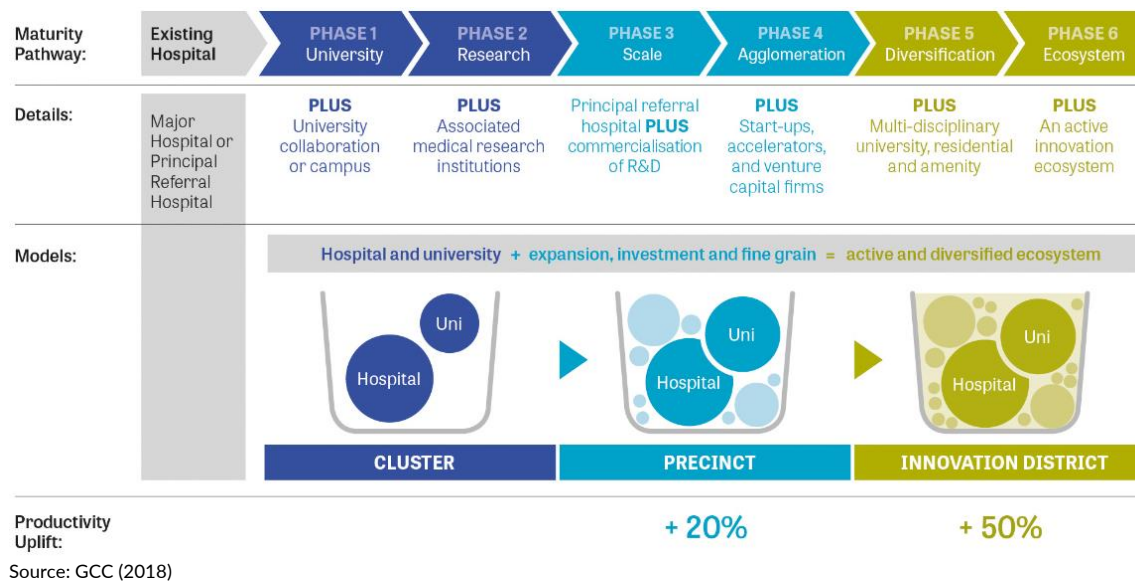
## 4. Need for the Proposal

### 4.1 Evolution of Health and Education Precincts

The economic agglomeration benefits of clustering of universities, hospitals, medical research institutions and tertiary education facilities into defined precincts are well researched and understood. Health and education precincts are key drivers of economic activity throughout Greater Sydney and their role as employment hubs over the coming decades is expected to grow significantly.

In recognition of their economic importance, NSW Government is actively investing into Greater Sydney's network of health and education precincts. Enabling the transition of health and education precincts into globally competitive 'innovation districts' (described in the Greater Sydney Region Plan) is a key strategic direction of NSW strategic planning policy.

**Figure 4.1: Maturity Pathway, Innovation Districts**



### 4.2 Learnings from Case Studies

As demonstrated by State and local strategic planning policy, supporting the transition of Liverpool from a 'health and education precinct' into an 'innovation cluster' is a key objective of NSW Government and Liverpool City Council.

To assess the potential for the LHAP to transition into an innovation cluster, a case study analysis of other health and education precincts across Greater Sydney has been carried out. The characteristics of these precincts – including their size, mix of public and private health services – provides insight into any impediments/ hurdles to growth facing the Liverpool Health and Academic Precinct.

Three health and education precincts are examined - selected from those designated as 'health and education precincts' in strategic planning policy and are anchored by principal referral hospitals with Level 6 clinical services delineation:

- **Westmead** Health and Education Precinct (anchored by Westmead Hospital)
- **Randwick** Health and Innovation Precinct (anchored by Prince of Wales Hospital)
- **Camperdown** Health Education Research Precinct (anchored by Royal Prince Alfred Hospital).

A summary of the key characteristics of these three case study precincts as compared to the LHAP is provided in **Table 4.1**.

SCHEDULE 1 provides a more detailed summary of each case study precinct.

**Table 4.1: Summary of Case Study Analysis, Select Health and Education Precincts**

	Liverpool	Westmead	Randwick	Camperdown
Local Health District	South Western Sydney	Western Sydney	South Eastern Sydney	Sydney
Principal Referral Hospital (Level 6 clinical services)	Liverpool Hospital	Westmead Hospital	Prince of Wales	Royal Prince Alfred
Status	Health and Education Precinct	Health and Education Precinct	Innovation District	Innovation District
City	Western City	Central City	Eastern City	Eastern City
Size	52.6ha*	75ha	136ha	73ha
% Government Land	50%	83%	10%	17%
Principal Referral Public Hospitals (beds)	1 (877)	1 (1,544)	1 (731)	1 (969)
Specialist Public Hospitals (beds)	-	3 (586)	2 (281)	-
Private Hospitals (beds)	2 (121)	2 (213)	2 (193)	2 (226)
<b>Private Beds/Public Beds (Level 6)</b>	<b>0.14</b>	<b>0.22</b>	<b>0.43</b>	<b>0.23</b>
Total Hospital Beds	998	1,757	924	1,195
Universities Campuses (students)	2 (~10,000)	2 (~2,000)	1 (58,000)	1 (~70,000)
<b>Research GFA</b>	<b>~15,000sqm</b>	<b>~50,000sqm</b>	<b>~61,000sqm</b>	<b>~116,000sqm</b>
Jobs	8,700	14,400	20,300	16,100

\*Based on the boundaries of the Liverpool Health and Academic Precinct  
Source: Atlas Economics

Compared to the other case study precincts, the LHAP shares many of their strengths. The size and scale of its anchor hospital is larger than many of the case study precincts, with its growing mix of university campuses providing a more diverse tertiary education offering to some of the other case study precinct. It also comprises a relatively large proportion of land owned by NSW Government agencies.

Despite these strengths, the case study analysis does demonstrate several elements absent from Liverpool:

- **Critical mass of lands** for further development. The LHAP is notably smaller than the other case study precincts. This lack of scale is recognised in the Precinct Strategy, which also identified the need for further expansion of the precinct.
- **Lack of private hospital operators** to support the public hospital. The LHAP comprises a lower number of private overnight hospital beds compared to the case study precincts and is the only precinct that does not have a private hospital with over 100-beds. Notably, there are only 0.14 private to public hospital beds in the South Western LHD. This is well below the other precincts which range from 0.22 to 0.43 of private to public hospital beds.
- **Small scale of existing medical research sector.** The Ingham Institute is the main research organisation in the LHAP, with the total amount of medical research floorspace estimated at circa 15,000sqm. This quantum of floorspace is significantly lower compared to the other case study precincts, particularly the two Innovation Districts (Randwick and Camperdown) which comprise between 60,000sqm and 120,000sqm of medical research floorspace.
- **Smaller jobs base** with 8,700 jobs compared to 14,000 to 20,000 jobs in the peer precincts.

These factors are impediments to the growth of the LHAP and its maturity into an innovation district. Importantly, these factors were identified by the NSW Government in the Precinct Strategy with specific actions to mitigate these challenges.

## 4.3 Economic Need of the Proposal

### Role in Liverpool Innovation Precinct

The Liverpool Innovation Precinct is poised to record significant employment growth over the coming decades. Over 2021-2041 period, the Precinct is expected to grow by additional ~7,400 workers (growth of 36%). The health care and education sectors are expected to be the key drivers of this employment growth (accounting for 80% of total employment growth).

The ability for the Liverpool Innovation Precinct to achieve this level of growth will be subject to its ability to mature into an 'innovation district'. Both the NSW Government and Council are actively seeking to support this transition through both direct investment and strategic planning (i.e. the Precinct Strategy).

While government-led investment will play an integral role in Liverpool's successful transition into an innovation district, involvement and investment by the private sector and industry is equally critical. Whilst the Liverpool Innovation Precinct has benefited in recent years from renewed interest from various tertiary education providers (i.e. WSU, UoW), there has been very little new privately-led health or medical-research development. A review of the development pipeline indicates there are no privately-led health or medical developments currently being planned or delivered within the precinct.

The Precinct Strategy identified that **additional private hospitals and medical research facilities** are critical to the future expansion of the LHAP, with opportunities to attract new investors to be encouraged. This Study's comparison against other case study precincts finds the LHAP has a notable shortfall in the provision of private hospital beds and medical research floorspace.

The Proposal has the potential to support the transition of the LHAP into an innovation district, particularly given existing interest from both private hospital operators and medical research institutes.

### Role for the Proposal

The Precinct Strategy specifically identified the Site and other residential flat buildings along Goulburn Street has barriers to the growth of the LHAP. Development of the Proposal would facilitate the removal of one of these 'barrier sites', whilst aligning with the objectives of the Precinct Strategy.

It is also important to note that the location of the Site directly adjacent the Liverpool Hospital will present opportunities for shared infrastructure – another key objective of the Precinct Strategy.

If delivered, the Proposal has the potential to:

- Increase the private bed: public bed ratio from 0.14 to 0.31 (though this would still be below its peer precincts).
- Deliver a new pedestrian bridge over Goulburn Street directly connecting the Proposal with Liverpool Hospital.
- Deliver an additional ~12,500sqm of GFA which could be utilised for medical research and education uses (which would still leave Liverpool below its peers in terms of medical research floorspace provision).
- Grow the employment/ jobs base by more than 1,000 jobs. On completion of the Proposal, the jobs base could be increased from 8,700 to approx. 9,800 jobs (though this would still be lower than employment in peer precincts).

Overall, the Proposal assists in strengthening the competitive position of LHAP by providing much-needed private health and medical research floorspace, contributing to growing the jobs base in Liverpool.

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# Case Study Analysis

## Westmead Health and Education Precinct

**Table S1-1: Westmead Health and Education Precinct, Key Characteristics**

Case Study	Westmead Health and Education Precinct
Location	Westmead, Sydney (1.5km west of Parramatta CBD)
Size	Circa 75 hectares
Employment	14,000 jobs (2021)
Hospitals	<ul style="list-style-type: none"> <li>Westmead Hospital (865 beds) – principal referral, tertiary teaching hospital with Level 6 ED Delineation.</li> <li>The Children's Hospital at Westmead (276 beds) – largest paediatric hospital in NSW.</li> <li>Cumberland Hospital (310 beds) – public psychiatric hospital.</li> <li>Westmead Private Hospital (179 beds) – private hospital co-located with the Westmead Hospital specialising in orthopaedic, urology, ear, nose and throat and general surgery in addition to maternity and cardiology services. Recently updated in 2022 to provide an additional 2 operating theatres, 13 consulting suites and 20 additional beds.</li> <li>Westmead Skin Hospital –specialist dermatology hospital.</li> <li>Westmead Centre for Oral Health - State-wide specialist oral health facility.</li> </ul>
Research Facilities	<p>Circa 50,000sqm of medical research floorspace. Major research centres include:</p> <ul style="list-style-type: none"> <li>Institute for Clinical Pathology and Medical Research</li> <li>Kids Research Institute</li> <li>Breast Cancer Institute</li> <li>The Crown Princess Mary Cancer Centre</li> <li>Children's Medical Research Institute</li> <li>Westmead Institute for Clinical Research</li> <li>Charles Perkins Institute</li> <li>Western Sydney Local Health District Research and Education Network</li> </ul>
Educational Facilities	<ul style="list-style-type: none"> <li>The University of Sydney: <ul style="list-style-type: none"> <li>Westmead Hospital Clinical School</li> <li>The Children's Hospital at Westmead Clinical School</li> <li>Faculties of Dentistry, Nursing, Health Sciences</li> <li>Centre for Oral Health</li> <li>Charles Perkin Centre</li> </ul> </li> <li>Western Sydney University College and International Language School</li> <li>Western Sydney Local Health District Research and Education Network</li> </ul>
Companies	<p>There is an existing cluster of health and medical businesses within the Westmead precinct, including:</p> <ul style="list-style-type: none"> <li>Resmed</li> <li>Epic-X</li> <li>Permobil Australia</li> <li>Southern Cross Hospital Services</li> <li>EverX</li> <li>TAD Disability Services</li> <li>Animated Biomedical Productions</li> <li>Air Liquide Healthcare</li> </ul>
Redevelopment	<p>Significant level of investment proposed, including:</p> <ul style="list-style-type: none"> <li><b>Westmead Education Campus.</b> Funded through the WestInvest Program (NSW Gov.), set to deliver a 1,000 student primary and pre-school, and 2,000 student selective high school.</li> <li><b>Westmead Hospital Redevelopment.</b> New 14-storey Central Acute Services Building incl: <ul style="list-style-type: none"> <li>New university-hospital space with USyd to occupy 1.5 floors with a 16-bed simulation ward.</li> <li>2 new emergency departments, 25 digital operating theatres, up to 300 patient rooms.</li> <li>Deliver approx. 96,000sqm floorspace, expected completion by mid-2023.</li> </ul> </li> <li><b>Innovation Quarter (iQ).</b> 3-stage development of a multidisciplinary research space for collaboration between business, health and research. <ul style="list-style-type: none"> <li>Proposed 39,000sqm of research, health, commercial and retail floorspace across 3 towers with targeted completion circa Q4 2025.</li> </ul> </li> <li><b>Integrated Mental Health Complex.</b> Proposed 10-level development providing mental health beds and services and education facilities. Expected completion around 2026.</li> </ul>

Source: ABS (2022)/Atlas Economics/BCI/Westmead Alliance (2017)

## Randwick Health and Innovation Precinct

Table S1-2: Randwick Health and Innovation Precinct, Key Characteristics

Case Study	Randwick Health and Education Precinct
Location	Randwick/Kensington, Sydney (4.5km south-east of Sydney CBD)
Size	~136 hectares
Employment	20,300 jobs
Hospitals	<ul style="list-style-type: none"> <li>• Prince of Wales Hospital (495 beds) – principal referral, tertiary teaching hospital with Level 6 ED Delineation).</li> <li>• Sydney Children's Hospital (158 beds) – NSW's second largest major paediatric hospital.</li> <li>• Royal Hospital for Women (123 beds) – Specialist hospital for women and babies and major teaching hospital for UNSW.</li> <li>• Prince of Wales Private Hospital (168 beds) – private hospital co-located with the Prince of Wales Hospital.</li> </ul>
Research Facilities	<p>Includes a Neuroscience Research Precinct which has concept plan approval for 61,000sqm of medical research floorspace. Existing operators:</p> <ul style="list-style-type: none"> <li>◦ The Kirby Institute</li> <li>◦ Lowy Cancer Research Centre</li> <li>◦ Neuroscience Research Australia</li> <li>◦ The Bright Alliance</li> <li>◦ Black Dog Institute</li> <li>◦ National Drug and Alcohol Research Centre</li> </ul>
Educational Facilities	<ul style="list-style-type: none"> <li>• The University of NSW: <ul style="list-style-type: none"> <li>◦ Prince of Wales Hospital Clinical School</li> <li>◦ Faculties of Medical Sciences, Psychiatry, Public Health and Community Health, Women and Children's Health</li> </ul> </li> <li>• TAFE Randwick (medical courses include dentistry, early childhood education and care, health administration, health services assistance, nursing, remedial massage).</li> </ul>
Companies	<p>Small cluster of allied health service and medical imaging providers. Major businesses include:</p> <ul style="list-style-type: none"> <li>• Sydney Surgical Centre</li> <li>• Focus Eye Centre</li> <li>• Douglass Hanly Moir Pathology</li> <li>• Randwick Imaging Centre</li> </ul>
Redevelopment	<p>Several redevelopment projects are being progressed including:</p> <ul style="list-style-type: none"> <li>• <b>New Health Translation Hub:</b> to provide 35,600sqm of integrated work, research and education floorspace with UNSW and Plenary Health to develop and operate the facility. <ul style="list-style-type: none"> <li>◦ UNSW will occupy 65% of available floorspace.</li> </ul> </li> <li>• <b>Prince of Wales Hospital Upgrade:</b> New Integrated Acute Services Building to provide 156 more beds within a 5,000sqm extension across Hospital Road. Due for completion in 2024.</li> <li>• <b>Randwick Campus Redevelopment (additional 5,828sqm of medical floorspace)</b> <ul style="list-style-type: none"> <li>◦ Construction of the Sydney Children's Hospital Stage 1 and Minderoo Children's Comprehensive Cancer Centre.</li> <li>◦ Facilities to accommodate new intensive care unit, emergency services, medical and surgical specialties and short-stay units.</li> <li>◦ Expected to provide for an additional 155,000 sick children per year. Anticipated completion in 2025.</li> </ul> </li> </ul>

Source: ABS (2022)/Atlas Economics/BCI/SESLHD (2021)

## Camperdown Health Education Research Precinct

Table S1-3: Camperdown Health and Education Precinct, Key Characteristics

Case Study	Camperdown Health and Education Precinct
Location	Camperdown, Sydney (2.5km west of Sydney CBD)
Size	~94 hectares
Employment	15,800 jobs
Hospitals	<ul style="list-style-type: none"> <li>Royal Prince Alfred Hospital (757 beds) – principal referral, tertiary teaching hospital with Level 6 ED Delineation.</li> <li>RPA Institute of Rheumatology &amp; Orthopaedics (26 beds) – specialist orthopaedic hospital.</li> </ul>
Research Facilities	<p>Circa 116,000sqm of research-related floorspace. Existing operators include:</p> <ul style="list-style-type: none"> <li>Baird Institute</li> <li>Brain and Mind Centre</li> <li>Marie Bashir Institute</li> <li>Heart Research Institute</li> <li>Centenary Institute of Cancer</li> <li>George Institute for Global Health</li> <li>Woolcock Institute for Medical Research</li> <li>Sydney Research</li> </ul> <p>The proposed Sydney Biomedical Accelerator Building in the University of Sydney Campus is expected to deliver up to 36,000sqm of additional research/ clinic learning floorspace by 2026.</p>
Educational Facilities	<p>The University of Sydney:</p> <ul style="list-style-type: none"> <li>Sydney Central Medical School</li> <li>Schools of Medicine, Pharmacy, Science and Veterinary Science</li> </ul>
Companies	<p>Limited number of medical and health care operators. Existing operators include:</p> <ul style="list-style-type: none"> <li>Oxytocin</li> <li>Camperdown Vascular Laboratory</li> <li>Apscan</li> </ul>
Redevelopment	<p>Several major projects are being planned and set to be delivered over the next 5 years including:</p> <ul style="list-style-type: none"> <li><b>'Camperdown Modern'</b> development at 122 Pyrmont Bridge Road. <ul style="list-style-type: none"> <li>Located in proximity to the Royal Prince Alfred Hospital, an anticipated 10,300sqm of medical floorspace is set to be delivered, including day surgeries, pathology, radiology, mental rehabilitation and consulting suits.</li> <li>The project is scoped to potentially deliver 120-130 patient beds.</li> </ul> </li> <li><b>Royal Prince Alfred Hospital redevelopment:</b> <ul style="list-style-type: none"> <li>An additional 15-storey building is proposed to include additional adult inpatient accommodation/beds, expanded Emergency Department, an Intensive Care Unit, operating theatres.</li> <li>A Neonatal Intensive Care Unit with 30% additional capacity.</li> </ul> </li> <li><b>Sydney Biomedical Accelerator Building:</b> New integrated health, education and precinct for the University of Sydney and Royal Prince Alfred Hospital. <ul style="list-style-type: none"> <li>Located within the University of Sydney campus.</li> <li>Upon completion, the development will comprise a complex of 3 interconnected buildings including 36,000sqm of floorspace for integrated biomedical research development.</li> </ul> </li> </ul>

Source: ABS (2022)/Atlas Economics/BCI/

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