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**Henry Halloran  
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## Exploring the role of affordable housing in successful health-focused innovation districts

A case study of precinct partner perspectives in Westmead Health and Innovation District

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*For the*

*Henry Halloran Research Trust*

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## DISCLAIMERS

The Henry Halloran Research Trust is an independent body, which has supported this project as part of its programme of research. The opinions in this publication reflect the views of the authors and do not necessarily reflect those of the Henry Halloran Trust, its Advisory Board, or the University of Sydney

Cover image: Staff accommodation in Westmead Health and Innovation District, Author.



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Westmead Health and Innovation District

Final report

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# Executive Summary

Over the last two decades, urban planning researchers and policy makers in NSW have been increasingly concerned with two key topics: addressing declining affordability and strengthening innovation ecosystems.

There is significant community pressure to address affordability challenges across the state, particularly in Greater Sydney (Gurran & Phibbs 2015). In the last four decades, housing prices far outstripped wage growth: the median house price in Sydney rose from five times the median annual salary in 1981, to 14 times in 2021 (Fitzsimmons 2021). City wide, the proportion of households renting, rather than purchasing or owning a home, is increasing; and the share of rental dwellings that are available and affordable for low and moderate income households is declining (Gilbert, Nasreen & Gurran 2023).

Simultaneously, the NSW Government is increasingly focused on planning and delivering innovation districts, to attract talent, business and investment to NSW and create additional jobs. Designating, supporting and strengthening innovation districts has been the focus of recent strategic plans for Greater Sydney, as NSW policy makers seize the opportunities presented by high growth industries in the innovation economy (GCC 2022a; DPE 2022).

Although innovation districts and housing affordability are generally treated as two independent policy areas, there is growing recognition that innovation districts are often associated with declining housing affordability and gentrification (McNeil 2016). The innovation economy also relies on a diverse range of low-to-moderate income workers, including research assistants, PhD students and start-up entrepreneurs, but housing this workforce securely and affordably has not been a focus of policy or research (Dowling et al 2020).

This gap is highlighted when exploring health-focused innovation districts (HFIDs), where “multiple health assets [are] co-located with large-scale and multi-disciplinary research, education and industry partners, who collaborate to support and promote innovation and commercialisation” (HINSW 2022a, n.p.). Preliminary evidence suggests there is demand for affordable housing in HFIDs from both low to moderately paid workers in the innovation sector, such as PhD candidates, start up founders and research assistants; and from moderately paid key workers essential to the functioning of the health assets that anchor the precinct, including nurses, ambulance workers, cleaners, porters and hospital administration workers.

The NSW Government’s focus on boosting HFIDs offers an opportunity to research the intersection of innovation districts and housing affordability, to better understand the role of affordable housing<sup>1</sup> in supporting successful health-focused innovation precincts.

## This report

Focusing on Westmead Health and Innovation District (WHID) as a case study, this report explores the role of affordable housing in supporting the delivery of successful HFIDs. It seeks to make a NSW-specific contribution to addressing the “paucity of peer-reviewed research on successful links between smart cities, innovation, and affordable housing” (Dowling et al 2020, p.1).

This report draws on a review of international and Australian policy and research evidence, and thematic analysis of interviews with WHID precinct partners to explore the role of co-located affordable housing in supporting innovation districts with a health sector focus. Precinct

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<sup>1</sup> Benedict (2020) defines affordable housing as “housing that can be bought or rented by a low to moderate income household at a cost of no more than 30 per cent of their household income” (p.12). It is distinct from key worker housing, which targets workers on low to moderate incomes in particular sectors, and social housing, which is targeted at households on very low incomes.

partners in WHID comprise the co-located government agencies, anchor institutions, universities, health facilities, research institutes, businesses and other partners that collaborate together to deliver the precinct's vision.

## Key findings

Drawing on the WHID case study, the report concludes that delivering affordable housing targeted at low to moderate income precinct workers would have significant benefits for WHID, but identified significant challenges for implementation. The key findings of the case study are summarised below.

### Role of affordable housing in supporting HFIDs

Interviewees identified three main ways that affordable housing supported the success of HFIDs:

- **Supporting a diverse health and innovation workforce:** Affordable housing options support the diverse workforce required for WHID to function – and could assist in attracting and retaining the emerging talent that is key to the international competitiveness of the precinct.
- **Enhancing vibrancy and amenity:** WHID is currently characterised by major health and research uses, limited street activation and lack of pedestrian amenity. Interviewees believed housing would help to diversify land uses within the precinct, and contribute to a sense of community, amenity and vibrancy; thereby improving the attractiveness of the precinct to businesses, employers and start ups.
- **Taking an “ecosystem approach”:** Interviewees also believed provision of affordable housing is integral to an “ecosystem approach” to precinct development, where the supportive infrastructure surrounding the precinct (including housing) is proactively managed to enable the long term vision for WHID.

Importantly, interviewees tended to prioritise provision of a diverse range of housing options, including “high end,” market-priced and affordable housing, over provision of solely affordable housing, to attract the diverse workforce required to support health and innovation functions at WHID.

These findings are largely consistent with the existing research literature, which found increasing attention devoted to affordable and diverse housing by innovation districts as a strategy to improve amenity, and attract and retain a diverse workforce. The findings of the WHID case study did, however, highlight the unique complexities of delivering affordable housing in an HFID – including balancing demand for affordable housing from key workers and innovation workers, and the perceived “dilution” of health innovation precinct character through incorporating non-clinical uses.

### Barriers to delivering affordable housing in HFIDs

Interviewees also highlighted barriers to delivering affordable housing in HFIDs, including:

- **Complex precinct governance:** Overlapping precinct development roles for government agencies in WHID has resulted in implementation challenges for delivering housing priorities. In particular, there is a disconnect between strategic planning agencies, which have advocated for housing provision, and the priorities of land-owning agencies, who have stronger levers for housing delivery. This poses challenges for coordination.
- **Competing priorities within the public health system:** As the largest landowner and major anchor of WHID, NSW Health has significant influence over the future of the precinct. However, housing delivery is not “core business” for the public health system, which is under pressure to prioritise health services and infrastructure. NSW Health currently lacks the organisational expertise, resources and mandate required to proactively address demand for affordable housing. This limited focus on housing needs is reinforced by a lack of qualitative and quantitative data on workforce housing needs and aspirations that would increase the visibility of housing stress as an issue affecting health service delivery.

- **Viability and land availability challenges:** Affordable housing delivery in WHID is also impacted by broader viability challenges, including city-wide high housing costs, rising interest rates, unresponsive tax incentives for affordable housing delivery and the cost of building post-pandemic.
- **Lack of broader government support to deliver affordable housing:** NSW Health is not solely responsible for providing affordable housing in the precinct, and delivery is undermined by the lack of robust planning tools and funded programs to support delivery across NSW Government.

There is limited existing research that “benchmarks” barriers to incorporating housing in innovation districts, but the above findings highlight the specific challenges for delivering affordable housing in both a NSW and HFID context. The WHID case study also reinforces the findings of existing research regarding limited policy supports and planning requirements for affordable housing in NSW and Australia more generally.

## Implications

Interviews, policy and research evidence reviews highlighted the value of affordable housing in supporting HFIDs, and pointed to the following opportunities for change:

- **Enhanced capacity and focus on affordable housing in the health system:** While affordable housing is not “core business” for NSW Health, as the major anchor and landowner in WHID, the organisation controls levers that can shape and foster housing delivery within the precinct. This could include access to land and/or guarantees of consistent rental income from NSW Health employees, when coordinated in partnership with developers, community housing providers and other agencies. Proactive fine-grain data collection and analysis on housing need in WHID, including workforce surveys, and developing “housing conscious” localised precinct strategies could enhance the visibility of workforce housing need within the health system.
- **Broader government support for affordable housing delivery:** While NSW Health, as the precinct’s anchor, has significant scope to drive an affordable housing agenda for WHID, the findings also reinforce the need for broader government reforms to support affordable housing delivery in NSW.
- **Clarification of stakeholder roles and responsibilities in supporting affordable housing provision:** There may be an opportunity to streamline decision making and clarify roles and responsibilities within precinct governance, to sharpen focus on affordable housing delivery. A special purpose authority could be well-suited to driving delivery of affordable housing, and broader precinct development activities, in WHID.

## Further research

This report is a short case study, and points to areas for further research, including:

- **Approaches to data collection:** The WHID case study highlighted the lack of data on housing need in HFIDs, and its relationship to workforce attraction and retention. Further research could explore practical, embedded approaches to data collection in HFIDs, including employee surveys, which would complement the insights provided by existing research into city-wide housing need (see: Gilbert, Nasreen & Gurran 2021; 2023).
- **Worker perspectives:** Seeking out the views of key workers and low to moderately paid innovation workers on affordable housing options in HFIDs would provide greater detail on their housing aspirations and the importance of housing costs in career decisions (Gilbert, Nasreen & Gurran 2021; Dowling et al. 2020).
- **Employer perspectives:** Further exploration of recruitment and retention challenges experienced by public and private sector employers would assist in clarifying the role of housing in supporting innovation district workforces.
- **Other HFIDs:** There is also potential to extend this case study to other HFIDs including in higher cost housing markets, where they may be even greater sensitivity to housing costs,



including at the Camperdown node of Tech Central, and Randwick Health and Innovation Precinct in inner Sydney.

## Abbreviations used in this report

DPE	NSW Department of Planning and Environment
GCC	Greater Cities Commission
HFID	Health-focused innovation district
HI	Health Infrastructure
IPC	NSW Innovation and Productivity Council
NSW	New South Wales
SCHN	Sydney Children's Hospital Network
SGCH	St George Community Housing
TfNSW	Transport for NSW
WHID	Westmead Health and Innovation District
WHP	Westmead Health Precinct
WSLHD	Western Sydney Local Health District

## Key terms

Affordable housing	Housing that can be bought or rented by a low to moderate income household for less than 30 per cent of their household income (Benedict 2020).
Housing stress	When households pay too high a proportion of their income in housing costs, leading to reduced spending on other essentials such as groceries and healthcare. Housing stress is commonly measured using the “30:40 indicator.” This indicator identifies households as being in “housing affordability stress when the household has an income level in the bottom 40 per cent of Australia's income distribution and is paying more than 30 per cent of its income in housing costs” (AHURI 2019).
Health-focused Innovation district	Where “multiple health assets [are] co-located with large-scale and multi-disciplinary research, education and industry partners, who collaborate to support and promote innovation and commercialisation” (HINSW 2022a, n.p.).
Innovation district	“Geographic areas where leading-edge anchor institutions and companies cluster and connect with start-ups, business incubators, and accelerators” (Katz & Wagner 2014 p.1).
Key worker	Generally refers to workers on moderate incomes who are employed in services essential to the functioning of a community, including nurses, teachers, police officers, emergency workers. Key workers generally cannot work from home, as physical presence is required to complete their work tasks (Gilbert, Nasreen & Gurran 2021).
Precinct partner	Co-located government agencies, anchor institutions, universities, health facilities, research institutes, businesses and other partners collaborating together to deliver the precinct’s vision.

# Chapter 1: Introduction

## Introduction

### Overview

Over the last decade, NSW urban policy has increasingly sought to address both declining housing affordability, and promote “innovation districts” as a key economic development strategy (Katz and Wagner 2014).

Although innovation districts and housing affordability are generally treated as two independent policy areas, there is growing recognition that innovation districts are often associated with declining housing affordability and gentrification (McNeil 2016). The innovation economy relies on a diverse range of low-to-moderate income workers, including research assistants, PhD students and start-up entrepreneurs, but housing this workforce securely and affordably has not been a focus of policy or research (Dowling et al 2020).

This tension is highlighted when exploring health-focused innovation districts (HFIDs), where precinct development leverages co-located hospitals, universities, medical research institutes and biotechnology, medical technology and pharmaceutical businesses to promote innovation across the health sector. Within HFIDs, there is demand for affordable housing from both low and moderate income workers in the innovation sectors, and key workers who are essential to the functioning of health assets – including nurses, ambulance workers, cleaners and administrative workers.

### Purpose of this report

With the NSW Government increasingly focused on planning and delivery of innovation districts, including HFIDs (GCC 2022a; DPE 2022), and trying to address housing affordability challenges, there is an opportunity to research the intersection of innovation districts and housing affordability to better understand the role of affordable housing in supporting successful health-focused innovation precincts.

Drawing on Westmead Health and Innovation District (WHID) as a case study, this research explores the perspectives of precinct partners on the role of affordable housing in supporting the delivery of successful health-focused innovation districts (HFIDs). In WHID, the “precinct partners” are the government agencies, and co-located health facilities, research institutions, universities and businesses collaborating together to deliver the precinct’s vision: “Australia’s premier health and innovation district – an ecosystem for excellence, ambition and collaboration” (DPE 2022, p.4).

This study seeks to make a NSW-specific contribution to addressing the “paucity of peer-reviewed research on successful links between smart cities, innovation, and affordable housing” (Dowling et al 2020, p.1). It also points to policy implications for cross-government agencies, universities and businesses aiming to clarify their role in the delivery of affordable housing in HFIDs.

The research aims for this project are outlined below.

# Research aims

The study addressed the following research question:

What is the role of affordable housing in supporting successful health-focused innovation districts, and what are the key barriers to delivery?

The proposed objectives of this study are to:

1. Review Australian and international evidence on the role of co-located affordable housing in supporting successful innovation districts, including health-focused innovation districts
2. Investigate precinct partners' perspectives on the role of affordable housing in supporting successful health-focused innovation districts in NSW, focusing on WHID
3. Identify barriers to the delivery of affordable housing in WHID
4. Develop recommendations to support the delivery of affordable housing in WHID.

# Report structure

Chapter one has set out the purpose of the research project, the research aims and report structure.

Chapter two outlines the method used to investigate the research aims, beginning with an exploration of the 'insider' researcher context.

Chapter three introduces the case study: Westmead Health and Innovation District (WHID), including the precinct's context, place character, transport accessibility, land ownership, governance and housing context.

Chapter four focuses on the first research aim, providing a concise overview of existing international and Australian research on innovation districts. The chapter focuses on where literature is concerned with health-focused innovation activity and affordable housing, concluding there is a significant lack of research exploring the intersection of innovation districts and housing affordability.

Chapter five analyses the state and local policy context guiding delivery of both innovation districts and affordable housing in NSW, highlighting the limited policy support for incorporating affordable housing within WHID.

Chapter six addresses the second and third research aims. It comprises a detailed analysis of the key themes that emerged from interviews with precinct partners within WHID. The chapter concludes that delivering affordable housing targeted at low to moderate income health and innovation workers would have significant benefits for WHID, but that there are currently major barriers to implementation.

Chapter seven focuses on the final research aim, identifying the implications of the case study findings, policy issues for consideration and research to further investigate the effective delivery of affordable housing within health-focused innovation districts.

## Chapter 2: Methodology

The following chapter begins with an exploration of the ‘insider’ researcher context and goes on to outline the methodological approach used to investigate the research aims.

### Positioning the researcher

#### Personal context

The motivation for this research project is personal, as well as academic. Since 2021, I have been employed at Health Infrastructure (HI), the NSW Health entity responsible for scoping, planning and delivering major health facilities on behalf of NSW’s public health system. At HI, I work on a range of projects focused on supporting health-focused innovation districts (HFIDs), including master planning, policy development, industry attraction activities, and fostering precinct networks. I also contributed to policy development for NSW Health’s approach to precinct development.

During my time at HI, I have received multiple enquiries about the role of housing in supporting HFIDs from colleagues across NSW Health and representatives from precinct partners, including state government agencies, universities and medical research institutes.

Currently, affordable housing is delivered in HFIDs on a site-by-site basis, and not as part of a coordinated NSW Government policy. While broader government strategy acknowledges the need for affordable housing as part of diverse health and education precincts (GSC 2018a), further action has been stifled by a lack of robust evidence to underpin the development of a policy position on this issue.

This research gap has motivated my engagement with this topic. From my perspective, now is the time to establish an evidence base regarding the potential impacts of delivering housing in HFIDs. NSW Health is leading master planning in key health precincts, including Liverpool, St Leonards and Westmead, and finalising precinct policy – these activities would benefit from consideration of the role of affordable housing.

Although I undertook study leave to complete this research, my own experiences working for HI, and my established professional networks across HFIDs in NSW, have inevitably contributed to the research design, data collection and analysis for this project.

#### Insider research

In the context of this research project, I can be classified as an “insider” researcher. Insider researchers share traits, experiences and/or roles with their study participants; they are members of the group that they are investigating, while outsiders are not (Corbin Dwyer & Buckle 2009).

There are a range of advantages to being an “insider” researcher. Corbin Dwyer and Buckle (2009) argue that the perception that a researcher is part of the same group as research participants provides a level of safety and comfort to research participants, who are more likely to trust, and give in depth answers to “insider” researchers. However, sharing experiences and perspectives with research participants can also cloud a researcher’s perspective when analysing data. Study participants can also assume that they share experiences with the researcher, and not fully explain themselves. As Burck (2005) argues, an interview is co-constructed between a researcher and interviewee, and there is an unequal power dynamic inherent within the interview.

By taking a self-reflexive approach to my research, I hope to occupy what Corbin Dwyer and Buckle (2009) term “the space between” insider and outsider research. Although I am a

colleague to many of my interviewees, undertaking analysis and research has changed my perspective on our shared experiences. For example, the academic literature that I have interacted with on this topic is not easily accessible to readers outside a university context. My interactions with multiple interviewees inside and outside HI have also led me to broaden and change my perspective on the intersection of affordable housing and HFIDs.

My role as a researcher means I can no longer claim to be a complete insider. Throughout this research I have attempted to negotiate “the space between,” highlighting how my own experiences may inflect my interpretation of data to maintain a self-reflexive stance.

## Methodology

This study used a variety of qualitative methods to explore the research question. A qualitative approach is well-suited to exploring employers’ perspectives on the role of affordable housing in supporting HFIDs, as it emphasises “study[ing] things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them,” (Denzin & Lincoln 2000a, p.3).

To explore the research question, the report focuses on a case study of Westmead Health and Innovation District (WHID), using interviews with representatives from health facilities, medical research institutes and universities employing staff within the precinct. This group of interviewees represents a cross-section of precinct partners within WHID, and is supplemented by interviews with affordable housing providers in the precinct.

### Case study

Case study is an appropriate “strategy of inquiry” (Denzin & Lincoln 2000b, p.371) for this project as the research question relies on investigating a “contemporary phenomenon within its real-life context” (Yin 2003, p.13). Yin (2003) argues that a case study approach is well-suited to exploring the interactions between a phenomenon (affordable housing in HFIDs) and its context (the organisational priorities of anchor institutions in WHID, the professional mindsets of precinct partners, the governance landscape), particularly when the borders between are blurred.

The WHID case study can be categorised as “descriptive” (Yin 2003), aiming to analyse, and describe in detail, the perspectives of employers in the precinct, and the way that they perceive the role of affordable housing in supporting the success of the precinct. Due to the small number of interviewees and focus on a single HFID, this case study is unlikely to provide detailed explanatory insights that could simply be directly transferred to other HFIDs. However, “the strategic choice of case study may greatly add to the generalizability [sic] of a case study” (Flyvbjerg 2004, p.393). WHID shares many challenges with other HFIDs in NSW, including complex, overlapping layers of governance, land ownership constraints and limited broader government support for affordable housing delivery. Therefore, a case study of WHID remains of interest for comparative purposes with other HFIDs in NSW, such as Randwick Health and Innovation Precinct.

### Semi-structured interviews

12 interviews (30 minutes – 1 hour each) were undertaken with staff from health facilities, affordable housing providers, state government agencies, medical research institutes and universities located within the precinct. Although interviews are not an unproblematic way to identify the facts of a case, they are a valuable way to enable people to discuss their own experience, position and understanding within the context of the case study (Cochrane 2014).

I had initially planned to undertake focus groups alongside interviews, but met a series of obstacles. Recruitment was initially planned for November and December 2022, usually a busy period as staff prepare to go on their summer holidays. In addition, interviewees from

NSW Health were affected by a COVID-19 pandemic wave, resulting in staff shortages and pressure on services. It was challenging to schedule the longer time slot required for focus groups participants' busy diaries, and to align participants to attend focus groups at the same time. I therefore pivoted to interviews, and extended my recruitment of participants into January 2023, and had a much more positive response.

Interviewees were chosen from across a range of organisations and multi-disciplinary professional backgrounds, including precinct coordination and development, strategic planning, business operations, property development and tenancy management. I identified many interviewees based on my own experience working at HI, where I regularly met with some of my interviewees, and were aware of their involvement in WHID.

The study utilised a “general interview guide” approach, to ensure that the interviews remained flexible and conversational (Patton 2002, p.340). As a current employee of HI, I had met some of my interviewees prior to interviews, which enabled a relaxed atmosphere. The interviewees were generally senior within their organisations, and most chose to be anonymous. The interviewees came from a range of organisations within WHID (see Table 1).

Table 1 Interviewees (Source: Author)

Organisation	Organisational role	Number of interviewees
Western Sydney Local Health District	NSW Health entity which manages Westmead Hospital and existing staff accommodation.	3
Health Infrastructure	NSW Health entity responsible for precinct planning and redevelopment projects in WHID.	4
Department of Planning and Environment	NSW Government responsible for strategic planning in WHID.	1
University of Sydney Westmead Clinical School	Major medical school operating out of Westmead Hospital.	1
Children's Medical Research Institute	Major medical research institute in WHID	1
St George Community Housing	Community housing provider that has recently delivered targeted key worker housing in WHID	1

To extend this research, further interviews could be undertaken with businesses located in the precinct. However, without pre-existing industry networks, it proved difficult to recruit participants from these groups within the project timeframe.

## Interview analysis

Due to the limited time available in which to complete this project, and the relatively small number of interviewees, I undertook thematic analysis of my transcribed interviews. Thematic analysis aims to identify “themes and patterns of meaning across a dataset in relation to a research question” (Braun & Clarke 2013, p.174).

Thematic analysis is a flexible and accessible qualitative analytic method appropriate for a project of this size. Thematic analysis enabled me to both describe and identify patterns across interviews to highlight the assumptions that underlie precinct partners' perspectives on the role of housing within WHID. Braun and Clarke (2013), however, acknowledge the limitations of thematic analysis, arguing that it does not prescribe either modes of data collection, or theoretical frameworks, which means it has “limited interpretative power if not used within an existing framework,” and is often limited to “description of participants' concerns” (p.180).

I undertook software-enabled coding of my transcribed interviews. As Ose (2016) argues, “computer-assisted qualitative data analysis software [such as NVivo] is too advanced and sophisticated when all we want to do is to sort and structure the text” (p.147). I therefore used a macro-enabled Microsoft Word template which produces a Word document of interview data separated into a table identifying data by code. The purpose of this method is not to quantify interview data but to sort and structure it into broad categories.



I undertook an inductive approach to the coding of my data. Although my analysis is inevitably informed by the existing academic context surrounding affordable housing and innovation districts, I began with an “open coding” approach to the data (Rubin & Rubin 2005). While the overarching topics of interest were decided prior to coding transcribed interviews (e.g. strategic planning, data collection), the specific categories of analysis were not predetermined, but emerged through the coding process (ibid; Ezzy 2002). After experimenting with various categories, I developed a set of codes for my data, identifying relationships between the codes to develop overarching themes for the data. These themes form the basis of Chapter 6.

## Summary

To explore the research question, this project focuses on a case study of WHID. The case study draws on interviews with precinct partners working within WHID, and a review of the broader policy and planning context for the precinct. I undertook thematic analysis of interview transcripts to identify key themes related to research aims. As an “insider researcher” I have attempted to maintain a self-reflexive stance to my data by highlighting my own lived experiences as a planner involved in HFID development in NSW.

# Chapter 3: Westmead Health and Innovation District case study

To explore the research aims, this report provides a detailed case study of the ways that different precinct partners, including hospitals, health services, medical research institutes and universities, view the role of affordable housing in Westmead Health and Innovation District (WHID).

WHID has been chosen as a case study for two reasons. First, as the largest HFID in NSW, WHID hosts a significant concentration of precinct activity and a diverse range of precinct perspectives.

Second, WHID shares many challenges with other Australian HFIDs, including limited urban amenity, a complex and overlapping governance landscape, “live” infrastructure projects and city-wide affordability challenges. Insights from WHID may be valuable to other HFIDs in NSW, including Randwick Health and Innovation Precinct, Liverpool Innovation Precinct and the Camperdown node of Tech Central (centred on Royal Prince Alfred Hospital and University of Sydney).

The following chapter provides an overview of WHID’s context, including history, urban context, transport accessibility, land ownership, governance, housing profile and existing affordable housing provision.

## History and context

“Within the space of less than forty years Westmead has grown from a dusty showground on the outskirts of Sydney to become Australia’s largest concentration of health, education and research facilities.” (Westmead Alliance 2023)

Westmead is a suburb located directly to the west of Parramatta CBD, on the traditional lands of the Burramattagal clan of the Darug people. After colonisation, the land was classified as part of the Governor’s Domain, later subdivided and renamed “Westmead” (a portmanteau of Western and meadow), and sold as farming and residential lots (McHardy & Sahni 2020).

To meet the growing healthcare needs of Western Sydney, Westmead Hospital first opened in 1978, on a site which had formerly operated as a showground, speedway and harness racing facility (Sahni 2020). Over time, Westmead Hospital expanded to meet growing needs, and was joined by the Sydney Children’s Hospital at Westmead (built in 1995), Westmead Private Hospital (built in 1999) and the WIN Program (a major extension of Westmead Hospital completed in 2008).

In 2015, a major redevelopment and expansion of Westmead was announced by the NSW Government. Since then, much of the precinct has been under construction to enable expanded services at both Westmead Hospital and the Children’s Hospital, as well as delivery of new transport links (including Sydney Metro West, a high capacity, high speed rail link; and Parramatta Light Rail).

Westmead has become one of the largest concentrations of health, education and research facilities in Australia. The total precinct is approximately 270 hectares, and hosts around 9,000 hospital workers – as well as researchers, administrators, technicians, entrepreneurs and other essential precinct workers (TfNSW 2022, p.22).

In 2016, the Greater Sydney Commission (GSC) first identified Westmead as a “health and education super precinct” with potential to attract “talent, investment and creative and

innovative activity” (GSC 2016, p.30). This direction was reinforced in 2018, when GSC designated Westmead as one of thirteen “health and education precincts” across Greater Sydney (GSC 2018a). GSC’s vision to evolve Westmead from a cluster of co-located health and education assets into a “world-class innovation district” built on a strategic vision developed by the precinct partners within Westmead – including hospitals, medical research institutes, local councils and universities (GSC 2018b, p. 21; Deloitte 2016).

Identifying Westmead as a “health and education precinct” resulted in increased focus on cross-government collaboration in the precinct, and attracted infrastructure investment to “unlock” the economic potential of the precinct. In 2019, Westmead Health and Innovation District, as it is now known, was designated by NSW Government as one of five “lighthouse precincts” to attract international investment, resulting in further government focus on the precinct. Since 2022, the now Greater Cities Commission has prioritised Westmead as the major innovation district in the Central City District (comprising a large area of Western Sydney, including Parramatta CBD) reinforcing the importance of the precinct for economic growth (GCC 2022a).

### Place character

The urban fabric of WHID is dominated by health facilities, which tend to have large building footprints, few entrances, perimeter fencing and limited permeability for pedestrians. There are few retail shops, cafes or non-health or residential uses to support workers to linger in the area after hours.

WHID was also primarily established during a car-dominated era, and workers, patients and students generally access the site via private vehicles (TfNSW 2022, p.30). These land uses and accessibility patterns have influenced the streetscape, which is characterised by lack of tree canopy or crossing points for pedestrians, and limited legibility of streets (shown in **Error! Reference source not found.** below). Although the site is close to a natural water way (Toongabbie Creek) and major open space (heritage-listed Parramatta Park), these are difficult for pedestrians to access.



Figure 1 Limited urban amenity in Westmead (Source: Author)

These challenges for amenity have been further exacerbated by ongoing redevelopment activity. Major health or transport infrastructure projects have been under construction either simultaneously or concurrently for most of the last decade, resulting in disruptive noise, truck movements, congestion, changed streetscapes and wayfinding challenges.

Addressing this limited amenity is a focus of both the *Westmead Place Strategy* (DPE 2022 and the *Westmead Public Domain Strategy* (GCC 2022c).

### Transport accessibility

As a major employment and health service centre in Western Sydney, WHID is served by rail connections to growth centres in the north-west and south-west, and east to the Parramatta and

Sydney CBDs, as well as bus services to nearby suburbs. Despite this apparent connectivity, WHID faces several transport challenges, including a congested road network (particularly during peak hours), lack of parking options, limited walkability and infrequent public transport after hours. These issues are viewed as potential risks to the future productivity of WHID (TfNSW 2022, p.4), and the precinct has therefore attracted significant transport infrastructure investment to “enable” its growth as a health and innovation district (ibid, p.5).

### Land ownership

NSW Health is the largest landowner in the precinct, owning 69 hectares (26%) of the total 270 hectares comprising the WHID.

The land owned and controlled by NSW Health is known as the “Westmead Health Precinct” and hosts major health facilities operated by different NSW Health entities, including Western Sydney Local Health District, Sydney Children’s Hospital Network and NSW Health Pathology, as well as medical research institutes. The largest health facilities in the precinct are Westmead Hospital and the Sydney Children’s Hospital at Westmead.

The boundary of the Westmead Health Precinct and WHID, as well as the area considered in the *Westmead Place Strategy* (DPE 2022) are shown in Figure 2. The focus of this case study is on WHID.

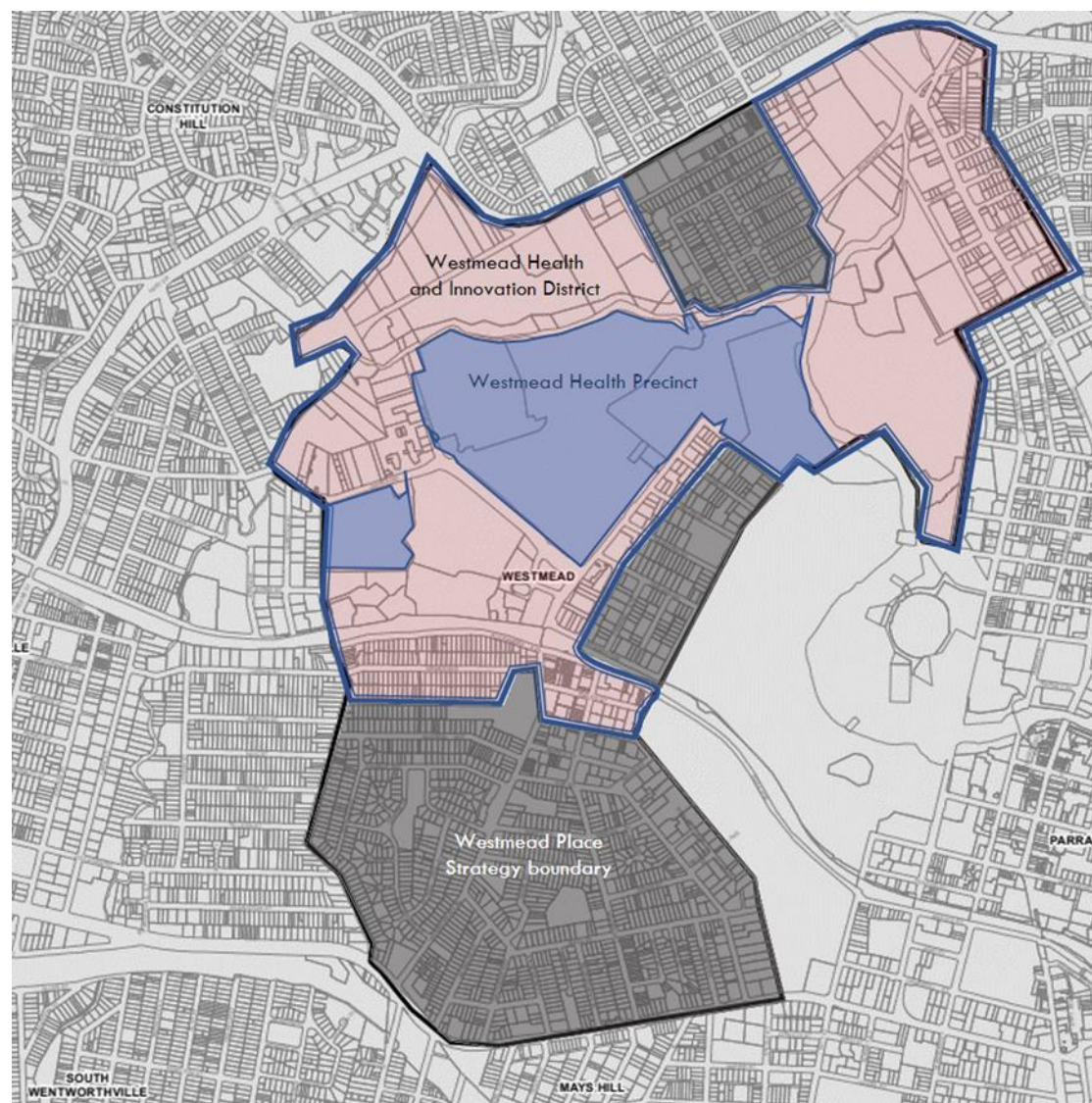


Figure 2: Overlapping precinct and sub-precinct boundaries within Westmead (Source: HINSW 2023)

## **Governance**

WHID has been identified as a state government economic development priority, with multiple publicly-funded infrastructure projects taking place simultaneously to boost the growth of the innovation economy. A network of overlapping inter-agency governance structures have been established to improve coordination and effectiveness of government activity within the precinct.

The Westmead Alliance, Westmead Health and Innovation District and Westmead Health Precinct aim to bring multiple public and private organisations together to achieve precinct goals. These governance structures include shifting representation from multiple state government agencies; alongside representatives from major medical research institutes, universities and businesses within WHID. The purpose, focus, membership and remit of these decision-making groups is summarised in Figure 3, and further outlined in Appendix A.

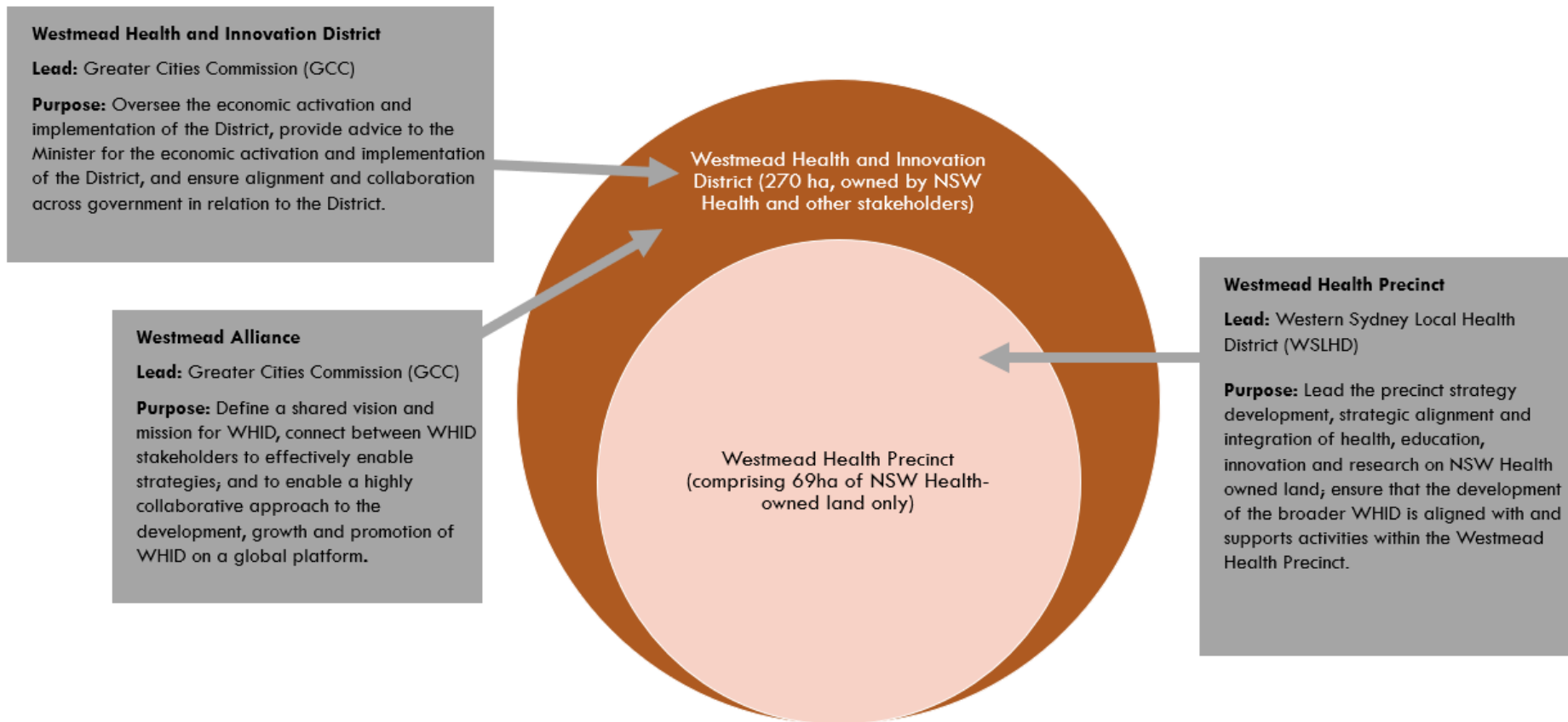


Figure 3 Governance structure in Westmead Health and Innovation District (Source: Author)

## Population

In addition to this concentration of health facilities and a large workforce, Westmead has a growing residential population. The population of the suburb of Westmead increased from 10,013 residents in 2001 to 16,555 residents in 2021. The number of residential dwellings has almost doubled over same period, from 3,700 in 2001 to almost 7,000 by 2021. The majority of these dwellings were high density apartments (ABS 2023a).

Westmead is home to a culturally diverse community, where a high proportion of residents were born overseas and three quarters of the community speak a language other than English at home. Many households include children (67.6%), and 1 in 10 people living in Westmead are employed at a hospital (ABS 2023a).

A high proportion of Westmead residents have tertiary qualifications (56.1%, compared to 33.3% across Greater Sydney) and many identify their occupation as professionals (43.4%, compared to 29.3% across Greater Sydney). The median household income in Westmead in 2021 was \$2,144 per week, compared to \$2,077 per week across Greater Sydney.

According to the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD), Westmead is in the most advantaged IRSAD quintile – but many suburbs to the south and west are in the most disadvantaged IRSAD quintile (see [Figure 4](#) below).

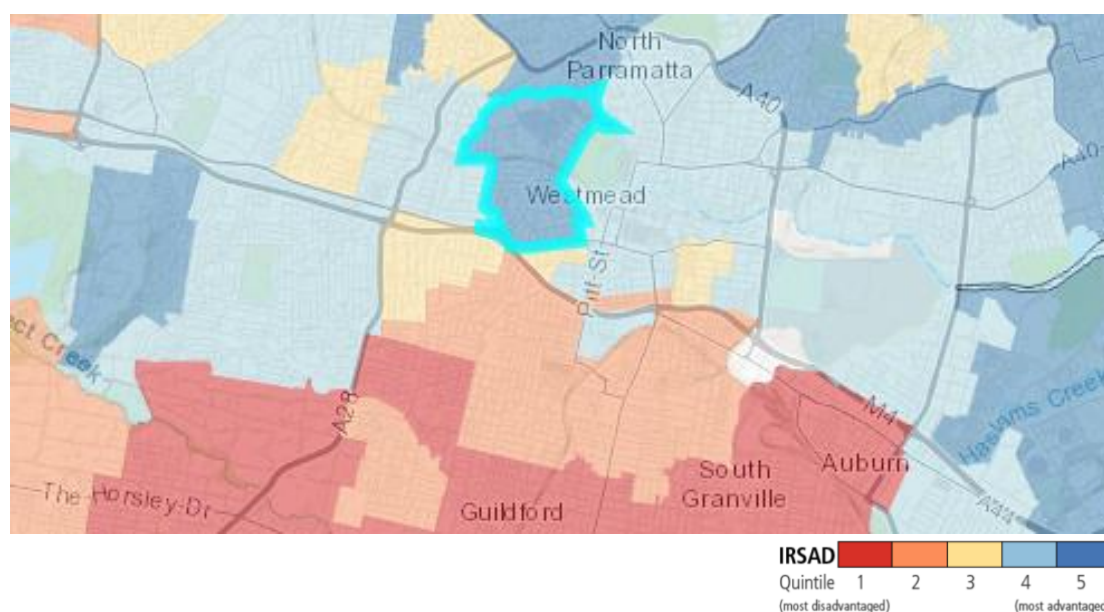


Figure 4 Index of Relative Socio-economic Advantage and Disadvantage, Westmead suburb, 2016 (ABS 2018)

## Housing context

Like many HFIDs across Australia and internationally, WHID experiences city-wide affordability challenges. In the last four decades, housing prices far outstripped wage growth: the median house price in Sydney rose from five times the median annual salary in 1981, to 14 times in 2021 (Fitzsimmons 2021). City wide, the proportion of households renting, rather than purchasing or owning a home, is increasing; and the share of rental dwellings that are available and affordable for low and moderate income households is declining (Gilbert, Nasreen & Gurrán 2023).

Declining housing affordability disproportionately affects low to moderate income earners, including key workers. Recent research found that approximately 29,000 key workers were in rental stress in 2016, over 36,000 were living in overcrowded homes in 2021 (an increase of

approximately 5,000 from 2016) and many were moving out of Greater Sydney to access home ownership and/or more affordable housing (ibid).

Between 2016 and 2021, in the Parramatta subregion, where WHID is located, there was a 9% net loss of key worker residents (second highest in Greater Sydney next to Eastern Suburbs); between 2011 and 2021 there was a 15% increase in the proportion of key workers living in the Parramatta subregion who are renting and a 7% decline in home purchasing. These trends are intensified for younger key workers (age 20 – 39 years), many of whom are forming households and attempting to purchase homes (Gilbert, Nasreen & Gurrán 2023). Median rent for a two bedroom apartment in the Parramatta LGA is not affordable based on an indicative salary for an early career enrolled or early career registered nurse (ibid).

### **Affordable housing supply**

Only a small proportion of existing stock in WHID is affordable housing, provided via NSW Health and community housing providers.

Western Sydney Local Health District (WSLHD), operator of Westmead Hospital, owns 190 units of accommodation within WHID, including a mix of dwelling sizes, short stay and long term accommodation, share accommodation and self-contained units (see Figure 5).



Figure 5 WSLHD Staff accommodation in Westmead (Source: Author)

The units were built over 30 years ago, as nurse's quarters, where junior nurses resided while undertaking training at Westmead Hospital. The delivery of this affordable housing reflects nurse education models, rather than a public health system response to housing affordability pressures. As nurse education transitioned from hospital-based models to university-based training in the 1980s and 1990s (Keane 2016), these units ceased to be required to accommodate nurses, and were re-purposed for broader staff accommodation. Most units have not been renovated (WSLHD 2023a).

The accommodation is only available to staff affiliated with Westmead Hospital or Sydney Children's Hospital at Westmead – and while it is offered below market rent, there is no income eligibility criteria. The accommodation is currently occupied largely by students, visiting clinicians, nurses, cleaners and maintenance staff, and interviewees identified that there are long waitlists for accommodation at the site.

New affordable housing stock has recently been delivered in WHID via an innovative partnership between a private developer and community housing provider. 85 units of additional affordable housing targeting key workers was within the Highline development, located 500m from Westmead Hospital. Delivered by Deicorp, the units were acquired by SGCH (St George Community Housing) in partnership with Lighthouse Infrastructure. SGCH now manages the tenancies, leasing the units to key workers that meet both criteria of low to moderate income, and working in designated sectors such as emergency services, health and education. The units are fully occupied, with 77% leased to key workers. These units are the result of a single partnership, and the scalability of this model is unclear.



Despite existing and newly delivered affordable housing stock in WHID, there remains a significant shortage of available, affordable housing – an issue in many areas of Greater Sydney. Recent research suggests that at least 140,600 affordable and social dwellings will be needed in Greater Sydney to 2036 to address existing shortages and future need (Lawson et al. 2018).

## Summary

This chapter has provided an overview of the context of the WHID case study, including history, urban context, transport accessibility, land ownership, governance and existing housing supply and affordability. These issues will be further explored through the results and discussion in Chapter 6.

## Chapter 4: Theoretical context

To situate this project within its theoretical context, this chapter includes a concise overview of existing international and Australian research focused on innovation districts, and further reviews instances where this literature is concerned with health-focused innovation activity and affordable housing. This chapter concludes that further investigation of the role of affordable housing in supporting the delivery of successful health-focused innovation districts (HFIDs) would contribute towards addressing the “paucity of peer-reviewed research on successful links between smart cities, innovation, and affordable housing” (Dowling et al 2020, p.1).

### Defining innovation districts

This section will provide a concise overview of existing international and Australian research that aims to define “innovation districts.” These place-based concentrations of innovation activity have become both a focus of urban research, and a key “innovation-led employment strategy” for governments, businesses and planners (Dowling et al. 2020).

“Innovation districts,” state Katz and Wagner, are “geographic areas where leading-edge anchor institutions and companies cluster and connect with start-ups, business incubators, and accelerators” (2014 p.1). For innovative firms, there are several advantages of clustering together. Co-location of firms, institutions, investors, entrepreneurs, incubators and accelerators supports the development of a dense ecosystem of innovation activity, attracts skilled workers and increases the visibility of clusters of industry and research, which multiplies financial value, employment and overall productivity (IPC 2018). Innovation districts have become a distinct feature of innovation economies, and high profile examples have emerged worldwide, from Cambridge, London, Barcelona and Stockholm, to Toronto, Boston, Seattle, and Seoul.

Innovation districts have emerged not just in “downtown” locations, as first identified by Katz and Wagner (2014), but in campuses oriented around universities, post-industrial areas, suburban areas undergoing intensification, suburban campuses and close to major transport interchanges or major employers (Moonen & Clark 2017). Regardless of setting, however, many innovation districts share key factors for success (Katz & Wagner 2014; Moonen & Clark 2017; IPC 2018, 2022), including:

- 1) Concentrated mix of diverse firms, institutions and organisations that drive and cultivate innovation
- 2) High amenity buildings, open spaces and other gathering spaces that encourage collaboration
- 3) Dense and deep networks, supported by events and programs that build connections between participants
- 4) Engaged leadership that works collaboratively to set vision, support an entrepreneurial culture, engage with local communities and clarify competitive advantage.

Locally, case studies of Australian innovation districts focus on identifying the place and policy contexts that attract and retain knowledge workers and innovative firms. Key success factors include co-located educational institutions and R&D activities, quality public spaces and urban amenities, a diverse, fine-grained mix of land uses, transport accessibility and the proactive inclusion of surrounding communities (Dowling et al.2020; Pancholi, Yigitcanlar & Guaralda 2018; Yigitcanlar 2010). However, as many innovation districts in Australia are still emerging, there is limited evaluation of the success of innovation districts in this jurisdiction.

Despite the enthusiastic adoption of innovation district strategies across Australia and internationally, there are emerging critiques of the concept. It is increasingly recognised that innovation districts can benefit the innovation ecosystem while excluding local populations

(Morisson & Bevilacqua 2019). In response, there is an important emerging theme within scholarship related to “inclusive innovation,” or approaches to ensuring innovation districts are “quality places” where diverse local communities “feel a sense of pride and attachment” (Vey 2017, n.p.). However, there are minimal studies of “inclusive innovation” that focus explicitly on questions of maintaining or improving housing affordability in these districts (excepting Dowling et al 2020). The relationship between innovation districts and housing affordability will be discussed in more detail below.

### **“Anchor plus” innovation districts**

When aiming to describe the scope of innovation districts, Katz and Wagner classified the “anchor plus” model, where “large scale mixed-use development is centred around major anchor institutions and a rich base of related firms, entrepreneurs and spin-off companies involved in the commercialisation of innovation” (2014 p.2).

There is increasing research on the important role of anchors in driving innovation districts (Spirou 2021; Morrison & Szumilo 2019). Anchors are companies and knowledge rich institutions that foster connections across innovation districts by undertaking vision-setting, initiating joint projects, developing strategic approaches to industry attraction and partnerships, building supply chain relationships, funding amenity improvements, placemaking and activation (IPC 2022). Significantly for this project, anchor institutions often include major teaching hospitals and universities. Hospitals can anchor an innovation district by providing a concentration of innovation assets and knowledge workers, as well as a broad range of key workers, required to support the functions of these facilities.

### **Health-focused innovation districts (HFIDs)**

This research is concerned with innovation districts that are focused on the health sector. Worldwide, many innovation districts aim to develop and leverage health-focused innovation ecosystems, bringing together major teaching hospitals (including health facilities, clinicians, clinical trials facilities and patients), universities, medical research institutes and established and emerging businesses in the biotechnology, medical technology and pharmaceutical sectors. High profile examples of health-focused innovation districts (HFIDs) include Kendall Square in Cambridge, Massachusetts and Cambridge Science Park in the UK (Austrade 2016; NLA 2022).

Fostering health-focused innovation ecosystems is an emerging focus of NSW Government strategy. Life science, medtech and biotech are fast-growing and high value industries, and there has been significant investment in infrastructure, programs and networks to accelerate connections between medical researchers, clinicians and businesses to commercialise health research (NSW Health 2022). Recognising and supporting health-focused innovation districts (HFIDs) has been a key strategy to support this productive sector. As further discussed in Chapter 5, the NSW Government has consistently recognised the potential of co-located health and education facilities in catalysing and fostering innovation ecosystems, with the aim of leveraging these “health and education precincts” to deliver enhanced productivity (GSC 2018a; GCC 2022a). Similarly, recent research by the Innovation and Productivity Council (IPC 2022) highlights the important role that major hospitals can play in anchoring innovation districts.

Despite significant policy attention, there is limited research focusing on HFIDs as a distinctive innovation district typology. Sheahan’s (2014) research focuses on the role of pedestrian-friendly urban design in facilitating collaboration and innovation within “health knowledge precincts” and provides a working definition of this type of innovation district:

“A hospital knowledge precinct can be defined as a distinct area of a city that has a concentration of clinical care facilities co-located with a university and bio-medical research facilities” (p.v).

This definition focuses on the spatial dimensions (physical assets, location) of HFIDs. HFIDs are also characterised by dense networks of researchers, entrepreneurs, clinicians and students who contribute to the innovation activity within the precinct. As Cutler et al (2010) state in their short article, to activate HFIDs as “productive hotspots and ‘living laboratories’” precinct governance needs to go beyond co-location of major health facilities and infrastructure, to embed a culture of collaboration and connection that results in productive new ideas and partnerships (p.303).

In the absence of a systematic academic review of HFIDs to classify their key characteristics, this project will apply the working definition of HFIDs currently applied by NSW Health:

[Locations where] “multiple health assets, co-located with large-scale and multi-disciplinary research, education and industry partners, who collaborate to support and promote innovation and commercialisation” (HINSW 2022a, n.p.)

HFIDs are also characterised by access to public transport, high quality public domain, walking and cycling links and green space. They also often have established governance groups to coordinate precinct activity, partners and interests. In NSW, examples of HFIDs include Westmead Health Precinct, Randwick Health and Innovation Precinct and the Camperdown node of the Tech Central Innovation District (centred on University of Sydney and Royal Prince Alfred Hospital).

## Urban productivity, housing affordability and innovation districts

The following section reviews existing research that explores the links between housing affordability, urban productivity and innovation districts.

Over the last two decades, a diverse range of studies have considered the relationship between housing and economic productivity, including in an Australian context (O’Connor & Healey 2002; Berry 2006; Gurran et al. 2015). These studies highlight the growing mismatch between the location of employment opportunities and housing affordable to lower and moderate income households, and examine the impacts to productivity in terms of labour markets, employment participation and commuting time (Gurran et al. 2021).

Limited access to affordable housing for lower income households close to employment centres negatively impacts productivity by contributing to urban congestion (Dodson et al. 2020) and may create barriers to participating in the workforce (Gurran et al. 2015). The spatial mismatch between housing and employment results in long commutes and high transport costs for workers who have to live further from their workplaces to secure affordable housing (Dodson & Sipe 2008), and may lead to some workers being excluded from participation in labour markets (Gurran et al. 2021). For employers, lack of access to affordable housing close to workplaces can make it difficult to attract and retain staff (Scanlon 2010).

### Housing affordability and innovation districts

While there is significant established research on the relationship between housing affordability and urban productivity, these links are less explored with regard to innovation economies and districts.

There is a major gap in research that examines the interrelationship between housing and innovation districts (Miao 2017). Dowling et al. (2020) conducted a systematic review of international evidence to determine the extent to which housing has been addressed in existing research on planning for “innovation-led employment strategies,” including innovation districts. The researchers concluded that although both innovation districts and housing are focuses of research internationally, there is a significant lack of research that considers the relationship

between the two. Where there is acknowledgement of the relationship between innovation districts and housing, it tends to focus on residential land uses as contributors to amenity, vibrancy and functionality within innovation districts (e.g. Pancholi, Yigitcanlar & Guaralda 2018). There is limited systematic evaluation of the outcomes of delivering affordable housing within innovation districts, including whether affordable housing for innovation workers, close to their workplaces, supports staff attraction and retention, or enhances precinct vibrancy and identity.

Existing research considers housing affordability-related impacts of innovation districts from two perspectives.

First, existing research has shown that innovation districts can impact housing affordability in surrounding neighbourhoods. For example, in San Francisco, many long-term residents have been displaced due to the rising housing and living costs associated with the growth of the innovation ecosystem (McNeil 2016). Economic development strategies focusing on attracting and retaining highly paid, mobile knowledge workers to grow innovation districts can impact local communities. Strategies to attract this “creative class” impacts local economic diversity and long term productivity by increasing housing and rental costs that have impacts on other groups, including local residents and small organisations (Florida 2017). Areas with a thriving innovation economy can further gentrify as they deliver amenity and services that are attractive to knowledge workers.

The impact of innovation districts on rising housing and rental costs, and attempts to redress this trend, are the subject of research on “inclusive innovation.” This term describes where investment in innovation is leveraged to deliver positive social and economic outcomes for local communities (Vey 2017). Globally, inclusive innovation activities can take the form of planning, delivering and advocating for affordable housing, targeted at both low income innovation district workers and existing neighbourhood residents (Morisson & Bevilacqua 2019; Dowling et al 2020).

Across the US, UK and Europe, there are high profile examples where affordable housing has been incorporated in innovation districts via diverse planning mechanisms (Dowling et al. 2020). In Kings Cross in London, and Tonsley Park in South Australia, inclusionary zoning<sup>2</sup> has been used to deliver affordable housing targeted at local communities, while in Chattanooga Innovation District in Tennessee, tax subsidies were provided to landowners who dedicated land and funds to the city government to deliver affordable housing (Morisson & Bevilacqua 2019). Similarly, at Innovate Albuquerque and 22@Barcelona, affordable housing has been delivered through provision of land and subsidies to low income housing providers. However, implementation of these affordability measures has not been seamless. Dowling et al’s (2020) review of innovation districts that have incorporated affordable housing identified significant issues in delivery, including consideration of housing affordability too late in planning/implementation of innovation districts, failure to adequately monitor housing diversity, lack of a long term vision for housing affordability and limited collaboration and leadership on the issue.

The second theme of research in this area highlights that the affordability and availability of proximal housing can impact the competitiveness of innovation districts. The innovation economy relies on a diverse range of low-to-moderate income workers, including research assistants, PhD candidates and start-up entrepreneurs, many of whom require access to affordable housing (Dowling et al. 2020). If innovation workers are unable to secure affordable housing within or close to innovation districts, then they are less likely to seek jobs there (Moonen and Clark 2017).

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<sup>2</sup> Inclusionary zoning is a land use planning intervention that mandates that a share of a residential development include a number of affordable housing dwellings. In some jurisdictions, developers can pay an affordable housing levy instead (AHURI 2017).

A small number of case studies describe attempts to attract and retain low to moderate income innovation workers by delivering affordable housing. In China, “talented worker housing” has been built as a strategy to enhance place competitiveness and support the growth of science parks (Miao 2017; Morrison 2014). However, the success of this strategy in attracting and retaining innovation workers in China has been limited to date, and further evaluation is needed. In the expensive local property market in Cambridge, UK, key worker housing policies have been deployed to support the local nationally significant innovation economy, which was perceived as threatened by rising housing costs that increasingly excluded moderately paid essential workers. As Morrison (2013) shows, the definition of “key workers” was expanded by local planning authorities to include “those working in research and development” (p.727). This policy approach underpinned the delivery of housing targeted at University of Cambridge’s academic staff, aiming to safeguard the competitiveness of the innovation economy.

Dowling et al’s (2020) recent research also grapples with some of these questions. The researchers’ interviews with start up businesses and accelerators within the Australian innovation sector aimed to understand the role of housing affordability in start up operations, and whether it was seen as a barrier or opportunity. Although interviews with young entrepreneurs identified that access to affordable rental housing is important, the authors concluded that:

“For startup firms, affordable housing is just one factor of many that influence their ability to succeed. Other factors include proximity to work (including co-working spaces), ease of transport access, and agglomeration of business” (p.31).

Firms identified that housing affordability, amenity, security and ease of access is important to supporting start up activities. Affordable housing is a more acute issue in expensive inner city metropolitan locations, where some firms managed high housing costs through informal networks (e.g. partners, friends and co-workers ) who provided access to less expensive housing. In outer metropolitan and regional locations, affordable housing was less important than amenity, lifestyle and transport access. The authors conclude that housing should be considered as part of an “ecosystems approach” to innovation districts, where diverse housing options are considered holistically within a “system of inclusion and affordability” (p.29).

## Affordable housing demand in health-focused innovation districts

The following section provides an overview of existing evidence regarding demand for affordable housing in HFIDs.

Within HFIDs, there is demand for affordable housing from two different low to moderate income groups that are essential to the functioning of these precincts:

- 1) Workers in the innovation sectors, such as PhD candidates, start up founders and research assistants. As established above, there is limited research into the housing needs of low income workers within the innovation sectors, and little consideration of the role of affordable housing in supporting the workforce sustainability of innovation districts (Dowling et al. 2020).
- 2) Workers essential to the functioning of health assets – including nurses, ambulance workers, cleaners, porters and administrative workers. This group is often referred to as “key workers,” a term capturing a broader range of low to moderate income workers important to the functioning of a city. The housing needs of key workers are comparatively well studied in an Australian context (e.g. Gilbert, Nasreen & Gurran 2021, 2023; Gurran et al. 2018).

The differences between these groups of workers are summarised in Table 2 below.

Table 2 Key relevant characteristics of low to moderate income workers in HFIDs (Source: Author)

	<b>Low to moderate income innovation workers</b>	<b>Key workers</b>
<b>Occupations</b>	PhD candidates, students, research assistants, lab technicians, start up entrepreneurs.	Nurses, ambulance workers, cleaners, porters, hospital administrative workers; and others.
<b>Employers</b>	Medical research institutes, hospitals, universities	Health services, hospitals.
<b>Physical presence</b>	Sometimes required to complete laboratory-based work, and also to facilitate face-to-face collaboration between researchers, clinicians, entrepreneurs and students.	Always required to complete work. Key workers cannot work from home, and need to live close to workplaces to cover shifts, respond to emergency situations and increases in service demand when “on call” (Gilbert, Nasreen & Gurran 2021).

### Low to moderate income innovation workers

The limited existing research outlined above highlights that some innovation workers are likely to benefit from access to affordable housing close to innovation districts. In HFIDs, this low to moderate paid income group includes start up entrepreneurs, PhD candidates and research assistants. The housing needs of these groups are discussed in more detail below.

Individual entrepreneurs in the innovation economy tend to be young (39% of start up founders in Australia are aged between 30 and 40) and need to draw on their personal financial resources to kick off their businesses (65% of start ups required cash contributions from the founder) (Startup Muster 2018, qtd. In Dowling et al. 2020). These characteristics mean that affordable housing could support these entrepreneurs to succeed by providing housing stability and reduced rental costs. Provision of affordable housing within innovation districts could also support the founders of start up firms to succeed by providing proximity to work (including co-working spaces), transport accessibility, proximity to anchors and agglomeration of other firms at an affordable price point (ibid, p.31). Proximity to work is important to innovation workers, and physical presence enables the collaborations and connections at the heart of innovation districts. However, unlike key workers, physical presence is not always required for these innovation workers to complete their jobs, and many work from home or co-working spaces.

The second group of innovation workers who may require access to affordable housing are researchers undertaking R&D activities for major medical research institutes and universities, and earning low to moderate incomes. PhD candidates are awarded a scholarship of approximately \$30-\$35,000 p.a. for 3.5 years, which may be supplemented by part-time work or top up scholarships (USYD 2022), while research assistants may earn between \$50,000 and \$80,000 p.a. (Jora 2022). In comparison, the average annual individual income in Greater Sydney is \$92,000 per year (ABS 2023b).

To complete their work, junior researchers within HFIDs are likely to require at least part-time physical access to their workplaces – either to access “wet labs” where key life science research activities can be undertaken, such as tissue culture, pathology and cell biology, or to access specialised medical research equipment, such as PET scanners. However, some work may be undertaken from home, such as computational or computer-assisted experiments.

## Key workers

The definition of a “key worker” shifts between jurisdictions (Gilbert, Nasreen & Gurran 2021), but it generally refers to workers on low and moderate incomes who are employed in services essential to the functioning of a community, including nurses, teachers, police officers, emergency workers, cleaners and laundry workers. Unlike many workers within the innovation ecosystem, the physical presence of these workers is required to complete their work, and they cannot work from home.

While relatively affordable compared to other areas of Greater Sydney, many health workers are on low to moderate incomes, and may struggle to cover even moderate housing costs in Westmead. For example, a registered nurse in their first year of work earns approximately \$67,127 p.a. (or \$1,028 a week after tax), and the average weekly rent of an apartment in Westmead (\$480) would cost 47% of their weekly wage (IRC NSW 2022). Low to moderate income households are generally considered to be in housing stress if they pay over 30% of their income towards housing costs.

Beyond Westmead, recent research by Gilbert, Nasreen and Gurran (2023) found that median rent for a two bedroom apartment in the Parramatta LGA, where WHID is located, is not affordable based on an indicative salary for an early career enrolled or early career registered nurse.

Table 3 Average salary and housing costs in Westmead, for health workers (Source: IRC NSW 2022; Author)

Health worker	Annual salary - award (before tax)	Weekly income after tax	% of income spent on housing costs (based on average weekly rent of \$480 in Westmead)
Registered nurse/midwife in first year of work	\$67,127	\$1,028	47%
Paramedic in first year of work	\$72,281.04	\$1,094	44%
Hospital assistant Grade 1 (includes cleaning, portering of patients and equipment, laundry, food services, sanitising of equipment etc.)	\$50,702.50	\$822	58%

Affordable, well-located housing for key workers is important to both socio-economic equity and urban productivity (Gurran et al. 2018). For key workers employed in areas with high housing costs, access to affordable and appropriate housing can be challenging, and many experience housing stress, long commutes, or live in overcrowded homes to access their workplaces (Gilbert, Nasreen & Gurran 2021). For employers of key workers, such as hospitals and schools, it can be difficult to attract and retain the key workers who are needed to operate services, leading to overloaded systems, and higher workforce costs due to employee turnover requiring retraining (Berry 2006).

Much of the existing research into key workers and housing affordability issues comes from the UK context, where “government interest in the location and affordability of housing for key workers has been particularly fuelled by economic efficiency concerns” (Gurran et al. 2018, p.7; see Morrison & Monk 2006; Scanlon 2010; Raco 2008). Morrison has explored the issue from the perspective of key worker employers, establishing a link between rising housing costs in Surrey (2006) and Cambridge (2010; 2013) and challenges for recruitment and retention – for both public-sector employers, including hospitals, and certain private sector employers, including retailers, hoteliers and privatised public transport companies. Morrison (2006) found that population-serving key worker roles, such as nurses and paramedics, are “ubiquitous”, and key workers can earn a similar wage but choose to live in a lower cost location, meaning that high housing costs can deter key workers from moving to an expensive location. Recruiting entry-level staff in areas with high housing costs can be challenging, and they were unlikely to stay in expensive areas after their training is completed. Morrison (2006) found that employers were concerned that as their employees reached the age where they wanted to purchase homes and “settle down” they moved out of the area.



To address these risks to productivity, global cities are increasingly developing targeted policies to meet the needs of key workers. Implemented in London, New York and San Francisco, these programs include dedicated affordable rental housing and low cost and shared equity home purchase models (Morrison 2010; Lazarovic, Paton & Bornstein 2016).

While recognising the importance of affordable housing in supporting key workers, Raco (2008) critiques the rationale and implementation of key worker housing in a UK context, arguing the concept of the “key worker” relies on “particular interpretations about what it is that makes a place ‘competitive,’ whose ‘presence’ is necessary for the socio-economic sustainability of a region, and the relationships between modes of production and social consumption” (p.738). Raco interprets key worker housing as the reorientation of a social policy (i.e. housing provision) towards broad neoliberal objectives of urban economic competitiveness.

There is a growing body of research highlighting the challenges for key workers in finding appropriate and affordable housing in Australian cities. This research has found that a significant proportion of key workers in Sydney and Melbourne experience unacceptable trade offs to live close to work, including housing stress or living in overcrowded homes, while others experience long commutes to access cheaper housing (Gurran et al. 2018). More recent studies have found that this trend has continued and is worsening (Gilbert, Nasreen & Gurran 2021; 2023).

Other key workers have moved out of Sydney to access more affordable housing (Gilbert, Nasreen & Gurran 2021). However, there is a lack of Australian-specific qualitative research into both employer and key worker perspectives on the role of affordable housing in supporting urban productivity. While the negative impacts of lack of access to affordable housing on key workers (long commutes, stress, lack of time with family and friends) is acknowledged, there is little qualitative research undertaken with key workers on how this affects their daily lives. There is also limited research on key workers’ housing preferences, including housing tenure, typology and location, or employers’ perspectives on the importance of affordable housing in attracting and retaining key workers to provide services in a particular location.

## Summary

This review of the theoretical context for this project has highlighted that this study is located at the intersection of a number of concepts – innovation districts, affordable housing, health-focused innovation activity, and urban productivity.

As this review has demonstrated, there is significant research exploring each of these concepts individually, but no existing research that explicitly focuses on questions of how affordable housing can support the success of HFIDs.

## Chapter 5: Policy context

By analysing the state and local policy context, this chapter demonstrates that innovation districts and housing affordability are generally treated as independent policy areas, and that there is limited external policy support for incorporating affordable housing within Westmead Health and Innovation District (WHID).

### Health-focused innovation districts: Policy context

As manufacturing activity has declined across most Western cities, governments, businesses and planners have increasingly sought to harness the opportunities presented by growing innovation economies. As identified in the previous chapter, innovation economies, as defined by Moonen and Clark (2017), are centred on businesses that embrace rapid change and disruption to deliver high quality employment opportunities and economic growth. They are focused on high growth industries, including digital technology, healthcare, finance and business services and biopharmaceuticals.

To leverage these opportunities, NSW urban policy has been increasingly focused on identifying and supporting innovation corridors and districts (Dowling et al 2020). There has been cross-government interest in developing innovation districts within NSW, from strategic planning, economic development and health agencies. These perspectives are explored in more detail below.

#### Strategic planning perspective

From a strategic planning perspective, the Greater Sydney Commission's (now the Greater Cities Commission) *Region Plan* (2018a) has a strong focus on strengthening and leveraging metropolitan innovation activity to deliver growth and enhance city competitiveness. "Innovation," states the Plan, "underpins global 21<sup>st</sup> century cities," before mapping existing "innovation corridors" that bring together universities, major referral hospitals, cultural assets, start ups hubs and business centres, and can be leveraged to attract jobs, businesses and investment into the local economy (p.101).

The *Region Plan* recognises that health-focused innovation activity is the dominant typology within NSW. It identifies thirteen "health and education" precincts, where co-located clusters of universities, hospitals, medical research institutes and education facilities contribute significantly to Greater Sydney's economy and "offer many opportunities to drive and support international competitiveness" (2018, p.113). Further, the Plan aims to bring together stakeholders from government, research and industry to collaboratively leverage precinct activities to further attract business and enable commercialisation of research. Improved coordination between stakeholders aims to enable these clusters of facilities to evolve from service-focused, localised health and education precincts to "innovation districts" with international profile and global competitiveness (p.114). These strategic objectives to strengthen innovation were implemented through the development of collaborative plans for health and education precincts, which aimed to bring government stakeholders together to set a vision for these precincts (GCC 2022a).

Westmead's potential as a "health and education precinct" to drive growth across Western Sydney is recognised in the *Region Plan*, and further explored in the *Central City District Plan* (GSC 2018a). The *District Plan* identified the potential for Westmead's workforce to grow from 18,000 in 2018 to between 32,000-50,000 in 2036 (GSC 2018b, p.60); the NSW Government has not identified housing targets for Westmead, but residential intensification is planned for outside the "health core" of the precinct (DPE 2022).

This focus on innovation districts, and on Westmead specifically, has been strengthened in the most recent updates to metropolitan planning for Greater Sydney. The Greater Cities

Commission's recent discussion paper, *The Six Cities Region* (GCC 2022b), reinforces that innovation districts at Tech Central, Westmead and the Aerotropolis have "emerged as a critical part of the innovation ecosystem that... will underpin the future economy" (p.10). The paper highlights the importance of innovation districts in "supercharg[ing] knowledge jobs" (p.22), and includes recommendations to support their growth, including fast rail, enhanced digital connectivity, delivery of advanced manufacturing facilities and environmental sustainability measures.

### **Economic development perspective**

From an economic development perspective, the NSW Government has also recognised the potential of innovation districts as "magnets for international investment in priority sectors" (2019, p.5). The Global NSW Strategy outlines the state's approach to "competitively position NSW in the global economy" by highlighting five "lighthouse precincts," including WHID, that have the potential to attract significant international investment to drive growth in NSW (NSW Government 2019, p.5). The Strategy recommends fostering these "lighthouse precincts" by streamlining planning processes, promoting these districts to global industry and research stakeholders, and connecting venture capital to investment opportunities.

The Innovation and Productivity Council (IPC) in NSW also recommends pursuing innovation districts as a strategy to attract investment and employment opportunities. In two reports, IPC have synthesised findings from international case studies to inform organisations involved in precinct development regarding key success factors for innovation districts (2018) and the role anchors can play in these precincts (2022).

### **Health policy perspective**

Like GCC and Investment NSW, NSW Health is increasingly invested in leveraging the potential of co-located health and education facilities to be activated as innovation districts. NSW Health's major corporate plan, the *Future Health Strategy* (2022) highlights the value of "health precincts" in supporting research collaboration and maximising the impact of infrastructure investment, arguing they are "the cornerstone for attracting industry participants and stimulating collaborative innovation and research" (p.50). Similarly, *the 20 Year Health Infrastructure Strategy* (NSW Health 2020) identifies the role of precincts in enhancing the capacity of health services, and attracting strategic partnerships and investments to deliver value to the health system. NSW Health is also currently developing its policy for health precincts, which has not yet been publicly released.

At a more localised level, several Local Health Districts in NSW have identified the potential of innovation districts in coordinating and leveraging industry, research and education activity, and have developed localised strategies to guide precinct development at Randwick Health and Innovation Precinct, Liverpool Innovation Precinct and St Leonards Health and Education Campus.

### **Innovation district strategies and housing**

Housing and affordable housing do not feature significantly in innovation district strategies in NSW, and these two policy areas are generally treated as independent of each other. For example, driving delivery of both affordable housing and innovation districts is a focus in GCC's *Region* (2018a), *District Plans* (2018b) and most recent discussion paper (2022b). However, in these documents there is no explicit link made between "provisions of affordable housing and a need to house the workers who underpin the innovation economy" (Dowling et al. 2020). The plans highlight the need to explore housing options for key workers across the city (GSC 2018b), but the role of affordable housing in supporting innovation district workforces is not explored.

There is some recognition by the IPC (2018) of the role of affordable and diverse housing as a success factor in international innovation districts. "A successful precinct," the IPC states, has

“access to affordable, diverse housing for workers and students” (p.36) and accessible, diverse housing “can play an important role in attracting and retaining businesses and workers” (p.37). The IPC (2022) also recognises the potential for innovation district anchors, including major teaching hospitals, to “deliver wider social and inclusiveness benefits for the precinct community,” including affordable housing. Similarly, the report highlights case studies of anchors delivering housing, including University of Manchester within the Oxford Road Corridor and MIT within Kendall Square.

Although these studies highlight the role that affordable housing can play in supporting innovation districts, there are no proactive strategies to promote delivery of affordable housing to support successful innovation districts in NSW.

## Westmead Health and Innovation District: Policy context

The following section provides an overview of the policy context for Westmead Health and Innovation District as it relates to innovation districts and housing affordability. Compared to the state level, there is stronger policy support for the delivery of affordable housing within innovation districts at a local level.

There is cross-government recognition of the value of Westmead as an established biomedical precinct. Department of Planning and Environment (DPE), Transport for NSW (TfNSW), GCC and NSW Health alike recognise the potential for the cluster of health and education assets within the precinct to be leveraged to deliver “Australia’s premier health and innovation district – an ecosystem for excellence, ambition and collaboration” (DPE 2022, p.4). To harness this potential, NSW Government agencies, medical research institutes, universities and local councils have come together to set the vision for WHID, resulting in several strategies articulating the place vision for the precinct, including the *Westmead Place Strategy* (DPE 2022), *Westmead Place Based Transport Strategy* (TfNSW 2022) and *Westmead Public Domain Strategy* (GCC 2022c). The policy goals of these WHID-focused strategies are summarised in Table 4 over page.

To deliver the vision for Westmead Health and Innovation District, these strategies prioritise “driv[ing] change in the innovation eco-system” by delivering a mix of health, education and research uses, growing the international research profile of Westmead, attracting significant commercial anchors and a multidisciplinary university campus, and securing affordable floorspace for start ups, research institutes and other complementary organisations (DPE 2022 p.11). In addition to supporting the innovation ecosystem, the strategies seek to enhance precinct amenity protecting and linking heritage and cultural assets, improving pedestrian and public transport connectivity, upgrading public spaces and streets as community meeting places and fostering the nighttime economy (DPE 2022; TfNSW 2022; GCC 2022c).

Unlike the state-wide innovation strategies, localised strategies for Westmead recognise the importance of affordable and diverse housing in supporting the delivery of the precinct’s vision. The *Westmead Place Strategy* identifies actions to “promote housing choice” within the precinct, with a focus on “student accommodation, key worker, social and affordable housing” (p.39); without mandating delivery of these housing options, the strategy identifies potential land within the precinct for delivery of key worker housing, and encourages DPE to “consider incentive mechanisms for key worker, social and/or affordable housing, where feasible” to be implemented by planning authorities, property developers and landowners (ibid). The *Place Strategy* does not define the “key workers” of WHID, which could include not only nurses, paramedics, cleaners and laundry workers – but the essential workers who underpin the innovation economy. The Strategy also does not identify specific delivery mechanisms for affordable housing.

Table 4 Policy goals of WHID-focused strategies (Source: DPE 2022; TfNSW 2022; GCC 2022c)

Policy goals	Westmead Place Strategy (DPE 2022)	Westmead Place-Based Transport Strategy (TfNSW 2022)	Westmead Public Domain Strategy (GCC 2022c)
Strengthen innovation ecosystem	✓		
Protect and grow existing jobs and employment floorspace	✓		
Connect with Country	✓		✓
Enhance precinct amenity and activation	✓	✓	✓
Enhance social connections and cohesion	✓		✓
Improve pedestrian experience and connectivity	✓	✓	✓
Diversify land uses	✓		
Improve housing supply and affordability	✓		
Improve public transport connections	✓	✓	
Protect and celebrate heritage	✓		✓
Expand green infrastructure	✓		✓
Improve perceptions of safety and inclusion	✓		✓

At a local government level, the priorities of the NSW Government-led precinct strategies for WHID are complemented by various City of Parramatta Council strategies that highlight the importance of the precinct as a major employment centre. However, these localised strategies do not draw a link between provision of affordable housing and the success of innovation districts. For example, while City of Parramatta’s *Affordable Rental Housing Policy* notes that increasing housing costs have resulted in the “continued loss of key workers” (2019, p.2), Council’s *Local Strategic Planning Statement* discourages residential development with Westmead in order to “encourage commercial, entertainment, health and education development” (CoP 2020 p.65). Council’s advocacy of rezoning to enhance the commercial and medical floorspace capacity of the precinct to enable a significant expansion of the WHID (CoP 2020) also highlights a key tension for the delivery of housing within innovation districts – that there is a perceived conflict between residential and innovation floorspace.

## Summary

This chapter has shown that there is significant policy activity in NSW aiming to support the delivery of innovation districts and affordable housing, but few of these policies explicitly consider the relationship between these two areas.

At a precinct level, there are policy aspirations to supply more diverse and affordable housing within WHID, but a limited policy framework at either state or local government level to support implementation.

# Chapter 6: Results and discussion

This chapter provides an overview of the results of the thematic analysis of interviews, including the key themes that emerged from the WHID case study. This chapter concludes that delivering affordable housing targeted at low to moderate income health and innovation workers would have significant benefits for WHID, but that there are currently barriers to implementation.

## Results

Interviews were undertaken with 12 precinct managers, strategic planners, workforce managers, development managers, staff accommodation and affordable housing providers working in WHID about their perspectives on the role of affordable housing in supporting the success of HFIDs.

Respondents agreed that affordable housing had a valuable role in supporting these precincts, but their reasons varied, from attracting and retaining lower income health and innovation workers to work in the precinct, to diversifying the predominantly health or research land uses within WHID to enhance vibrancy and amenity.

Importantly, some interviewees, particularly those focused on innovation talent attraction, perceived a lack of both “high end” and affordable housing in WHID. These stakeholders prioritised diverse housing provision over provision of solely affordable housing, arguing increased supply and diversity of housing options is needed to attract the workforce required to support health and innovation functions at WHID.

These findings are explored in more detail in the next section.

## Discussion

### Affordable housing's role in supporting successful HFIDs

Thematic analysis of interviews identified three main themes regarding the role of affordable housing in supporting the success of HFIDs. First, affordable housing options support the diverse workforce required for WHID to function – and the emerging talent that is key to the international competitiveness of the precinct. Second, affordable housing would diversify land uses within WHID, which is currently dominated by major health and research uses. Affordable housing would contribute to a greater sense of community, amenity and vibrancy in the precinct. Third, provision of affordable housing is integral to an “ecosystem approach” to precinct development, where infrastructure surrounding the precinct is proactively managed to enable the long term vision for WHID. These themes are explored in detail below.

#### **Supporting a diverse health and innovation workforce**

Many interviewees identified that affordable housing had an important role in supporting the diverse mix of talent that is required for a HFID to thrive, including key workers in the health sector and low to moderately paid innovation workers, including early career researchers, students and entrepreneurs.

#### **Key workers**

Interviewees highlighted key workers in the health sector as the largest group impacted by lack of affordable housing in WHID. Large numbers of nurses, paramedics, allied health staff, cleaners and laundry workers are employed to deliver health services and support the functioning of WHID's major health anchors. These groups are often paid low to moderate incomes, and can struggle to secure affordable and appropriate housing close to work. Key workers may instead choose to live in less expensive areas and undertake longer commutes,

which can compound the stress of working physically demanding jobs over long and irregular hours, in high pressure environments (Gilbert, Nasreen & Gurran 2021, p.4).

Interviewees identified significant productivity costs associated with lack of affordable housing close to WHID. Workforce and operations managers stated that it can be challenging to retain experienced workers, as they may choose other jobs closer to home, or seek roles in areas with lower housing costs to get into home ownership. Recent analysis of key worker population trends in Greater Sydney and its surrounding areas suggests that housing affordability pressures are “pushing out” key workers from the inner suburbs of Sydney, where a high proportion of key worker jobs are located, and that this trend has intensified over time (Gurran et al. 2018; Gilbert, Nasreen & Gurran 2023; see Figure 6).

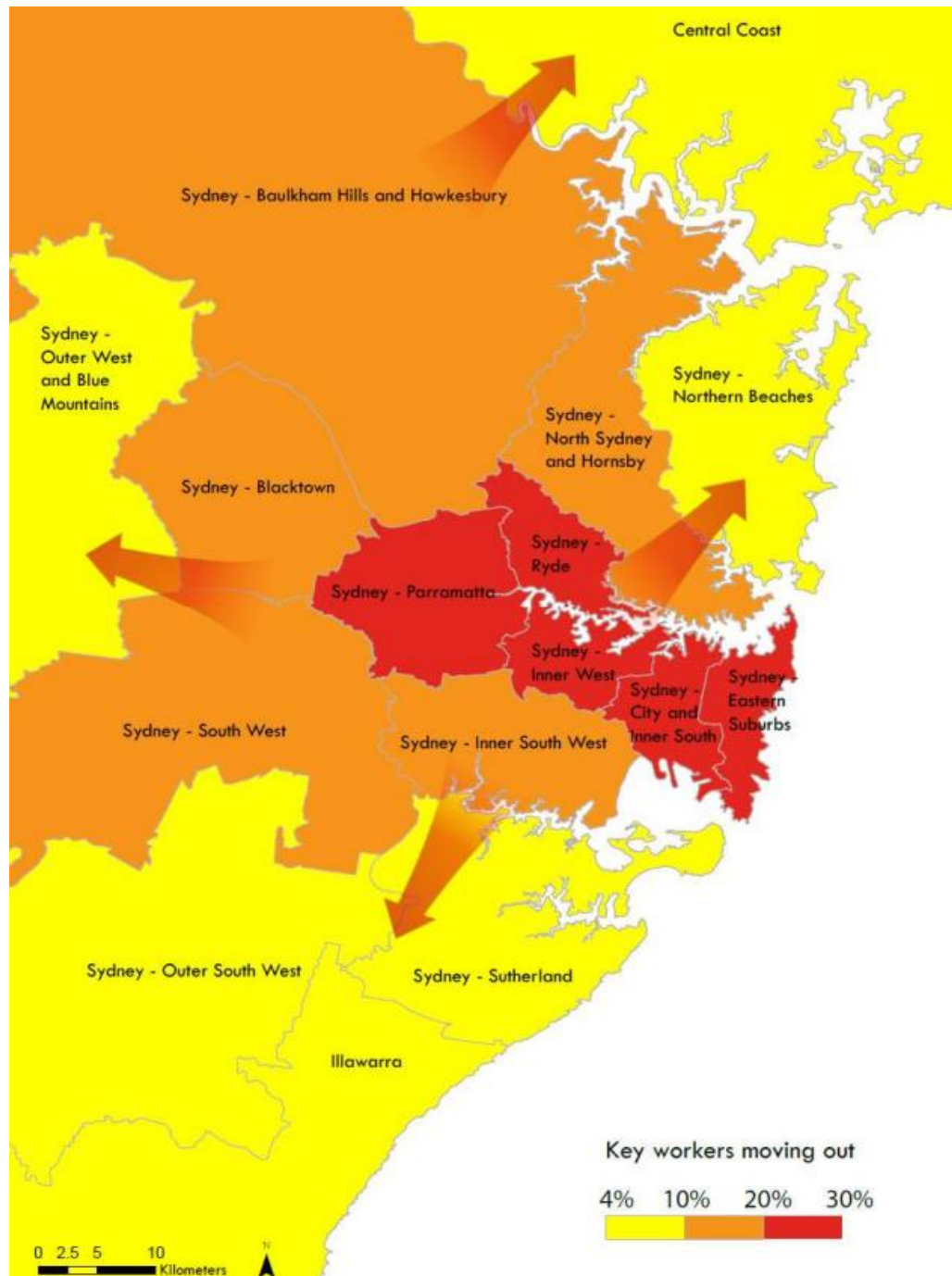


Figure 6 Percentage of key workers who left subregion between 2011 and 2016, and predominant direction of residential moves (Source: Gurran et al 2018, p.24)

Across NSW, there is a shortage of qualified health staff, and the employment market is very competitive (Fedele 2022). High housing costs in WHID and other areas of Greater Sydney are therefore a major barrier to attracting and retaining health staff, particularly as key worker roles are available state-wide, and these workers have a choice of similar roles in areas with lower housing costs. The overriding concern, expressed by a workforce manager for a health facility in WHID, is that experienced staff will leave their roles in WHID to reduce housing or commuting costs, or they will not apply for roles at all, as they cannot afford to live close to the hospital:

“It’s often a reason quoted for people moving on because they eventually find a job closer to home... So definitely it’s a reason for people leaving. It’s a reason for people not coming in the first place.” – Workforce manager, health sector

Interviewees also highlighted that affordable housing would also help to retain health key workers by reducing the transport and childcare costs associated with working long distances from home. Despite strong east-west rail connections, WHID has limited transport connections to surrounding neighbourhoods (though delivery of Parramatta Light Rail and Sydney Metro West will improve the precinct’s transport accessibility), meaning many workers need to drive to work, and are affected by rising fuel and toll costs over long commutes. In addition, parking is limited and expensive in WHID for those who drive to work.

Interviewees noted that many key workers employed in WHID are women, and/or single parents, and the high costs of childcare can be intensified when workers need to factor long commutes into the number of hours of care required. Indeed, one interviewee stated that tenants of the existing staff accommodation associated with Westmead Hospital value the proximity to their workplaces, which is convenient and reduces transport and parking costs. Another interviewee stated that nurses living in affordable housing valued proximity to the hospital, as it reduced perceived safety risks when returning home at the end of night shifts. Providing affordable housing close to workplaces would therefore also reduce these issues for workers in WHID, assisting in staff attraction and retention.

This research focuses on the housing needs of health sector key workers employed in a HFID within a major urban area, but there are likely parallels with the experiences of health staff across NSW. Further research would be required to explore this wider context, including the interrelated impacts of housing, commuting and childcare costs on health workers’ employment location decisions.

Interviewees in WHID framed key workers as “valuable” to the ongoing growth of WHID, and therefore as worthy of housing assistance. These observations resonate with Raco’s (2006, 2008) critique of the rationale and implementation of key worker housing policies in a UK context. These policies, argues Raco, rely on assumptions “concerning the value of particular types of work and workers to the competitiveness of a place” (2008, p.738). Key worker housing initiatives assume that social services, including health, are fundamental to the effective functioning of local and regional labour markets – and a lack of affordable housing for key workers results in spatial inequalities that can affect the economic growth of priority regions. In comparison, housing initiatives targeting low income households regardless of occupation aim to meet people’s basic needs, and are driven by social welfare aims. Within NSW, however, even key workers employed in target occupations must meet income eligibility for affordable housing, as “key worker housing” is not a statutory housing typology.

Interviewees also framed the importance of supporting key workers in terms of their contribution to WHID’s innovation ecosystem. While key workers are typically not employed in innovation-focused roles, they underpin service delivery at the hospitals which anchor the precinct, and support “bench to bedside” research translation, a critical component of WHID’s comparative advantage:

“You don’t have the innovation workers unless you’ve got [key workers]...that’s the baseline that you will build on. You don’t get this agglomeration of activity without all



of those staff.” – Precinct manager, health sector

Hospitals provide a critical mass of clinicians, researchers and patients, attracting innovative firms working across high value industries including biotechnology, medical technology and life sciences. When hospitals anchor nationally-significant innovation districts and economies, they become “too important to be endangered by labour shortages in key public sector organisations” (Morrison 2013, p.727).

Interviewees also highlighted that a diverse HFID workforce can catalyse ties between clinicians, researchers, entrepreneurs – leading to increased collaboration and denser, more productive networks. These dense networks are critical to the success of HFIDs:

“If health workers of whatever type are working and living in the same location and they're mixing with people that are working and living in that location as well, that are in different disciplines, then you've probably got the balance right... because there's more chances for those incidental collisions to happen.” Precinct manager, health sector

However, interviewees also acknowledged that the lack of affordable housing is only one contributing factor to the challenge of recruiting and retaining key workers. Long hours, staff shortages and limited pay rises have also contributed to key workers leaving their professions (Fedele 2022).

### ***Innovation workers***

Research has found that lack of suitable housing to meet the needs of low to moderately paid innovation workers can have productivity costs, including recruitment challenges for research institutes and businesses located in the precinct, which may lead these firms to relocate elsewhere. High housing costs can also prevent a “critical mass of start ups” from developing, and “limits the potential diversity, collaborative potential and productivity” of the HFID, with long term productivity impacts (Dowling et al. 2020, p.21). Diverse housing has become an increasingly prominent priority in internationally significant innovation districts and corridors, including the Oxford-Cambridge Arc in the UK (NLA 2022) and 22@ Barcelona in Barcelona (IPC 2018).

Interviewees in WHID confirmed these findings in the research literature, arguing that affordable housing would support innovation workers in WHID, particularly lab assistants, equipment technicians, research assistants, young entrepreneurs and students on low to moderate incomes.

As established in Chapter 3, affordable housing needs of key workers are increasingly well researched in Australia and internationally (Gilbert, Nasreen & Gurrán 2021, 2023; Urwin, Gould, Faggio 2016), while the housing needs of innovation workers tends to be under-emphasised (Dowling et al. 2020). While arguments for key worker housing provision often hinge on the physical presence required for key worker roles (Gilbert, Nasreen & Gurrán 2021), interviewees argued that physical presence is also a requirement of many innovation roles in HFIDs. Health-focused innovation activity is often lab-based or requires access to patient populations; meaning the proximity of housing to work is also an important factor for innovation workers:

“[Children’s Medical Research Institute] have someone in that building 24 hours a day. Depending on the type of research they're doing, they may need to feed their cells for the purposes of their research, but they need to be on site to look after whatever it is they're growing or studying... they could be there at anytime in the day.” – Precinct manager, health sector

Interviewees also highlighted that affordable housing plays a role in temporarily supporting an innovation worker during particular phases in their career. For example, entrepreneurs often invest their own savings into establishing their businesses, and have limited cash flow in the early stages of growth. In addition, due to the need for clinical trials in the health sector,

there may be a longer wait before entrepreneurs see financial returns. Affordable housing could reduce housing costs and provide security to support entrepreneurs in HFIDs with an appetite to translate discoveries into products and services, leading to broader economic development benefits:

“Cash flow is very poor until you get some runs on the board and grants in and angel investors and offers from VC companies. So I think if we're true to the vision of having a health and innovation precinct, we also need to think about [the housing needs of] the broader entrepreneurial community” – Precinct manager, health sector

Interviewees highlighted that high quality, accessible housing plays a role in enhancing the competitiveness of HFIDs based in cities with high housing costs, such as Sydney. Medical research institutes, universities and other innovation-focused organisations compete internationally for a small global pool of talented staff – and Sydney's expensive housing market may be a deterrent to attracting more established workers who may be looking for home ownership options, or larger homes to accommodate their families.

“We want to retain [talented research staff], and housing is a key component of that...we compete on an international market and we have to understand that Sydney is just really expensive” – Operations manager at medical research institute

Some interviewees emphasised that it was therefore important to provide diverse housing choice across the precinct, to support both low to moderate income workers and to attract more highly paid clinicians, researchers and innovation workers.

### **Vibrancy and amenity**

Interviewees also highlighted the role of affordable and market priced housing in enhancing the vibrancy and amenity of WHID. Housing at all price points has the potential to diversify the precinct's built environment, and attract residents and visitors to activate public spaces, which are currently underutilised.

Vibrancy and amenity are success factors for innovation districts, and residential land uses contribute to amenity within innovation districts (Pancholi, Yigitcanlar & Guaralda 2017; IPC 2018). Diverse land uses, well-designed, safe and accessible public spaces, “hot spots” for social interaction such as cafés and bars contribute to the liveability that attracts businesses and workers to locate in a precinct (IPC 2018). Limited place quality, including poor transport, inadequate tenant infrastructure and limited public spaces, is a risk to the success of innovation districts by “reducing the attractiveness of the precinct to employers, workers and start ups” (IPC 2018, p.8).

Florida's research has highlighted the importance of a “vibrant street culture” in attracting the “creative class” of highly skilled, young, mobile knowledge workers that drives the growth of post-industrial urban innovation economies (Florida 2002). For these workers, quality of life and amenity are important factors when making housing decisions, alongside more “classic” factors such as cost, accessibility and travel time to workplace (Lawton, Murphy & Redmond 2013). Policy interventions at state and local scales have become increasingly concerned with attracting this “creative class” to underpin local innovation ecosystems (Raco 2008). More recent research has shown that economic development strategies focusing on attracting and retaining these workers can exclude local residents and smaller businesses, negatively impacting local economic diversity and long term productivity (Florida 2017). However, research indicates that amenity remains an important consideration in attracting these innovation workers.

Interviewees confirmed the existing research findings, stating that WHID's insufficient amenity is a barrier to attracting high value firms and knowledge workers:

“When [senior staff member] first moved to Sydney from Melbourne, she decided to rent in Westmead and she was out of there as soon as she could be. It's just got no heart or soul.” – Operations manager, medical research institute

Interviewees highlighted that improving vibrancy and amenity is a priority for successful precinct development:

“There's nothing [in WHID] from an amenity point of view... how do you curate the evolution of a health precinct to make sure that it has things there that people are attracted to, to keep them there [after work], versus them needing to leave and go elsewhere to find that” – Precinct manager, health sector

“If you think back to sort of the City of Sydney fifteen to twenty years ago, it was quite dead at night. I think if you don't have those diversity of uses [in WHID] that's what you could see. And I don't think that that type of environment really leads to innovation.” – Strategic planner, state government

Like many HFIDs internationally, the urban fabric of WHID is dominated by major health facilities, which offer few opportunities for pedestrians to traverse, gather and activate the public realm, reducing scope for the incidental social interactions and network building that underpins collaboration in innovation districts (Sheahan 2014). There are also few retail shops, cafes and restaurants to support workers to linger in the area. Addressing this limited amenity is a focus of the *Westmead Place Strategy* (DPE 2020, p.12).

Interviewees also highlighted the importance of improved amenity and vibrancy in addressing perceptions regarding the attractiveness of living in Western Sydney more broadly:

“There was always that perception of, you know, people didn't live near [Westmead], and I suppose a lot of the older academics or the more established people... if they can afford to, they tend not to live probably in the western suburbs.” – Operations manager, university

### **Taking an “ecosystem approach”**

Interviewees also argued that affordable housing was supportive infrastructure for innovation-focused activity within WHID. They emphasised taking an “ecosystem approach” to precinct development, considering housing choice, vibrancy, public spaces and accessible transport as integral to delivering on the vision for WHID:

“Agencies like the Department of Planning are very focused on a number of things, bits of infrastructure, if you like, that need to be delivered to make [WHID] a really comprehensive place and put it on the innovation district trajectory” – Precinct manager, health sector

Reviews of internationally successful innovation precincts similarly highlight the importance of fostering amenity, accessibility and diverse land uses, and proactively managing the infrastructure surrounding innovation districts – including housing (Dowling et al 2020; Moonen & Clark 2017). Rather than focusing exclusively on attracting knowledge workers, firms and institutions to co-locate, innovation district models are increasingly taking account of affordability, equity, access and local participation, as key elements to support the long term success of precincts (Vey 2018). Interviewees confirmed this approach:

“If we've got precincts that are just exclusively health buildings, they're not going to deliver some of the larger, broader precinct outcomes that drive the knowledge economy. If we've got precincts that have got accessible housing, inclusive housing, retail, commercial opportunities, industry opportunities, they're more likely to drive bigger benefits.” – Precinct manager, health sector

Research literature indicates that if innovation districts do not consider the broader ecosystem, productivity costs may arise in the long term (Dowling et al. 2020, p.20). For example, in Seattle, home to a booming tech industry including Google, Facebook, Salesforce, Amazon and Expedia, there has been significant public investment to support this “corporate enclave,” while rents increased by nearly 70% between 2010 and 2019, displacing many local residents (ibid, p.18; Read 2019). Innovation district specialists recommend that city leaders “get ahead of affordability issues” to ensure that start ups, local residents and maturing firms can remain within innovation ecosystems as they grow and become more successful (Wagner et al 2017, p.5).

Innovation precincts are increasingly foregrounding an inclusive growth agenda, and reintegrating institutions and innovative firms into their local contexts (NLA 2022). Prominent innovation districts including Tech Central in Sydney, Chattanooga and the Oxford Cambridge Arc in the UK are recognising that affordable housing and workplaces, permeable and walkable streetscapes, connections to training and upskilling opportunities for locals can support more equitable and sustainable innovation economy growth (Brookes 2022; Morisson & Bevilacqua 2019; NLA 2022).

### **Risks and planning considerations for co-locating affordable housing with employment uses**

Overwhelmingly, interviewees viewed affordable housing positively, as important supporting infrastructure. However, one interviewee noted that residential uses are incompatible within employment-focused areas, and could compromise the perception of the area:

“There’s also that argument that it’s hard to get those top tier employment uses in a precinct if they can see someone’s clothes hanging on the line across from them.” – Strategic planner, state government

Other interviewees also stated that residential uses within the central “health core” of WHID could be seen as diluting the health innovation character of the precinct. As housing is currently the highest value land use in the Greater Sydney market, there is a significant risk of permanently losing land for health, education and employment uses if it is rezoned to allow residential uses. Similarly, some health facility operations can conflict with residential amenity, including noise, light and disruption from emergency services and parking congestion associated with hospital visitation. Interviewees’ resistance to integrating housing within HFIDs seems to reflect perceived competition and conflict between clinical and non-clinical uses for limited land in inner city precincts – rather than stigma associated with affordable housing and low income tenants. These issues are not unique to WHID – medical staff and the local council recently opposed a proposal to deliver non-health uses, including key worker housing, on former hospital grounds at the St Leonards Health Campus, a HFID in northern Sydney (WCC 2021).

However, there are many examples of successful mixed use precincts, both locally and internationally, which counter this view of conflict between commercial, innovation and residential uses. Research into innovation districts has identified amenity and diverse land uses as key to the success of these precincts. Instead, these comments may point to a tendency among different precinct partners to view the diverse goals of different agencies (economic development, investment attraction, innovation and housing, for example) in WHID as in competition with each other.

The potential negative externalities of integrating residential uses within HFIDs could also be addressed via planning controls. For example, it may be appropriate to concentrate the majority of residential uses to be delivered within the walking catchment of WHID, rather than directly co-located with health facilities.

## Summary

Thematic analysis of interviews highlighted that affordable housing had an important role in supporting the diverse mix of talent that is required for a HFID to thrive, but drivers differed for different workforce sectors. While physical presence at work is important for both key and innovation workers, there are slightly different issues around lack of affordable housing these groups.

For key workers, lack of affordable housing can deter qualified essential workers from working in areas with expensive housing, leading to recruitment and retention issues for the health system. In comparison, provision of affordable housing could support innovation workers by attracting start ups and entrepreneurs as they establish their businesses, and retaining lower paid innovation workers, such as PhD candidates, lab technicians and research assistants.

Interviewees also saw significant benefits of increasing affordable housing in WHID, including improving amenity and long-term competitiveness of the precinct, but they raised some planning and land use concerns that need to be considered in any affordable housing strategy for WHID, including issues around balancing incompatible land uses and “diluted” health innovation character.

## Barriers to delivering affordable housing

Thematic analysis also highlighted interviewees’ perceptions of the main barriers or challenges for delivering affordable housing in HFIDs, including complex precinct governance, the competing priorities within the Health system, viability challenges and the lack of broader government support for affordable housing.

### Complex precinct governance “crowds out” affordable housing priorities

Precinct development experts argue that “long term success demands a collaborative approach to governance” (Wagner et al 2017, p.5). Multi-organisation partnerships are common in urban regeneration projects, where they are implemented to improve efficiency and coordination of activity – in theory, overcoming the resource constraints of individual agencies (Lowndes & Skelcher 1998; Elander 2002).

Across the NSW Government’s portfolio of precincts, including WHID, governance structures have been established which bring together government, business and institutions to set precinct visions, implement strategic initiatives and monitor success (GCC 2023). In WHID, however, the scale, sweep and complexities of multi-stakeholder governance has resulted in challenges for identifying, aligning and implementing priorities:

[WHID is] “very much a government priority and everyone’s at the table, but sometimes that then crowds out what you’re... actually focused on” – Precinct manager, health sector

Interviewees identified a disconnect between the priorities of land-owning agencies (primarily NSW Health) and strategic planning agencies (including DPE and GCC) within WHID – creating challenges for delivering housing priorities.

“Where is the centralised oversight to pull all of this together?... Greater Cities Commission have the responsibility, but they don’t really have any power to... mandate [housing delivery]... We need to be really clear on who is set to deliver and keep people across all levels of government accountable to make sure that we achieve what we need to achieve.” – Precinct manager, health sector

Delivery of affordable housing has been identified as a priority for the precinct by strategic planning agencies, including DPE and GCC – but without broader government support for affordable housing delivery, or land ownership in Westmead, these agencies have limited power to implement their vision.

### **Competing priorities within the health system**

When asked to identify barriers to delivering affordable housing within WHID, many interviewees highlighted the competing pressure on the public health systems to deliver health services and infrastructure before addressing housing issues.

Anchors play a critical role in driving the success of innovation districts (IPC 2022). As the major anchor and largest landowner in WHID, NSW Health has significant influence over the future development of the precinct. WHID is anchored by major public teaching hospitals which attract clinicians, patients, students, universities, medical research institutes and a growing ecosystem of life sciences businesses. NSW Health, as the operator of these facilities (via the WSLHD and Sydney Children's Hospitals Network) has capacity to create jobs, foster networks, attract investment and talent and set the vision for the precinct. However, interviewees argued that NSW Health lacked the organisational expertise, resources and mandate required to support these anchors by proactively addressing affordable housing need:

“Health doesn't have a mandate to deliver [affordable housing]. We're the major land owner [but] we don't really have a funding mechanism other than for delivering clinical services.” – Precinct manager, health sector

Affordable housing is a “non-core” service for NSW Health, one that is likely to be squeezed out by immediate, clinical priorities, particularly during the ongoing COVID-19 pandemic. Over the last three years, health systems internationally have been overloaded, and are struggling to maintain service delivery, support fatigued staff and reduce ambulance wait times (Davey 2022). With these immediate priorities, interviewees identified that it was challenging for NSW Health to focus on “non-core” services, such as housing provision:

“It feels like there's a competition... between delivering indirect benefits to health and direct benefits to frontline services. So in a very crude way, it might be that we're more likely within Health to fund a new bed than we are to fund a house for a worker” – Precinct manager, health sector

NSW Health's limited focus on affordable housing delivery is also reinforced by the lack of strategies and policy considering workers' housing needs within the public health system. There is no formal public commitment to delivering housing for health workers in NSW Health's major strategic documents, including the *Future Health Strategy* (NSW Health 2022) and *20 Year Health Infrastructure Strategy* (NSW Health 2020). As interviewees within the health sector generally had a self-described high workload, and need to balance many competing priorities, the lack of overarching strategic commitment to affordable housing can mean the issue loses visibility and/or traction.

While public health entities rely on a large workforce of low to moderately paid employees who may be experiencing housing pressures, provision of affordable accommodation for staff is not a whole-of-NSW Health priority. Instead, many local health entities deliver or lease staff accommodation as needed within their local communities, to support immediate service delivery:

“A lot of LHDs [Local Health Districts] are just trying to work it out themselves, because they don't know where to go to get specific expertise [on housing]” – Precinct manager, health sector

While WSLHD owns and operates staff accommodation close to Westmead Hospital, these units were delivered over 30 years ago, to accommodate junior nurses undertaking hospital-based training, and most units have not been renovated (WSLHD 2023a). One interviewee highlighted that these units are currently being considered for redevelopment as contemporary key worker housing, but detailed feasibility testing is required. Instead, community housing providers have taken the lead in delivering affordable housing units targeting key workers in WHID (SGCH 2023).

### **Limited data on worker housing needs and aspirations**

Although there is extensive staff and stakeholder consultation taking place across NSW Health, there are currently no staff or employer surveys focused on housing needs within the precinct. When asked what the role of affordable housing could be in supporting staff attraction and retention, interviewees stated:

“Unfortunately, I don't have any hard data to back that up, and as I said, it's all hearsay and stuff that comes to me from unofficial type sources, but it's very definitely an issue and a factor in what people are looking at when they're making their decisions [about employment in the precinct]” – Workforce manager, health sector

Many interviewees identified that a lack of data was a barrier to building momentum behind housing-related projects. Robust data could highlight the scale of housing affordability issues in WHID, the perspectives of key workers on their housing needs and aspirations and the impact of housing issues on employer recruitment and retention. When asked what would enable them to prioritise housing issues more effectively, one interviewee responded:

“I'd like to see the data... what is the demand for different types of housing? What's the market appetite for that housing? What's the current supply shortage and where does it fit in the mix of housing supply shortages? So what's the market actually calling for? and what's the market delivering at the moment?” – Precinct manager, health sector

Without statistics on housing need, interviewees found it difficult to make a case for taking account of housing in planning processes, or to prioritise housing in competition with “core” health services.

### **Viability and land availability challenges**

Interviewees also highlighted on-the-ground implementation challenges for affordable housing in WHID, associated with viability and land availability.

Due to the gap between the high up-front cost of land in Greater Sydney, in comparison with the steady but comparatively low income stream generated by below-market rents, it can be difficult for affordable housing-only developments to “stack up”:

“It's really hard to get the feasibility of [affordable housing] to stack up... you're not talking about [tenants] that have got a lot of disposable income, typically... [and] you're going to end up with fairly high capital expenditures... because you've basically got people coming and going all the time, which means more wear and tear, more bad debts on water recoveries and electricity recoveries and all that stuff.” – Development manager, health sector

The feasibility challenges associated with affordable housing in WHID are underpinned by city-wide high housing costs, rising interest rates, unresponsive tax incentives for affordable housing delivery and the cost of building post-pandemic. These challenges are reinforced by the broader lack of government support for affordable housing delivery in NSW.

The urban fabric of WHID also poses barriers for affordable housing delivery. Due to WHID's health district character, there is limited land available for housing delivery in the “core” of the precinct, as this space is taken by expanding hospital infrastructure. Instead, densely built-up areas to the south and east of Westmead Hospital offer more potential for redevelopment, but are dominated by “older, walk up-style apartments” (see Figure 7). Interviewees identified there would need to be significant planning control changes to deliver the value uplift to incentivise redevelopment of these areas and/or encourage multiple owners to amalgamate units and lots to facilitate redevelopment. In addition, these older apartment buildings are relatively affordable, and their loss without replacement with new affordable rental housing could exacerbate current affordability issues.



Figure 7 Older style, walk up apartments to the south of Westmead Hospital (Source: Author)

Interviewees identified that it was important to motivate non-government actors to move into this space to encourage creative solutions to housing delivery challenges.

“What are the bits that make sense for [NSW Health] to do? and where are the bits that it makes sense for us to go to another housing provider in government or private? And say ‘right, well, we need X delivered’” – Precinct manager, health sector

Due to the slow decision-making structures in government, interviewees also argued that non-government developers can be more responsive to emerging opportunities to deliver affordable housing through innovative models. Encouraging private property developers to deliver affordable housing in WHID is likely to require both robust planning requirements and significant incentives. These incentives could include access to government-owned land at a discounted rate, opportunities to achieve economies of scale by delivering affordable housing across multiple locations, integrating privately owned housing to deliver higher returns or access to dedicated funding for affordable housing.

For example, community housing provider SGCH has recently delivered 85 affordable housing units targeted at key workers on privately owned land in Westmead, in partnership with Lighthouse Infrastructure, an institutional investor (SGCH 2023). Leveraging this innovative partnership between a community housing provider and investor resulted in comparatively straightforward delivery of affordable housing in WHID:

“It was overall really positive... I don’t think we anticipated such a positive and easy flowing project. We thought it was, you know we were going to get a lot more roadblocks, but we didn’t – and demand was so high [for units]” – Tenancy manager, community housing provider

However, this statement may reflect that the interviewee was a tenancy manager, rather than a development manager.

### **Lack of broader government support for affordable housing**

The health system’s lack of consideration of “key worker” housing needs is reinforced by a broader lack of government support for affordable housing in NSW.

Existing research highlights that the lack of broader government policies, planning requirements and incentives and adequate funding for affordable housing in NSW is a key barrier to delivery (Gurran & Phibbs 2015; Morris 2021). Interestingly, this issue was not raised in detail by interviewees; which likely reflects that most interviewees were focused on precinct development, rather than affordable housing delivery.

One interviewee from a strategic planning agency stated that although the *Westmead Place Strategy* recognises demand for affordable housing in WHID, and identifies the need for further studies to identify opportunities for housing intensification and diversification, this commitment is mismatched to weak implementation mechanisms. Efforts to deliver affordable



housing on the ground are hampered by limited planning requirements and incentives at state government level:

“[DPE] only has so many tools in its toolkit. We can rezone land... but a lot of it comes down to the market and whether those developers, landowners want to develop and provide those uses and that's not something that [DPE] can control... [The Place Strategy] doesn't really have a lot of weight in the planning system... [it] couldn't mandate particular requirements” – Strategic planner, state government – Strategic planner, state government

Different government agencies are responsible for planning, funding and delivering affordable housing in NSW. DPE develops long term housing strategy, and defines planning controls to encourage affordable housing delivery (DPE 2021). Department of Communities and Justice provides some capital grants and access to low cost finance to support affordable housing development by community housing providers (DCJ 2023). Landcom, the NSW Government's property developer, also has ambitious affordable housing targets for its own portfolio (Landcom 2023).

Despite this government activity, there has been limited meaningful action to address housing affordability issues, which will be discussed in the following chapter.

#### **Enablers of affordable housing delivery**

Interviewees also briefly identified “enablers” of affordable housing delivery in Westmead, including clarifications and streamlining of governance, improved collection and communication of housing supply and demand data, and embedded mechanisms to deliver housing within land use strategies for Westmead. These are explored in greater detail in the next chapter.

## Summary

This chapter begins with results demonstrating that precinct partners within WHID believe that affordable housing has a valuable role to play in supporting successful HFIDs. Major themes emerging from the interviews were explored in depth to explain the role of affordable housing in innovation districts. The chapter then concluded with an overview of the barriers to delivering affordable housing within WHID, as identified by the interviewees. In the next chapter, the implications of these findings are considered, and recommendations are offered for better integrating affordable housing into WHID's future growth.

# Chapter 7: Implications

This report explored the role of affordable housing in supporting successful HFIDs, focusing on the perspectives of precinct partners, and the policy context for HFIDs in NSW.

The following chapter outlines the implications of the research findings discussed in Chapters 3, 4 and 5, which identified a range of potential areas for enhancing the focus and capacity of the health system to address housing issues and improving coordination of inter-agency partnerships for implementation.

## Implications

Existing research on “inclusive innovation” in cases such as Cleveland, Chattanooga and Barcelona, demonstrates that a focus on inclusion supports a sustainable innovation economy, and that there can be significant productivity costs from failing to consider equity (Dowling et al 2020, p.40). In these successful cases, commitment to inclusive growth, including to housing affordability, was considered in early planning stages, embedded in land use frameworks, and frequently monitored.

In comparison, research undertaken within WHID found little evidence that affordable housing is “systematically considered as part of the enabling infrastructure needed to support innovation-led economic development” (ibid, p.40). As discussed in Chapter 5, precinct partners within WHID recognised affordable housing’s valuable role in an “ecosystem approach” to innovation districts, but experienced multiple barriers to proactively considering affordable housing provision in their work.

These findings lead to policy implications for WHID, and other HFIDs in NSW:

- **Enhanced capacity and focus on affordable housing in the health system:** As the major anchor and landowner in WHID, NSW Health has scope to proactively drive an “inclusive innovation” agenda, which could include delivery of affordable housing to support low to moderate income precinct workers.
- **Broader government support for affordable housing delivery:** The public health system is not alone responsible for housing delivery in WHID, and the findings reinforce the need for broader government reforms to support affordable housing delivery in NSW.
- **Clarification of stakeholder roles and responsibilities in supporting affordable housing provision:** There is an opportunity to streamline decision making and clarify roles and responsibilities within WHID, to sharpen focus on housing priorities. A special purpose authority could also be well-suited to driving delivery of affordable housing, and broader precinct development activities, in WHID.

These policy implications are explored in more detail below.

### Enhanced capacity and focus on affordable housing in the health system

As the major anchor and landowner in WHID, NSW Health has significant scope to proactively advocate for an “inclusive innovation” agenda to deliver social and economic benefits for local workers, businesses and communities across the precinct – including affordable housing.

Anchors worldwide are considering their surrounding precinct ecosystems, leveraging their global connections, purchasing power and built environment to create employment opportunities, attract investment and foster local innovation ecosystems (IPC 2022; Spirou 2021). “Precinct conscious” anchors are also recognising their impact on demand for housing, rising rents and gentrification in their local communities, and proactively delivering affordable housing in response (IPC 2022, p.5). For example, MIT has recently delivered 454 units of affordable housing within the Kendall Square precinct in Cambridge, MA, partly in response to student lobbying for affordable housing in response to rising rents as the booming innovation

district attracted new workers to the city (MIT 2023; Chao 2017). This may also reflect the large array of fiscal incentives for affordable housing delivery in the US.

This research highlighted multiple opportunities to enhance NSW Health's focus on housing pressures, including enhanced data collection and analysis on worker housing needs, consideration of housing in NSW Health's strategic frameworks, and prioritising delivery of affordable housing on NSW Health-owned land. These are explored in more detail below.

While NSW Health can contribute land and facilities, and attract investment partners for affordable housing delivery, innovation districts rely on a collaborative ecosystem of institutions, government, industry and landowners to thrive. Private investors and property developers will be needed to provide the capital and expertise to finance affordable housing; and other government agencies will be instrumental in creating the reforms needed to reduce barriers to affordable housing delivery – including development incentives and planning requirements, streamlining planning delivery.

### **Enhanced data collection and analysis**

None of the precinct partners interviewed for this research collected either qualitative or quantitative data on workers' housing needs in WHID. Housing need was considered sporadically. In documents where housing need is highlighted (e.g. *Westmead Place Strategy*) it is not supported by robust data, but by assumptions about workforce need. The lack of fine-grain data on the diversity and scale of housing need in WHID reduces its visibility for state agencies that could potentially implement meaningful change.

While Census data provides a useful snapshot of workers' tenure, housing costs, commuting patterns and relocations, employee surveys at WHID would help to explore the extent to which housing affordability affects staff attraction and retention. As the major employer in the precinct, NSW Health could take a leading role in collecting, analysing and communicating data related to worker housing need in the precinct. Westmead Hospital and the Sydney Children's Hospital at Westmead employ a combined 9,000 workers, including a high proportion of key workers on moderate incomes, providing a significant sample for potential research surveys.

Survey results capturing workers' dis/satisfaction with existing housing conditions, costs and commuting times, housing needs and aspirations, attitudes to living in the same accommodation as other employees and the impact of different factors on housing choices, would significantly improve the understanding of housing needs for workers in WHID. This data could also help to identify priority groups and target a proposed dwelling mix for future housing provision by NSW Health in WHID. More broadly, it would contribute to addressing the gap in research on key worker housing preferences (Gilbert, Nasreen & Gurran 2021).

In jurisdictions where affordable housing has successfully been delivered to support health facilities, there are proactive actions by employers to measure and monitor housing pressures. For example, at Addenbrooke's Hospital, a major public teaching hospital associated with University of Cambridge, UK, provision of affordable housing has become a proactive strategy to attract and retain qualified staff, while maintaining the hospital's status as national centre of medical excellence (CUH 2022).

Addenbrooke's is located within the UK's innovation-focused Cambridge Biomedical Campus, an area with high housing costs, partly due to the booming local innovation economy. The Cambridge University Hospitals NSW Foundation Trust, operator of Addenbrooke's Hospital, recognised that its employees "have difficulties in finding suitable housing within a reasonable commuting distance of the Addenbrooke's Hospital and at an affordable price," and commissioned housing surveys in 2002, 2009 and 2020 to establish the amount and type of housing required to support hospital workers (Savills 2020, p.5), and drive delivery of new affordable accommodation for staff, to be owned and operated by the Trust. Similarly, in Australia, research on affordable housing need and policy options has been commissioned by

key worker advocacy organisations, such as Teachers Mutual Bank, Firefighters Mutual Bank and Police Bank (e.g. Gurran et al. 2018).

Focus groups and interviews with NSW Health staff working in WHID would also provide further qualitative insights into the importance of housing costs as a factor in employment-related decision making, and test the potential value of affordable housing in staff attraction and retention.

For example, in NSW, policies and programs particularly target delivery of affordable rental housing. This is mismatched with some key workers' home ownership aspirations, and may not support long-term retention of key workers in more expensive areas (Gilbert, Nasreen & Gurran 2021). Instead, shared ownership programs and other interventions to address barriers to home ownership for key workers, may need to be explored (ibid).

Research literature also highlights that key workers' "housing careers" are an important consideration in developing affordable housing policy interventions to support key worker attraction and retention. The housing choices of key workers will be influenced by both their life events (including childbirth and parenting, job changes, ill health and the interaction with interlinked family) and the broader housing market context (Coulter & Van Ham 2019), and affordable housing interventions will need to flexibly respond to this. Scanlon (2010) found significant variation in the housing preferences and aspirations of individual key workers: older key workers may already own their own homes, many younger key workers were seeking options to purchase a dwelling, rather than rent an affordable home, and not all key workers wish to live close to their workplaces (particularly teachers and police officers for privacy reasons).

The significant variation in key workers' housing needs and aspirations points to the need to undertake further targeted research with key workers themselves regarding housing preferences, and the impact of life stages, occupations, health and family dynamics on housing choices. Without this nuanced data, it will be difficult to effectively target affordable housing delivery to attract and retain workers.

### **Highlighting housing in NSW Health's strategies and policies**

NSW Health's strategies and policies tend to be "largely housing 'blind'" – obscuring the link between affordable, appropriate housing and staff attraction and retention (Dowling et al. 2020, p.40). For example, WSLHD's *Strategic Plan (2023b)* outlines a plan to "invest in our staff and support systems to attract, retain and develop people of the highest calibre" – but the Strategy makes no reference to the role of affordable housing in attracting and retaining staff.

In innovation districts that have successfully delivered affordable housing for their diverse workforces, major anchors have publicly committed to advocating for and delivering affordable housing, within strategic documents. There is an opportunity for NSW Health to provide a stronger statement on housing affordability, and better align with the *Westmead Place Strategy's* commitment to affordable housing (DPE 2022). This could take the form of explicit recognition of the need for housing in HFIDs in strategic plans for WSLHD, Westmead Hospital and the Sydney Children's Hospital at Westmead, as well as in any master plans prepared for the future development of NSW Health owned land in WHID.

### **Prioritising affordable housing delivery on health land**

Recent NSW Government documents have highlighted opportunities to deliver affordable housing on surplus land (GCC 2022b; DPE 2021). NSW Health, as the major landowner in the precinct, has an opportunity to prioritise surplus Health-owned land in WHID for affordable housing delivery, including the renewal and expansion of existing staff accommodation.

Affordable housing is not "core business" for NSW Health, and the organisation has competing priorities such as delivering health services and facilities, as well as limited expertise in housing financing and delivery, or tenancy management. However, NSW Health controls levers that

can shape and foster housing delivery within the precinct, particularly when coordinated in partnership with industry and other agencies. For example, NSW Health has the capacity to offer property developers and community housing providers discounted land and long leases for affordable housing redevelopment, guarantees of consistent rental income from NSW Health employees, and delivery of supportive amenity, such as open space and public domain improvements – in exchange for affordable housing delivery.

However, as indicated above, there may be externalities and impacts associated with incorporating residential uses within the “health core” of WHID – including clashes between “incompatible” housing and employment uses, and the perceived dilution of the health innovation character of the precinct. Delivery of affordable housing within the “health core” of WHID would therefore need to be considered on a site by site basis.

### **Broader government support for affordable housing**

Although there is significant opportunity for NSW Health to enhance its capacity and focus on affordable housing, the health system should not be solely responsible for affordable housing delivery in the precinct.

To maximise its effectiveness, NSW Health’s focus on affordable housing would need to be supported by robust state government policy. The NSW Government plays the key role in defining planning controls and requirements for affordable housing inclusion, providing capital grants and access to low cost finance to support affordable housing development.

Multiple studies have outlined measures that could be taken by the NSW Government to address systemic issues in the housing market which contribute towards unaffordability, including inclusionary zoning, enhanced funding for community housing providers and land value capture mechanisms (Williams 2015; Bennett 2021). However, to date, the efforts of other stakeholders to deliver affordable housing across the state have been stymied by “the NSW government’s rigid adherence to the neoliberal/financialisation of housing...[which] makes it extremely difficult for the state government to put in place the policies required” (Morris 2021, p.23).

Until this systemic barrier is addressed, it may be challenging for NSW Health and other stakeholders to effectively deliver affordable housing within WHID.

### **Clarification of stakeholder roles and responsibilities in supporting affordable housing provision**

Interviews also highlighted that the overlapping precinct governance structures within WHID produce complexity for agencies attempting to focus on implementation. There is an opportunity to streamline decision making and clarify roles and responsibilities within WHID, to sharpen focus on affordable housing delivery.

In other urban redevelopment contexts, special purpose authorities, such as development corporations, have provided a structure to consolidate and streamline decision making, improving responsiveness to market opportunities (Smith 2019, p.2). Special purpose authorities take many forms, but are generally characterised by the transfer of government powers to a separate unit, for a specific purpose, such as urban development. Special purpose authorities often have independent revenue sources and taxing powers, their own governing boards, and a specific focus on particular policy areas. These flexible governance vehicles are well-suited to precinct development, as they can help to coordinate across diverse precinct partners and are more responsive to changing market conditions – while providing independence and insulation from changing political agendas (IPC 2018).

Globally, special purpose authorities have played a critical role in the long-term development of successful innovation districts. For example, the not-for-profit MaRS Discovery District

corporation leads the development of Toronto's premier innovation district (IPC 2018, p.41), and Agency 22@ Limited, a corporation formed by Barcelona City Council, implemented the planning and infrastructure required to support the development of the city's renowned 22@ innovation district (urbanagendaplatform.org 2023).

Rather than relying on state agencies to lead precinct development in WHID, establishing a special purpose authority could lead to greater efficiency and coordination, access to independent funding sources, and improved focus on precinct-specific outcomes. To ensure delivery of affordable housing, a special purpose authority would likely require access to specific funding and land, potentially drawn from multiple agencies, as well as guarantees that revenue raised through development of land for affordable housing would be reinvested in the precinct. However, it may be unlikely that different state government agencies would cede control over their individual landholdings in favour of a collective approach.

## Opportunities for further research

This report is a short case study, and points to areas for further research. For example, the interviews undertaken for this study were limited to engagement with experts, specifically individuals involved in affordable housing delivery, workforce management, strategic planning, precinct coordination and property development within WHID.

There continues to be a significant research gap regarding the perspectives of key workers and low to moderately paid innovation workers on affordable housing options in HFIDs (Gilbert, Nasreen & Gurran 2021; Dowling et al. 2020). Further research seeking out the views of these groups would provide greater detail on their housing aspirations and the importance of housing costs in career decisions.

Research with public and private sector employers in HFIDs, including with workforce managers and operations managers for health facilities, medical research institutes and businesses, would also enable further exploration of recruitment and retention challenges for these employers.

There is also potential to extend this case study to explore the role of affordable housing in supporting other HFIDs in an Australian context, including in higher cost housing markets such as Camperdown and Randwick in inner Sydney, where there may be even greater worker sensitivity to housing costs.

In addition, this HFID-specific research project could be broadened to explore the housing needs of health sector key workers in other NSW contexts, including regional and rural settings. There may be significant parallels between WHID and other areas, but further research is required to test the applicability of this case study's findings to a wider context.

## Conclusion

Drawing on WHID as a case study, this study explored the role of affordable housing in supporting successful HFIDs, barriers to delivery and opportunities to support increased supply of affordable housing.

Overall, analysis revealed that at WHID, affordable housing would play a role in supporting both low and moderate income innovation workers, and key workers who are essential to the functioning of health assets. Interviewees argued that affordable housing would not only assist in attracting and retaining the emerging talent that is key to the international competitiveness of the precinct, it could also enhance the attractiveness of the precinct to workers, businesses and investment by diversifying land uses and improving amenity. This is broadly consistent with the limited existing research on the intersection of affordable housing and innovation districts.

The findings of the WHID case study did, however, highlight the unique complexities of delivering affordable housing in an HFID – including challenges balancing innovation and housing priorities in a complex precinct governance landscape, coordination between different agencies and perceived “dilution” of health innovation precinct character through incorporating non-clinical uses, including housing. These findings can be applied to other NSW-based HFIDs and beyond.

The study highlighted that affordable housing is a critical consideration for HFIDs across NSW, and there are a number of measures that could be taken to support precinct partners to scope, plan and deliver affordable housing within HFIDs. Interviews, policy and research evidence pointed to the following opportunities for change: enhancing the capacity of the health system, as the major anchor of HFIDs, improving broader government support for affordable housing and streamlining inter-agency governance structures to sharpen focus on housing delivery.

# Appendix A: Governance groups in WHID

The below table summarises the membership and focus of the three major governance groups in WHID.

Table 5 Governance group membership and focus in WHID (Source: Westmead Alliance 2022; interviews with NSW Health staff)

Governance group	Chair	Membership	Focus
Westmead Health and Innovation District	Greater Cities Commission	<p>State government agencies</p> <ul style="list-style-type: none"> <li>- Greater Cities Commission</li> <li>- Western Sydney Local Health District (NSW Health entity)</li> <li>- Sydney Children's Hospitals Network (NSW Health entity)</li> <li>- Health Infrastructure (NSW Health entity)</li> <li>- Department of Planning and Environment</li> <li>- Infrastructure NSW</li> <li>- Transport for NSW</li> <li>- Investment NSW</li> <li>- Create NSW</li> <li>- Schools Infrastructure NSW</li> <li>- NSW Chief Scientist and Engineer</li> <li>- NSW Treasury</li> <li>- Department of Enterprise, Investment and Trade,</li> <li>- Property and Development NSW</li> </ul>	<ul style="list-style-type: none"> <li>- Alignment of investment programs</li> <li>- Alignment and interdependencies of health and transport infrastructure delivery</li> <li>- Economic development</li> <li>- City and regional planning</li> <li>- Place identity, planning and activation</li> <li>- Workforce, housing, sustainability</li> </ul>
Westmead Alliance	Greater Cities Commission	<p>State government agencies:</p> <ul style="list-style-type: none"> <li>- Greater Cities Commission</li> <li>- Western Sydney Local Health District (NSW Health entity)</li> <li>- Sydney Children's Hospitals Network (NSW Health entity)</li> </ul> <p>Local government:</p> <ul style="list-style-type: none"> <li>- City of Parramatta</li> <li>- Cumberland Council</li> </ul> <p>Medical research institutes:</p> <ul style="list-style-type: none"> <li>- Westmead Institute for Medical Research</li> <li>- Children's Medical Research Institute</li> </ul> <p>Universities</p> <ul style="list-style-type: none"> <li>- University of Sydney</li> <li>- Western Sydney University</li> </ul> <p>Businesses/industry</p> <ul style="list-style-type: none"> <li>- Westmead Private Hospital</li> <li>- Sydney Business Chamber</li> </ul>	<ul style="list-style-type: none"> <li>- Integrate research, education and clinical care</li> <li>- Engagement with stakeholders and partners</li> <li>- Identify opportunities for the private sector to partner with public agencies to deliver services and facilities</li> </ul>
Westmead Health Precinct	Western Sydney Local Health District (NSW Health entity)	<p>NSW Health entities</p> <ul style="list-style-type: none"> <li>- Health Infrastructure</li> <li>- Western Sydney Local Health District</li> <li>- Sydney Children's Hospitals Network</li> <li>- NSW Health Pathology</li> <li>- Office of Health and Medical Research</li> </ul> <p>Medical research institutes</p> <ul style="list-style-type: none"> <li>- Westmead Institute for Medical Research</li> <li>- Children's Medical Research Institute.</li> </ul>	<ul style="list-style-type: none"> <li>- Continued innovation, integration and quality in health care delivery</li> <li>- Workforce education and training</li> <li>- Supporting health research and innovation</li> <li>- Investment opportunities and industry partnerships to support development of the precinct</li> <li>- Advocate to broader NSW Government through engagement with WHID</li> <li>- Lead implementation of masterplan for NSW Health-owned land</li> </ul>



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