



Macquarie Park Innovation Precinct

Economic Impact Assessment

NSW Department of
Planning and Environment

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Executive Summary

BACKGROUND

Macquarie Park was established in the 1960's as an employment area spurred by the rezoning of around 200ha of North Ryde's 'green belt'. The development of Macquarie University in the same decade was a catalyst for its rapid growth over the following decades. The area attracted large national and international corporations from tech sectors attracted to affordable accommodation (industrial/ business park buildings) and partnership opportunities with the university.

Macquarie Park is the fourth largest office market after Sydney CBD, North Sydney and Parramatta. Technology and health-related tenants continue to dominate occupier activity. Tenancy sizes are relatively large compared to other office markets.

Macquarie Park's role as a business park and its contribution to the NSW economy has been supported by investment in infrastructure across the north shore. Key projects included:

- **Lane Cove Tunnel (2007)** - forming part of Sydney's orbital motorway network, the tolled 4km tunnel served to reduce traffic congestion along Epping Road.
- **The Epping to Chatswood Rail Link (2009)** - 13km underground rail service between Epping and Chatswood with three new stations at Macquarie University, Macquarie Park and North Ryde.
- Construction of **Macquarie University Hospital (2010)** and expansion of **Macquarie University (2011-2012)** to include a new library, student services building and purpose-built research facility for speech and language disorders.
- **M2 Motorway Upgrade (2013)** - to reduce travel times and add new entry/ exit ramps.

Metro stations at Macquarie Park, Macquarie University and North Ryde opened in 2019 as part of the Sydney Metro Northwest connecting Tallawong and Chatswood station. The metro line will connect through to the Sydney CBD by 2024.

The Macquarie Park Innovation Precinct Place Strategy seeks to grow Macquarie Park's economic capacity, provide for residential capacity and social infrastructure. The Place Strategy was finalised in September 2022, providing long-term vision, strategic framework and masterplan for development.

The infrastructure investment supports rezoning of seven masterplanned neighbourhoods (in stages). The Stage 1 Detailed Master Plan and rezoning package introduces new planning controls to guide development in the neighbourhoods of Waterloo Park (Butbut), Shrimptons Quarter (Waragal Birrung) and western portion of Macquarie Living Station (Gari Nawi).

Atlas Economics (**Atlas**) is engaged by Department of Planning and Environment (DPE) to carry out an Economic Impact Assessment to examine the economic impacts of the Stage 1 Detailed Master Plan and proposed rezoning.

Scope and Approach

The following tasks have been undertaken to complete the Economic Impact Assessment.

- Assessment of the influencing factors for the success of the Precinct from a land use and market perspective.
- Market appraisal to understand the patterns of supply and demand for business and residential uses in the Precinct.
- Review of the Stage 1 Detailed Master Plan to observe how the proposed land uses respond to market demand.
- Estimate the economic impacts of the Stage 1 Detailed Masterplan on the local economy and surrounding region.

Assumptions and Limitations

Atlas acknowledges a number of limitations associated with the Study.

- The long-term economic implications of the COVID-19 pandemic.
- Data from third party sources is assumed to be correct and is not verified.
- Specific assumptions related to economic impact modelling are detailed in the chapter. Some economic impacts are not typically modelled within an Input-Output modelling framework, with alternative economic measures better placed to assess their impacts (e.g. Cost Benefit Analysis, Computable General Equilibrium).

MACQUARIE PARK STAGE 1 MASTER PLAN

The Stage 1 Master Plan and proposed rezoning introduces new planning controls to guide future development in Waterloo Park (Butbut), Shrimptons Quarter (Waragal Birrung) and the western portion of Macquarie Living Station (Gari Nawi). Key development yields are summarised in **Table ES-1**.

The Stage 1 Detailed Masterplan proposes almost 1.9 million square metres GFA. It acknowledges the permissibility of Build-to-rent developments in the zone and accordingly explores two land use scenarios:

- Scenario 1 - Commercial-only scenario.
- Scenario 2 - Commercial and build-to-rent scenario.

Table ES-1: Macquarie Park Innovation Precinct Stage 1 Neighbourhoods, Land Use Yields

| Neighbourhood | Open Space (sqm) | Floorspace Potential (sqm) | New Dwellings |
|--------------------------------------|------------------|----------------------------|---------------|
| Waterloo Park (Butbut) | 17,685 | 648,036 | - |
| Shrimptons Quarter (Waragal Birrung) | 33,530 | 582,509 | 2,646 |
| Macquarie Living Station (Gari Nawi) | 20,220 | 654,942 | 414 |
| Total Stage 1 | 71,435 | 1,885,486 | 3,060 |

Source: AJC (2023)

In Scenario 1, the Stage 1 rezoning could accommodate some 54,000 workers and circa 3,000 new dwellings, with provision of more than 70,000sqm of public open space. In Scenario 2, the rezoning could accommodate some 31,000 workers (reduced for Build-to-rent dwellings). The eventual built outcome is likely to fall between the two land use scenarios.

The Stage 1 Detailed Master Plan introduces residential uses on select sites in some neighbourhoods. It requires the consolidation of sites to access residential floorspace and provision of public open space concurrent with development. The provision of public open space would complement the delivery of Council's fine grain network through developer incentive contributions. Affordable Housing contributions will be required within residential development.

DEMAND FOR PROPOSED LAND USES

The demand for land use categories of office, retail and industrial has been re-set by structural change in human behaviour since the COVID-19 pandemic. There is lower aggregate demand for office and retail, while the reverse is true for industrial.

Commercial Land Uses

Office employment activity is now more dispersed. In the past, most office employment activity took place in the office. Today, that activity is dispersed between the office, the home and a third place (which could be a co-working space or other place). This means that office employment today is more footloose and mobile.

The dispersal of office employment activity has meant lower occupancy rates in the office, and consequently less aggregate demand for purpose-built office space. It has also meant higher demand for dwellings with a study and flexible spaces.

Like other commercial office markets across Australia, there has been a 're-setting' of demand for office floorspace across Macquarie Park. Overall demand has been softer, with a significant amount of vacant floorspace across the market (>20%). There is a clear divergence between prime and secondary grade space, with demand focused on high-quality prime space.

Despite the headwinds facing the office sector, Macquarie Park still plays an important role as one of Greater Sydney's major employment centres. It is a major destination for a mix of industries (e.g., pharmaceuticals, technology/IT, electronics) which require a *mix* of floorspace types, including warehousing, laboratory, research and showroom space.

Continued Transformation

The opportunity for local amenity and services within an office market is underpinned by the size of the worker catchment. Large office markets such as Sydney CBD who benefit from a critical mass of workers are able to sustain a wide range of business services (e.g. cafés, restaurants, wine bars, etc.) which are important for tenant amenity.

Even though Macquarie Park is large (almost 900,000sqm), its expansive and sprawling nature make it challenging to be serviced by business and retail services that contribute to amenity. The availability of all-important amenity in two nodes (focused around Macquarie Centre and the Macquarie Park station) will improve the overall amenity offer of the Precinct.

Macquarie Park has a unique and important role to play - to provide not just commercial office, but a mix of business floorspace that its profile of occupiers (pharmaceutical, technology and health research) requires.

The take-up of office space is expected to be slower moving forward as the market cycles through vacant space and the demand per capita has been re-set. Notwithstanding, targeted rezoning by the Master Plan of sites that contribute to precinct vibrancy and enable delivery of important community infrastructure (e.g. public open space, community facilities) is critical for the Precinct's next phase of evolution.

ECONOMIC IMPACTS OF STAGE 1 MASTER PLAN

The economic impacts of the Stage 1 Master Plan have been estimated using an Input-Output model and assessed at the Greater Sydney level assuming the land use mix of Scenario 1 (commercial-only in the E2 zone):

- **Base Case:** The Precinct continues to operate under current planning controls, including existing operations and projected growth in commercial development over the next 20 years.
- **Proposal Case:** The Precinct is developed under the Stage 1 Master Plan, including ~3,000 residential units and future commercial over the next 20 years, stimulated through the additional dwellings via household expenditure, available labour force, and increased open space and infrastructure amenity.

The assessment distinguishes the economic impacts during construction and those that are more permanent.

Construction Phase

During construction the Proposal Case is projected to generate significant economic impacts for Ryde LGA, including:

- **\$4.6 billion** in output (including \$3.1 billion in direct activity).
- **\$1.5 billion** contribution to Gross Regional Product (GRP) (including \$785.6 million in direct activity).
- **\$926.7 million** in incomes and salaries paid to households (including \$529.7 million in direct income).
- **9,376 Full-Time Equivalent (FTE) jobs** (including 5,677 FTE directly employed in construction activity).

Operational Phase

Compared to the Base Case, the Proposal is estimated to result in an annual **net increase in economic activity** with:

- **\$1.4 billion** additional in output (including \$893.8 million in direct activity).
- **\$713.8 million** additional in contribution to GRP (including \$437.2 million in direct activity).
- **\$398.2 million** additional incomes and salaries paid to households (including \$262.0 million directly).
- **3,246 additional FTE jobs** (including 1,964 additional FTE jobs directly related to activity in the Precinct).

The Proposal will also facilitate notable household expenditure impacts through providing new housing stock:

- **\$387.7 million** in total output (\$261.9 million directly).
- **\$226.8 million** contribution to GRP (\$157.5 million directly).
- **\$107.3 million** in wages and salaries to local workers (\$73.7 million directly).
- **1,279 FTE jobs** (954 direct FTE).

The Master Plan envisages development of residential uses in targeted areas of the Stage 1 neighbourhoods to facilitate an increase in economic activation and delivery of community infrastructure. The provision of public open space concurrent with development would complement delivery of Council's fine grain network through developer incentive contributions.

The economic impacts estimated demonstrate the Proposal has economic merit, having the ability to contribute significantly to the Ryde LGA economy.

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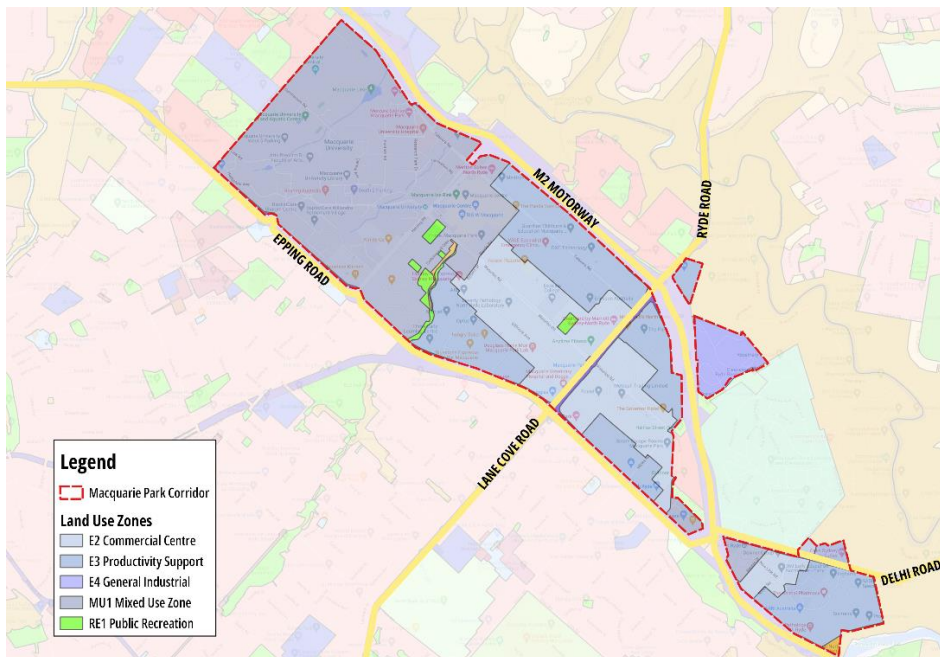
1. Introduction

1.1 Background

The Macquarie Park Corridor is located on Sydney's north shore and is bounded by the M2 Motorway and Delhi Road to the north-east, Epping Road to the southwest, Culloden Road to the north-west and Lane Cove River to the southeast. It is ~18km northwest of the Sydney CBD. Major assets include Macquarie University and Macquarie Centre.

The Macquarie Park Corridor was established in the 1960's as an employment area spurred by the rezoning of around 200ha of North Ryde's 'green belt' which was previously gardens and bushland. The development of Macquarie University in the same decade was a catalyst for its rapid growth over the following decades. The area attracted large national and international corporations from tech sectors attracted to affordable accommodation (in the form of industrial/ business park buildings) and partnership opportunities with the university.

Figure 1-1: Macquarie Park Corridor



Source: Atlas

By the early 2000's the suburb accommodated a large concentration of jobs driven by the rapid growth of the university and a broad economic base of business, education, health services and retail.

Its role as a business park and its contribution to the NSW economy has been supported by investment in infrastructure across the north shore. Key projects included:

- **Lane Cove Tunnel (2007)** - forming part of Sydney's orbital motorway network, the tolled 4km tunnel served to reduce traffic congestion along Epping Road.
- **The Epping to Chatswood Rail Link (2009)** - 13km underground rail service between Epping and Chatswood with three new stations at Macquarie University, Macquarie Park and North Ryde.
- Construction of **Macquarie University Hospital (2010)** and expansion of **Macquarie University (2011-2012)** to include a new library, student services building and purpose-built research facility for speech and language disorders.
- **M2 Motorway Upgrade (2013)** - to reduce travel times and add new entry/ exit ramps.

Most recently, metro stations at **Macquarie Park, Macquarie University and North Ryde (2019)** have opened as part of Metro Northwest connecting Tallawong and Chatswood. The metro line will connect through to the Sydney CBD by 2024.

The cumulative investment in infrastructure has resulted in a surge of investment activity. Aged industrial facilities have been gradually redeveloped into more compact office buildings accommodating large national and multi-national occupiers.

Clustering of sectors is arguably the Macquarie Park Corridor's greatest strength. It is home to Macquarie University, University Hospital and University Incubator. Since 2016, it has grown to accommodate around 180 large international organisations including CSIRO and 200 small businesses.

Strategic Investigations

The Macquarie Park Innovation Precinct Place Strategy (the Place Strategy) seeks to grow Macquarie Park's economic capacity, provide for increased residential and social infrastructure. Building upon a suite of previous strategies and technical studies, the Place Strategy was finalised in September 2022 and provides a long-term vision, strategic framework and masterplan to guide future development. It focuses on the Macquarie Park Corridor excluding Macquarie University (this is referred to as 'the Precinct').

A Strategic Infrastructure and Services Assessment (SISA) was prepared to support the Macquarie Park Innovation Precinct Place Strategy and the Macquarie Park Innovation Precinct Strategic Master Plan (the Strategic Master Plan).

The Place Strategy envisages a staged urban renewal process and identifies seven neighbourhoods across the Macquarie Park Innovation Precinct. The first neighbourhoods progressed for rezoning include Waterloo Park (Butbut), Shrimptons Quarter (Waragal Birrung) and the western portion of Macquarie Living Station (Gari Nawi). The Stage 1 detailed masterplanning and rezoning will introduce new planning controls to guide future development in these neighbourhoods.

Atlas Economics (Atlas) is engaged by Department of Planning and Environment (DPE) to carry out an Economic Impact Assessment to examine the economic impacts of the Stage 1 Detailed Master Plan and proposed rezoning.

1.2 Macquarie Park Innovation Precinct

Macquarie Park (referred to as 'the Precinct') is Greater Sydney's fourth largest office market with almost 900,000sqm of office floorspace after Sydney, Parramatta and North Sydney. In 2021 the Precinct accommodated more than 50,000 jobs. Land use zones of E2 Commercial Centre, E3 Productivity Support, MU1 Mixed Use and RE1 Public Recreation currently apply in the Precinct.

Figure 1-2: Macquarie Park Innovation Precinct, Neighbourhoods



| | | |
|---|--|---|
| Legend | | |
| 1 North Park - Ngalawala (Reciprocity) | 5 Porters Creek - Burbigal (Morning) | ● Metro station |
| 2 Waterloo Park - Butbut (Heart) | 6 Wicks Road South - Gerungul (Unbreakable) | ▨ Macquarie university (Herring Road) Precinct |
| 3 Shrimptons Quarter - Waragal Birrung (Evening Star) | 7 North Ryde Riverside - Narrami Badu-Gumada (Connecting Water Spirit) | ▨ North Ryde Station precinct |
| 4 Macquarie Living Station - Gari Nawi (Saltwater Canoe) | | — Stage 1 Neighbourhood Master Plan |

Source: DPE (2022a)

The Waterloo Park, Shrimptons Quarter and the western portion of Macquarie Living Station (the Stage 1 neighbourhoods) are focused around the Macquarie Park metro station. These lands are currently zoned a mix of E2 and E3.

1.3 Scope and Approach

Atlas is engaged by DPE to support implementation of the Stage 1 Neighbourhoods Detailed Master Plan and rezoning package. This advice is provided in several parts, including:

- **Economic Impact Assessment (this Study)** considers how the Detailed Master Plan responds to demand for various land uses and estimates the economic impacts that could result if the Detailed Master Plan was implemented.
- **Affordable Housing Contributions Scheme** that proposes contributions to Affordable Housing are made by development where residential uses are envisaged to be permitted.

Approach to Economic Impact Assessment

The following tasks have been undertaken to complete the Economic Impact Assessment.

- Assessment of the influencing factors for the success of the Precinct from a land use and market perspective.
- Market appraisal to understand the patterns of supply and demand for business and residential uses and the baseline market context of the Precinct.
- Review of the Stage 1 Detailed Master Plan to observe how the proposed land uses respond to market demand.
- Estimate the economic impacts of the Stage 1 Detailed Masterplan on the local economy and surrounding region.

1.4 Assumptions and Limitations

Atlas acknowledges a number of limitations associated with the Study.

- The long-term economic implications of the COVID-19 pandemic, particularly the shift in migration patterns to the regions, are not fully understood.
- Data from third party sources is assumed to be correct and is not verified.
- Desktop market research has been undertaken without physical site surveys and inspections.
- Specific assumptions related to economic impact modelling are detailed in Chapter 5.

Some economic impacts are not typically modelled within an Input-Output modelling framework, with alternative economic measures better placed to assess their impacts (e.g. Cost Benefit Analysis, Computable General Equilibrium).

2. Strategic Context

2.1 Greater Sydney Region Plan

The Greater Sydney Region Plan (the Region Plan) is the principal strategic planning framework for the Greater Sydney region. The Region Plan seeks to accommodate the needs of Sydney's growing population into a metropolis of three cities - Western Parkland City, Central River City and Eastern Harbour City, building on a vision where most residents live within 30 minutes of their jobs, education and health facilities.

The Region Plan delineates Greater Sydney into five districts: Western Parklands City, Central River City, Eastern Harbour City, Northern District and the Southern District. The Precinct falls within the boundaries of the Eastern Harbour City, and specifically an area defined as the 'Eastern Economic Corridor'.

The Eastern Economic Corridor

The Eastern Economic Corridor includes the areas of Macquarie Park, Chatswood, St Leonards, the Harbour CBD (which encompasses the Sydney CBD and the city fringe areas) including North Sydney and Green Square.

The Eastern Economic Corridor is recognised as economically significant to the Greater Sydney and NSW economy given the high concentration of jobs with good road and public transport connectivity. It also incorporates four major university campuses, four principal referral hospitals and six of the nine commercial office markets in Greater Sydney.

The Region Plan notes the potential for a larger labour market to be accessible by businesses in the Eastern Economic Corridor and improved productivity as committed transport infrastructure is completed.

North District Plan

The North District Plan (the District Plan) identifies opportunity for intensification of health and education facilities and ancillary businesses at Macquarie Park as a health and education precinct.

The District Plan identifies approaches to strengthen Macquarie Park through approaches that would:

- Enable additional capacity for commercial floorspace and maintain a commercial core.
- Improve urban amenity as the centre transitions from business park to a vibrant commercial centre, including reducing the impact of vehicle movements on pedestrian and cyclist accessibility.
- Deliver a finer grain road network to enhance pedestrian connections and provide new access points.
- Promote design excellence in urban design by upgrading public areas.
- Deliver an innovation ecosystem in Macquarie Park, capitalising on the relationship with Macquarie University and nearby high-tech and medical corporations.
- Improve public transport connections to Parramatta and the District's other strategic centres, including the Northern Beaches Hospital.

2.2 Macquarie Park Innovation Precinct Place Strategy

The Macquarie Park Innovation Precinct Place Strategy was finalised in August 2022 and contains a unified planning framework and vision for the progressive transition of the precinct to an innovation precinct. The Place Strategy outlines six moves/ interventions to realise the Precinct's transition. Actions are detailed under each move which address matters relating to land use, design, transport and movement, heritage and culture and infrastructure delivery across the Precinct.

In addition to 14 Directions, the Place Strategy also identifies 'Six Big Moves' for Bays West to guide the planning and urban design framework. These six moves are to:

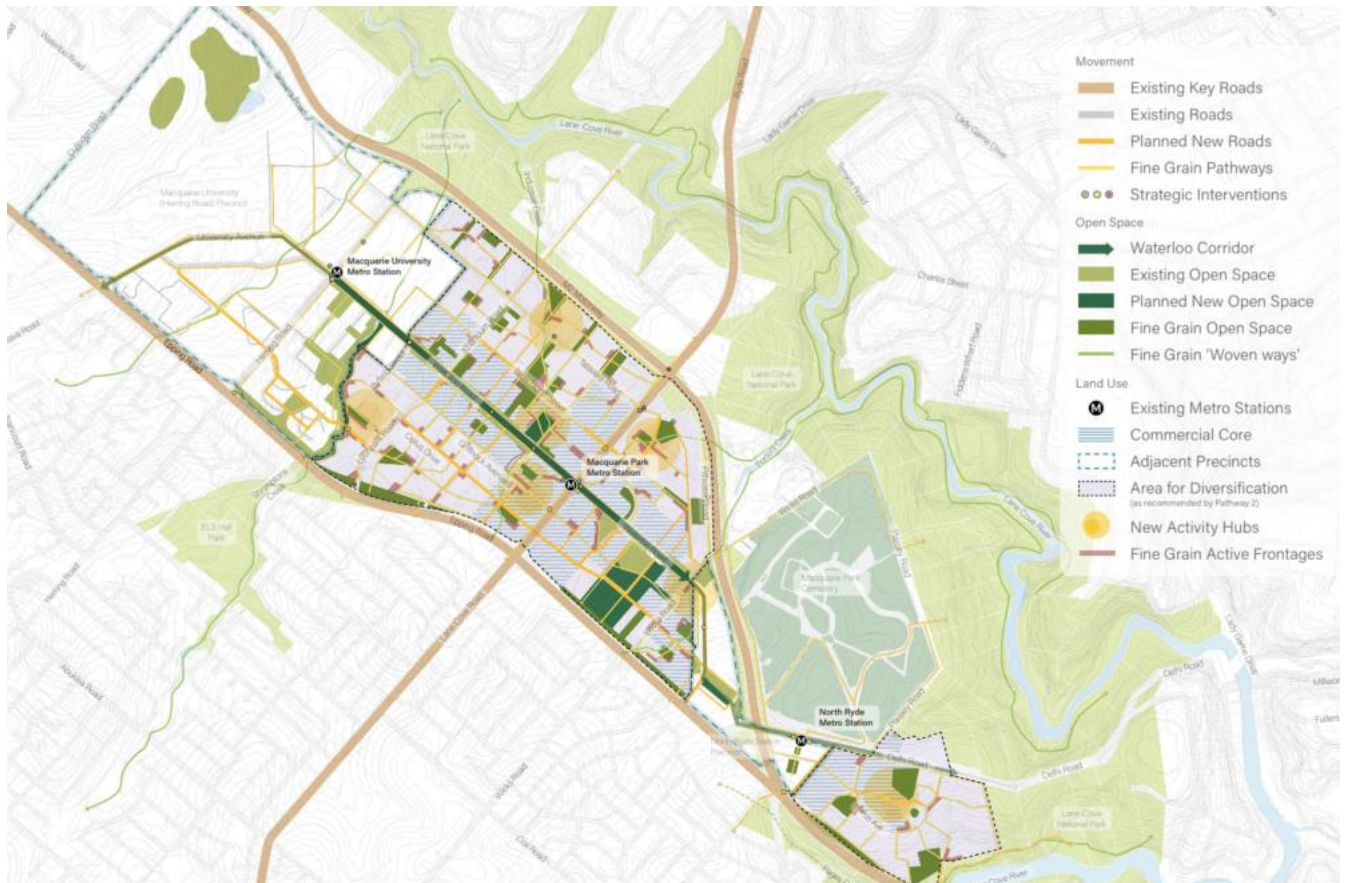
1. Drive the transformation of Macquarie Park into an innovation precinct.
2. Scale and time new development to match infrastructure capacity.
3. Rebalance transport uses.

4. Prioritise and enrich the pedestrian experience.
5. Create sustainable neighbourhoods within Macquarie Park, each with their own identify and role.
6. Connect to Country and deliver better quality open spaces.

The Place Strategy incorporates a Master Plan to guide the long-term development of the Precinct. The Master Plan is an aspirational end-state representation of the precinct and starting point for more detailed investigations to be based on. Detailed master plans for each neighbourhood are to be prepared prior to their rezoning and release.

Figure 2-1 depicts the long-term vision of the Macquarie Park Strategic Master Plan. 'Areas for Diversification' are areas where current uses will be complemented by new uses including retail, services or residential. These areas are anticipated to increase their footfall attracting a wider range of population around them.

Figure 2-1: Macquarie Park Innovation Precinct, Strategic Master Plan



Source: DPE (2022)

Macquarie Park Innovation Precinct Strategic Master Plan

The draft Macquarie Park Innovation Precinct Strategic Master Plan was released for public exhibition in July 2021. The Strategic Masterplan envisages a broad mix of commercial, community, civic, retail, residential and recreational land uses and aligns with the 'Big Moves' outlined in the Place Strategy.

Overall, the Strategic Masterplan anticipates accommodating some 20,000 workers and up to 7,650 new dwellings, with significant provision of public open space. Key development yields are summarised in **Table 2-1**.

Table 2-1: Macquarie Park Innovation Precinct, Land Use Yields

| Neighbourhood | Open Space (sqm) | Total Built Floorspace (sqm) | New Dwellings |
|------------------------|------------------|------------------------------|---------------|
| North Park (Ngalawala) | 40,000-45,000 | 450,000-500,000 | None |
| Waterloo Park (Butbut) | 40,000-45,000 | 300,000-400,000 | None |

| Neighbourhood | Open Space (sqm) | Total Built Floorspace (sqm) | New Dwellings |
|--|------------------|------------------------------|---------------|
| Shrimptons Quarter (Waragal Birrung) | 25,000-30,000 | 600,000-650,000 | 2,100-2,600 |
| Macquarie Living Station (Gari Nawi) | 9,000-14,000 | 500,000-550,000 | 350-450 |
| Porters Creek (Burbigal) | 15,000-20,000 | 80,000-100,000 | 400-600 |
| Wicks Road South (Garungul) | 80,000-85,000 | 250,000-300,000 | 1,500-2,000 |
| North Ryde Riverside (Narrami Badu-Gumada) | 30,000-35,000 | 400,000-500,000 | 1,500-2,000 |

Source: DPE (2022b)

Following engagement with a variety of stakeholders, the Strategic Master Plan has been finalised.

2.3 Macquarie Park Stage 1 Detailed Master Plan

The Stage 1 Detailed Master Plan and proposed rezoning introduces new planning controls to guide development in Waterloo Park (Butbut), Shrimptons Quarter (Waragal Birrung) and western portion of Macquarie Living Station (Gari Nawi).

The Stage 1 Detailed Masterplan proposes almost 1.9 million square metres GFA. It acknowledges the permissibility of Build-to-rent developments in the zone and accordingly explores two land use scenarios:

- Scenario 1 - Commercial-only scenario.
- Scenario 2 - Commercial and build-to-rent scenario.

Key development yields are summarised in **Table 2-2**.

Table 2-2: Macquarie Park Innovation Precinct Stage 1 Neighbourhoods, Land Use Yields

| Neighbourhood | Open Space (sqm) | Floorspace Potential (sqm) | New Dwellings |
|--------------------------------------|------------------|----------------------------|---------------|
| Waterloo Park (Butbut) | 17,685 | 648,036 | - |
| Shrimptons Quarter (Waragal Birrung) | 33,530 | 582,509 | 2,646 |
| Macquarie Living Station (Gari Nawi) | 20,220 | 654,942 | 414 |
| Total Stage 1 | 71,435 | 1,885,486 | 3,060 |

Source: AJC (2023)

In Scenario 1, the Stage 1 rezoning could accommodate some 54,000 workers and circa 3,000 new dwellings, with provision of more than 70,000sqm of public open space. In Scenario 2, the rezoning could accommodate some 31,000 workers (reduced for Build-to-rent dwellings) and circa 3,000 new dwellings (in rezoned areas). The eventual built outcome is likely to fall between the two land use scenarios.

The Stage 1 Detailed Master Plan introduces residential uses on select sites in some neighbourhoods. It requires the consolidation of sites to access residential floorspace and provision of public open space concurrent with development. The provision of public open space would complement the delivery of Council's fine grain network through developer incentive contributions.

Affordable Housing contributions will be required within residential development of the Stage 1 Detailed Master Plan.

2.4 Infrastructure Requirements

The Greater Cities Commission (GCC) led preparation of the Macquarie Park Strategic Infrastructure and Services Assessment (SISA) to support the Place Strategy and the Strategic Master Plan. The SISA considered the impact and growth of change in three parts of the Macquarie Park Corridor:

- North Ryde Station Urban Activation Precinct.
- Macquarie University (Herring Road) Urban Activation Precinct.
- Macquarie Park Investigation Area (the subject of the Place Strategy).

The SISA investigates the infrastructure and services needed to support:

- Development that has already occurred (last five years) and the immediate pipeline.
- Growth over the medium to longer term horizon from:
 - The already zoned precincts of North Ryde Station and Macquarie University.
 - Potential additional mixed use development in the Macquarie Park Investigation Area.

The SISA identifies at a strategic level the total cost and potential funding options to guide decision making.

Table 2-3: Macquarie Park Corridor Infrastructure and Service Costs

| Infrastructure and Service Category | Estimated Cost | Delivery Considerations |
|---|----------------------|---|
| Public transport | \$4.2 billion | <ul style="list-style-type: none"> • Increased Northwest Metro services |
| Health, justice, police and emergency services | \$533 million | <ul style="list-style-type: none"> • Potential new community health facility, new ambulance station and new policing centre subject to future capital planning process |
| Roads and active transport | \$299 million | <ul style="list-style-type: none"> • Future travel demand by private vehicle cannot be met by additional infrastructure. Local development contributions and Council's developer incentive scheme are key in delivering local transport infrastructure |
| Education | \$430 million | <ul style="list-style-type: none"> • Securing of land ahead of future rezoning essential |
| Sport and active recreation | \$159 million | <ul style="list-style-type: none"> • Land is required for sports infrastructure to enable future expansion of existing or new facilities |
| Cultural and community infrastructure | \$153 million | <ul style="list-style-type: none"> • Generally Council responsibility, may be sourced partially through developer contributions including Voluntary Planning Agreements |
| Green and blue infrastructure (incl. parkland and open space) | \$56 million | <ul style="list-style-type: none"> • Infrastructure of local significance typically Council responsibility • Regionally significant infrastructure funded by NSW Government who can provide grant funding to Council for local green infrastructure |
| Water and electricity | \$484 million | <ul style="list-style-type: none"> • Scoping for additional water infrastructure is required based on detailed designs |
| Total | \$6.4 billion | |

Source: GCC (2022)

The SISA expects approximately \$1.6 billion as required in the immediate term where the remaining \$4.8 billion over the medium to longer term. The NSW Government is expected to be the likely source of the majority of the costs - either the NSW Government in combination with the Commonwealth, or the NSW Government alone, or the NSW Government in combination with a Special Infrastructure Contribution (SIC). A Housing and Productivity Contribution (HPC) has since been gazetted and in force.

Local government is expected to be responsible for a proportion of the infrastructure costs; the SISA acknowledges more detailed neighbourhood level planning may suggest additional local infrastructure is needed.

Schools Infrastructure NSW has secured sites for the delivery of a new primary school within the Midtown development area and a new primary school and high school in the Lachlan's Line development area. The final business case for these schools has been approved.

The Infrastructure Delivery Plan investigates further the funding of infrastructure and service proposals that will support development.

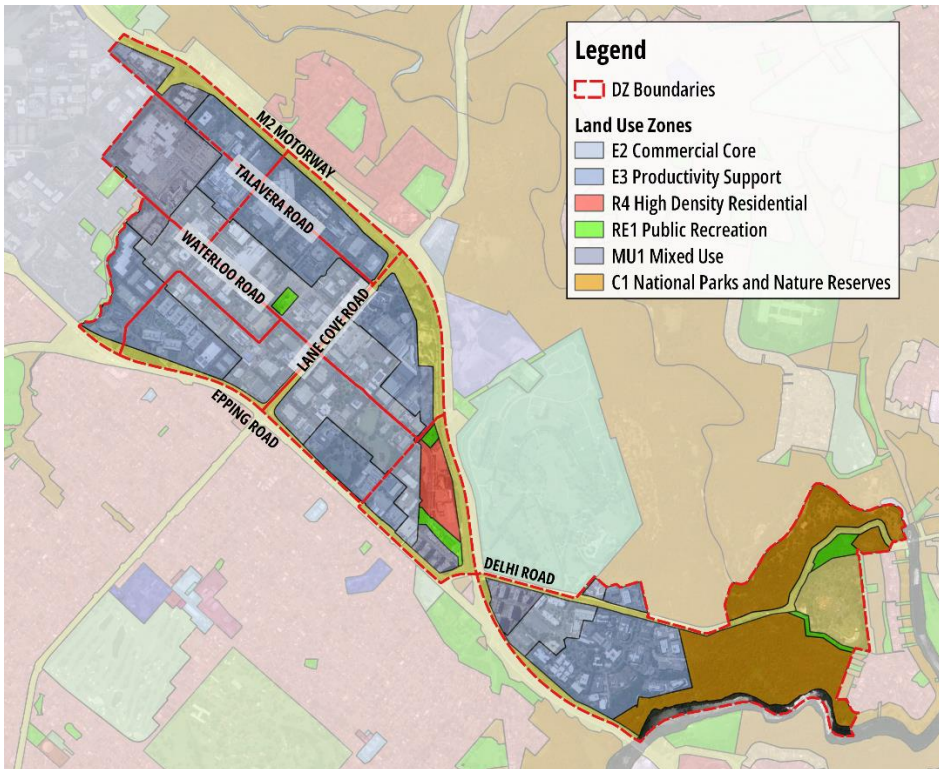
3. Employment Context

3.1 Employment Profile

This section reviews the employment characteristics of the Precinct. To analyse employment activity, a series of Australian Bureau of Statistics Destination Zone (DZ) are selected which broadly align with the geographical boundaries of the Precinct. The analysis examines the dominant industries of employment and journey to work data in the Precinct.

Figure 3-1 shows the boundaries of the Precinct and catchment area selected to understand employment activity.

Figure 3-1: Employment Profile Area Boundaries



Source: Atlas

Industry Classifications

The ABS categorises employment activity into 19 industry sectors referred to as ANZSICs (Australian New Zealand Standard Industry Classification). These are the most commonly utilised categorises used when analysing an areas employment profile.

It can be useful to consider employment composition in broader industry terms. Broad industry classifications (BIC) group the 19 ANZSIC sectors into four main industry categories - population-serving, knowledge-intensive, health and education and industrial. These BIC groupings and their corresponding ANZSICs are shown in Table 3-1.

Table 3-1: Industry Classifications (BICs) by 19-Digit ANZSIC

| Population Serving | Knowledge-Intensive | Health and Education | Industrial |
|---|--|---|--|
| <ul style="list-style-type: none"> Construction Retail Trade Accommodation & Food Services Arts & Recreation Services Other Services | <ul style="list-style-type: none"> Information, Media & Telecommunications Financial & Insurance Services Rental, Hiring & Real Estate Services Professional, Scientific & Technical Services Administrative & Support Services Public Administration & Safety | <ul style="list-style-type: none"> Education & Training Health Care & Social Assistance | <ul style="list-style-type: none"> Agriculture, Forestry & Fishing Mining Manufacturing Electricity, Gas, Water & Waste Services Wholesale Trade Transport, Postal & Warehousing |

Source: ABS/Atlas

3.1.1 Employment by Industry

In 2021, there were approximately 50,680 workers in the Precinct. In 2011, some 36,810 workers were recorded, reflecting an average annual employment growth of 3% in the last decade.

Over the 2011-2021 period, employment in the Precinct was predominantly driven by knowledge-intensive and industrial sectors. This includes jobs in wholesale trade and professional, scientific & technical services. Whilst dominant industries of employment in the Precinct remained largely unchanged in the last decade, some notable shifts include:

- **Information, Media & Telecommunications:** 7% decline from 7,222 jobs (20%) in 2011 to 6,434 jobs (13%) in 2021.
- **Public Administration & Safety:** 5% growth accounting for 211 jobs (<1%) in 2011 to 2,591 jobs (5%) in 2021.
- **Health Care & Social Assistance:** 4% growth representing 2,140 jobs (6%) in 2011 to 4,836 jobs (10%) in 2021.

Table 3-2 provides a breakdown of employment by industry in the Precinct over the 2011-2021 period.

Table 3-2: Employment by Industry (2011-2021)

| Industry | 2011 | | 2016 | | 2021 | | % Avg. Annual Growth (2011-21) |
|---|---------------|-------------|---------------|-------------|---------------|-------------|--------------------------------|
| | No. | % | No. | % | No. | % | |
| ANZSIC | | | | | | | |
| Agriculture, Forestry and Fishing | 20 | 0% | 65 | 0% | 84 | 0% | 15% |
| Mining | 40 | 0% | 71 | 0% | 184 | 0% | 16% |
| Manufacturing | 4,269 | 12% | 4,471 | 10% | 4,360 | 9% | 0% |
| Electricity, Gas, Water and Waste Services | 31 | 0% | 94 | 0% | 90 | 0% | 11% |
| Construction | 1,428 | 4% | 2,251 | 5% | 2,702 | 5% | 7% |
| Wholesale Trade | 8,211 | 22% | 9,547 | 20% | 10,108 | 20% | 2% |
| Retail Trade | 2,133 | 6% | 3,574 | 8% | 3,122 | 6% | 4% |
| Accommodation and Food Services | 669 | 2% | 1,347 | 3% | 1,131 | 2% | 5% |
| Transport, Postal and Warehousing | 213 | 1% | 568 | 1% | 582 | 1% | 11% |
| Information Media and Telecommunications | 7,222 | 20% | 7,462 | 16% | 6,434 | 13% | -1% |
| Financial and Insurance Services | 455 | 1% | 415 | 1% | 467 | 1% | 0% |
| Rental, Hiring and Real Estate Services | 329 | 1% | 404 | 1% | 479 | 1% | 4% |
| Professional, Scientific and Technical Services | 6,972 | 19% | 7,840 | 17% | 7,967 | 16% | 1% |
| Administrative and Support Services | 843 | 2% | 1,021 | 2% | 1,484 | 3% | 6% |
| Public Administration and Safety | 211 | 1% | 787 | 2% | 2,591 | 5% | 29% |
| Education and Training | 259 | 1% | 378 | 1% | 584 | 1% | 8% |
| Health Care and Social Assistance | 2,140 | 6% | 3,136 | 7% | 4,836 | 10% | 8% |
| Arts and Recreation Services | 57 | 0% | 204 | 0% | 200 | 0% | 13% |
| Other Services | 803 | 2% | 772 | 2% | 511 | 1% | -4% |
| Inadequately described/Not stated | 503 | 1% | 2,200 | 5% | 2,765 | 5% | 19% |
| Total | 36,808 | 100% | 46,607 | 100% | 50,681 | 100% | 3% |
| Broad Industry Classification | | | | | | | Change (2011-21) |
| Population-Serving | 5,090 | 14% | 8,148 | 18% | 7,666 | 16% | 4% |
| Knowledge-Intensive | 16,032 | 44% | 17,929 | 40% | 19,422 | 41% | 2% |
| Health and Education | 2,399 | 7% | 3,514 | 8% | 5,420 | 11% | 9% |
| Industrial | 12,784 | 35% | 14,816 | 33% | 15,408 | 32% | 2% |
| Total | 36,808 | 100% | 46,607 | 100% | 50,681 | 100% | 3% |

Source: ABS/Atlas

In 2011, knowledge-intensive and industrial employment accounted for almost 80% of jobs in the Precinct collectively. Whilst remaining dominant industries of employment in 2021 (73%), the Precinct's employment profile has been increasing in diversity. This is led by new jobs in the population-serving and health and education sectors.

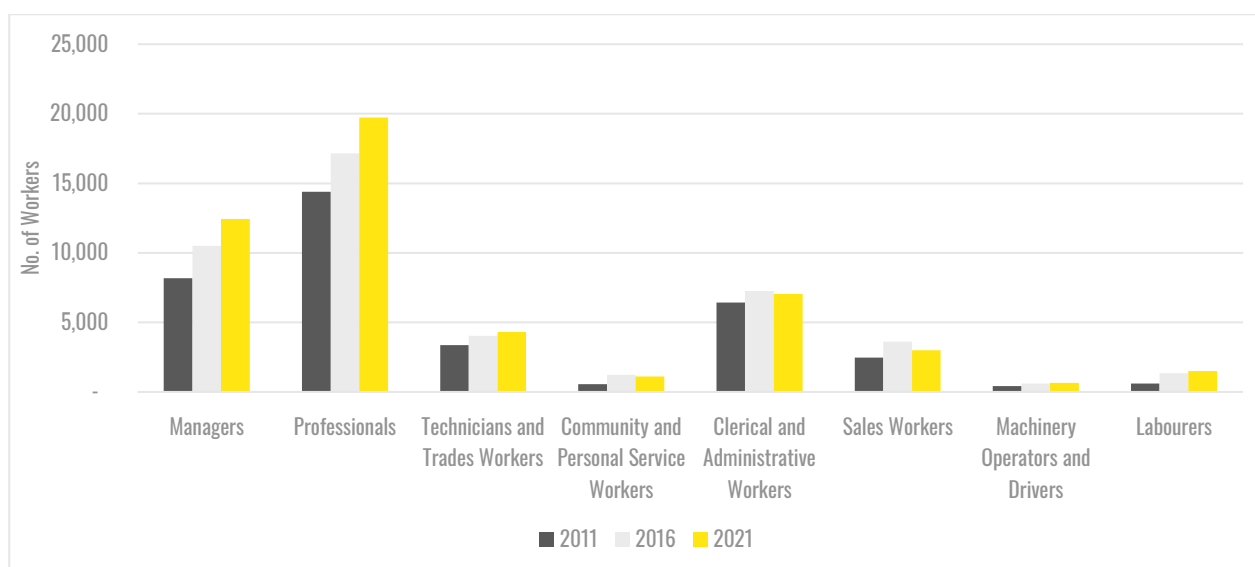
3.1.2 Employment by Occupation

In 2021, a 77% majority of workers in the Precinct occupied traditional white-collar occupations. This includes those employed as managers (25%), professionals (39%) and clerical workers (14%) - the dominant occupations in the Precinct.

Over the 2011-2021 period, the occupation profile of workers remained largely unchanged. Particularly, the Precinct recorded the largest increase in workers employed as managers (+4,270 workers). Conversely, the number of machine operators & drivers recorded the lowest growth (+230 workers). Collectively, blue-collared occupations (machine operators & drivers, technicians & trade workers and labourers) accounted for just 13% of jobs in the Precinct in 2021.

Figure 3-2 illustrates the occupation profile of the Precinct over the 2011-2021 period.

Figure 3-2: Occupation Profile (2011-2021)



Source: ABS (2021)

3.2 Workers' Travel Patterns

Journey to Work

An analysis of journey-to-work patterns indicates where workers in the Precinct live is dispersed. Approximately 50% live either in Ryde or adjoining LGAs with the rest living as far as Canterbury-Bankstown, Central Coast and Penrith LGAs.

In 2021, 12% of the Precinct's workers resided locally within the Ryde LGA, representing the dominant LGA of residence. Other common LGAs where workers live include Parramatta (12%), Blacktown (10%), Hornsby (7%) and The Hills (7%), immediately adjoining the Ryde LGA to its western boundary.

Whilst the Precinct recorded nominal growth in workers who live locally in the Ryde LGA over 2011-2021, this was exceeded by the growth in workers travelling to work from the surrounding Parramatta and Blacktown LGAs (Table 3-3).

Table 3-3: Dominant Worker Place of Residence (LGA), 2011-2021

| Place of Residence (LGA) | 2011 | 2016 | 2021 |
|--------------------------|------|------|------|
| Ryde | 11% | 11% | 12% |
| Parramatta | 6% | 10% | 10% |
| Blacktown | 6% | 7% | 9% |
| Hornsby | 9% | 8% | 7% |
| The Hills | 8% | 6% | 7% |

Source: ABS (2021)

Method of Travel to Work

The 2021 Census was undertaken during the COVID-19 lockdowns for most parts of Australia, including NSW. As such, many occupations were required to work from home, including nearly 70% of the Precinct's workers. Of the Precinct's workers who continued to travel to work in 2021, more than 20% travelled by private car.

In 2011 and 2016, the Precinct's workers predominantly travelled to work by car, although in declining proportions (from 66% in 2011 to 63% in 2016). Conversely, more workers utilised public transport over the same period. Particularly, the proportion of the Precinct's workers utilising train services to work grew from 13% in 2011 to 24% in 2016.

Whilst it is likely that train utilisation has accelerated following the delivery of the Macquarie Park metro line in 2019 (and post-pandemic lockdowns), recent travel preferences to work will only be accurately captured in the 2026 Census.

Table 3-4 illustrates the Precinct's workers' travel methods to work over the 2011-2021 period.

Table 3-4: Method of Travel to Work, 2016-2021

| Method of Travel | 2016 | 2021 |
|--------------------------------------|------|------|
| Public transport | 24% | 5% |
| Private vehicle | 63% | 22% |
| Active transport | 3% | 1% |
| Other mode | 0% | 0% |
| Worked at home or Did not go to work | 9% | 70% |
| Mode not stated | 1% | 0% |

Source: ABS (2022)

3.3 Implications for the Master Plan

The Precinct already accommodates a significant concentration of employment and has the potential to leverage the industry clusters already present. Businesses who locate in the Precinct are able to access the rich skilled labour pool connected by metro service.

Intensifying the use of lands in the Precinct has multiple economic benefits and is a well-founded principle of urban planning. Urban intensification promotes economic sustainability by supporting the financial viability of public transport networks and can reduce the cost of energy, water and waste systems maintenance through reducing urban sprawl.

4. Demand for Land Uses

4.1 Commercial Land Uses

The demand for commercial land uses has been subject to the headwinds of structural change following the COVID-19 pandemic. This section considers the structural trends that influence the demand for office space both internationally and domestically and draws out the implications for masterplanning at the Precinct.

The historical context of the Macquarie Park office market is firstly considered. The trends influencing commercial office markets are then considered. Lastly, implications of these trends in the context of the Precinct are examined.

Macquarie Park Office Market

Macquarie Park is the fourth largest office market in NSW, just behind Parramatta, North Sydney and the Sydney CBD. Comprising more than 920,000sqm of office stock across some 80 buildings, Macquarie Park is characterised by 'campus-style' office buildings comprising a mix of commercial office, warehouse and showroom floorspace. It forms part of the larger 'North Shore' office market, which also includes St Leonards/Crows Nest, Chatswood and North Ryde.

Macquarie Park has a well-established cluster of information technology, pharmaceutical, and business service occupiers which have organically grown over time. Multiple ASX-listed and multinational companies and headquartered and/or located in the precinct, including Optus, Foxtel, Ericsson, Medtronic and Sonic Healthcare.

Macquarie Park has historically accommodated occupiers with a mix of land use requirements - commercial office, warehouse, research and laboratory, showroom, etc - within a traditional business park format. Office buildings in Macquarie Park are distinctly low in scale and generally range from 4-10-storeys with characteristically large floor plates.





Rents and prices in Macquarie Park have generally been amongst the lowest, below that of other major office markets - on the North Shore as well as the Parramatta CBD. These lower rents in part reflect the type of commercial typologies and nature of floorspace (warehouse, research, lab, etc.) in Macquarie Park.


Structural Re-setting of Demand

Structural trends refer to a major shift in the way an industry, an economy or a society functions. Like all real estate sectors, offices are subject to structural changes that alter the type, location and quantum of space that is needed today and that will be needed in the future to meet occupier demand. Whilst many of these trends were underway prior to the COVID-19 pandemic, the impact of enforced working from home has been to accelerate the realisation of these structural changes from perhaps 5-10 years to 12-24 months.

Table 4-1 identifies the five major structural trends that are impacting office occupier demand per worker.

Table 4-1: Rapid Change: Structural Trends and Impact on per worker office space demand

| Structural trend | per worker Demand | Characteristics |
|---|-------------------|--|
|  Hybrid Working | Negative | <ul style="list-style-type: none"> Fewer working days in the office/week Changing physical workspace needs |
|  De-densification | Positive | <ul style="list-style-type: none"> Greater space allowance for amenity like kitchens, cafés & social/ collaboration areas Awareness that higher space provision is healthier |
|  Changing Corporate Structures | Negative | <ul style="list-style-type: none"> A rising share of fully remote roles and companies reducing office demand |
|  Health & Wellbeing | Positive | <ul style="list-style-type: none"> More space for additional facilities such as exercise and outdoor areas Suitable social distances |

| Structural trend | per worker Demand | Characteristics |
|--|-------------------|---|
|  Sustainability | Neutral | <ul style="list-style-type: none"> Focus on resource efficient workspaces with higher sustainability ratings |

Source: Atlas Economics

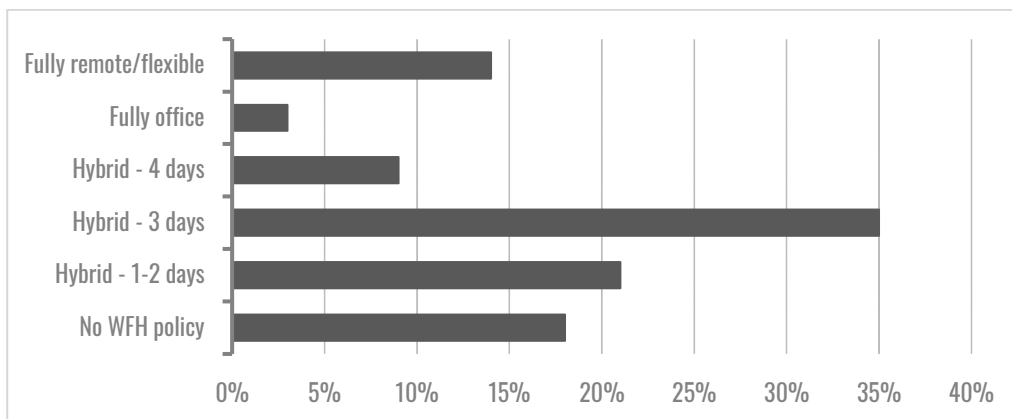
Flexible/ Hybrid Working

Flexible/ hybrid working refers to a working arrangement in which office-based workers split their working week between the office, their home and in some cases a third space such as a co-working facility or library. Prior to the COVID-19 pandemic, hybrid working was the exception rather than the rule. The employer expectation was that workers would primarily or exclusively be office-based during the working week.

Government mandates to contain the spread of the COVID-19 virus obligated all workers who could work from home (WFH) to do so. Millions of formerly office-based employees instantly gave up their daily commutes and workplaces. Rather than leading to a collapse in output which had been feared, organisations realised how many tasks could effectively be performed at home with either neutral or positive productivity impacts. Employees valued the travel time and cost savings that WFH provided and its greater flexibility. Employers accepted the employee engagement benefits of hybrid working arrangements and the financial benefits achievable through reducing or consolidating their physical office footprint.

Hybrid working is now the default position for Australian corporates with office-based workers (**Figure 4-1**). Two-thirds of corporate occupiers have a hybrid working policy and 14% are fully remote. Just 3% are in the office 5 days a week. As a result, the average Australian worker now spends more than a quarter of their working week (27%) at home or in a third space (library, local café, co-working space).

Figure 4-1: Australian Corporate Working-from-home (WFH) Policies Breakdown



Source: The Aussie Corporate, March 2023

Overall, hybrid working has a negative impact on per person office demand as occupiers do not need to provide space for all full-time employees to have a permanent desk.

Shift Towards High Quality Space

Structural trends such as hybrid working are altering the demand for office space at a macro level. At a micro level, the characteristics of office demand are changing too with critical implications for submarkets and individual office assets.

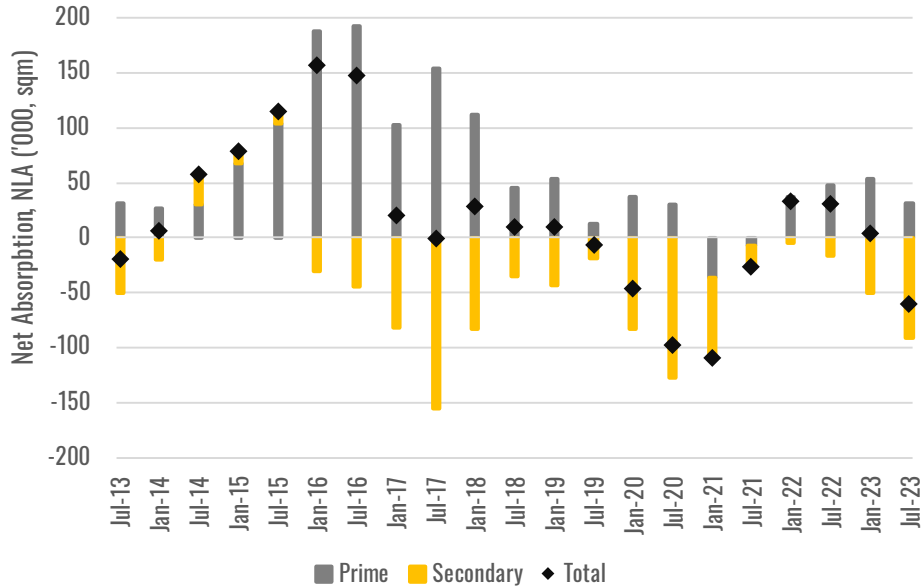
In a post-COVID-19 market, occupier demand is focusing on a specific type of office space which provides:

- Flexible spaces that can be adapted to accommodate a wide variety of activities.
- High-quality sustainability credentials.
- Quiet spaces for phone calls or working.
- An abundance of meeting spaces and places for collaboration.
- Good access to public transportation.
- Food and beverage amenities such as an on-site café, health and wellness facilities.

To meet these requirements, demand is focusing on the best quality contemporary space at the expense of older-style buildings. This can be directly observed in recent net absorption data.

Net absorption measures the space 'taken-up' through stock audit adjustments, i.e. the balance of occupier demand. Prior to the pandemic the Sydney CBD market recorded next positive absorption every year, but since Q4 2019 it has been negative in all but three quarters (Figure 4-2). Secondary space has not seen net positive absorption since Q4 2018.

Figure 4-2: Net Absorption (2018-2023), Sydney CBD

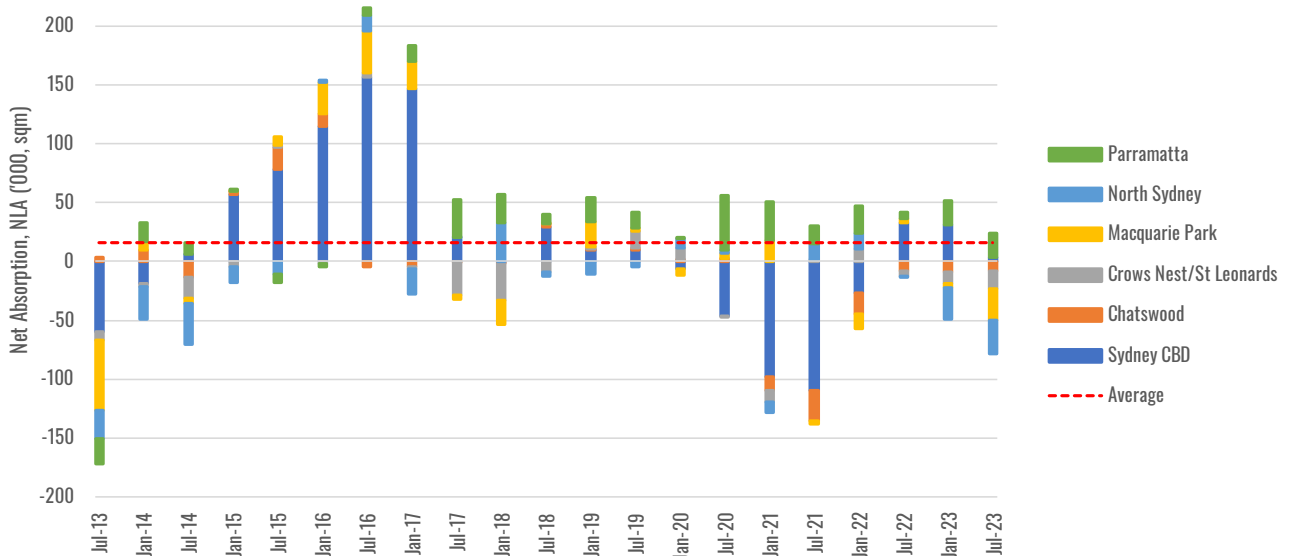


Source: PCA (2023)

A collapse in demand during the pandemic is understandable, given the inability to occupy offices and uncertainty over when the pandemic would end. However aggregate net absorption following the pandemic is much lower than the net contraction which occurred during the pandemic and it is concentrated only in prime space. This implies that overall office occupier demand today is much weaker than it was pre-pandemic, and it is targeted on the best quality space only.

Figure 4-3 shows that in the broader office markets, leasing velocity has followed the same trajectory. There was significant net negative absorption during the pandemic, a brief moderate recovery afterwards before absorption turned net negative again. In Macquarie Park, there has not been positive net absorption recorded since Q1 2021.

Figure 4-3: Net Absorption (2018-2023), Sydney Metropolitan Office Markets



Source: PCA (2023)

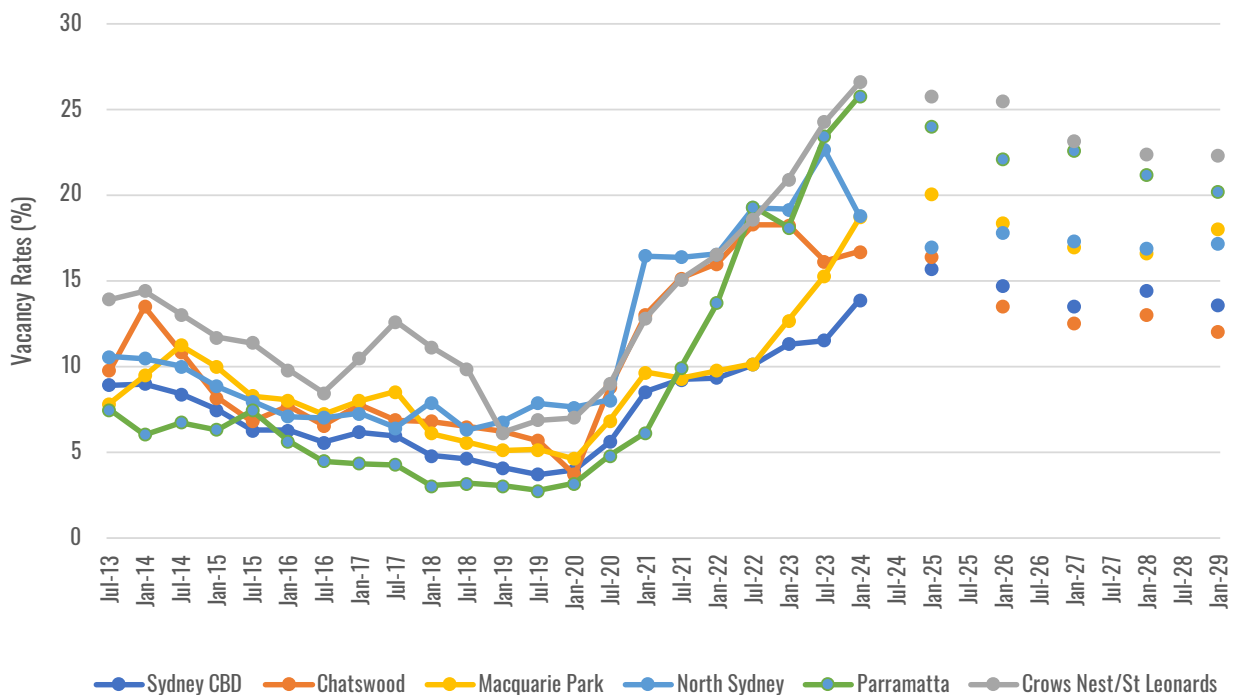
Vacancy Rates

The collapse in office demand during 2020-2021 at the height of uncertainty during the period of lockdowns resulted in a sharp spike in vacancy rates in all office markets. At the time there was speculation that post-pandemic there would be a 'bounce back' and occupancy rates would return to their pre-pandemic levels.

Since that time, flexible office working arrangements have become entrenched in many businesses, with the take-up (or net absorption) of office floorspace well below pre-pandemic levels. This has had a corresponding impact on vacancy rates which have remained elevated in all office markets.

Figure 4-4 shows historical vacancy rates in Macquarie Park and other metropolitan office markets to Q2 2023. These vacancy rates are expected to remain elevated for the decade to 2028 (allowing for new completions and commitments over that period). In Macquarie Park, vacancy rates are expected to hover between 15% and 20%.

Figure 4-4: Vacancy Rates (Historical and Forecast), Sydney Metropolitan Office Markets



Source: PCA (2023), various

All office markets are 'working through' the floorspace that is currently vacant. Landlords are offering generous incentives and tenants have the ability to 'pick and choose' office premises that suit their requirements. Existing office buildings and office developments that are under construction are in competition to capture investment from a smaller base of demand.

Until vacancy rates return to 'normal' levels (5%-10%), effective rents will remain depressed which negatively impacts on development feasibility and the viability of new office development.

Commercial Development Activity

A review of the commercial development pipeline indicates there is a large quantum of commercial floorspace planned for delivery in Macquarie Park (at various stages of planning). Across multiple sites, there is more than 200,000sqm of commercial floorspace proposed and in the pipeline.

The largest commercial development currently proposed is the 'Macquarie Square' development at 45-61 Waterloo Road. Set to comprise over 117,000sqm of office floorspace across 5 buildings ranging from 6 to 15-storeys, the development is being progressively delivered and will be amongst the largest office developments in Macquarie Park to date.

Another major project being progressively delivered is Stockland's 'M Park' project at 11-17 Khartoum Road. Set to comprise a total of ~105,000sqm of commercial floorspace across five buildings, the development will become the new consolidated Australian headquarters for Johnson and Johnson.

Despite the strength of the office pipeline, there are only a handful of projects currently under construction. These include the initial stages of M Park and the 'Macquarie Exchange' development at 396 Lane Cove Road.

Implications for Office Demand

Like other commercial office markets across Australia, there has been a 're-setting' of demand for office floorspace across Macquarie Park. Overall demand has been softer, with a significant amount of vacant floorspace across the market (>20%). There is a clear divergence between prime and secondary grade space, with demand focused on high-quality prime space.

Despite the headwinds facing the office sector, Macquarie Park's position as one of Greater Sydney's office markets remains strong. It is a major destination for a mix of industries (e.g., pharmaceuticals, technology/IT, electronics) which require a *mix* of floorspace types, including warehousing, laboratory, research and showroom space.

Given current market rents (net rents between \$450/sqm to \$550/sqm of net lettable area), the financial viability of high-rise office tower development at **large scale** across Macquarie Park is not yet economic. There is nevertheless demand for office space, with comprehensive redevelopment only expected in limited cases.

4.2 Residential Land Uses

Macquarie Park is a popular high-density residential market. Its significant retail amenity offering at Macquarie Centre, public transport accessibility, tertiary educational offering and mix of employment opportunities have driven a wave of apartment development, with almost 3,000 new apartments delivered over the 2016-2021 period.

There are several new apartment projects currently being marketed off-the-plan. Market investigation indicates that whilst demand has begun to soften in line with the broader housing market, take-up remains steady with good interest from a range of buyer cohorts including small families, students (often supported by their parents), downsizer couples and investors.

Two of the most prominent new apartment projects being marketed include 'Trilogy' and 'Treehouse at Midtown'.

- Trilogy, 100 Talavera Road, Macquarie Park

Developed by Meriton, 'Trilogy' at 100 Talavera Road comprises 3 high-rise towers ranging from 38-59 storeys and comprising over 1,000 apartments. With marketing commencing in June 2022, approximately 50% of the first staged release has been sold to date. Pricing for 2-bedroom units has been circa \$980,000 to \$1.2m, with 3-bedroom units achieving prices from \$1.4m to \$1.5m. Buyers generally expect all 2-bedroom apartments to have at least one car space, with 3-bedrooms expected to have two car spaces.

- Treehouse at Midtown MacPark, Ivanhoe Place, Macquarie Park

Comprising approximately 3,300 apartments, the Midtown MacPark precinct delivered by Frasers (as part of the redevelopment of the Ivanhoe public housing estate) is the largest apartment development in Macquarie Park to date. About a third of the total dwellings will be designated as social and affordable housing. The initial release, known as 'Treehouse', commenced marketing in October 2020 with approximately 400 apartments sold to date. Prices for 2-bedroom units have generally ranged from \$900,000 to \$1.3m, with 3-bedrooms from \$1.3m to \$2.9m. All studio apartments have been sold out and prove particularly popular given their affordability.

Residential Development Activity

A review of the development pipeline indicates there is a significant quantum of new residential development being planned and delivered within Macquarie Park. A total of nine projects has the potential to collectively deliver over 6,100 apartments.

The largest of these developments is the joint venture redevelopment of the Ivanhoe Estate by Land and Community Housing and Frasers Australia which will deliver some 3,300 apartments (including 950 social housing and affordable housing dwellings). The Meriton development at 100-112 Talavera Road is also poised to deliver almost 1,300 dwellings across four residential towers ranging from 27 to 60-storeys.

There is minimal need to proactively attract demand for residential uses in the Precinct – they will occur 'as of course'.

4.3 Implications for the Master Plan

Macquarie Park was established in the 1960's as an employment area spurred by the rezoning of around 200ha of North Ryde's 'green belt' which was previously gardens and bushland. The development of Macquarie University in the same decade was a catalyst for its rapid growth over the following decades. The area attracted large national and international corporations from tech sectors attracted to affordable accommodation (in the form of industrial/ business park buildings) and partnership opportunities with the university.

Macquarie Park has experienced strong leasing conditions over much of the past decade with continued demand from large national and international companies seeking affordable office space and single occupier floorplates, generous on-site parking and external signage opportunities, many of which are not available in competing office markets.

By the early 2000's the suburb accommodated the fourth largest concentration of jobs in NSW after Sydney CBD, North Sydney and Parramatta driven by the rapid growth of the university and a broad economic base of business, education, health services and retail. Today, technology and health-related tenants continue to dominate occupier activity. Notably, tenancy sizes are relatively large compared to other suburban office markets.

Macquarie Park's growth can be traced to a major growth-spurt over the 2006-2011 period, where an annual average of 53,000sqm of office floorspace was added. In the decade that followed, growth slowed to average annual additions of 15,000sqm (2011-2016) and 4,300sqm (2016-2021).

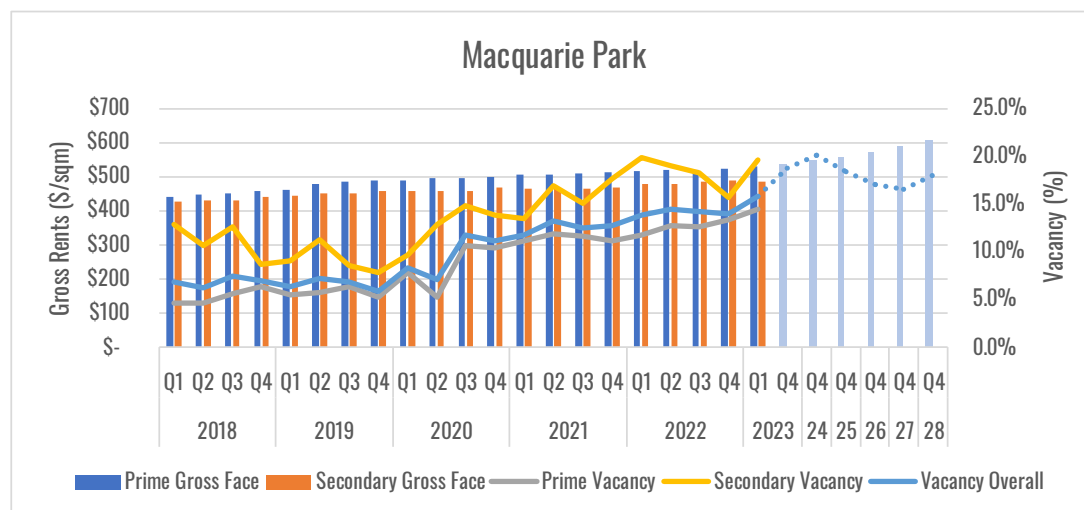
Prior to the COVID-19 pandemic, development momentum and market interest in the Study Area had been building, with the opening of metro stations within contributing to demand for more compact and dense forms of commercial development. This can be observed from the type of development proposed in the pipeline - some commercial buildings/ towers akin to those in North Sydney.

Leasing activity for new prime office space was steady in the lead up to Q2 2020. Health related sectors accounted for 29% of leasing deals followed by government (24%) and technology related sectors (18%). (Knight Frank, 2020).

Impact of COVID-19 Structural Trends

Like other office markets, the onset of COVID-19 resulted in an upswing in vacancy levels in Macquarie Park - rising from 5.9% (2019 pre-pandemic) to 15.8% in January 2023 (PCA, 2023). **Figure 4-5** shows the divergence of secondary and prime grade vacancies and overall vacancies which are expected to remain elevated towards the end of the decade (JLL, 2023).

Figure 4-5: Macquarie Park Rents and Vacancy Rates (Historical and Forecast), 2018-2028



Source: JLL (2023)

There has been notable investment interest in Macquarie Park, despite the economic uncertainty of COVID-19 and subsequent government restrictions. The sales of Macquarie Corporate Centre and Pinnacle Office Park in the latter half of 2020 indicated healthy investor interest for well-positioned prime assets.

The demand metrics for key land use categories of office, retail and industrial have been re-set following the structural change in human behaviour since the COVID-19 pandemic. There is lower aggregate demand for office and retail floorspace per capita, whereas the reverse is true for industrial floorspace.

Office employment activity is now more dispersed. In the past, most office employment activity took place in the office. Today, that activity is dispersed between the office, the home and a third place (which could be a co-working space or other place). The reduction in occupied office space does not mean there is less employment activity. Rather, it means that office employment is more footloose and mobile.

The dispersed nature of office employment activity has meant lower occupancy rates in the office, and consequently less aggregate demand for purpose-built office space. It has also meant higher demand for dwellings with a study and flexible spaces.

While the completion of transformative developments will contribute to improving the quality of the public realm and urban amenity and continue to drive development momentum in Macquarie Park, the pace of demand and development activity is expected to continue to slow as the market works to absorb space that is currently vacant. In any market where vacancies are elevated, high incentives are offered by landlords and thereby put downward pressure on effective rents. This then make it challenging for new developments to be viable.

Continued Transformation

The opportunity for local amenity and services within an office market is underpinned by the size of the worker catchment. Large office markets such as Sydney CBD who benefit from a critical mass of workers given their volume of floorspace are able to sustain a wide range of business services (e.g. cafés, restaurants, wine bars, etc.) which are important for tenant amenity.

In contrast, even though Macquarie Park is not insignificant in size (almost 900,000sqm), its expansive and sprawling nature (not being a compact centre like North Sydney and Chatswood CBDs) makes it challenging to be easily served by business and retail services that contribute to amenity. The availability of all-important amenity in two nodes (focused around Macquarie Centre and eventually in and around the Macquarie Park station) will improve the overall amenity offer of the Precinct.

As highlighted in the foregoing sections, the importance of amenity and quality of space is now ever critical to businesses and workers alike; commercial buildings needing to 'work harder' to convince both cohorts of their necessity and value.

Macquarie Park has a unique and important role to play - to provide not just commercial office, but a mix of business floorspace that its profile of occupiers (pharmaceutical, technology and health research) requires.

The take-up of office space is expected to be slower moving forward as the market cycles through vacant space and the demand per capita has been re-set. Notwithstanding, targeted rezoning by the Master Plan of sites that contribute to precinct vibrancy and enable delivery of important community infrastructure (e.g. public open space, community facilities) is critical for the Precinct's next phase of evolution.

5. Economic Impact Assessment

5.1 Overview and Approach

This chapter examines the economic activity and impacts that could result on rezoning during construction and completion. The analysis estimates the economic activity that could be support in Scenario 1 (commercial-only activity in the E2 zone):

- **Base Case**
 - The Precinct continues to operate under current planning controls, including existing operations and projected growth in commercial development over the next 20 years.
- **Proposal Case**
 - The Precinct is developed under the Stage 1 Master Plan, including ~3,000 residential units and future commercial over the next 20 years, stimulated through the additional dwellings via household expenditure, available labour force, and increased open space and infrastructure amenity.

Refer to SCHEDULE 1 for the assumed development program in the Base Case and Proposal Case. The economic impacts are assessed at the Ryde LGA level. An Input-Output model (including the development of specific regional Input-Output transaction tables) was developed to reflect the economic structure of the Ryde LGA.

Input-Output modelling considers economic activity through examining four types of impacts as described in **Table 5-1**.

Table 5-1: Economic Indicators

| Indicator | Description |
|---------------|---|
| Output | The gross value of goods and services transacted, including the cost of goods and services used in the development and provision of the final product. Care should be taken when using output as an indicator of economic activity as it counts all goods and services used in one stage of production as an input to later stages of production, thus overstating economic activity. |
| Gross Product | The value of output after deducting the cost of goods and services inputs in the production process. Gross product (e.g. Gross Regional Product (GRP)) defines a net contribution to economic activity. |
| Incomes | The wages and salaries paid to employees as a result of the Project either directly or indirectly. |
| Employment | Employment positions generated by the Project (either full time or part time, directly or indirectly). Employment is reported in terms of Full-time Equivalent (FTE) positions or person-years. |

Source: Atlas

Input-Output modelling estimates show the impacts of direct spending in a particular industry as well as from Production-induced impacts (Type I) or Consumption-induced impacts (Type II).

- **Production-induced impacts (Type I)** show the effects of industrial support effects of additional activities undertaken by supply chain industries increasing their production in response to direct spending.
- **Consumption-induced impacts (Type II)** estimate the re-circulation of labour income earned as a result of the initial spending through other industry impacts (or impacts from increased household consumption).

The estimates of economic impacts consider production and consumption-induced flow-on impacts. Type II impacts are commonly considered to overstate economic activity and therefore the types of flow-on impacts are reported separately.

5.2 Drivers of Economic Activity

To understand the economic impacts likely to result from the Proposal compared to the Base Case, it is necessary to distinguish economic impacts during the construction phase and those economic impacts that will be more permanent in nature following construction completion and operations commencement and stabilisation to long run averages.

- **Construction Phase:** Construction activity will draw resources from and thereby generate economic activity in Ryde as well as from outside the catchment area.

Assumptions are made on the proportion sourced from within and from outside Ryde LGA and the quantum over development occurring. The construction phase is assessed for the Base Case and Proposal Case.

- **Operational Phase:**
 - **Base Case:** The Precinct will continue to facilitate direct employment through current activities undertaken on-site and projected future growth in commercial activity.
 - **Proposal Case:**
 - The Precinct will retain existing operations and generate expanded ongoing employment activity through additional commercial development. The Proposal Case will also generate dispersed employment through persons working from home in the new residential dwellings.
 - The Precinct will facilitate additional household expenditure in the local economy through 3,029 new residential units.

Refer to SCHEDULE 1 for a description of the drivers and assumptions that underpin the assessed economic impacts.

5.3 Economic Activity and Impacts

Construction Phase

During construction the Proposal Case is projected to generate significant economic impacts for Ryde, including:

- **\$4.6 billion** in output (including \$3.1 billion in direct activity).
- **\$1.6 billion** contribution to GRP (including \$785.6 million in direct activity).
- **\$926.7 million** in incomes and salaries paid to households (including \$529.7 million in direct income).
- **9,376 FTE jobs** (including 5,677 FTE directly employed in construction activity).

Economic impacts during construction are summarised in **Table 5-2**.

It should be noted that construction impacts are reported **in total** for the construction phase from 2024-2044, and do not represent an average annual estimate.

Table 5-2: Construction Impacts in Ryde LGA, Base and Proposal Case (2024-2044)

| Indicator | Output (\$M) | GRP (\$M) | Incomes (\$M) | Employment (FTE) |
|---------------------------------------|------------------|------------------|----------------|------------------|
| Base Case | | | | |
| Direct | \$1,165.1 | \$304.1 | \$217.5 | 1,936 |
| Flow-on Type I (Production-induced) | \$349.4 | \$155.4 | \$90.8 | 791 |
| Flow-on Type II (Consumption-induced) | \$204.4 | \$124.1 | \$51.7 | 543 |
| Total | \$1,718.9 | \$583.6 | \$360.0 | 3,270 |
| Proposal Case | | | | |
| Direct | \$3,089.6 | \$785.6 | \$529.7 | 5,677 |
| Flow-on Type I (Production-induced) | \$986.2 | \$448.3 | \$262.9 | 2,291 |
| Flow-on Type II (Consumption-induced) | \$530.3 | \$322.0 | \$134.2 | 1,409 |
| Total | \$4,606.1 | \$1,555.9 | \$926.7 | 9,376 |
| Net Construction Impacts | | | | |
| Direct | \$1,924.5 | \$481.5 | \$312.2 | 3,741 |
| Flow-on Type I (Production-induced) | \$636.8 | \$292.9 | \$172.1 | 1,500 |
| Flow-on Type II (Consumption-induced) | \$325.9 | \$197.9 | \$82.5 | 866 |
| Total | \$2,887.2 | \$972.3 | \$566.7 | 6,106 |

Note: Totals may not sum due to rounding.
Source: Atlas

Compared with the Base Case, the Proposal Case facilitates notably more construction activity, resulting in greater levels of output and contribution to the local economy.

The Proposal is estimated to result in a **net increase in economic activity** through direct and indirect (flow-on) at:

- **\$2.9 billion** additional in output (including \$1.9 billion in direct activity).
- **\$972.3 million** additional in contribution to GRP (including \$481.5 million in direct activity).
- **\$566.7 million** additional incomes and salaries paid to households (including \$312.2 million directly).
- **6,106 additional FTE jobs** (including 3,741 additional FTE jobs directly related to activity in the Precinct).

Operational Phase

Following the completion of construction, the Proposal Case is estimated to support the following annual economic activity through direct and indirect (flow-on) impacts associated with operations (and dispersed employment) in the Precinct (projected by 2044):

- **\$17.4 billion** in output (including \$11.0 billion in direct activity).
- **\$8.8 billion** contribution to GRP (including \$5.4 billion in direct activity).
- **\$4.9 billion** in incomes and salaries paid to households (including \$3.2 billion in direct income).
- **39,599 ongoing FTE jobs** (including 23,876 FTE directly related to activity in the Precinct).

Table 5-3 summarises the projected 2044 operational economic impacts in both the Base and Proposal Case.

Table 5-3: Operational Impacts in Ryde LGA, Base Case and Proposal Case (Projected 2044)

| Indicator | Output (\$M) | GRP (\$M) | Incomes (\$M) | Employment (FTE) |
|---------------------------------------|-------------------|------------------|------------------|------------------|
| Base Case | | | | |
| Direct | \$10,139.6 | \$4,943.2 | \$2,957.9 | 21,912 |
| Flow-on Type I (Production-induced) | \$3,048.3 | \$1,432.1 | \$828.6 | 7,066 |
| Flow-on Type II (Consumption-induced) | \$2,776.2 | \$1,685.6 | \$702.5 | 7,375 |
| Total | \$15,964.1 | \$8,060.8 | \$4,489.0 | 36,353 |
| Proposal Case | | | | |
| Direct | \$11,033.4 | \$5,380.4 | \$3,219.9 | 23,876 |
| Flow-on Type I (Production-induced) | \$3,317.8 | \$1,559.2 | \$902.5 | 7,694 |
| Flow-on Type II (Consumption-induced) | \$3,022.4 | \$1,835.1 | \$764.8 | 8,030 |
| Total | \$17,373.6 | \$8,774.6 | \$4,887.2 | 39,599 |
| Net Operational Impacts | | | | |
| Direct | \$893.8 | \$437.2 | \$262.0 | 1,964 |
| Flow-on Type I (Production-induced) | \$269.5 | \$127.1 | \$73.9 | 628 |
| Flow-on Type II (Consumption-induced) | \$246.2 | \$149.5 | \$62.3 | 655 |
| Total | \$1,409.5 | \$713.8 | \$398.2 | 3,246 |

Note: Totals may not sum due to rounding.
Source: Atlas

Compared with the Base Case, the Proposal Case facilitates a notably intensified use of the Precinct by 2044, accommodating more businesses and employment activity, resulting in greater levels of output and contribution to the local economy.

The Proposal is estimated to result in a **net increase in economic activity** through direct and indirect (flow-on) annually at:

- **\$1.4 billion** additional in output (including \$893.8 million in direct activity).
- **\$713.8 million** additional in contribution to GRP (including \$437.2 million in direct activity).
- **\$398.2 million** additional incomes and salaries paid to households (including \$262.0 million directly).
- **3,246 additional FTE jobs** (including 1,964 additional FTE jobs directly related to activity in the Precinct).

Household Expenditure Impacts

In addition to the commercial activity estimated above, the Proposal Case is projected to generate additional household expenditure supported through new dwellings within the Ryde LGA. This activity is estimated to support on an ongoing annual basis (once fully developed and occupied):

- **\$387.7 million** in total output (\$261.9 million directly).
- **\$226.8 million** contribution to GRP (\$157.5 million directly).
- **\$107.3 million** in wages and salaries to local workers (\$73.7 million directly).
- **1,279 FTE jobs** (954 direct FTE).

Table 5-4 shows the estimates of economic activity associated with household expenditure. It should be noted that operational and household impacts are not additive, due to potential for double counting of economic impacts (for example, household spending will result in direct and flow-on activity for businesses that are operating within the Precinct).

Table 5-4: Household Expenditure Impacts in Ryde LGA, Proposal Case (Projected 2044)

| Indicator | Output (\$M) | GRP (\$M) | Incomes (\$M) | Employment (FTE) |
|---------------------------------------|----------------|----------------|----------------|------------------|
| Direct | \$261.9 | \$157.5 | \$73.7 | 954 |
| Flow-on Type I (Production-induced) | \$59.5 | \$29.1 | \$16.8 | 149 |
| Flow-on Type II (Consumption-induced) | \$66.4 | \$40.3 | \$16.8 | 176 |
| Total | \$387.7 | \$226.8 | \$107.3 | 1,279 |

Note: Totals may not sum due to rounding.

Source: Atlas

1.1 Summary of Findings

The delivery of the Stage 1 Master Plan is shown to have significant and positive economic impacts to the Greater Sydney economy. Compared with the Base Case, it is estimated to result in a **net increase in economic activity** during the construction phase through a mix of direct and indirect (flow-on) activity, including:

- **\$2.9 billion** additional in output (including \$1.9 billion in direct activity).
- **\$972.3 million** additional in contribution to GRP (including \$481.5 million in direct activity).
- **\$566.7 million** additional incomes and salaries paid to households (including \$312.2 million directly).
- **6,106 additional FTE jobs** (including 3,741 additional FTE jobs directly related to activity in the Precinct).

When operational, the Proposal is estimated to result in an annual **net increase in economic activity** with:

- **\$1.4 billion** additional in output (including \$892.6 million in direct activity).
- **\$712.9 million** additional in contribution to GRP (including \$436.6 million in direct activity).
- **\$397.6 million** additional incomes and salaries paid to households (including \$261.7 million directly).
- **3,241 additional FTE jobs** (including 1,961 additional FTE jobs directly related to activity in the Precinct).

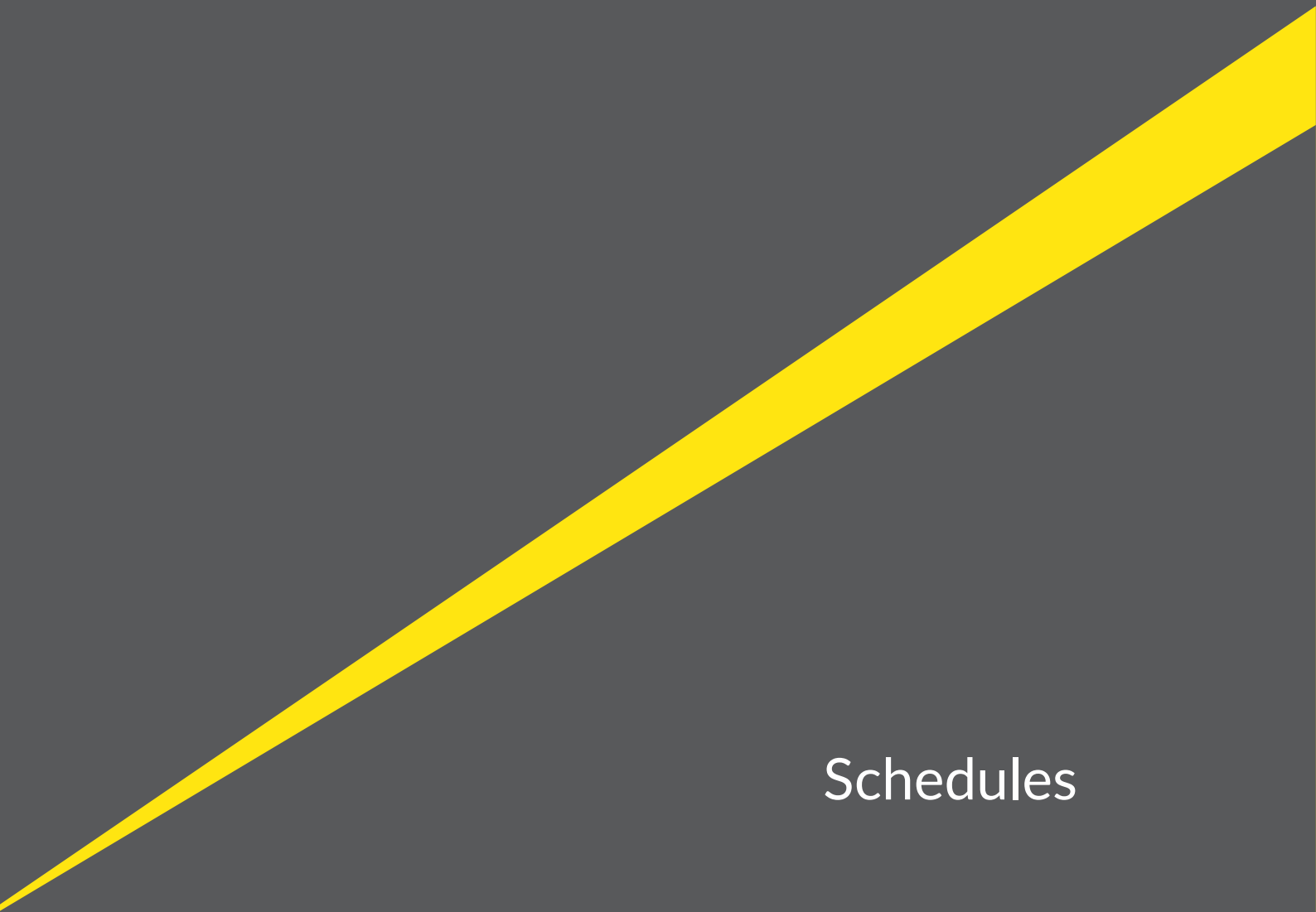
The Proposal will also facilitate notable household expenditure impacts through providing new housing stock:

- **\$387.7 million** in total output (\$261.9 million directly).
- **\$226.8 million** contribution to GRP (\$157.5 million directly).
- **\$107.3 million** in wages and salaries to local workers (\$73.7 million directly).
- **1,279 FTE jobs** (954 direct FTE).

The economic impacts estimated in this chapter demonstrates the Proposal has economic merit, having the ability to contribute significantly to the Ryde economy.

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Schedules

Input-Output Modelling Methodology

Input-Output models are a method to describe and analyse forward and backward economic linkages between industries based on a matrix of monetary transactions. The model estimates how products sold (outputs) from one industry are purchased (inputs) in the production process by other industries.

The analysis of these industry linkages enables estimation of the overall economic impact within a catchment area due to a change in demand levels within a specific sector or sectors.

Impacts are traced through the economy via:

- **Direct impacts**, which are the first round of effects from direct operational expenditure on goods and services.
- **Flow-on impacts** (indirect impacts), which comprise the second and subsequent round effects of increased purchases by suppliers in response to increased sales. Flow-on impacts can be disaggregated to:
 - **Industry Support Effects (Type I)** derived from open Input-Output models. Type I impacts represent the production induced support activity as a result of additional expenditure by the industry experiencing the stimulus on goods and services, and subsequent round effects of increased purchases by suppliers in response to increased sales.
 - **Household Consumption Effects (Type II)** derived from closed Input-Output Models. Type II impacts represent the consumption induced activity from additional household expenditure on goods and services resulting from additional wages and salaries being paid within the catchment economy.

Economic analysis considers the following four types of impacts.

Table S1-1: Economic Activity Indicators

| Indicator | Description |
|-------------------|--|
| Output | The gross value of goods and services transacted, including the cost of goods and services used in the development and provision of the final product. Care should be taken when using output as an indicator of economic activity as it counts all goods and services used in one stage of production as an input to later stages of production, thus overstating economic activity. |
| Gross Value Added | The value of output after deducting the cost of goods and services inputs in the production process (less the impact of net taxes on final production). Gross Value Added (GVA) defines a net contribution to economic activity. |
| Incomes | The wages and salaries paid to employees as a result of the Project or Proposal either directly or indirectly. |
| Employment | Employment positions generated by the Project or Proposal (either full time or part time, directly or indirectly). Employment is reported in terms of Full-time Equivalent (FTE) positions or person-years. |

Source: Atlas

Regional Model Development

Multipliers used in this assessment have been created using a regionalised Input-Output model derived from the 2020-2021 Australian transaction table (ABS, 2023a).

Estimates of gross industry production in the catchment area were developed based on the share of employment (by place of work) of the catchment area within the Australian economy (ABS, 2022) using the Flegg Location Quotient and Cross Hauling Adjusted Regionalisation Method (CHARM). See Norbert (2015) and Kronenberg (2009) for further details. Where required, values were indexed to current dollar values using CPI (ABS, 2023b).

Modelling Limitations and Assumptions

Input-Output modelling is subject to a number of key assumptions and limitations (ABS, 2023a):

- **Lack of supply-side constraints:** The most significant limitation of economic impact analysis using multipliers is the implicit assumption that the economy has no supply-side constraints. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or near capacity.
- **Fixed prices:** Constraints on the availability of inputs, such as skilled labour, require prices to act as a rationing device. In assessments using multipliers, where factors of production are assumed to be limitless, this rationing response is assumed not to occur. Prices are assumed to be unaffected by policy and any crowding out effects are not captured.
- **Fixed ratios for intermediate inputs and production:** Economic impact analysis using multipliers implicitly assumes that there is a fixed input structure in each industry and fixed ratios for production. As such, impact analysis using multipliers can be seen to describe average effects, not marginal effects. For example, increased demand for a product is assumed to imply an equal increase in production for that product. In reality, however, it may be more efficient to increase imports or divert some exports to local consumption rather than increasing local production by the full amount.
- **No allowance for purchasers' marginal responses to change:** Economic impact analysis using multipliers assumes that households consume goods and services in exact proportions to their initial budget shares. For example, the household budget share of some goods might increase as household income increases. This equally applies to industrial consumption of intermediate inputs and factors of production.
- **Absence of budget constraints:** Assessments of economic impacts using multipliers that consider consumption induced effects (type two multipliers) implicitly assume that household and government consumption is not subject to budget constraints.

Despite these notable limitations, Input-Output techniques provide a solid approach for assessing the direct and flow-on economic impacts of a project or policy that does not result in a significant change in the overall economic structure.

Drivers of Economic Impact

In order to understand the economic impacts likely to result from the Base Case and Proposal, it is necessary to distinguish economic impacts during the construction phase and those economic impacts that will be more permanent following construction completion.

- **Construction Phase:** Construction activity will draw resources from and thereby generate economic activity in the Ryde LGA economy as well as from outside Ryde LGA. Assumptions are made on the proportion sourced from within and from outside Ryde LGA.
- **Operational Phase:** Estimated ongoing economic activity has been divided into:
 - Economic activity from businesses operating within the Precinct (including dispersed employment activity from persons working from home in residential dwellings created under the Proposal Case).
 - Economic activity from increased household expenditure via households locating into residential dwellings created under the Proposal Case.

Construction Phase

For modelling purposes, construction costs (including contingency) for the Base Case and Proposal Case were broken down into their respective Australian and New Zealand Standard Industrial Classification (ANZSIC) industries.

The breakdowns were developed based on the following assumptions by Atlas regarding the most appropriate ANZSIC industries for each activity and estimated average square metre construction costs for occupying businesses.

Table S1-2: Construction Cost Allocation (including Contingency)

| Work Type | Base Case (\$M) | Proposal Case (\$M) | ANZSIC |
|-----------------------------|------------------|---------------------|---|
| Commercial | \$1,393.7 | \$1,714.4 | Non-Residential Building Construction (100%) |
| Residential | \$0.0 | \$1,981.6 | Residential Building Construction (100%) |
| Site Works and Landscaping | \$27.9 | \$73.9 | Heavy and Civil Engineering Construction (70%), Construction Services (30%) |
| Professional Services Costs | \$131.8 | \$349.6 | Professional, Scientific and Technical Services (100%) |
| Total | \$1,553.4 | \$4,119.5 | |

Note: Totals may not sum due to rounding.

Source: Atlas

Of the above capital outlay, not all activity will be undertaken within the Ryde LGA economy. It was assumed:

- Approximately 75% of the direct expenditure on construction-related activity would be sourced from local businesses and labour. Of this:
 - Approximately 25% of purchases on goods and services (supply chain related activity) made by construction-related businesses sourced from outside Ryde LGA would be spent within the local economy (i.e., 25% of the Type I flow on activity associated with non-local construction companies is assumed to represent additional local activity in Ryde LGA).
 - Approximately 5% of wages and salaries paid to construction-related workers sourced from outside the region would be spent on local goods and services, such as food and beverages (i.e. 5% of the Type II).

Only flow-on activity of locally sourced professional, scientific and technical services activity (75%) is included, as it is not anticipated professional, scientific and technical services businesses located outside of Ryde LGA would purchase goods/services locally.

Operational Phase

In order to model the economic impacts, operational employment levels for the economic activity occurring in the Base Case and Proposal Case were projected to 2044 and categorised into the ANZSIC industries.

Future operational employment was projected based on the following take-up rates:

- **Base Case:** Take-up of 10,000sqm pa from 2024 to 2031 and 12,000sqm pa from 2031-2044.
- **Proposal Case:** Take-up of 10,000sqm pa from 2024 to 2031 and 16,000sqm pa from 2031-2044.

Higher long-term growth under the Proposal Case is projected to reflect the impacts of increased liveability, labour force, and infrastructure facilitated through the masterplan.

Direct employment was converted to an annual turnover estimate using the ratios in the transaction tables developed for this project.

Table S1-3: Operational Employment and Turnover Estimates (2044)

| ANZSIC | Floorspace (sqm) | Job Density (sqm/FTE) | Employment Impact (FTE) | Direct Turnover (\$M) |
|---|------------------|-----------------------|-------------------------|-----------------------|
| Base Case | | | | |
| Internet Service Providers, Internet Publishing and Broadcasting, Websearch Portals and Data Processing | 10,390 | 1,000 | 10 | \$20.5 |
| Accommodation | 15,434 | 75 | 206 | \$56.0 |
| Commercial (Existing) ¹ | 424,889 | 30 | 14,163 | \$6,569.1 |
| Future Commercial Capacity ¹ | 226,000 | 30 | 7,533 | \$3,494.0 |
| Total | 676,713 | 31 | 21,912 | \$10,139.6 |

| ANZSIC | Floorspace (sqm) | Job Density (sqm/FTE) | Employment Impact (FTE) | Direct Turnover (\$M) |
|---|------------------|--|-------------------------|-----------------------|
| Proposal Case | | | | |
| Internet Service Providers, Internet Publishing and Broadcasting, Websearch Portals and Data Processing | 10,390 | 1,000 | 10 | \$20.5 |
| Accommodation | 15,434 | 75 | 206 | \$56.0 |
| Commercial (Existing) ¹ | 424,889 | 30 | 14,163 | \$6,569.1 |
| Future Commercial Capacity ¹ | 278,000 | 30 | 9,267 | \$4,298.3 |
| Dispersed Employment ² | 272,589 | Avg. 1.5 workers/ with 5% of residents working from home ³ | 230 | \$89.5 |
| Total | 1,053,302 | 41 | 25,876 | \$11,033.4 |

Totals may not sum due to rounding.

Notes:

1 - Estimated based on the Precinct Place of Work employment mix (ABS, 2022).

2 - Estimated based on the Ryde LGA Place of Usual Residence employment mix (ABS, 2022).

3 - A potentially conservative assumption considering post COVID-19 work trends.

Source: Atlas

Household Expenditure

This section outlines the household expenditure that would be associated with the new dwellings proposed as part of the Proposal Case, and potential economic activity supported.

The household expenditure activity supported should not be combined with the impacts in the section above, as some of these impacts are likely to have already been captured in the assessment (e.g. some expenditure on retail and food and beverages by households is likely to be spent at the outlets locating in the Precinct).

This section is to understand specific economic activity supported in Ryde LGA through household expenditure as its own separate analysis.

The ABS Household Expenditure Survey (ABS, 2017) was used to identify the proportion of weekly household incomes that are spent across expenditure items in the Ryde LGA. The fourth quintile of NSW residents was used to best represent the expenditure patterns of residents in the surrounding catchment area.

The household survey only contains household expenditure data, and individual residents must be converted to an equivalent number of households. This was achieved by applying the estimated number of dwellings (3,060) and a vacancy rate of 2% (representative of the current rental market).

This data was converted to current values (ABS, 2023b), annualised and allocated into their respective ANZSIC industries. The breakdown to ANZSIC industries was developed based on assumptions by Atlas regarding the most appropriate ANZSIC industries for each activity.

Table S1-4 shows the household expenditure estimates for the Ryde LGA under the Proposal Case.

Table S1-4: Household Expenditure Estimates (Proposal Case)

| ANZSIC | Total Spend (\$M) | % Spent in Ryde LGA | Local Spend (\$M) |
|----------------------------|-------------------|---------------------|-------------------|
| Ownership of Dwellings | \$67.0 | 100% | \$67.0 |
| Retail Trade | \$63.4 | 80% | \$50.7 |
| Food and Beverage Services | \$33.5 | 80% | \$26.8 |
| Personal Services | \$18.3 | 75% | \$13.7 |
| Other Services | \$20.0 | 70% | \$14.0 |
| Telecommunication Services | \$11.0 | 60% | \$6.6 |
| Road Transport | \$30.6 | 80% | \$24.5 |
| Rail Transport | \$15.3 | 50% | \$7.6 |
| Air and Space Transport | \$5.1 | 20% | \$1.0 |

| ANZSIC | Total Spend (\$M) | % Spent in Ryde LGA | Local Spend (\$M) |
|--|-------------------|---------------------|-------------------|
| Sports and Recreation | \$26.0 | 75% | \$19.5 |
| Primary and Secondary Education Services (incl Pre-Schools and Special Schools) | \$3.6 | 75% | \$2.7 |
| Technical, Vocational and Tertiary Education Services (including Undergraduate and Postgraduate) | \$2.9 | 75% | \$2.2 |
| Arts, Sports, Adult and Other Education Services (including Community Education) | \$0.7 | 75% | \$0.5 |
| Health Care Services | \$17.2 | 80% | \$13.7 |
| Heritage, Creative and Performing Arts | \$11.1 | 80% | \$8.9 |
| Electricity Transmission, Distribution, On Selling and Electricity Market Operation | \$4.0 | 60% | \$2.4 |
| Total | \$329.6 | 79% | \$261.9 |

Notes: Totals may not sum due to rounding.
Source: ABS (2017), Atlas

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