

Parramatta 2021

Unlocking the potential of a new economy







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Introduction



*Lucy
Turnbull AO*

Chief Commissioner
of the Greater Sydney
Commission

The Greater Parramatta area which is now covered by City of Parramatta Council represents one of the most exciting and dynamic parts of Sydney with a broad range of natural and manmade assets and a rich history and heritage.

Currently home to over 230,000 people, over the next 5 years another 41,000 people will call Parramatta home. This growth in population will be matched by very significant projected increases in jobs and economic productivity. The Greater Sydney Commission looks forward to continuing to work with City of Parramatta Council in making sure the massive public and private investment in this area (more than \$10 billion over the next five years) is best leveraged to create a liveable, sustainable and productive city at the very heart of the Greater Sydney Region.

Lucy Turnbull AO





Greg Dyer

Interim General
Manager,
City of Parramatta

As we look towards the next five years and beyond, Parramatta is rapidly transforming to become the engine room of Australia's most significant economic growth region; a vibrant home of diverse communities and a centre of excellence in research, education and enterprise.

We are well on the way to achieving all that as a new Parramatta is already emerging thanks to considerable private and public investment across our growing city.

That investment in our future – in jobs and industry, transport and cultural infrastructure and commercial and residential development – will reap enormous rewards for our local economy and the people of our community.

The indicators which are outlined within this report provide a compelling picture of the size of the opportunity which is emerging in Parramatta.

By 2021, it is expected that Parramatta's economic growth rate will nearly double from 2.4 per cent to 4.6 per cent. This will mean 22,000 additional jobs and a CBD one third bigger than it is today.

Forty-one thousand more people will call Parramatta home in the next five years. Longer term, Parramatta will double in size in the next 20 years and Western Sydney will be home to more than half of all Sydneysiders within 10 years.

A massive pipeline of infrastructure, including a light rail network, a redeveloped stadium for Parramatta and the new Museum of Applied Arts and Science (Powerhouse Museum), will unlock and accelerate economic growth across the city, as well as provide great new opportunities for work and play in the heartland of Global Sydney.

Parramatta has already attracted a long list of organisations and government departments which are moving their headquarters, and thousands of jobs, to our CBD.

Within five years, it's forecast that an additional \$1.2 million will be spent by workers, residents and visitors on retail each and every day in Parramatta.

It is indeed an exciting time for our community as well as for anyone looking to Parramatta as a place of opportunity and investment – a great place to live, work, play or to build a business on the strength of a rapidly growing economy.

Highlights



Population growth

In the next five years, Parramatta's population will grow by 41,000 residents at almost twice the pace of Australia. This is the equivalent of 2 busloads of new residents per week.



The accessible heart of Sydney

The Parramatta LGA is accessible to 2.3 million people within 45 minutes by either car and/or public transport. This means half of Sydney can access Parramatta with ease.



Employment growth

By 2021, an estimated 22,000 additional people will be working in Parramatta, totalling 186,000 (14 per cent growth).



Parramatta's investment boom

Over the next five years, more than \$10 billion will be invested in constructing roads, light rail, schools, hospitals, universities, offices, shops, accommodation, a museum, a sports stadium, and new public spaces.



Economic growth

Parramatta's economic growth is anticipated to almost double from 2.4 per cent per annum to 4.6 per cent per annum over the next five years due to infrastructure investments and future developments, growing to be a \$30 billion economy (in Gross Regional Product), with \$66 billion in turnover.



Office space

Parramatta's commercial floor space is estimated to expand by 232,000 m² or 34 per cent by 2021 (if all of Parramatta Square is built in addition to the known pre-committed leases). This is equivalent to adding most of Chatswood's office stock.



Growth driven by the finance, health and government sectors

In Parramatta, the health, government and financial service industries will generate 72 per cent of all employment growth (16,000 jobs), 60 per cent of all output growth (\$3.5 billion) and 68 per cent of the new economic returns (\$2.1 billion).



Retail rebirth

The anticipated growth, both in terms of population and commercial development, will see an additional \$3 billion in retail turnover in the city centre over the next 5 years. In 2021, this is equivalent to an additional \$1.2 million per day.



Primed for take-off

Parramatta's economy is primed for the new one million annual visitors expected at the new Museum of Applied Arts and Sciences in 2022, and the 2025 commissioning of Western Sydney Airport.

Executive summary

Western Sydney is Australia's fifth largest region in terms of contribution to gross domestic product (GDP), and houses more than 10 per cent of Australia's population, making it one of the nation's leading regions.

The City of Parramatta Council area is at the core of this economic and social activity.

The new local government boundaries paint a picture of a larger and more vibrant City of Parramatta. Compared to the old Parramatta local government area (LGA), the new boundary:

- encompasses an area that is 36 per cent larger
- includes a population of 230,000 that is 18 per cent larger
- has 24 per cent more employed people (157,000 vs 100,000)
- has an economy with a total gross regional product that is 62 per cent larger (\$23 billion vs \$14 billion)

Clearly, Parramatta is already a significant economic power in its own right.

What is remarkable is that the next five years will be a springboard for an evolved and even more significant Parramatta economy.

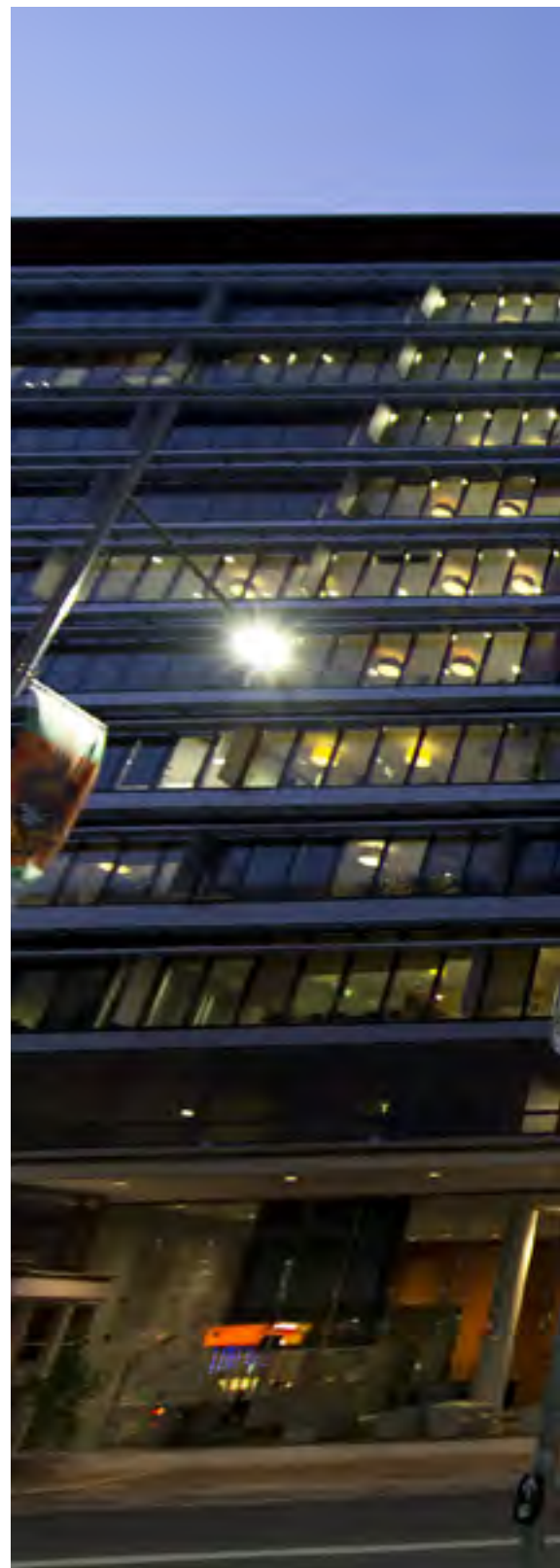
A fundamental driver of this transformation is the significant infrastructure investment planned

for Parramatta, to be delivered over the next five years, including:

- public investment spread across:
 - \$4.7 billion of economic infrastructure – this includes, for example, WestConnex and the Parramatta Light Rail connecting the Parramatta CBD to Homebush
 - \$2.7 billion of social infrastructure – this includes, for example, investments in the Westmead precinct, the 'vertical school', the Museum of Applied Arts and Science (i.e. the new Powerhouse Museum) and the Western Sydney Stadium
- private investment in commercial and residential buildings – this includes \$3.4 billion of investment consisting of an additional 7,400 residences and an extra 232,000 m² in commercial floorspace.

The significant investment in both economic and social infrastructure over the next five years will result in two primary impacts.

First, we see an expansion in the Parramatta economy. Parramatta's economic growth (i.e. gross regional product – GRP) is forecast to average 4.6 per cent annually over the five year period (compound annual growth rate). This is an almost doubling of the underlying growth rate based on historic growth of 2.4 per cent and above





the forecast state-wide average 2.9 per cent over the period 2016-18.

Second, we see a shift in the makeup of the Parramatta economy. We project growth to be most concentrated in the financial and insurance services sector (\$2.2 billion additional output in 2021). On an output basis, the financial and insurance services sector (at \$12 billion) remains the second largest sector in the Parramatta economy, with retail and wholesale trade maintaining the top spot at \$15 billion.

Combined, the health care and social assistance, public administration and safety and financial and insurance services industries will generate 72 per cent of all employment growth (16,000 jobs), 60 per cent of all output growth (\$3.5 billion) and 68 per cent of the new economic returns (\$2.1 billion) above baseline in 2021.

Over the next five years the continued development of Parramatta will be underpinned by:

- Parramatta's centrality as a place to work:
 - Of Sydney's workforce, 1,306,000 people already live within 45 minutes travel of Parramatta by car or 1,038,000 by public transport. Meanwhile 48 per cent of Sydney's population lives within 45 minutes of Parramatta. The significant residential developments planned for the region will see these figures grow dramatically.
 - Better connectivity for businesses will be provided by light rail and WestConnex.
- Parramatta's evolution into a commercial and residential hub is creating a CBD that will be activated day and night through new residents and workers who will increase demand for shops, cafes, restaurants, bars and entertainment.

Figure 1: Baseline and investment-generated growth in GRP

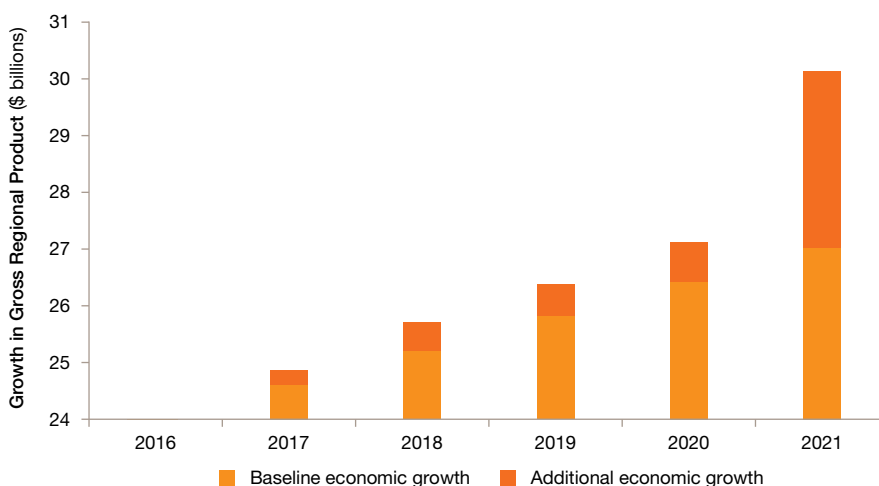


Figure 2: Investment-generated impact on Parramatta's economic output in 2021

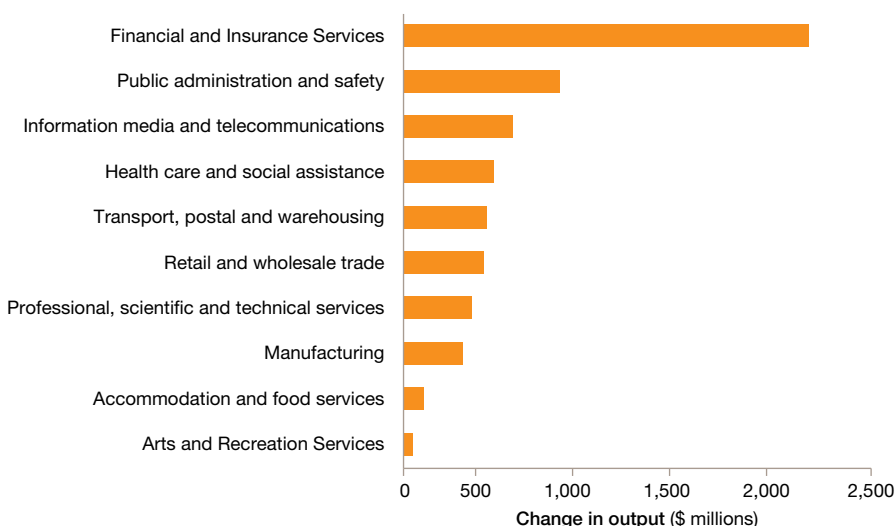
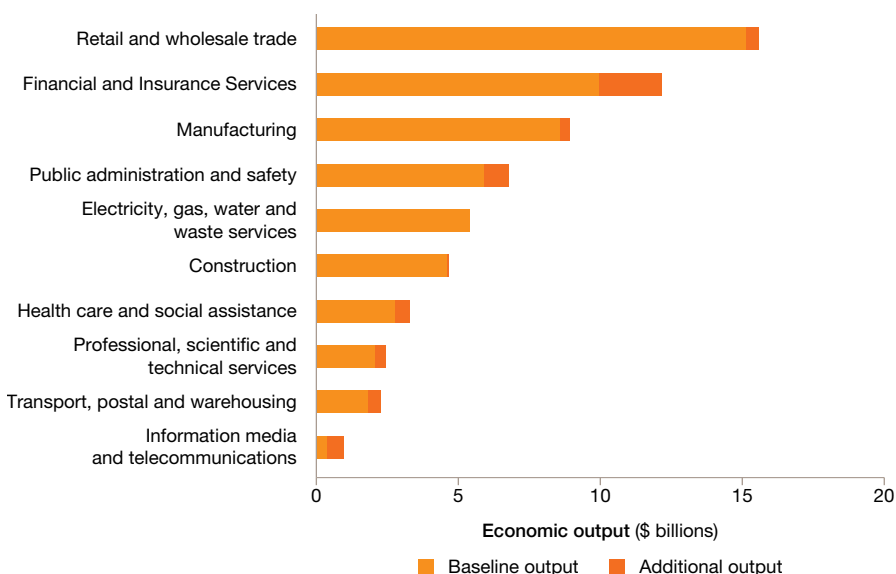


Figure 3: Largest sectors in Parramatta by output in 2021



- The catalytic involvement of universities, underpinned by Western Sydney University, and the combination health and university facilities at Westmead.

Beyond the timeframe of this study, we can expect to see even more profound shifts as the transformational effects of domestic and international connectivity provided by access to the Western Sydney Airport becomes available. Additionally, when the Museum of Applied Arts and Science comes on line in 2022 we can expect to see more than one million visitors coming to Parramatta each year.

Analysis of similar overseas city environments demonstrates that 'second cities/CBDs' can thrive when their growth is supported by a balanced set of strategic infrastructure investments. For example, as the recent PwC *Cities of Opportunity* study of global cities reinforces that a city requires balanced social and economic strengths to work as a whole.

The array of major projects being developed by the City of Parramatta Council, NSW Government and the private sector are providing a balanced investment and growth perspective, addressing:

- connectivity shortcomings
- the personalisation of some existing spaces that have a lack of active use
- the need for major cultural institutions
- orientation of the economy to higher value industries
- residential capacity in close proximity to employment zones.

This means that in the near future the City of Parramatta will be a greater place to live, work and play. Business and investors should put Parramatta at the centre of their future plans just like Parramatta is at the heart of Sydney in so many ways.

“Despite the fact that all our cities represent business centers, engines of ... regional economies, the strongest relationships with overall success appear in areas like quality of living, senior wellbeing, housing, and disaster preparedness. Put differently, effectively dealing with human needs, both everyday and extraordinary ones, remains the essence of city success.”

PwC 2016, *Cities of Opportunity*, p.1



This section describes the scale and scope of the economy within the newly redefined City of Parramatta Council local government boundaries.

Parramatta in 2016

The City of Parramatta area contains a \$23 billion economy

The City of Parramatta is one of Australia's leading regions, with population growing at twice the pace of the broader Australian economy. This is especially evident in the new local government boundaries, which expands the reach of the City of Parramatta to a wider population.

The new local government boundaries paint a picture of a larger and more vibrant City of Parramatta Council area. Compared to the old Parramatta local government area (LGA), the new boundary:

- encompasses an area that is 36 per cent larger
- includes a population of 230,000 that is 18 per cent larger
- has 24 per cent more employed people (157,000 vs 100,000)
- has an economy with a total gross regional product that is 62 per cent larger (\$23 billion vs \$14 billion)
- financial and insurance services is now the second fastest growing industry in the LGA (the electricity, gas, water and waste services industry is the fastest) whereas growth industries in the previous LGA were all government related.

Clearly, Parramatta is already a significant economic power in its own right.

Figure 4: Old and new Parramatta LGA boundaries



Source: PwC's Geospatial Economic Model, 2015 data from Australian Bureau of Statistics and City of Parramatta Council

Parramatta is the commercial, civic, cultural and educational centre of Western Sydney

Business and commercial

As the geographical, commercial and cultural capital of Western Sydney, Parramatta is the second largest CBD in Sydney and the sixth largest in the country. With a \$23 billion economy, the Parramatta LGA is a major provider of business and government services. Parramatta also serves as the civic and administration centre of Greater Western Sydney, acting as host to the;

- NSW Police Force Headquarters (NSWPFHQ)
- Sydney Water Corporation Headquarters (SWCHQ) (relocated from Sydney's CBD in 2009)
- New South Wales Department of Attorney General and Justice Headquarters
- Parramatta Justice Precinct, which contains the Children's Court of New South Wales and the Sydney West Trial Courts.

Natural assets

The City of Parramatta contains a number of natural assets including;

- the riverbank on which the CBD sits and which links Parramatta to Sydney via a ferry service.
- Parramatta Park, which acts as an important cultural hub for the region encouraging family and friends to get together through events hosted at the park, attracting over 2.3 million visits each year.

Culture and major infrastructure

Parramatta has a diverse cultural mix, with approximately 18,300 residents migrating to Parramatta from other countries between 2006 to 2011. The cultural

diversity of the city means it hosts a number of multi-cultural events throughout the year including Parramasala, Loy Krathong and Lunar New Year.

Other cultural attractions in Parramatta include:

- ANZ Stadium
- Pirtek Stadium
- The Riverside Theatres

Education, health and research

With over nine university campuses, colleges and graduate schools, including campuses from the Western Sydney University (WSU), the University of Sydney, the University of New England, Charles Sturt University and Sydney Graduate School of Management, Parramatta has a strong culture of education, research and development, particularly in the East and North West.

Parramatta is also host to Australia's largest concentration of health, education and research facilities at Westmead with four hospitals, two universities, two large research institutes and many allied health centres.

SWCHQ



NSWPFHQ



WSU campus



ANZ stadium



Parramatta River



Parramatta has a large and growing financial and insurance services sector employing 19,000 people

The Parramatta LGA employs over 157,000 people. Health care and social assistance is the dominant industry for employment, with almost 25,000 people working in the industry. This is primarily driven by the Westmead health precinct which houses Australia's largest concentration of health, education and research facilities.

Public administration and safety is also a significant employer in Parramatta as various NSW State Government agencies have offices based in the city. More than 20,000 people work in this industry.

The newly expanded boundaries of Parramatta's LGA which now includes Homebush, means that the financial and insurance services sector is now the city's third largest employer – about 19,000 people work in the finance or insurance service sector within Parramatta.

Over the last 15 years, the fastest growing sector has been electricity, gas, water and waste services, largely due to the relocation of Sydney Water's office to Parramatta in 2009. The growth of the financial and insurance services industry – the second quickest growing sector since 2001 – can be attributed to the expansion of the sector in Homebush. Public administration and safety has also been a growth sector for Parramatta as the State Government has chosen a 'decentralisation' policy of moving government agencies westward to support economic development beyond the Sydney CBD.

Relative to the rest of Sydney and NSW, Parramatta's economy is more focussed in financial and insurance services (19 per cent of Parramatta's value added in 2015 is from this sector versus 17 per cent for the rest of Sydney and 6 per cent for NSW excluding Sydney). While it is not likely to directly rival the Sydney CBD, Parramatta does have a comparative clout in the financial and insurance services sector. Other sectors where Parramatta has a relative strength are manufacturing, health care and social assistance and public administration and safety.

Figure 5: Employment by industry in 2015

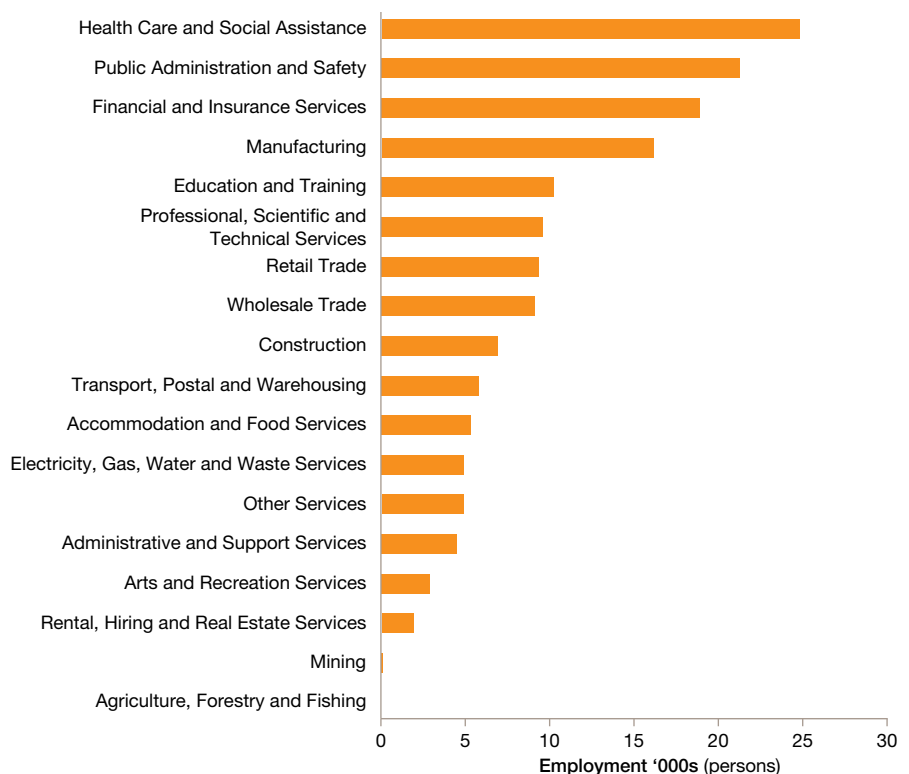
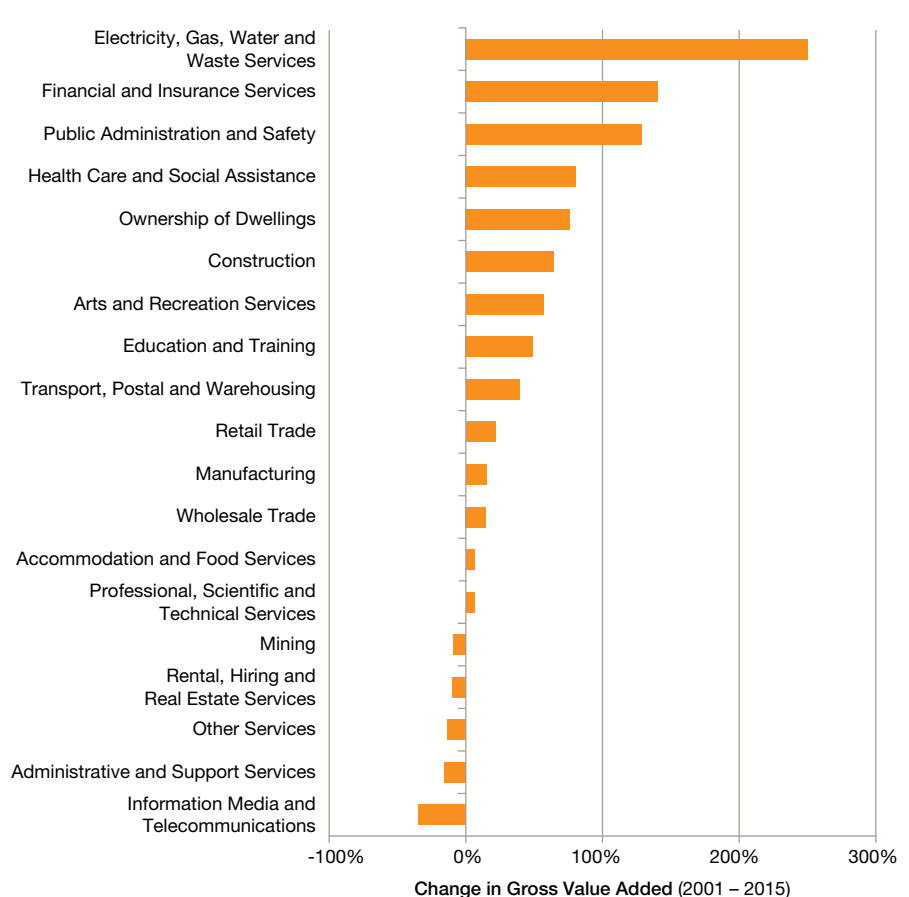


Figure 6: Growth in industry gross value added 2001-2015



Source: PwC analysis

2.3 million people can access the Parramatta LGA within 45 minutes

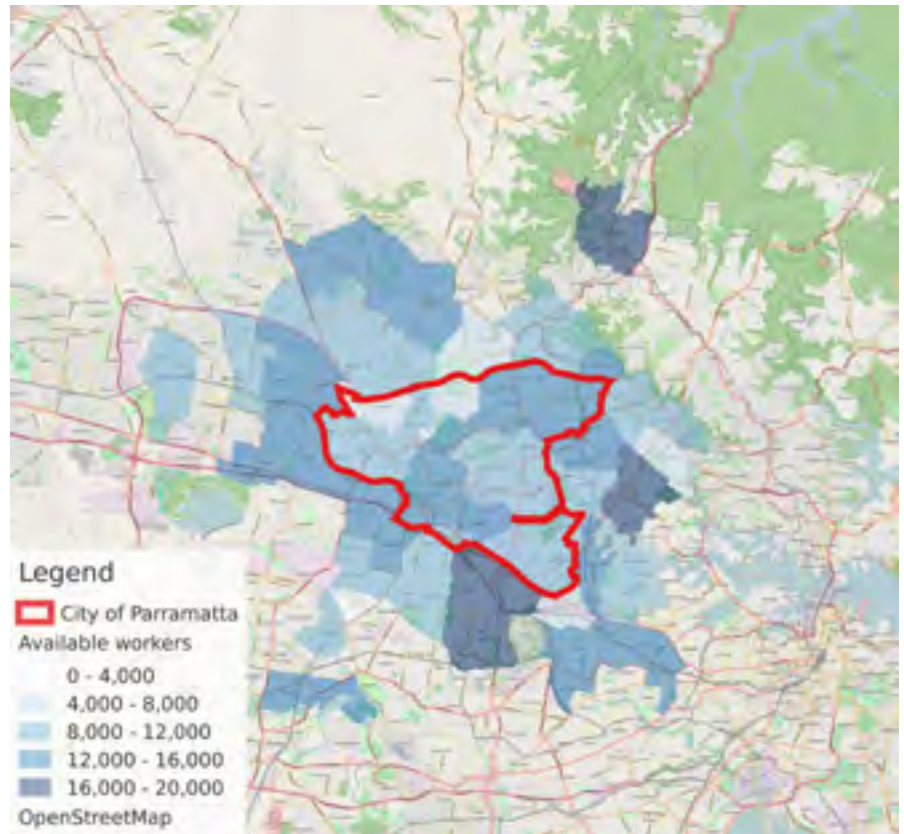
One of the key attractions of Parramatta is its centrality in Sydney. With the geographic heart of Sydney moving west, Parramatta becomes an easily reached location for both workers and shoppers. PwC's Geospatial Economic Model analysis shows there are 1,306,000 people in the workforce (aged 15 or over) within 45 minutes travel of Parramatta by car or 1,038,000 by public transport.

When we consider the whole population within 45 minutes of Parramatta given travel mode choice (i.e. considering the rates of people who choose to travel by car over public transport and vice versa) we estimate a catchment of 2.3 million people.

This means about half of Sydney's population (4,921,000 in 2015) can easily access Parramatta's offices, hospitals, universities, shopping centres and cultural and entertainment attraction.

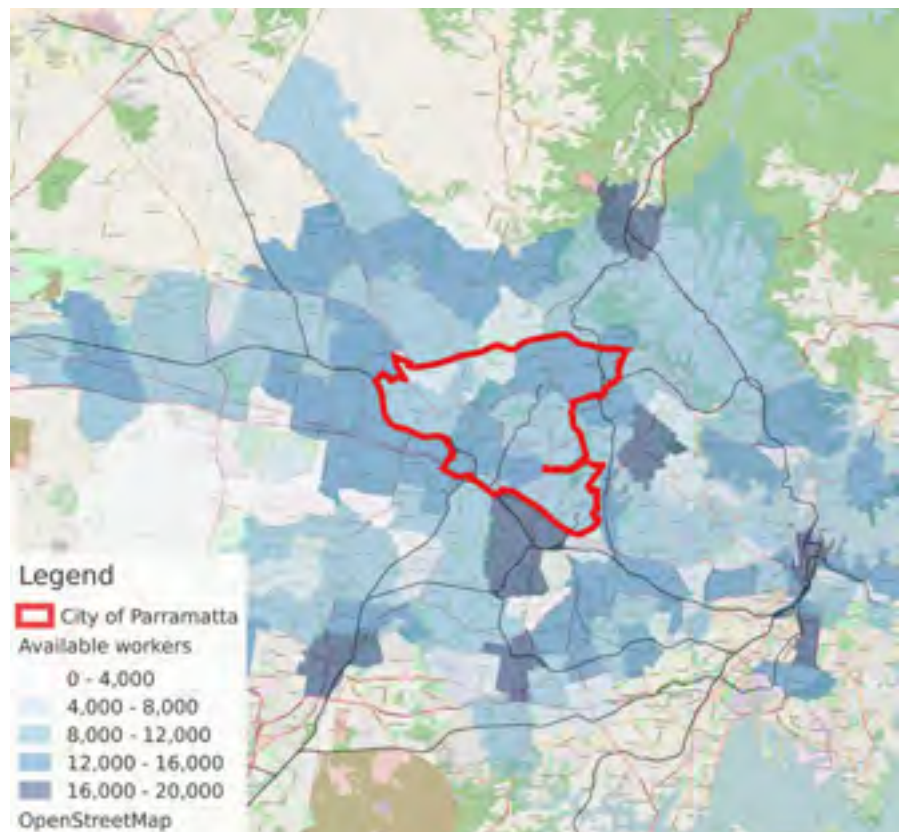
This has facilitated the jobs growth generated by Parramatta's residential and commercial developments, as well as social and economic infrastructure to date and this will accelerate over the next five years.

Figure 7: People within 45 minutes by car



Note: Car journey times are estimated based on traffic conditions on Monday 7 November at 8am.

Figure 8: People within 45 minutes by public transport



This section describes the possible scale and scope of change in the City of Parramatta economy over the period through to 2021.

Parramatta in the future

Developments in Parramatta over the next five years

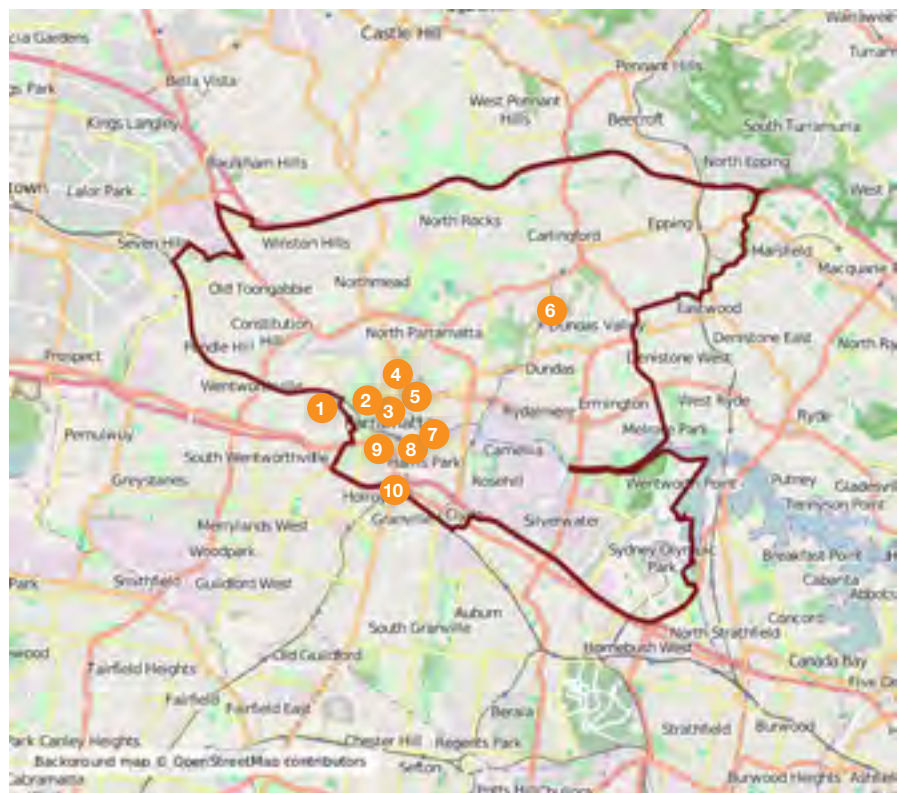
Over the next five years, Parramatta is undergoing several large investments that will further accelerate the growth of the economy.

At the core of this transformation are the following committed projects:

- public investment spread across:
 - \$4.7 billion of economic infrastructure – this includes WestConnex and the Parramatta Light Rail connecting the Parramatta CBD to Homebush
 - \$2.7 billion of social infrastructure – this includes investments in the Westmead precinct, the Museum of Applied Arts and Sciences (i.e. the new Powerhouse Museum), Western Sydney Stadium, Riverbank Precinct renewal, Civic Link masterplan and the ‘vertical school’.
- private investment in commercial and residential buildings – this includes \$3.4 billion of investment consisting of an additional 7,400 residences and an extra 232,000 in commercial floorspace.

Figure 9 identifies the key developments to be built over the next five years.

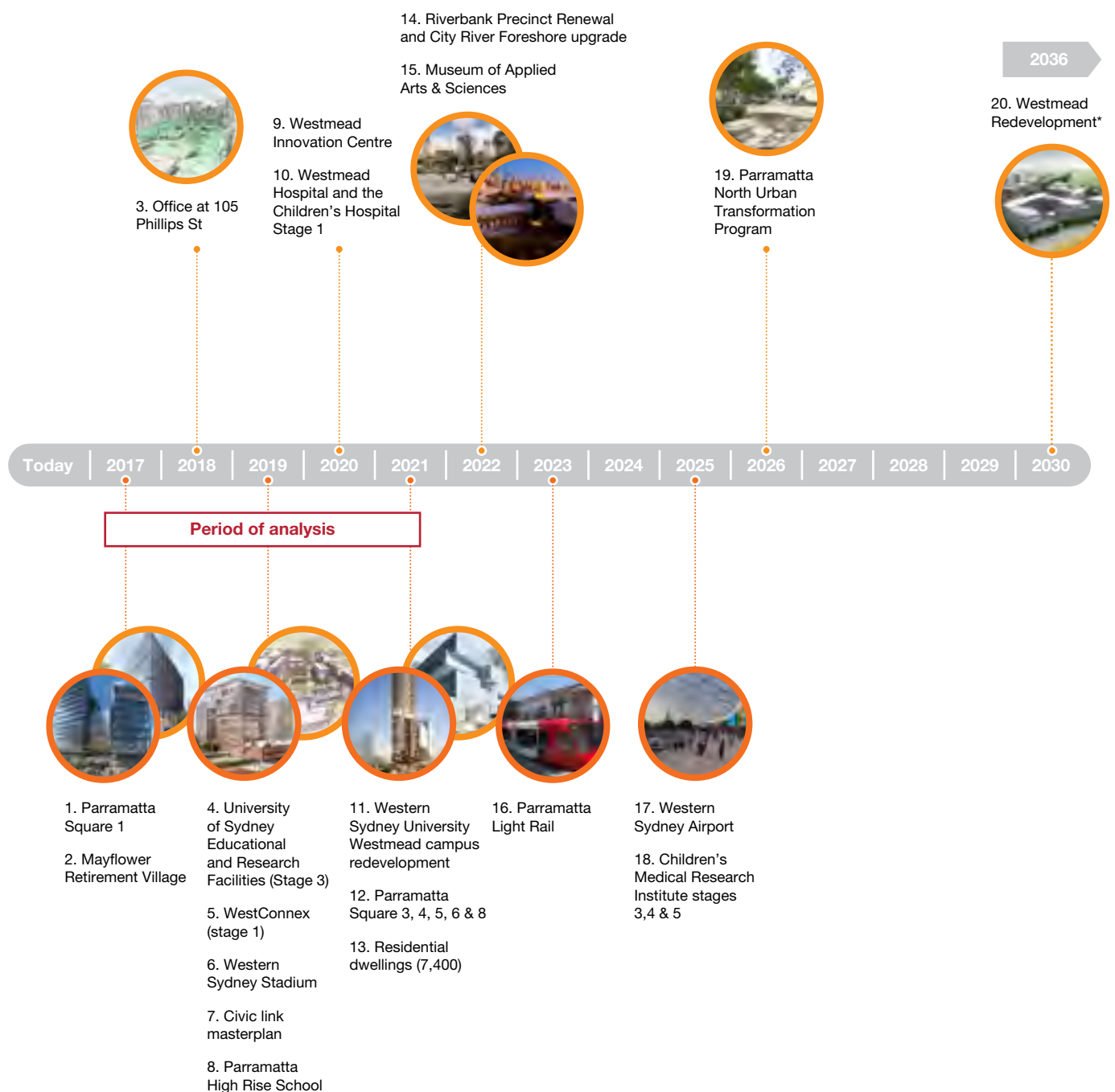
Figure 9: Key infrastructure developments in the Parramatta LGA



- | | |
|---------------------------|---|
| 1. Westmead Redevelopment | 6. Parramatta Light Rail |
| 2. Parramatta Square | 7. Museum of Applied Arts and Sciences (MAAS) |
| 3. Riverbank precinct | 8. Residential and commercial developments |
| 4. Western Sydney stadium | 9. Parramatta vertical school |
| 5. Civic link masterplan | 10. Westconnex |

Over \$10 billion in public and private sector investment by 2021

Figure 10: Timeline of expected completion of developments



* Note that some elements of the Westmead redevelopment, such as the University of Sydney's plans for Westmead will be completed beyond this period but may be completed by 2036.

Diverse public and private infrastructure development underpins the Parramatta growth agenda

Parramatta Light Rail

The proposed Parramatta Light Rail will link Westmead and Carlingford to Parramatta, Camellia, Olympic Park, Homebush and Strathfield. At over 20km in length, it will provide a public transport link to residential, employment, cultural and education precincts. Services will run at high frequency, seven days a week and will connect to the wider rail network, bus, ferry and active transport links. The current indicative timescale is for construction to commence in late 2018. The light rail is expected to be completed by 2023.

WestConnex (stage 1)

WestConnex Stage 1 involves widening the M4 Motorway between Parramatta and Homebush, and extending the M4 with underground tunnels from Concord to City West Link at Haberfield. Upon completion, motorists will be able to travel between the Blue Mountains and Haberfield without encountering traffic lights. Stage 1 is scheduled to be completed by 2019.

Western Sydney Airport

Western Sydney Airport, to be located in Badgerys Creek, has been committed by the Australian Government. Occupying approximately 1,780 hectares, the airport will create both direct jobs at the airport, and indirect jobs facilitated by increased accessibility to the region. The airport is expected to be open by 2025.

Western Sydney Stadium

The current 20,000 seat Pirtek Stadium is the subject of a \$350 million upgrade into a new, 30,000 seat stadium – known as the Western Sydney Stadium. Parramatta Leagues Club is concurrently investigating the potential to leverage this new investment with an upgrade of the club facilities and supporting uses. The stadium is expected to be completed by 2019.

Museum of Applied Arts and Sciences

The Museum of Applied Arts and Sciences (the Powerhouse Museum) will be relocated from Sydney CBD to a new building on the banks of the Parramatta River. Construction is expected to begin in 2018 and finish by 2022, displaying 40 per cent more exhibits than the current museum. In addition, the location will be incorporated into the proposed light rail plans and will form a centerpiece to the Riverbank precinct.

Riverbank precinct

The Riverbank precinct will be an architectural landmark and key destination for workers, residents and visitors alike, binding the physical element of the river, together with history, culture, and entertainment. The precinct will host major city events, such as New Year's Eve and Loy Krathong, throughout the year. Combining open public space and a rejuvenated waterfront location, the precinct will also include



residential and retail space. Stretching from the welcoming arrival point of Parramatta Quay to Kings Quarter, it also features the Riverside Theatre and the new Museum of Applied Arts and Sciences. Connected via Civic Link (see below) to the CBD and its transport interchange, the precinct will be positioned as an all-hours cultural complement to the Parramatta Square business district.

Civic Link

The Civic Link Framework is a plan to create a green, pedestrianised public space and cultural spine which will connect Parramatta CBD's primary civic and riverfront spaces. It will respond to the environmental context and to the city's rich and vibrant history, expressing people and place, past, present and future.

City River Foreshore

The City River Foreshore is a revitalisation along the river corridor that includes a number of projects, namely a major upgrade to Parramatta Quay, which involves a new weir, wharf, public square and boardwalk cycleway.*

* Note – not included in the economic analysis of construction impacts



Artists impression of the future Parramatta skyline

Westmead redevelopment

The Westmead redevelopment includes a range of residential, cultural, sporting, transport and education infrastructure upgrades. This includes, but is not limited to, Parramatta North Urban Transformation Program, Westmead Hospital and the Children's Hospital at Westmead, the University of Sydney Westmead Plans, and the Western Sydney University Westmead Campus. With the renewal complete, the Westmead redevelopment is believed to add 6,000 new jobs in the area by 2021.

High rise high school

The State Government has committed to transforming the Parramatta Public School and Arthur Phillip High School into a vertical school. This includes 14 storeys proposed for the secondary school and five storeys proposed for the primary school, with the layout designed to facilitate modern ways of learning. The development is estimated to be completed by 2019.

Parramatta Square

The \$2 billion Parramatta Square redevelopment is one of the largest urban renewal projects in the country. It includes the construction of at least five major commercial, residential and civic buildings which will border a 250 metre long public domain and thoroughfare in the core of the city. This includes the proposed Aspire development. It is anticipated that Parramatta Square will open in stages and be completed by 2021.

Residential dwellings

Compared to historical trends, a surge in residential developments is expected to occur in the coming years in order to accommodate the new residents. An estimated 1,478 extra dwellings will be built on average each year between now and 2021. This will likely be developed from the large pipeline of apartment developments in the CBD, where an estimated 10,000 apartments (such as the Aspire tower within Parramatta Square) are proposed or through other projects around the

LGA (such as the Parramatta North Urban Transformation Program). For example, the areas of Olympic Park and the Ermington-Melrose Park are noted by .id to be the precincts with the largest numbers of new dwellings to be added in coming years.

Commercial developments

Commercial developments considered in the next five years include 3, 4 and 6 Parramatta Square and 105 Phillip Street. These are developments that are either already committed, or estimated to be highly likely to be committed in the near future. Based on the estimated completions of each of these developments and Parramatta Square (due to open 2017) this will mean Parramatta's commercial floor space will expand by 232,000 square metres or 34 per cent by 2021 (an increase of 118,000 square metres above the baseline net absorption rates).

The look and feel of future Parramatta

The impacts upon visitors, retail and hospitality, land values and development patterns in the CBD

What has long been the vision – to firmly re-establish Parramatta as Sydney's second CBD – is rapidly becoming a reality. With unprecedented investment in infrastructure and urban development, the city has the components to be a vibrant and activated city. Underpinned by a rise in residential population, commercial office development, investment in significant transport and cultural infrastructure, such as the Museum of Applied Arts and Sciences, Parramatta Square, Parramatta in 2021 will stand to be a highly active city in both day and night.

The city is anticipated to grow in terms of residential inhabitants and commercial development within the CBD. With this new critical mass comes activity.

Activated cities demonstrate better economic performance, higher desirability for tenants and residents, higher productivity and competition; which in turn fuels economic demand and growth.

The regeneration of Parramatta will result in improved amenities through enhancements to the public domain, activated street frontages, laneways, pedestrian linkages and riverside promenades. The shifts in the Parramatta CBD that have taken place in recent times demonstrate that the Parramatta LGA has the potential to grow in land value at a faster rate than Sydney CBD.

With added people, jobs and prosperity, retail and hospitality, Parramatta will continue to thrive and step up to take its place as Sydney's second CBD.



Likely businesses and industries that may relocate or open offices in Parramatta given the changing economy

In addition to the economic study, from a qualitative perspective, Parramatta has a significant young population, accessible transport infrastructure and, in a relative sense, more affordable commercial office space. These form the key elements of an innovation based economy.

Based on this, with the right strategic investment and leadership, Parramatta could be at the forefront of innovation in Australia. Utilising its younger population, connectivity and more affordable real estate, to create new jobs for a new economy. As well as working towards attracting established businesses, Parramatta would stand to benefit from cultivating and retaining the future top ASX companies.

It is forecast that Parramatta's population will grow from 236,000 in 2016 to 277,000 in 2021. This means about 41,000 more residents will be housed in the Parramatta LGA. This growth rate – 3.3 per cent per annum – is about twice that of Australia's over the same period – 1.7 per cent. Many of these new residents may live in new dwellings to be built in the areas of Homebush, the Parramatta CBD and Ermington.

With the population growth, alongside infrastructure and cultural investments, comes increased interaction at street level, higher retail and restaurant patronage. Cultural and entertainment venues will provide a diverse offering of after work entertainment. The look and feel of the city will differ by location; five key trends of activities that will develop and affect the look and feel of the city are listed below.

A. An increasingly densely-populated and activated CBD – At the heart of every great city is a thriving urban core. Urban economists have long held that cities are offering economic opportunity through productivity, innovation, interaction and the spread of knowledge in dense areas, enabling entry into the global economy. It is through 'urban agglomeration' that the great cities of New York and London have lead to their respective positions as economic centres. According to the Brookings Institute, it is through density that 'labour market pooling' is achieved, increasing productivity by up to 6 per cent. High urban density and close proximity to likeminded peers creates an environment of collaboration, allowing for ease of moving goods, people and ideas. Parramatta's CBD will become increasingly densely populated with the demand for centrally located housing stock resulting in a development pipeline of about 10,000 apartments in and around the CBD. Most of these apartments are high rise developments and will markedly change the physical look of the CBD skyline. With the central location at the heart of Sydney, the growth in population and additional transport, cultural and social infrastructure, the CBD will become increasingly attractive to government and satellite offices of ASX100 businesses and head offices for smaller organisations. The growth in workers in the CBD will lead to demand for cafes, restaurants and retail activity.



Artists impression of the Northbank Terrace on the Parramatta river

B. Light rail leads to urban renewal – The light rail project will enable urban renewal at the precincts of Homebush, Olympic Park, Carter Street, Silverwater and Camellia. This may change the land use in these precincts as more space is dedicated to residential dwellings where people choose to live close to tram stops.

C. Westmead health cluster – Australia's largest concentration of health, education and research facilities will continue to expand. The updating and expansion of the Westmead health facilities will attract talent as healthcare workers strive to work with the leading professionals of their sectors. Westmead's brand and its existing clout will attract new health technology enterprises, allied health services, innovative new businesses and start-ups, and potentially link the research, teaching and health services with new investors. Meanwhile the Parramatta North Urban Transformation will enable more of these people to live near the cluster, allowing for an expanding healthcare centre of excellence.

D. University hubs – The array of Parramatta universities will update and develop their campuses. These educational facilities will then be able to attract more young talent and create employment opportunities for lecturers and researchers. The colocation of the university institutes at Westmead also leads to growth opportunities as PwC analysis shows that this tends to generate economic growth 4 per cent above what could otherwise be expected in a region with standalone facilities. (see Appendix A for more details on this research).

The activation of the CBD, the improved transport links to WSU and Westmead, and the expanding

CBD workforce may lead to more local employment opportunities and could therefore help retain graduates within the City of Parramatta.

E. Homebush: a sporting, commercial and residential precinct – The residential developments at Homebush (including Olympic Park) are expected to make the area the fastest growing residential area of the city. This will enable more local finance and hospitality workers to live closer to their work and in time activate the Homebush area.



International experience suggests that ‘second cities’ can develop with sustained, balanced investment programs

Analysis of overseas ‘second cities’ (i.e. areas with a strong and distinct business district within a common, broader metropolitan area, or nearby secondary cities) demonstrates that there is no single path to second city success. However, there are a number of common elements that can be seen in Parramatta. For example, two case studies of second cities that have undergone similar regeneration and growth to Parramatta (refer to Appendix B for further details of these case studies) include:

- Aarhus, Denmark – a city that has achieved economic growth on the back of new infrastructure investment (Rapid Light Rail, New University Hospital, Aarhus Docklands, Godsbanen).
- Brooklyn, New York City – a city that has experienced significant urban regeneration since 2004, leading to the emergence of a thriving innovation and cultural fabrics.

The common drivers of successful growth include:

- **A balanced investment approach:** Investment from both public and private sectors in Aarhus and Brooklyn was balanced across a number of asset classes. Whilst residential uses dominated throughout the development of each case study, this growth was underpinned through affordability, proximity, migration of talent, employment generating uses, particularly innovation and tech based businesses, and the existence of an established urban culture.

Figure 11: The population density of New York



Source: New York Population Density

* <http://www.census.gov/quickfacts/table/POP060210/36047,00>

- **Both Aarhus and Brooklyn leveraged existing assets (physical and intangible) to support growth:** Aarhus has sought to leverage the growth of the knowledge, health and service industries to drive economic growth. Brooklyn, whilst planning for commercial office, experienced greater than expected residential population growth. The younger demographic of Brooklyn as a result of this additional residential development and relative affordability has played a significant part in the establishment of a globally recognised cultural identity.
- **The importance of culture and place:** The foundation of a great city is inherently linked to the culture of its people.

A rich civic life gives rise to cultural identity, cohesion and uniqueness of place. Investment in cultural facilities and public spaces allowed for the cultivation of a profound civic identity in Aarhus and Brooklyn. This identity was fundamental to attracting financial and human capital.

- **Public transport infrastructure and walkability:** Aarhus has sought to utilise the development of a Light Rail network to ease people flow. High density in Downtown Brooklyn (14,147 people per m²) has created an environment of high walkability (walk score 96/100).

The estimated economic impacts of Parramatta's investment phase

We have modelled the impact of the developments and the move of staff to Parramatta described in the preceding pages. The model methodology is described in Appendix C.

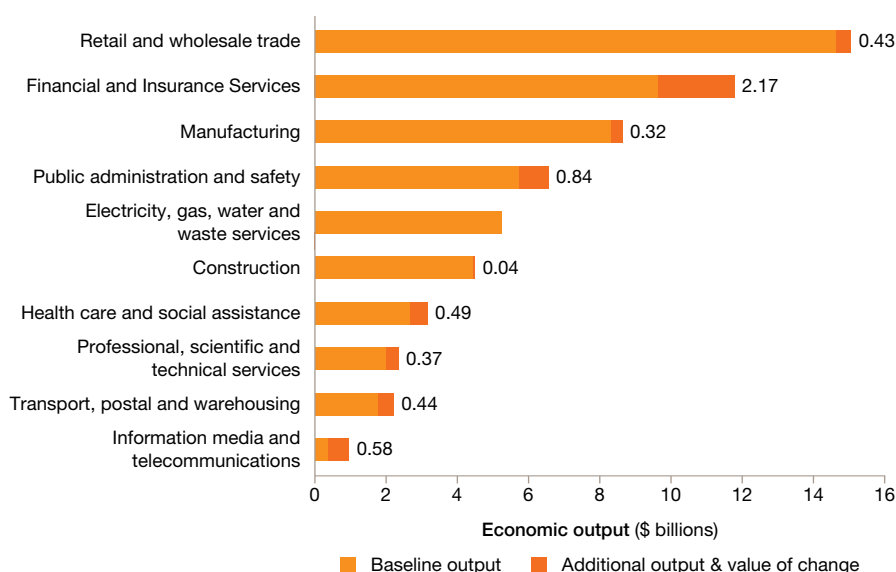
The combined results of these investments is twofold over the next five years to 2021.

Firstly, we see an overall expansion in the Parramatta economy. It is estimated that in 2021, output will be \$66 billion. This represents an additional \$5.8 billion above baseline, demonstrating 10 per cent growth. The output generated through the investments flows onto several key industries. In particular, the financial and insurance services, public administration and safety, information media and communications and health care and social assistance sectors account for 2/3rd of the estimated change in output (\$4.1 billion in 2021), through increased tenants in the area and redevelopments, as well as through flow-on effects from increased employment in other sectors in the LGA.

Other major industries with notable increases in output include:

- Transport, postal and warehousing (\$440 million) – attributed to the expansion of the sector following the productivity enhancing investment of WestConnex Stage 1 and the development of Parramatta Light Rail.
- Retail and wholesale trade (\$430 million) – see case study on page 28 on this sector.
- Information media and telecommunications (\$330 million) – this industry had the highest percentage growth on baseline through to 2021 (86 per cent) and is driven by the expected continuation of the trend of businesses in this sector taking up commercial tenancies in the Parramatta CBD.

Figure 12: Largest sectors by output after investment boom (2021)



Parramatta investments will raise the pace of economic growth

When we look at the equivalent of Gross Domestic Product for the Parramatta LGA – Gross Regional Product (GRP) – we can see the level of the step change.

Over the next five years, Parramatta is estimated to experience significant growth as a result of the future investments. Parramatta's growth is forecast to be 4.6 per cent (compound annual growth rate, an average of \$1 billion annually), almost double that of the baseline growth rate (2.4 per cent). By 2021, the Parramatta economy is estimated to grow at \$3.1 billion above baseline and will be a \$30 billion economy. The scenario and baseline estimates for Parramatta are shown in Figure 13.

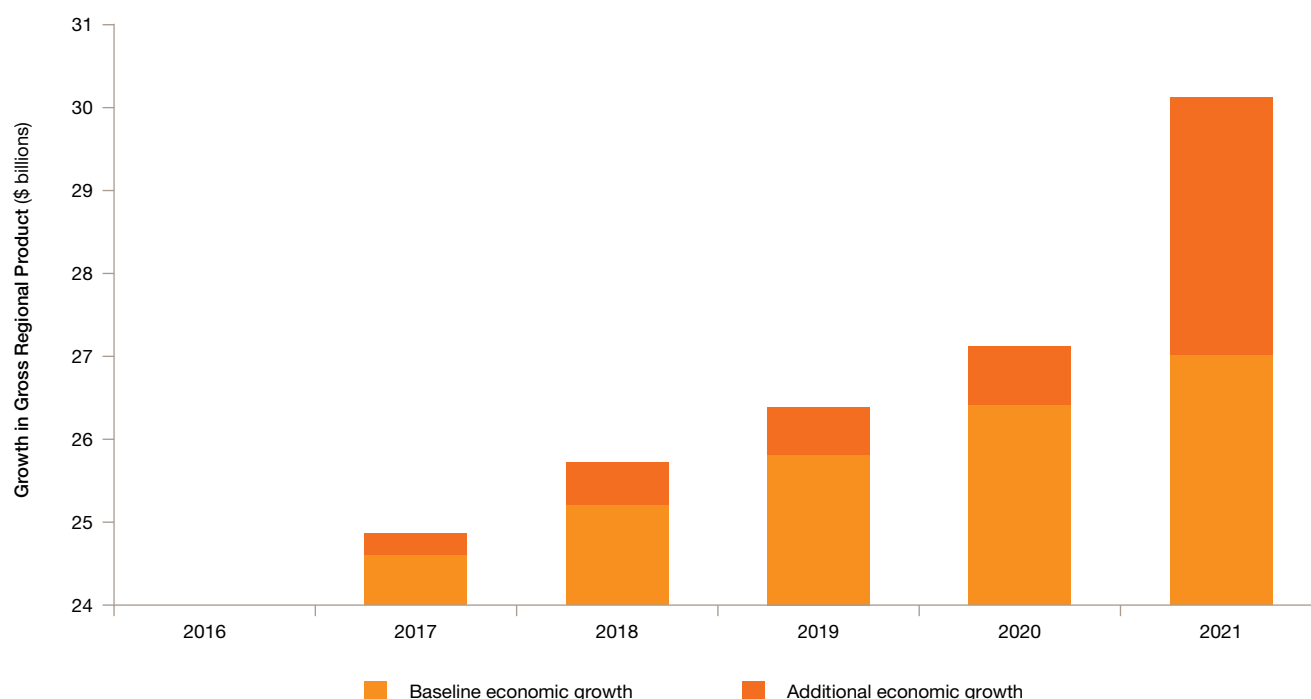
The proposed developments not only benefit the Parramatta LGA, but also has flow-on benefits to Sydney and the rest of NSW.

In addition to what is captured here:

- The opening of the Museum of Applied Arts and Sciences in 2022 will bring thousands of visitors everyday to the city, which will boost the transport, hospitality and retail sectors.
- The commissioning of the Western Sydney Airport from 2025 onwards will save time and cut transport costs for businesses which may further add to Parramatta's existing geographical advantages and encourage more businesses to make the city as their location of choice.
- The completion of Stages 2 and 3 of WestConnex are also expected to further advantage Parramatta as businesses will be able to more easily traverse the city, avoiding numerous intersections on the congested above-ground roads of Inner West and Inner South Sydney.

4.6 per cent
annual
growth in the
Parramatta
economy
over the next
five years.

Figure 13: Baseline and investment-generated growth in GRP (2016-2021)



The composition of Parramatta's economy will change

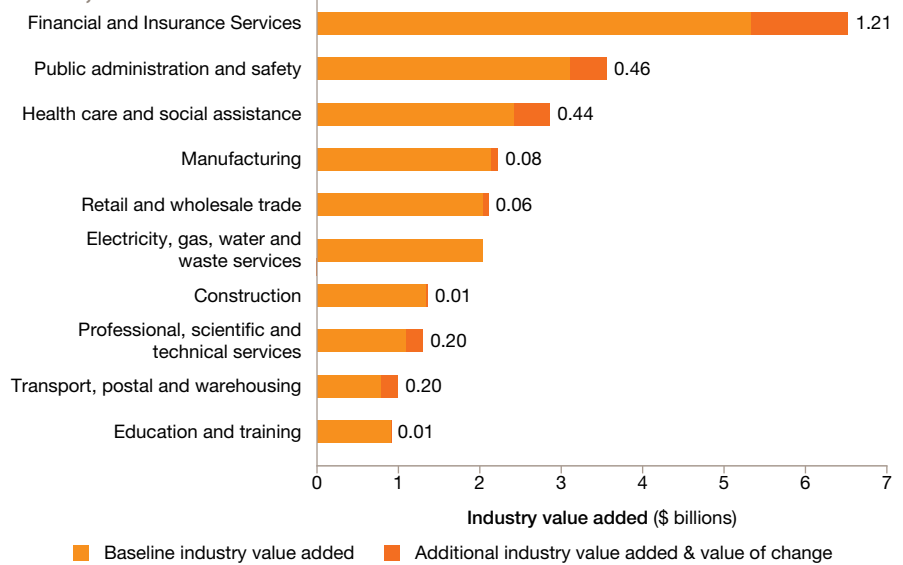
When we break the overall GRP impact down by industry value added in 2021 (Figure 14) we see that the financial and insurance services sector expands the most – \$1.2 billion, followed by the government sectors of public administration and safety and health care and social assistance. Value added in these sectors is estimated to expand by approximately \$0.9 billion due to the increased investment in offices for the public administration sector and hospitals at Westmead. In addition to the expanded capital, the public sector workforce grows and adds to the output.

Other sectors to expand particularly include:

- Transport, postal and warehousing – which gains from investment in Parramatta Light Rail as well as efficiencies from WestConnex
- Professional, scientific and technical services – which gains through the expansion in the workforce and greater office space
- Information, media and telecommunications – which is estimated to expand due to increase in commercial space and office workers moving to Parramatta.

The output of the arts and recreation services sector will be greater in the years following 2021 once the Museum of Applied Arts and Sciences relocates from the Sydney CBD to Parramatta.

Figure 14: Estimated impact on Parramatta industry value added, 2021



Financial and insurance services exhibits the largest growth.

**Additional
22,000 people
employed in
Parramatta
in 2021.**

A larger workforce

In line with industry value added, jobs growth accelerates as a result of the proposed developments.

In 2021, it is estimated that an additional 22,000 people will be employed in Parramatta, resulting in a 14 per cent increase in growth on baseline in 2021. This will take total employment to 186,000 people in 2021 (Figure 15).

Health care and social assistance remains the largest sector for employment in 2021 with 32,000 employees – up 5,700 employees

on the baseline. This is driven by the developments in Westmead. The public administration and safety sector follows next at 31,000 employees and exhibits the largest growth with an additional 6,800 employees due to the NSW Government commitment to decentralise jobs and reinforce Parramatta as Sydney's dual CBD. development, Financial and insurance services is the third largest sector in total and in terms of additional employees.

Figure 15: Estimated impact on Parramatta employment

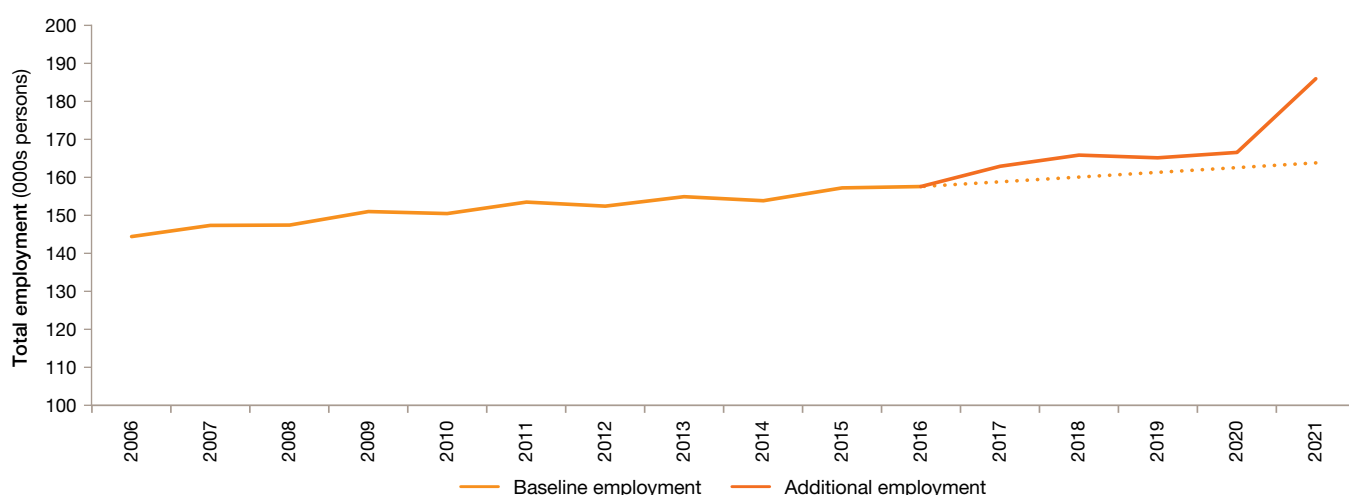
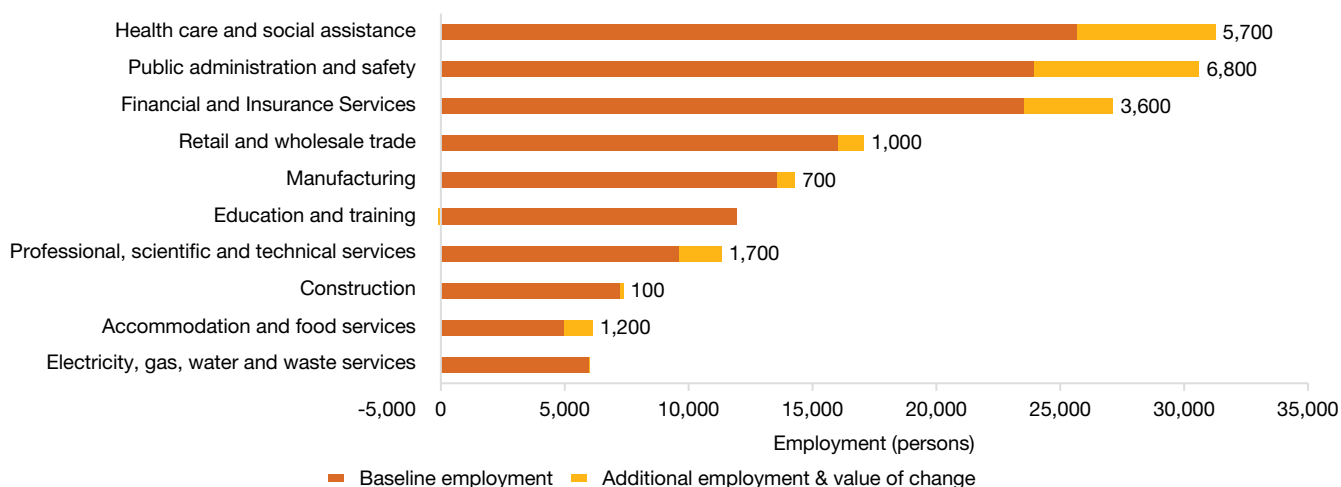


Figure 16: Employment by largest sectors in 2021





Case study: The retail and wholesale sectors in Parramatta

The retail and wholesale trade sector in Parramatta has declined in employment terms over the last 10 years from approximately 23,000 people in 2006 to 18,000 people today. This is likely explained by technological advances such as the growth in online shopping, in-store innovations that have improved productivity (automated tellers for example), and the concentration of activity in larger shopping centres rather than in strip shops. This is not a Parramatta specific trend; employment across Sydney's retail and wholesale trade sector has been fairly stagnant over the same timeframe. However, while employment has been flat or declining, both Sydney and Parramatta have seen productivity in retail and wholesale increase. As Figure 17 shows, Parramatta's value added has been relatively flat over the last 10 years as employment declined, which highlights the increasing productivity of the sector.

The growth Parramatta's phase over the next five years is expected to increase the scale of the retail and wholesale sector. During the construction phase to 2021, there will be a short term boost to wholesalers and retailers as businesses purchase inputs for their developments. Retailers will also see increased activity as construction workers consume locally. Figure 18 shows this impact – the growth spurt is estimated to support over 2,000 retail and wholesale employment opportunities in Parramatta in the first two years.

An additional \$3 billion in turnover is estimated over the five year period. In line with the somewhat lumpy nature of the construction activities, these effects are less significant in 2019 and 2020 but will grow in 2021. In summary, by 2021 the retail and wholesale trade sector will:

- employ 17,300 people (up from 16,200 under current trends)
- turnover \$15.2 billion (up from \$14.8 billion under current trends, an increase of about \$1.2 million a day)
- contribute \$2.15 billion towards Parramatta's Gross Regional Product (an increase from \$2.08 billion under current trends)



Artists impression of Parramatta Square

The longer term impacts on the retail and wholesale trade sector are likely to be even greater than this, as the relocation of the Museum of Applied Arts and Sciences (anticipated to open in 2022) is expected to bring more than 1 million visitors per annum. If each visitor spends \$100 while in the area and 1/3rd of that went to retailers, the museum alone would expand the output of Parramatta's retail sector by 1 per cent. In addition to this, many of the extra 22,000 workers (noted above in page 25) will relocate in 2021 (under the assumptions applied in this analysis such as Parramatta Square being completed by 2021). These workers will subsequently spend more, supporting local retailers and wholesalers.

Figure 17: Retail and wholesale trade sector in Parramatta and Sydney

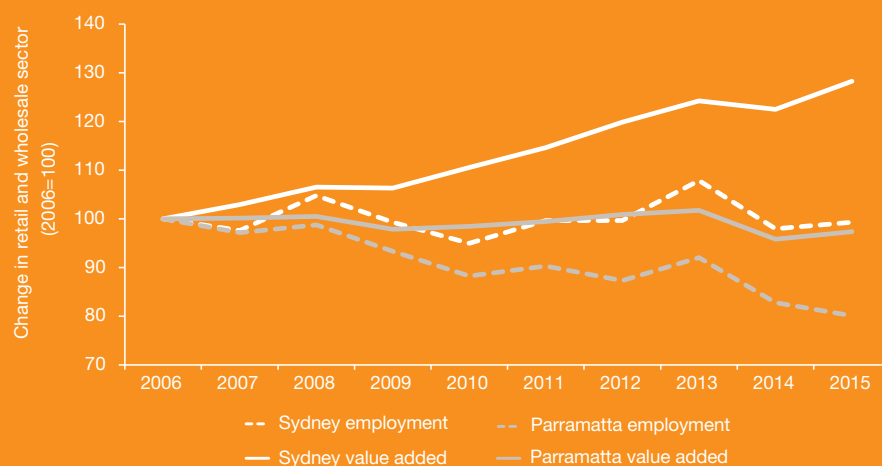
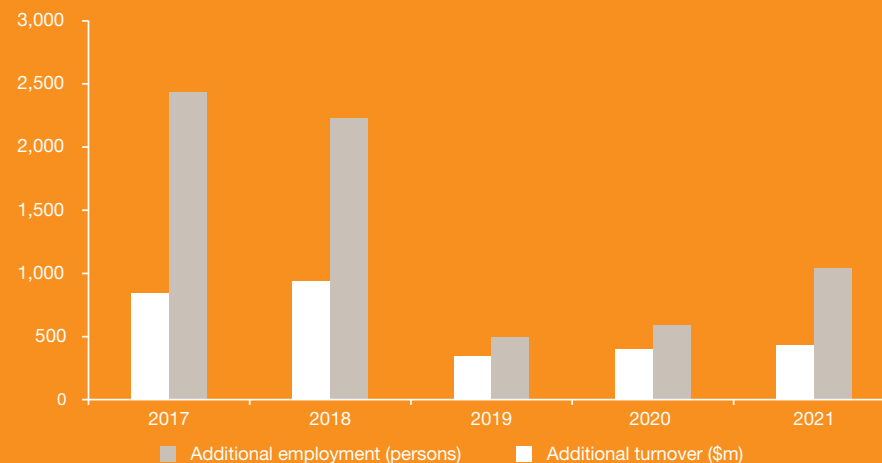


Figure 18: Change in retail and wholesale trade turnover and employment



Appendix A

The economic contribution of Hospitals and Universities in Sydney

The Westmead health precinct provides an opportunity to stimulate growth through health and education linkages

At a glance, simple co-location of a hospital and a university would seem to be enough to encourage collaboration and generate innovation in Sydney. Health care and education in areas with a hospital or university both significantly outstripped average growth in Sydney between 2001 and 2015 (see Figure 19). Above

average growth was also seen in jobs and the productivity of the areas.

Importantly, this above average growth occurs across a range of sectors in these locations, not just the health and educational sectors. This points to the dynamic nature of these clusters and the additional benefits that flow over and support other sectors. While the Sydney sample is a small one, the observations back up broader theory and other findings that a

Key trends

Compound annual growth rate	Sydney	Hospital & University
Economic (GRP)	1.9%	4.0%
Employment	0.9%	2.6%
Productivity	1.0%	1.4%





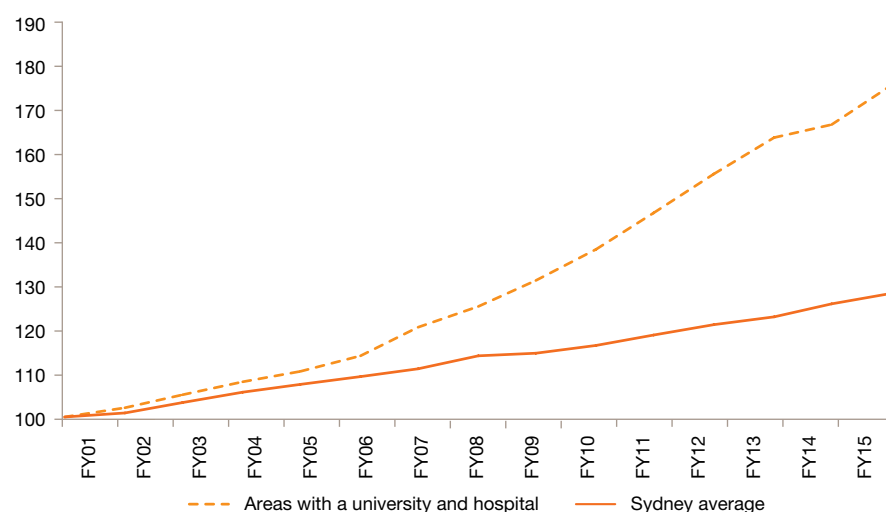
diverse range of complimentary sectors clustering around anchor tenants or industries generates the greatest returns.

However, co-locating a hospital and a university doesn't necessarily result in strong economic growth.

Closer inspection of the performance of each location points to different drivers of growth, both in terms of the macro-level drivers and also precinct specific considerations. These imply that simple co-location of the health and university precincts are not the only ingredients to generate growth.

While Westmead Hospital doesn't have the same university ties as some other precincts (e.g Royal Prince Alfred/University of Sydney has grown strongly, supported by specific investments in research infrastructure (e.g. Charles Perkins Centre)), a similar phenomenon has been witnessed, with recent capital investment raising the profile and productivity of the health sector and attacking a range of supporting and complimentary organisations.

Figure 19: Growth of areas with a Hospital and University in Sydney (economic output, index)



Appendix B

International examples of ‘second city’ development

Brooklyn, New York, USA

Brooklyn has experienced sustained investment and regeneration efforts for over a decade. Since the New York City’s formative Downtown Brooklyn rezoning in 2004, investment in infrastructure and urban regeneration has led to the establishment of Brooklyn as a highly desirable and diverse place to live, visit and work.

Urban Regeneration Driving Growth: 2004 Downtown Brooklyn Rezoning

Since 2004, nearly 3.8 million square metres of residential, commercial and institutional space has been developed, or is under construction, with more than \$10 billion of private investment into a previously overlooked area of an outer borough. Since 2000, the population within Brooklyn has grown by 126,823 people*.

Supporting this private investment, the City and State government has invested more than \$1.5 billion in public infrastructure, open space and cultural facilities.

From Back Office to Prime Market

Brooklyn was long considered the ‘back office’ to Manhattan. The single biggest objective of the Downtown Brooklyn rezoning was to stimulate commercial office development. However, no new office buildings were developed in Downtown for the decade following. Having said this, the commercial office market has enjoyed significant growth from 2014 with a number of new commercial developments completing. Traditionally more affordable than neighbouring Manhattan, Downtown Brooklyn has over the past decade, attracted emerging technology, media, creative and start-up firms.

* Note: Period between 2000 to 2013



The lower cost of commercial and residential space, with relative proximity to Manhattan, has been particularly attractive for young workers and their employees. Subsequently, office vacancy rates in Downtown Brooklyn have tightened from 5.8 per cent in quarter 3 of 2011, to 3.2 per cent in quarter 3 of 2015. Notable relocations from Manhattan to Brooklyn, such as Tine Inc. (one of the world's most influential media companies), is also evidence of Brooklyn's burgeoning office market.

Brooklyn a Powerful Global Brand

On the back of significant urban and social transformation, Brooklyn has developed into a global brand in its own right, renown for its culture and innovative environment. A growing population, particularly in younger generations and students, has led to the rise of a creative, start-up and innovative industry. The Brooklyn Tech Triangle, encompassing Downtown Brooklyn, DUMBO and the Brooklyn Navy Yard, has emerged as an international tech precinct facilitating the growth of multi- billion dollar companies, such as Etsy (Market capitalisation \$1.54 billion) out of DUMBO.

Brooklyn as a brand has attracted not only financial capital to the borough, but importantly human capital.

“Downtown Brooklyn has transformed into a 24 hour live, work, play neighborhood. Businesses and people simply want to be here.”

Sen. Charles Schumer

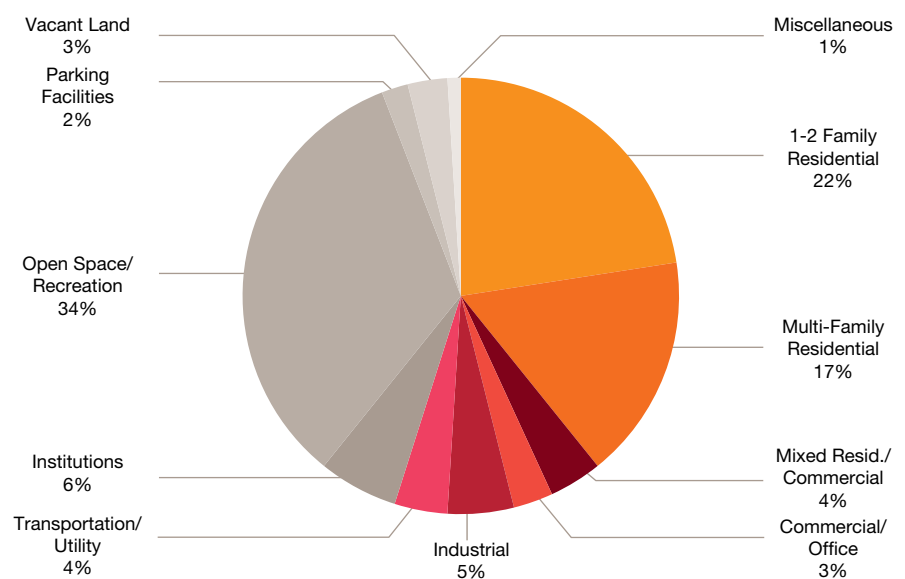


Brooklyn residents and workers benefit from a thriving restaurant and retail market, which has grown significantly through reported food and beverage revenue of \$17 million in 2001 to \$54 million in 2011.

Brooklyn is the most populated of the five boroughs. The residential population of Downtown Brooklyn under the 2004 rezoning increased by 35.9 per cent. Whilst the residential development experienced between 2004-2014 is perhaps the most visible aspect of the regeneration of Downtown Brooklyn, the increased residential population and resultant residential land use split of 44 per cent has created vibrancy and critical mass of a population with a thriving cultural, artistic and diverse community.

The potential for employment generating floor space in Brooklyn was always apparent, however, it was a matter of time:

Brooklyn Land Use Split



Source: New York City Department of City Planning, District Needs (2013)

Transformative impact of regeneration in Brooklyn

Downtown Brooklyn rezoning



New York City rezoning of Downtown Brooklyn sought to capture future economic growth and new jobs growth. Encouraging a mix that complemented a commercial and residential core.



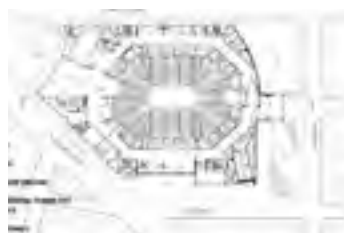
Impact of the Downtown Brooklyn rezoning:

- **+\$4.9 billion** investment,
- **19,000 +** residential units,
- **+22.4 per cent** real increase in median household income.

Barclays Center



The Barclays Center opened in 2012 as the centerpiece of the \$4.9 billion 'Atlantic Yards' (now named 'Pacific Park') redevelopment.



Impact of the Barclays Center development:

- **+251m (USD)** indirect activity in first year,
- **+2,000 jobs** created in operation.

Brooklyn Tech Triangle



The 'Brooklyn Tech Triangle': Downtown Brooklyn – DUMBO – Navy Yard, contributes \$5 billion to the economy. DUMBO has the highest concentration of tech firms of any neighbourhood in New York City.



Impact of the Brooklyn Tech Triangle:

- **+22 per cent** growth in number of firms,
- **+45 per cent** in directly employed workers
- Home of Etsy (**\$1.54 billion market capitalisation**).

Brooklyn Cultural District



Mayoral priority and a joint project by multiple government departments (Cultural Affairs, Housing Preservation, Development, the Department of City Planning) with Brooklyn Museum, Library and Academy of Music (BAM) key stakeholders.



Impact of the Brooklyn Cultural District:

- **+60 cultural groups** to be based in Downtown Brooklyn,
- Elements of **24/7** operation,
- **+2,000 affordable** units.



“Aarhus has a population of 320,000 (and 1.2 million within a 1 hour radius of the CBD) and is Denmark’s second-largest city and fastest growing economy. The City of Aarhus has approximately 33,000 employees with an annual turnover of circa €3 billion.”

Aarhus, Denmark

Shifting nature of the city

Aarhus has been undergoing a structural shift from an industrial based economy to a knowledge economy. Aarhus is currently experiencing unprecedented levels of urban development, with many underutilised industrial assets being replaced by residential accommodation and commercial assets to facilitate the growth of the knowledge-based industry. Aarhus, through the New University Hospital redevelopment, will soon be the home of the largest medical facility in northern Europe.

Infrastructure investment driving growth

Aarhus is the “fastest growing economy in Denmark”, consolidating its position as the engine of growth within the country. This growth has been led through knowledge-intensive industries (e.g. IT, tech, medical, enviro-engineering, bio-tech).

Investment in key infrastructure projects such as the Aarhus Docklands, the Light Rail Transit (LRT) and New University Hospital redevelopment have been catalytic in the growth of Aarhus as a city.

‘Smart city’ and knowledge economy

Aarhus has been a world leader in the creation of knowledge clusters, particularly the highly successful IT city, Katrinebjerg. The city has leveraged investment in new developments with lateral industry clustering around new projects, particularly the New University hospital redevelopment (e.g. med-tech and University clustering around the hospital site).



Aarhus City Council is targeting population growth of 50,000 residents and 30,000 jobs by 2030.

Urban regeneration projects such as the Aarhus Docklands and redevelopment of the social housing estate 'Gellerup-parken' into a mixed-use neighbourhood will contribute to the housing stock to facilitate future population growth.



Aarhus has been appointed **European Capital of Culture in 2017** (Aarhus 2017). The title 'European Capital of Culture' represents one of the most prestigious and prominent cultural events in Europe. The opportunity to hold such an event has been facilitated through investment in cultural infrastructure.

In 2009-2010, a new production centre for rhythmic music was established, and a disused rail freight terminal in the middle of the city (Godsbanen – Goods Station) has been converted into a production centre for the visual arts, the performing arts and literature.

The museum sector is a key political focus area for the City of Aarhus. In particular, 'Den Gamle By' (The Old Town), ARoS Aarhus Art Museum and Moesgaard Museum MoMu have (following significant investment and the development of new exhibition facilities) attracted huge audiences and strengthened Aarhus's international brand as a cultural city.



Building on a culture of innovation and collaboration, Aarhus has developed a unique 'Smart Aarhus' initiative as the centre of their smart city development strategy. Smart Aarhus involves citizens in the development of projects such as the Digital Neighbourhood project, where the traditional communication model is turned on its head, and issues raised by citizens form the basis of new city initiatives.

Transformative impact of investment in Aarhus

Aarhus Docklands



Redevelopment of the former industrial harbour. This urban regeneration project includes the creation of a new with residential, commercial, educational, library and educational uses.



Impact of the Aarhus Island development on the city:

- +7,000-10,000 residents,
- +12,000 jobs
- 800,000m² of floor space to be developed.

University Hospital



Aarhus is currently developing the largest hospital in Northern Europe. The hospital will be at the heart of a health care cluster with related businesses, the university and R&D.



Impact of the University Hospital development on the city:

- +10,000 employees,
- +€0.86 billion capital investment value (\$1.3 billion AUD)
- MedTech Innovation Centre + job multiplier.



Light Rail Transit (LRT)



LRT to include the two existing rail connections north and south of the city as well as an expansion including 12 kilometres of new LRT-track in and around Aarhus.



Impact of the LRT project on the city:

- Annual saving of 47 GWh of energy and 7.3 kton CO² emissions
- Stage 1 investment capital investment value of \$241m (AUD).

Godsbanen



Godsbanen (Goods Station) is the centre of cultural production in Aarhus. A 10,500m² space, housed in a reappropriated Goods Station (built in 1912) Godsbanen was opened in 2012.



Impact of the LRT project on the city:

- +175,000 visitors annually,
- 400 cultural events held annually
- European Capital of Culture 2017.



Appendix C

Economic impact method

Overview of economic impact methodology

We have undertaken a multifaceted approach to estimating the impact of the array of construction projects and relocation of employees to Parramatta. The process can be summarised by the two steps outlined below:

Step 1: CGE modelling

We modelled the construction impacts over the five years to 2021 (totaling \$10.4 billion) in a Computable General Equilibrium (CGE) model. This investment impact has been directed into eight sectors (public sector, other services, business services, passenger rail, dwellings, construction, accommodation and air transport).

Using a range of assumptions and Australian Bureau of Statistics data, we have allocated the state-wide results down to the new Parramatta LGA. To do so, we have used the following three broad categories of assumptions:

- Where the investment impacts are predominantly expected to be in Parramatta LGA, we have allocated them as such (e.g. we have assumed impacts to dwellings to be predominantly in Parramatta from the direct impacts of the investment there, but there will be some flow on impacts for the rest of Sydney).
- With construction (and mining and agriculture) we assume that Parramatta's share of the impacts will be in line with Parramatta's existing share of the sector across the state (4 per cent for construction, 0 per cent for mining and agriculture).
- For all other sectors (e.g. retail; manufacturing; information, media and communications and utilities) we assume the impacts are proportional to the average of all sectors in the above two points.

In addition to this, we have modelled the impact of time savings from business motorists using the new WestConnex Stage 1 project. We estimate a labour productivity benefit (from reducing the amount of time spent in traffic) of approximately \$75 million per annum in 2019-2021, using a consistent methodology to the one presented in the WestConnex business case. This is modelled through the CGE model as a benefit to the road freight sector and other sectors which use roads – e.g. retail and wholesale trade, road passenger services, communications, financial services, business services and public administration.





Step 2: Direct impacts of new workers in Parramatta

One of the key elements to the changing shape of Parramatta includes several private and public sector offices opening up branches or relocating their staff to Parramatta. The impacts modelled in Step 1 only reflect the impacts of construction. To model this, we have estimated the direct impact of the office workers moving into new CBD offices and health workers moving into the expanded Westmead health precinct just outside the CBD.

For office space with pre-committed leases, we have assumed these workers are in either professional services (PwC) or public administration (NSW Water, Department of Education). In the case of uncommitted leases (for the rest of Parramatta Square, which is assumed to be completed by the end of 2021 as per Council's assumption), we assume one building is in financial and insurance services with the rest of the uncommitted space allocated into public administration and safety (76 per cent), information, media and communications (18 per cent) or professional services (6 per cent) in line with recent office leasing trends (Savills, Parramatta office briefing, August 2016). In total, this is 15,885 additional employees to Parramatta.

We subsequently applied averages of industry value added per employee for these sectors from the ABS (category 8155, Table 1), except for the financial and insurance services which the ABS does not report on, for which IBISWorld statistics were used. These total estimates of industry value added then supplement the change in GDP, industry value added and employment estimated from Step 1.

Appendix D

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Glossary

Term	Description
Additional or incremental change	The estimated impact of the investments relative to the baseline.
Baseline	The 'business as usual' trend based on historical data.
Gross Domestic Product (GDP)	The total value of goods produced and services provided in a country during one year.
Gross Regional Product (GRP)	GRP is the equivalent of GDP for a local area – in this case the Parramatta LGA.
Gross Value Added (GVA)	The equivalent of GDP at the industry level, before taxes and subsidies are accounted for.
Industry Value Added (IVA)	The equivalent of GDP at the industry level.
Local Government Area (LGA)	The geographic area for which a council is responsible in administering.
Output or turnover	Output at an industry level is equivalent to total revenue or income.

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