Penrith Economic Development Masterplan

PENRITH CITY COUNCIL

23 SEPTEMBER 2014

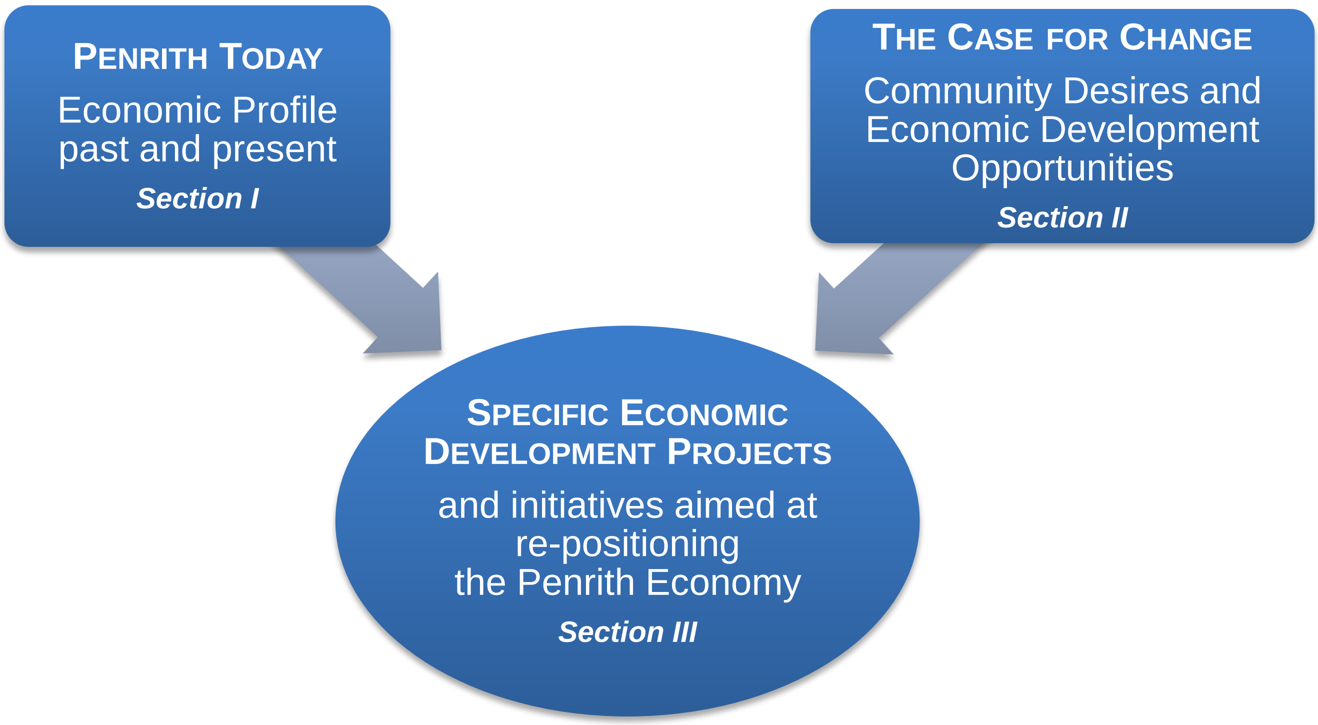
JACOBS

INTRODUCTION

This report is designed to provide the Local Government of Penrith with an economic development direction based on the latest information available regarding the current LGA economy; how this economy is situated in the State region; and its competitive position within the global economy. Based on this data central drivers of the LGA economy are identified and merged with local assets to provide the building block for a local economic development strategy centred on the central core urban area of the LGA. Based on this analysis a series of inception approaches are proposed to forge economic direction for the core area that will be catalytic in building longer term LGA wide strategy. This analysis is not intended as a forecast of the future but to be used as a means to forge from current assets opportunities to strengthen the local economy; reduce commuting and dollars escaping the LGA as well as making the LGA a place that will attract and retain young productive workers drawing new employers and new civic activation to make Penrith a better place to live and work.

STRUCTURE OF REPORT

This is an economic action report. That is, it is aimed at more than profiling the economic condition but at proposing concrete actions based on empirical data, interviews and community consultations



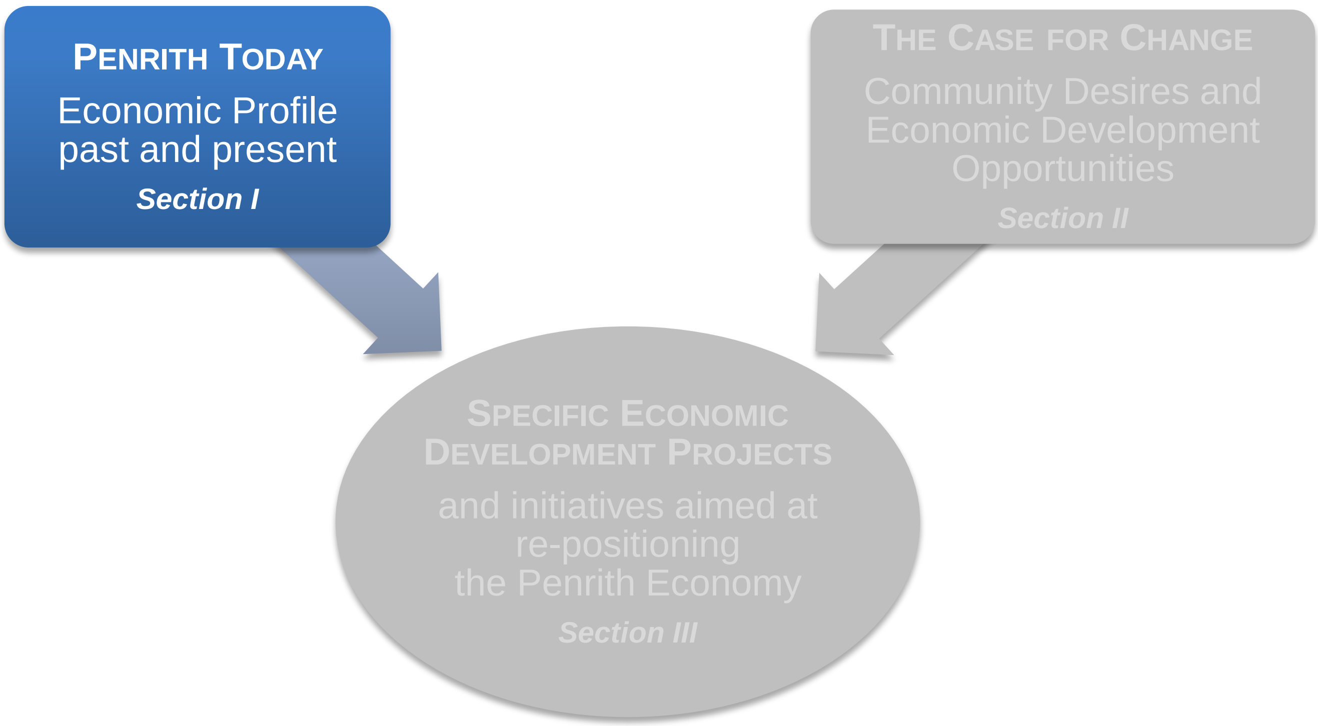
SECTION I - PENRITH TODAY

ECONOMIC PROFILE PAST AND PRESENT

PREAMBLE

This section reviews where Penrith is and articulates the LGA's assets, capacities and liabilities. It is this context that necessarily shapes the City's future. There are "no silver bullets" for a local economy since local areas do not control macro-economic trends and have little capacity to use even local assets since local governments are not independent entities.

But even with this said, "What sustains great organizations over time? Great talent. And what do talented people want? Most want influence, money, personal fulfilment, and the chance to make a difference. But more and more, talented people also want a great place to live." Helgesen (2010)



AN EMERGING REGIONAL POSITION

In strategic plans for Sydney Metropolitan region (notably the Draft Sydney Metro Strategy), Penrith is set as a Regional City and is expected to be a focal point for regional transport, jobs and services.

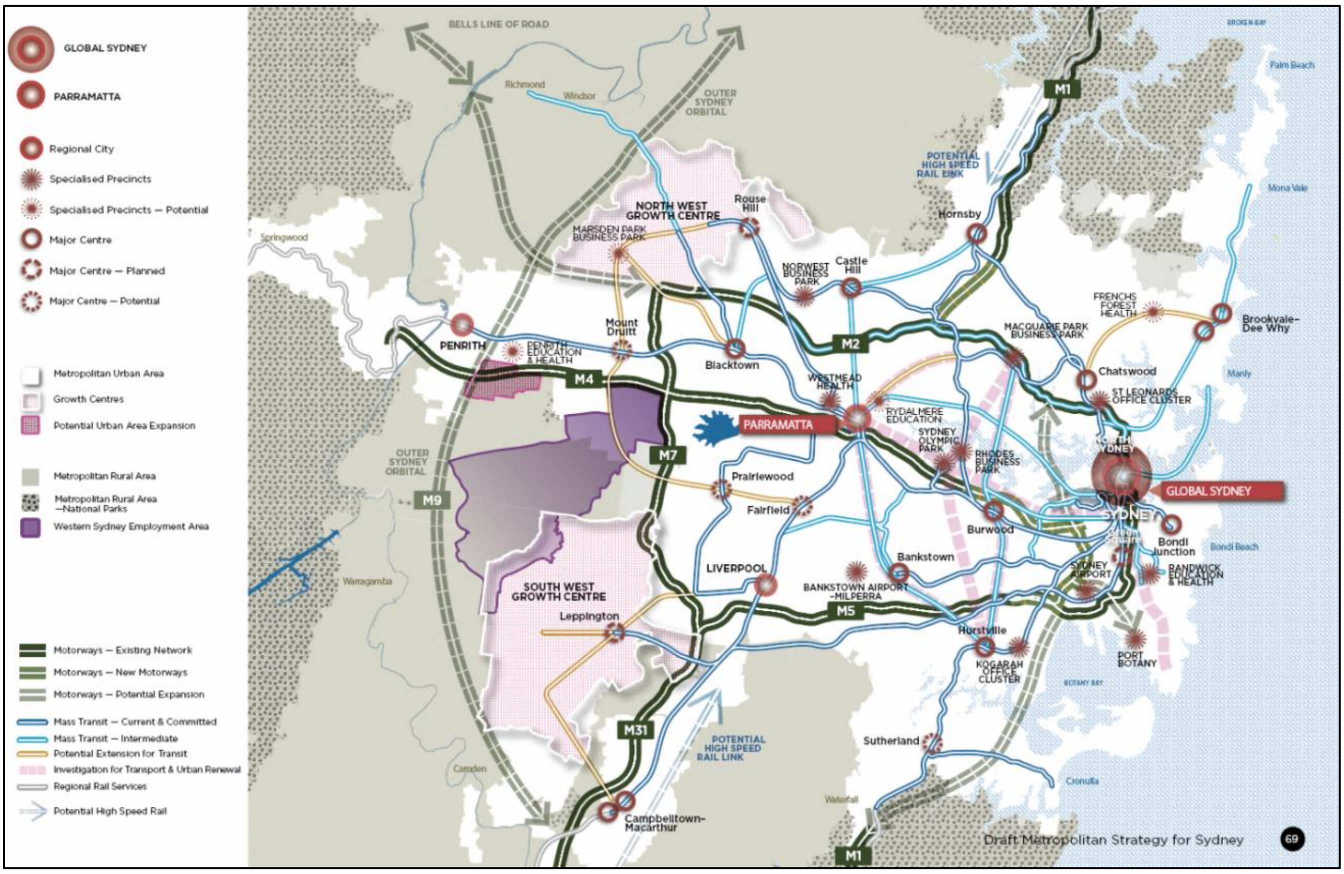


Figure 1: Draft Metropolitan Strategy for Sydney – Map – Page 69

Penrith as the principal gateway to Sydney to Western NSW is geographically well-positioned to service the North West and South West Growth Centres (NWGC, SWGC) of regional Sydney. Penrith's catchment will expand by more than 900,000 people over the next two decades. Northwest and Southwest growth is well underway. This expansion will add over 500,000 new residents. The Western Sydney Employment Area will grow by 60,000 jobs to service this growth. Linking and enhancing this growth to incorporate more basic export oriented high paying non-government jobs is Penrith's future task as the Outer Sydney Orbital M9 Motorway and related infrastructure including the new Badgery's Creek Airport anticipated to develop nearby.

The Penrith Education and Health precinct is identified in the Draft Sydney Metro Strategy: it includes both the Nepean hospital precinct and the University of Western Sydney campus in Werrington. The Sydney International Regatta Centre and the Penrith White-water Stadium are identified as the site for staging international and national events.

In a speech in Canberra on 15 April 2014, the Prime Minister and the Minister for Infrastructure and Regional Development confirmed that the site for Western Sydney's new airport will be Badgerys Creek. While the initial construction phase should generate around 4,000 jobs, the airport development is expected to create 35,000 jobs by 2035, increasing to 60,000 jobs over time. Although the Western Sydney airport will not be fully operational for a decade, planning for the new airport will start immediately and construction should start in 2016. Realistically, a new airport will see its first flight in the mid-2020s. To support Badgerys Creek development, the Commonwealth government also plans on building road and rail infrastructure that will benefit to airport users and residents throughout Western Sydney.

Badgerys Creek is approximately 20km from Penrith City Centre and even closer to St Marys, St Clair and Erskine Park. No other major town centre today is located as close to the future Airport. The extension of the South West Rail link will create over time other thriving town centres closer to the airport, which will eventually compete geographically with Penrith to service the airport.

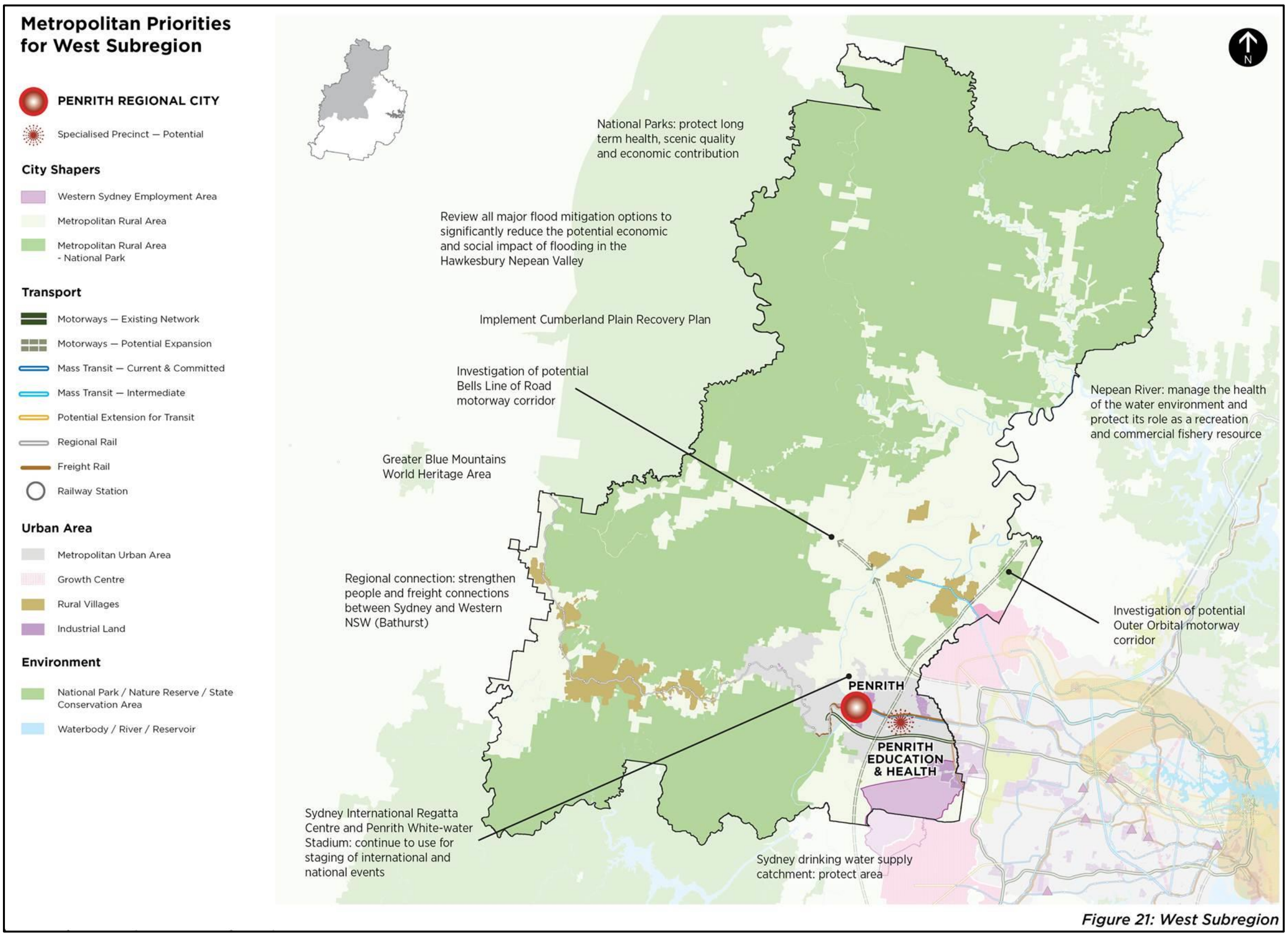


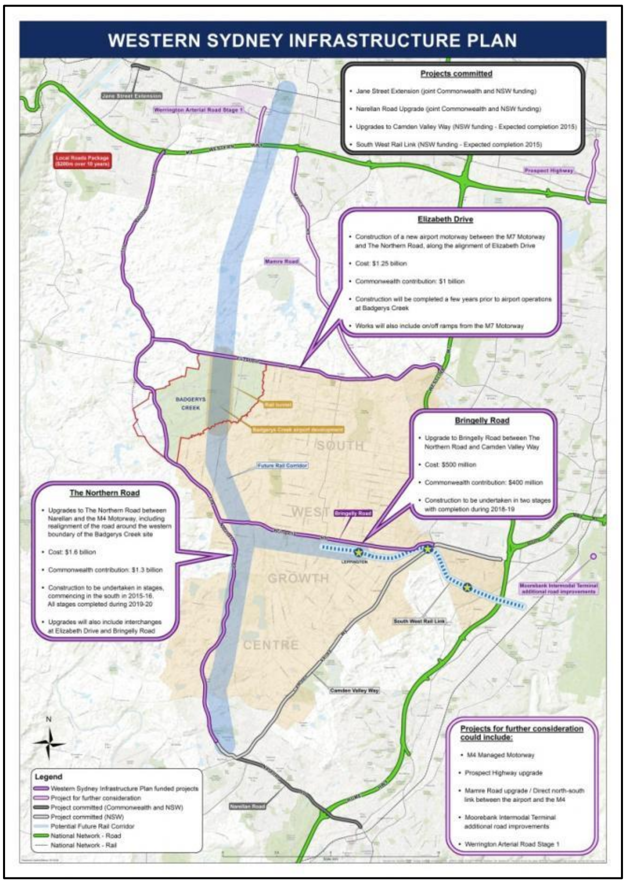
Figure 2 Draft Metropolitan Strategy for Sydney – West Subregion – p92

The Commonwealth Government Western Sydney Infrastructure plan (figure 3) includes major road upgrades necessary for the airport growth, notably the Northern road to Penrith. Most importantly the Commonwealth plan supports the Transport for NSW plan (see figure 4) for the extension of the South West Rail Link (SWRL) and outlines protected corridors (in blue in figure 3 and in purple in figure 4).

The SWRL will connect the future airport and St Marys. Penrith Council has already called on the State Government to consider:

- Having additional stations at the Penrith Health and Education Precinct (PHEP) at Werrington and the location of the proposed Sydney Science Park.
- Connecting with the Western Rail line through the PHEP with a connection to the Penrith City Centre.
- Increasing the frequency and speed of Western Rail Line services and synchronising these services with the new line.
- Extending the corridor to the North West Rail Link to connect the North West and South West Growth Centres through Penrith and the Western Sydney Employment Area.
- Ensuring a coordinated approach across all levels of government.

"Council's submission, drafted in consultation with the University of Western Sydney and other councils, shows the State Government a way to ensure that the rail corridor maximises the opportunities and benefits for the City and region," Councillor Fowler said.



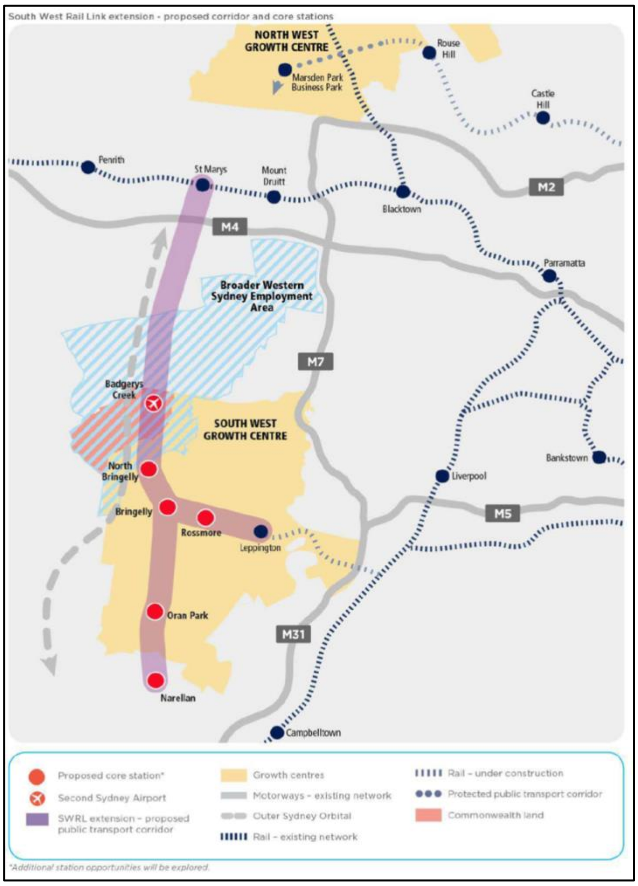


Figure 3: (Left) Commonwealth Government Western Sydney Infrastructure Plan

Figure 4: (Right) Transport for NSW – SWRL extension – proposed corridor and stations

KEY MESSAGES FOR SPECIFIC ECONOMIC DEVELOPMENT PROJECTS

At the intersection of major transport routes and strategic infrastructure Penrith has an opportunity to strengthen its position in advanced logistics, communications, graphic and related arts as well as engineering and manufacturing.

The local workforce will have to train in occupations and activities that will support the design, the construction and the operations of the future airport. The operations of the airport will supply jobs in the long run in industries such as air control, plane maintenance and repair, quarantine services, security and safety services, cleaning services, retail and hospitality.

The airport will also be a magnet for time-critical manufacturing, medical research and pathology labs and for distribution, tourism and conference industries. The Penrith local workforce is well-positioned in many of these industries and could leverage its position by upskilling and a constant focus on innovation, differentiation and value creation.

Close to major growth centres in the Sydney Region where homes for about 500,000 new residents will be built in the coming decades, Penrith has an opportunity to strengthen and intensify its position in sustainable and advanced construction techniques.

Better integration in the construction industry and linkages with universities and international sustainable construction events and competitions will be required to generate knowledge transfers. This will enable the Penrith construction workers to be leaders in building sustainable homes smarter, cheaper, faster and better.

A GROWING AND CHANGING POPULATION

A GROWING POPULATION

According to the Australian Bureau of Statistics population projections, Penrith could grow as quickly as 1.9% annually for a total population increase of 46.9% – from 185,000 in 2011 to 271,000 by 2031. This population growth projected for Penrith is markedly greater than most Sydney LGAs, making Penrith the 11th fastest growing LGA in the Sydney region.

A RELATIVELY YOUNG POPULATION PROFILE

Penrith is home to a significant proportion of young people, with those under 20 comprising 29% of the total population, compared with the same age cohort comprising just 25% of the population across Sydney.

Median age: 34 vs 36 in Sydney metro

0-24 years = 36% of Penrith's population against 32% in Sydney Metro

25-64 yeas = 54% of Penrith's population against 56% in Sydney Metro

AN INCREASINGLY AGEING POPULATION

Penrith's population is also increasingly ageing, which is evident in the increasing proportion of the population comprised of older age groups between the 2001 and 2011 census. During this 10 year period, Penrith's population of over 55 grew by 6.6%.

Penrith's older population is projected to grow significantly faster than its younger populations. According to the ABS projections, within just two decades the percentage of those aged 65 and over in the Penrith local government area could double from 9.4% today to comprise 18.4% of the total population by 2031. This means that nearly 33,000 new retirees could call Penrith home by 2031.

In the same period, the percentage of young people (<15) will decrease slightly from 21.3% today to 20.6%, while the proportion of those aged 15-64 will drop from 69.3% to 61.0%.

A MORE AND MORE ETHNICALLY DIVERSE POPULATION

With nearly 3 in 4 (74%) residents born in Australia, the Penrith community is strongly rooted in its local connections and is one of Sydney's most Australian-born populations – compared to just 58% of state-wide Sydneysiders are Australia-born.

Nonetheless Penrith's diversity is changing, with an increasing number of persons arriving from India, the Philippines, New Zealand, China, Fiji, and Sri Lanka.

HOUSEHOLDS AND HOUSING NEEDS

Bigger households and more and younger families

The size of households in Penrith is significantly larger that the Sydney average. On average Penrith has 2.8 people per household while Sydney has 2.7 and Australia has 2.6. Penrith has more families and more younger families than the Sydney Region and the Australian average. There is also a higher proportion of households with couples with children.

Household size on the decline + More households + More lone-person households in all areas of the nation including Penrith.

Consistent with national trends household sizes are on the decline and the largest increase in household type in Penrith is the lone-person household. 2600 new households were formed in Penrith between 2006 and 2011. Over the next decade, about 3.9 new households will be formed every day in Penrith.

Stability of residence

Penrith residents are moving homes less than other residents across the Sydney region. 63% of households have stayed in the same home in the last 5 years.

Housing type - bigger homes and more stand-alone houses

Sydney region has already a quite dispersed and low density urban model among developed countries. Penrith is the archetype of suburbia living and this housing pattern that lacks sufficient density thus contributing to urban sprawl, which is no longer a preferred pattern of living for younger more mobile populations.

- 81% of residents live in detached housing - compared to 58% for Western Sydney
- 19% of residents live in units, compared to 40% for Western Sydney
- 36% of residents live in a 4+ bedroom home

Between April 2013 and April 2014 there were 1,237 houses sold in Penrith City, with an average of 98 days on the market and sold at a median price of $395,000. In the same period of time there have been 783 units sold, having been on the market for an average of 75 days and selling for a median price of $281,000.

There is a greater housing affordability in Penrith and thus greater likelihood to purchase. It is important to note that this affordability comes at a price: car ownership and all the cost associated with it.

Car ownership

That dispersed type of urban development and the associated distance to jobs results in Penrith residents having more cars than average Sydney residents, with 55% owning two or more vehicles compared to 44% households who own two or more vehicles in Sydney. In fact, 1 in 14 (7%) Penrith households own four or more vehicles compared to an average of 4% across Sydney.

Journey to work

Historically, the most widely used form of transport between Penrith and Sydney has generally been road based, with a single road in the 1800s initially linking Sydney with the central west, across the Blue Mountains.

Roads still support most of the region's journeys. Today the predominant form of travel to work for Penrith residents is via car, with 79.6% of employees driving to work and a further 6.7% being driven to work as a passenger (this compares with 65.8% and 5.6% of Sydneysiders, respectively). Just 7.8% of residents utilise public transport (train or bus) to get to work.

This is primarily because the City is not served by an effective public transport network, with both bus and train services operating at inadequate frequencies. The past three decades of urban development have grown out from the City's main centres, isolated from public transport and therefore reliant on cars. The relative low density of dwellings makes it unviable to create high frequency and high quality public transport services.

URBAN SPRAWL AND OTHER CONSEQUENCES OF LOW DENSITY URBAN DEVELOPMENT

Decades of 'dormitory suburb' housing developments in the 1980s and 1990s brought in additional residents and workers but few jobs. In the 1990s the population was 50,000, but there were fewer than 40 jobs for every 100 workers in Penrith's workforce.

Numerous studies have shown that suburbia living has undesired impacts on economic development and efficiency, innovation and creativity, people health and happiness, and on environmental and social sustainability. (See appendix 1)

KEY MESSAGES FOR SPECIFIC ECONOMIC DEVELOPMENT PROJECTS

Penrith young workforce is growing but not staying in the city-region. On the other hand, a substantial ageing component of the population is increasing and lacks mobility to vital services since they cannot drive forever. So, Penrith is growing on both ends-young and old and losing its working age productive population in the middle age cohorts. More homes will be required that meet the needs of the working productive aged population who will increasingly want to live in urban vibrant settings. As homes closer to daily destinations will be needed. Crucial to Penrith's and the region's social and economic success is to drive this growth in appropriate areas, close to amenities, jobs and sustainable transport connections.

For the last 20 years, major economic growth and innovation occurred in dense and mixed use areas. Penrith will require embracing this movement for greater variety and density if it wants to attract a working aged urban and urbane population creates. Penrith need to remain an affordable city to live and will encourage a greater diversity of housing types on large and small plots, in more configurations than currently available or even allowed. This will allow the total cost of living, including house price and transport costs to be minimised for the household and total infrastructure costs to be optimised for the government and hence for all of us. Statutory planning documents will support better proximity and connectivity across the City and ask new developments to deliver medium to high density easily and sustainably connected to jobs and leisure centres.

With younger, older and smaller households the need to be close to amenities, education facilities, jobs and transport options will be greater. It will mean that there will be more one bedroom apartments, more terrace like townhouses on smaller plots, more supply of a wide diversity of housing in established areas that will make Penrith a more liveable place to live for all its residents.

Penrith must aim at becoming a 30 minute neighbourhood with access to most of your daily lifestyle needs such as jobs, schools, parks, local shops, health services, etc. within a 30 minute trip from your home. This may be by walking, cycling, public transport, or even by car, but takes into account congestion and other factors.

Penrith needs to step away from the post-World War II notions of cities to meet expectations of younger generations who will lead the future City...

LOCAL JOBS AND THE ECONOMY

GROSS REGIONAL PRODUCT

Penrith City's Gross Regional Product is estimated at $7.24 billion, which represents 1.6% of the state's GSP. In 2012/13, Penrith City contributed 2.0% of New South Wales's employment and 1.6% of its value add.

FULL-TIME EQUIVALENT EMPLOYMENT IN PENRITH

Penrith City provides over 71,000 local jobs (NEIER 2012) to the regional workforce – those include part-time and full-time jobs. This figure corresponds to 59,000 full-time equivalent jobs. Over 5000 full time jobs were created in Penrith City during the 5 years between 2006 and 2011.

There are around 97,000 Penrith city working residents (2012) and more than a third of them work in Penrith LGA when around 60% to 65% commute outside the Penrith LGA for work. This lopsided equation is intolerable and unsustainable.

Penrith has historically enjoyed lower unemployment and higher labour forces participation rates than Western Sydney and the rest of Australia. Penrith's unemployment rate in December 2013 was less than many other NGAAs and just under the national rate in that time period: 6.39% which is also relatively low on national and international standards. Unemployment is an important indicator of the economic success of an area.

The table below shows the number of full-time employment in the Penrith City sorted by number of jobs provided. The lines in white are the industries with a higher proportion of jobs than in NSW. The lines in grey are the industries with a lower proportion of jobs versus the NSW average.

Full-time equivalent employment by industry sector

Penrith City

Industry	Number 2012/2013	Change s. 2007/08	Penrith %	NSW %
Health Care and Social Assistance	7,548	+1,366	12.8	10.6
Manufacturing	7,027	-331	11.9	8.8
Construction	6,730	+222	11.4	9.1
Retail Trade	6,597	-353	11.2	8.9
Education and Training	5,631	+448	9.5	6.9
Public Administration and Safety	4,645	+326	7.9	5.9
Accommodation and Food Services	3,705	+244	6.3	6.1
Transport, Postal and Warehousing	3,546	+311	6.0	5.7
Other Services	2,761	+81	4.7	4.1
Wholesale Trade	2,253	+282	3.8	4.3
Professional, Scientific and Technical Services	2,046	-16	3.5	9.2
Administrative and Support Services	1,503	+253	2.5	3.1
Electricity, Gas, Water and Waste Services	995	-69	1.7	1.2
Rental, Hiring and Real Estate Services	941	+7	1.6	1.9
Financial and Insurance Services	832	-31	1.4	5.5
Arts and Recreation Services	775	+96	1.3	1.5
Agriculture, Forestry and Fishing	718	+95	1.2	2.9
Information Media and Telecommunications	445	-85	0.8	2.7
Mining	329	+95	0.6	1.5
Total industries	59,026	+2,943	100.0	100.0

Source: National Institute of Economic and Industry Research (NIEIR) ©2014.
Compiled and presented in economy.id by .id the population experts www.id.com.au

KEY DATA INFORMING ECONOMIC OPTIONS AND OPPORTUNITIES

Health Care and Social Assistance, Manufacturing, Construction, Education and Training and Transport, Postal and Warehousing ARE THE CORE SECTORS FOR THE PENRITH LGA comprising 51.6% of the jobs located in Penrith city. These industries also account for more than 2000 jobs created since 2007/08 making more than two third of the growth in jobs in the LGA.

Professional, scientific and technical services - representing 3.5% of total local workforce - Financial and Insurance services - representing 1.4% of the total local workforce – and Information Media and Telecommunications - representing 0.8 of the total local workforce - witness the biggest gap with the NSW average, respectively with 9.2%, 5.5% and 2.7% of the NSW workforce employed in these industries.

Retail trade, wholesale trade and Accommodation and Food services account for more than 20% of the local workforce but as can be seen later in the document this retail industry is only the fourth largest contributor to the GDP of Penrith

In economic development projects, Penrith will strengthen and secure presence for these vital sectors: *Health Care and Social Assistance*, Advanced *Manufacturing*, *Construction*, *Education and Training and Logistics.*

Penrith must seek to increase job opportunities for *Professional, scientific and technical services*, and *Information Media and Telecommunications* as they generate higher job spin-offs than other industries. These industries fit the profile of the Penrith population and build industries that are knowledge based and have a strong influence on culture and lifestyle either related to their relative higher spending power or their activities (See Section II).

WORKFORCE - WHO WORKS IN PENRITH

Local workers' occupation and where they come from

Penrith City provides approximately 71,000 local jobs (NEIER 2012) to the regional workforce.

Though there is a gap in the census figures and significant differences between the ABS census data sets (54,991 local jobs and 87,224 employed residents) and the NEIER data sets (71,022 local jobs and 97,366 employed residents) – relying on the census figure of 2011 we can estimate that Penrith residents account for 56% of Penrith's workforce.

The remaining 44% of Penrith's workforce commute into Penrith from outside of Penrith City for work. 24% of these workers commute from Blacktown, 26% from the Blue Mountains, 10% from Hawkesbury, 3% from Wollondilly, and 3% from Liverpool. The map below shows where workers travel from and to work in Penrith LGA.

Workforce occupations

Penrith City - All industries

Occupations	Number 2011	Penrith %	Changes. 2006	Sydney SD%	NSW %
Professionals	10,554	19.2	+1,070	23.8	23.0
Clerical and Administrative Workers	9,153	16.6	+504	16.7	15.2
Technicians and Trades Workers	6,876	12.5	-139	12.7	13.2
Sales Workers	6,164	11.2	-340	9.5	9.4
Community and Personal Service Workers	5,816	10.6	+686	8.0	9.6
Managers	5,781	10.5	+60	13.2	13.5
Machinery Operators And Drivers	5,156	9.4	+1,089	6.0	6.3
Labourers	5,036	9.2	-277	8.0	8.6
Inadequately described or not stated	458	0.8	+2	2.1	1.1
Total [genders]	54,994	100.0	+2,655	100.0	100.0

Source: Australian Bureau of Statistics, Census of Population and Housing 2006 and 2011.
Compiled and presented in economy.id by .id, the population experts. http://www.id.com.au

The table above shows the occupations of workers in Penrith sorted by number. In white, are the occupations that are under-represented in Penrith compared to the state and the Sydney region averages. In grey are the occupations where Penrith has a proportion of workers than the state and the Sydney region average.

KEY WORKFORCE STRUCTURES

Managers - 10.5% of the workforce - and professionals - 19.2% of the workforce – which is a significant gap with the state and the metropolitan average that have respectively above 13% and 23% of people in those occupations. Linked with its industrial and manufacturing capabilities, Penrith has a higher proportion of Labourers, Machinery Operators and Drivers.

Penrith needs more "lieutenants of industry"; that is more operations managers that have extensive technical knowledge, new process, innovation and industrial awareness and management skills to drive and deliver game changing projects.

To do so, a shift to higher value engineering and manufacturing and better industry coordination is needed alongside the provision of homes and amenities that will attract those talents.

As the chart below shows with Penrith occupations on the inside of the diagram and State the outer ring, Penrith lacks the human capital to attract global employment. As Morretti says: "It is the people who determined the employment not the firms. Good firms go to good people and good places attract good people so either the people attract or create the work. Penrith therefore has to be attractive as a good living place for the type of people firms want. The fact that it is a nice place to live will not make it a good place for employers unless there is a strong intersection between what the firms needs and what the people place possesses.

Figure 5 - Competitive Occupational Profile

Source: Authors from ABS, 2011

This graphic shows that Penrith's professional and technical occupations are not on par with those of the State averages. As a result increased education and development of the local population is required as a base for economic transformation. One important aspect of this requirement is to move education closer to the transit system. While the university is close to the rail station it is not close enough. If education is immediately adjacent to the ends of transport, the participant can go to a course before they get into their car or go home. Once in the car it is more tempting to go home than to pursue more education.

Penrith residents will not gain new jobs from the airport or other industries unless their skills match the job requirements... So, it is imperative that the jobs-housing balance be solved by reducing commutes or the influx of new workers will overwhelm the local labour force. This is especially true if the airport gains momentum requiring thousands of new professionals and technicians that Penrith doesn't have currently.

WHERE ARE JOBS LOCATED IN PENRITH

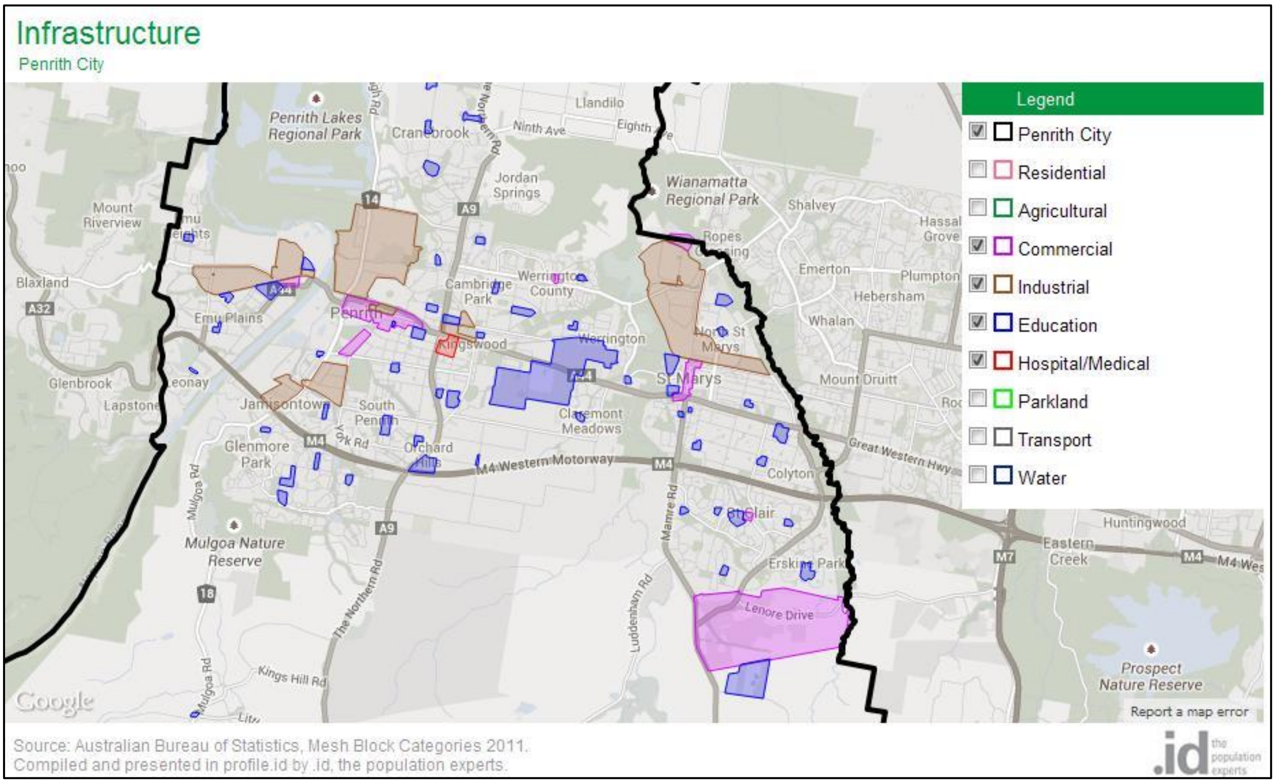


Figure 6: Land Use and major infrastructure - ABS Mesh Block Categories 2011 - Compiled and presented in profile.id

Note: The land use shown in the map is derived from ABS Mesh Block categories. Mesh Blocks broadly identify land use and are not designed to provide definitive land use. It is purely an indicator of the main planned land use for a Mesh Blocks.

The map below shows where jobs are located across the Penrith LGA.

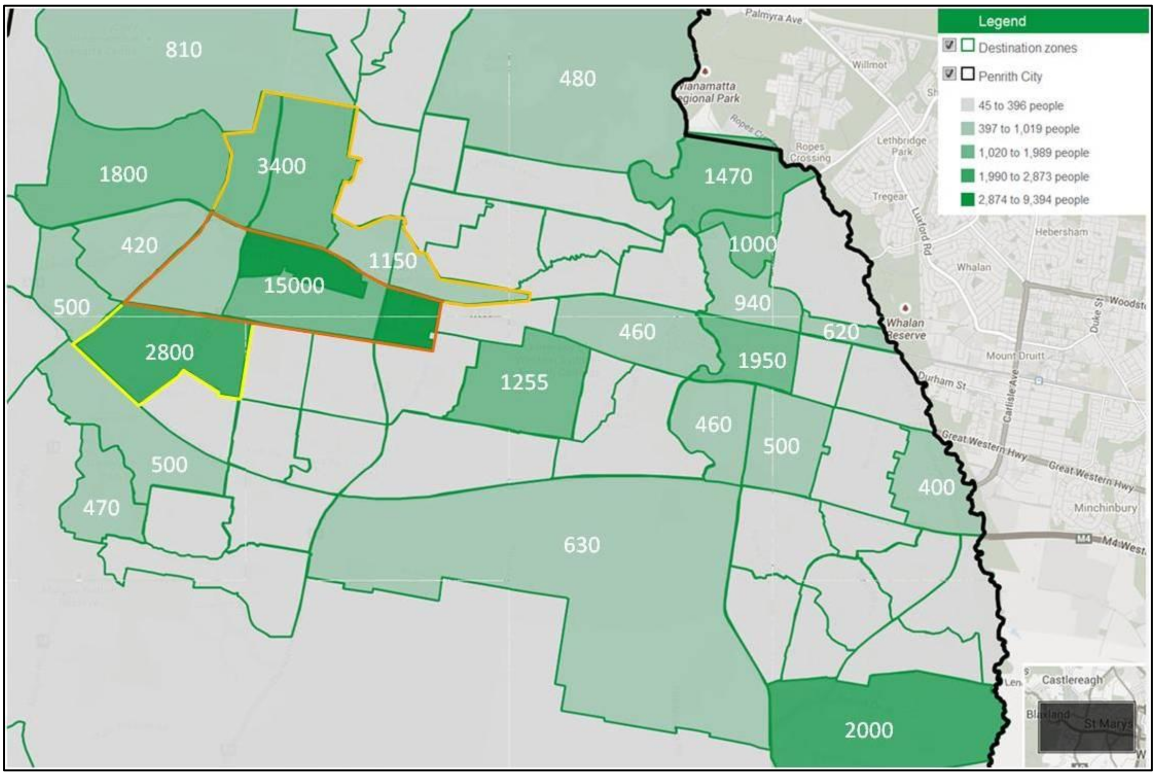


Figure 7: Job location in Penrith – All Industries – ABS Census 2011

In the map above, 70% of jobs in Penrith City are located in the areas with a number. The CBD (area with orange outline) accounts for 30% of all jobs in Penrith City. If extended to the north of the railway (area with light orange outline) it accounts for 39% of all jobs in Penrith City. With Jamisontown (area with bright yellow outline), the whole area accounts for 45% of all jobs in Penrith. With Emu Plains across the river, the area has more than 50% of the Penrith workforce. Other major job centres are St Marys and St Marys North, Erskine Park and the University of Western Sydney.

Manufacturing jobs are primarily located in St Marys North, North Penrith, Emu Plains, Jamisontown and Erskine Park. In the map below, the areas with a figure represent 5400 manufacturing jobs out of the 5900 jobs counted across the LGA in the 2011 Census.

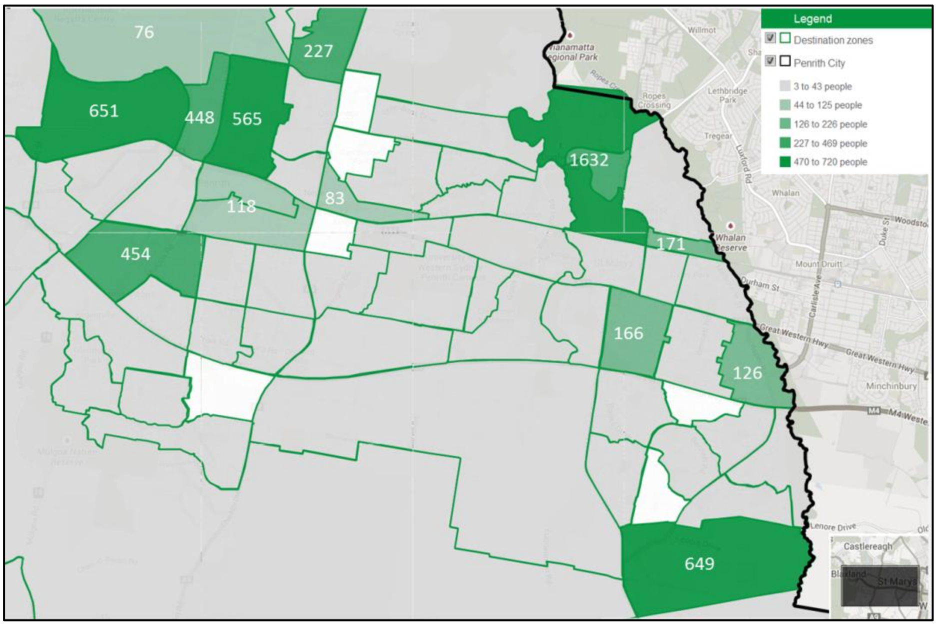


Figure 8: Manufacturing jobs locations – Census 2011

Construction jobs are also located in these areas but are also located on major construction sites on the city's outskirts. In the map below, the areas with a figure represent around 1750 jobs (Census 2011). By its nature, the construction sector is more dispersed across the different employment areas and construction sites.

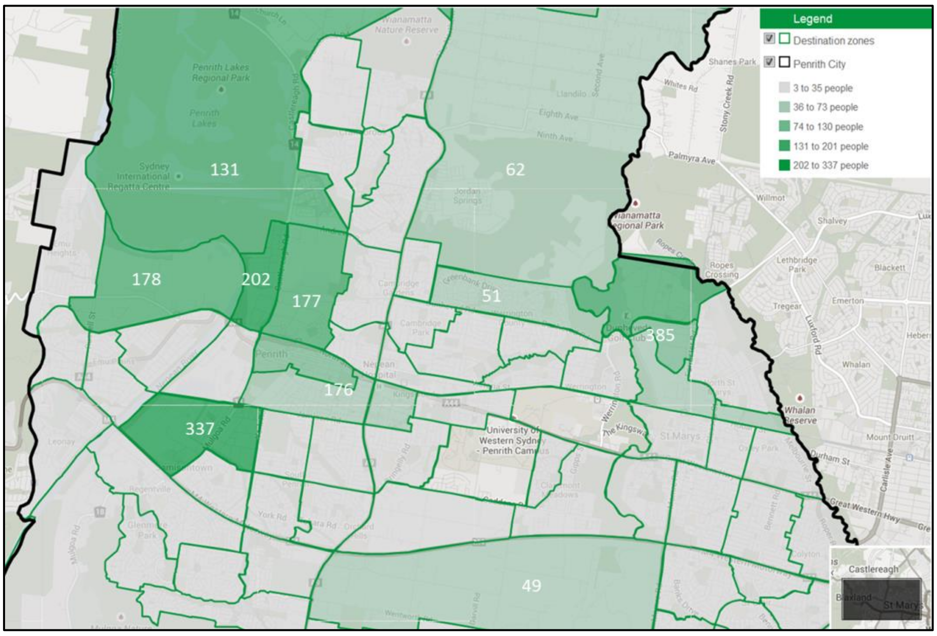
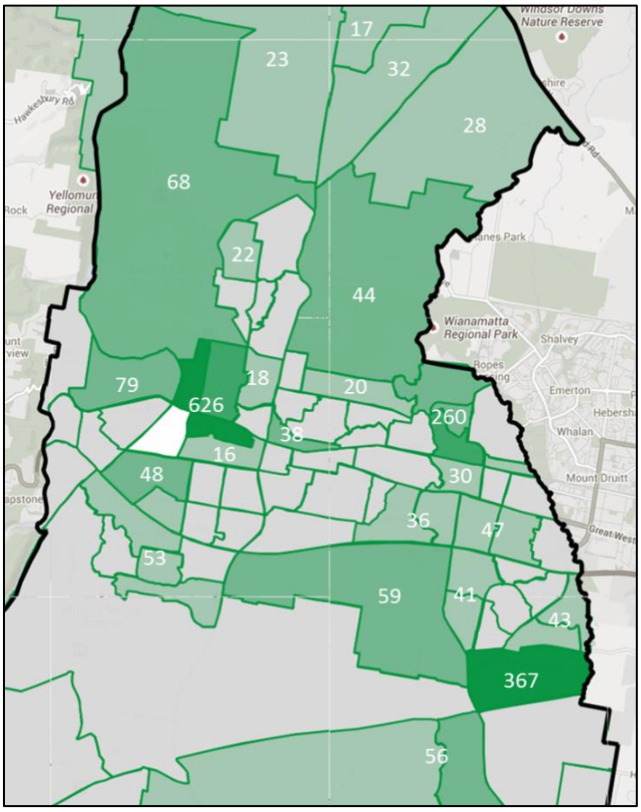


Figure 9: Construction jobs locations – Census 2011



The Transport, Postal and Warehousing industry is also heavily widespread but key employment centres are the Penrith CBD, Erskine Park and St Marys.

About 1200 workers are employed as truck drivers. Their role to pick-up and deliver goods across the region and across industries contributes to the dispersed nature of their job.

With 47.5% of the workforce of *Information Media and Telecommunication*, 45% of the workforce of *Financial and Insurance Services*, and 40% of the workforce of *Professional, Scientific and Technical Services* jobs, Penrith CBD has a key proportion of the creative class and high value / spin-off jobs (see section II). Other key locations for those jobs are St Marys and Erskine Park.

Figure 10: Transport, Postal and Warehousing jobs locations

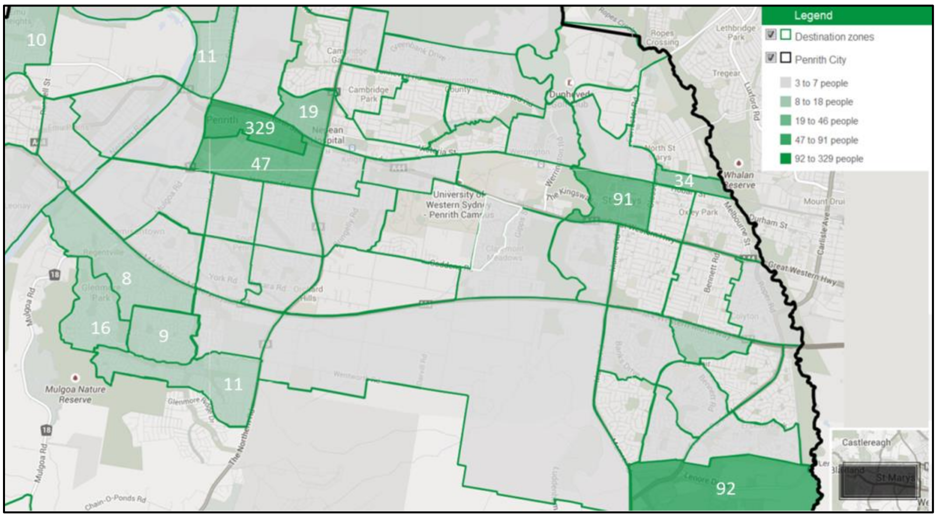


Figure 11: Financial and Insurance jobs locations 2011

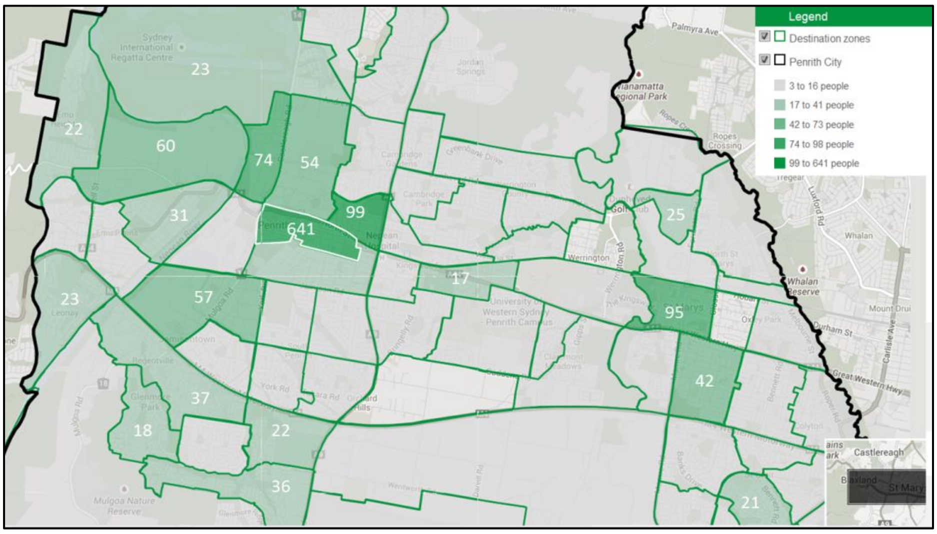


Figure 12: Professional, Scientific and Technical jobs locations

Health care and social assistance jobs are mainly located in and around the Nepean Hospital Precinct and in the Penrith CBD with more than 66% of the jobs in this industry located in the area outlined in orange in the map below.

Figure 13: Health Care and Social Assistance jobs locations – Census 2011

Retail locations: Major retail centres include Westfield Penrith, Penrith CBD and St Marys CBD, with numerous other significant centres (Centro Lennox, Centro Nepean, Colyton, Erskine Park Village, Glenmore Park, Mount Pleasant, Southlands, St Clair, St Marys Village, Station Plaza and Werrington County Village).

Industrial locations: The main industrial areas are located in Emu Heights, Emu Plains, Erskine Park, Jamisontown, North St Marys, Penrith and St Marys, with smaller industrial areas at Agnes Banks, Castlereagh, Kingswood and Londonderry

EMPLOYED PENRITH RESIDENTS

Employed residents Industry, occupation and where they go to work

The current census shows more than a third of Penrith residents work in Penrith. In those living and working in Penrith 15% work in Retail Trade and over 9% in accommodation and food. 13% work in Health Care and Social Assistance. 10% work in Manufacturing. Almost 9% work in Education and 8% work in Construction.

The proportion of people living in Penrith and commuting elsewhere for work has increased between 2006 and 2011, growing from 63% to 64.7%.

More than 15,000 Penrith residents travel to Blacktown to work. 12% in Manufacturing, 12% in Retail Trade, 10% in Transport Postal and Warehousing, 8% in Health Care and Social Assistance, 8% in Education and Training, 8% in Financial and Insurance services (more than those in the industry travelling to Sydney CBD) 5% in Professional, Scientific and Technical services.

Over 10,000 Penrith residents travel to Parramatta, Holroyd and Auburn to work. 16% in Manufacturing, over 13% in Public Administration and Safety, over 11% in Health Care and Social Assistance, almost 11% in Financial and Insurance Services, 8% in Transport, Postal and Warehousing and 5% in Construction.

More than 3,200 Penrith residents travel to Sydney CBD to work. 32% of them work in Financial and Insurance services, 18.5% work in Professional Scientific and Technical services, more than 10% work in Public Administration and Safety.

Around 2,500 Penrith residents travel to Fairfield to work, 2,200 to Hawkesbury, 1,900 to the Hills Shire, 1,600 to Liverpool, around 1,000 to the Blue Mountains and 1,000 to Ryde.

Employed residents occupations

Penrith City - All industries

Occupations	Number 2011	Penrith %	Changes. 2006	Sydney SD%	NSW %
Managers	8,772	10.1	+359	13.2	13.5
Professionals	12,146	13.9	+1,419	23.8	23.0
Technicians and Trades Workers	13,289	15.2	+12	12.7	13.2
Community and Personal Service Workers	8,433	9.7	+1,303	8.0	9.6
Clerical and Administrative Workers	16,643	19.1	+668	16.7	15.2
Sales Workers	8,622	9.9	-81	9.5	9.4
Machinery Operators And Drivers	9,338	10.7	+572	6.0	6.3
Labourers	8,345	9.6	-447	8.0	8.6
Inadequately described or not stated	1,637	1.9	-52	2.1	1.1
Total [genders]	87,225	100.0	+3,753	100.0	100.0

Source: Australian Bureau of Statistics, Census of Population and Housing 2006 and 2011.
Compiled and presented in economy.id by .id, the population experts. http://www.id.com.au

Manufacturing is Penrith's largest industry, comprising 1 in 8 of all Penrith employed residents (11.8%). Health care and social assistance follows employing 1 in 10 persons in the Penrith employed residents workforce and Construction employing almost 1 in 10 persons.

Retail activities (retail trade, wholesale trade and accommodation and food services) employs 1 in 5 (22%) of Penrith workers which a slightly higher proportion than NSW (21%).

The table below shows the number of Penrith residents employed in each industry. In white are the industries where Penrith residents are in larger proportion than the NSW average. A large proportion of the residents work in Manufacturing, Construction and Transport, Postal and Warehousing industries. The Health Care industry, though slightly below the state average, has experienced the highest growth among Penrith residents followed by Education and Training.

Local labour force industry of employment

Penrith City

Industry	Number 2011	Penrith employed residents %	NSW %	Change from 2006
Manufacturing	10,294	11.8	8.4	-668
Retail Trade	9,900	11.3	10.3	-280
Health Care and Social Assistance	8,845	10.1	11.6	+1,414
Construction	8,142	9.3	7.3	+280
Public Administration and Safety	6,466	7.4	6.1	+596
Transport, Postal and Warehousing	6,424	7.4	4.9	+457
Education and Training	5,796	6.6	7.9	+681
Accommodation and Food Services	4,829	5.5	6.7	+214
Wholesale Trade	4,783	5.5	4.4	+139
Financial and Insurance Services	3,802	4.4	5.0	+65
Other Services	3,648	4.2	3.7	+187
Professional, Scientific and Technical Services	3,582	4.1	7.9	+102
Administrative and Support Services	2,637	3.0	3.3	+233
Industry not classified	2,349	2.7	2.5	+132
Electricity, Gas, Water and Waste Services	1,336	1.5	1.1	+209
Rental, Hiring and Real Estate Services	1,298	1.5	1.6	-11
Information Media and Telecommunications	1,251	1.4	2.3	-88
Arts and Recreation Services	1,125	1.3	1.5	+163
Agriculture, Forestry and Fishing	553	0.6	2.2	-37
Mining	170	0.2	1.0	-20
Total [genders]	87,230	100.0	100.0	+3,768

Compiled and presented in economy.id by .id, the population experts.
Source: Australian Bureau of Statistics, Census of Population and Housing 2006 and 2011.

EMPLOYMENT CAPACITY

Employment capacity is a simple way of looking at whether Penrith City could theoretically provide jobs for all its residents if they were to choose to work locally. Employment capacity is simply the number of local jobs in an industry, divided by the number of local residents employed (anywhere) in that industry. A figure over 1.0 means there are more jobs available than residents employed in that industry. Under 1.0 means there are more residents employed than jobs available in that sector. This is a theoretical exercise as, even if there are enough jobs provided locally, there will always be some people who choose to commute out of the area.

Employment capacity by industry

Penrith City - 2012/13

Industry	Local jobs	Employed residents	Ratio of jobs to residents
Health Care and Social Assistance	9,628	9,878	97%
Retail Trade	9,228	11,845	78%
Manufacturing	7,447	10,165	73%
Education and Training	7,409	6,716	110%
Accommodation and Food Services	6,200	6,556	95%
Construction	6,025	8,548	70%
Transport, Postal and Warehousing	3,772	7,530	50%
Other Services	3,178	4,812	66%
Wholesale Trade	2,662	5,611	47%
Professional, Scientific and Technical Services	2,536	4,545	56%
Administrative and Support Services	1,997	3,479	57%
Public Order, Safety and Regulatory Services	1,467	2,317	63%
Arts and Recreation Services	1,307	1,643	80%
Rental, Hiring and Real Estate Services	948	1,241	76%
Electricity, Gas, Water and Waste Services	935	1,309	71%
Agriculture, Forestry and Fishing	929	892	104%
Financial and Insurance Services	890	3,587	25%
Information Media and Telecommunications	618	1,924	32%
Total industries	71,022	96,876	73%

Source: National Institute of Economic and Industry Research (NIEIR) ©2014.
Compiled and presented in economy.id by .id the population experts
http://www.id.com.au

The jobs to residents ratio for Penrith City in 2011/12 was 0.73, meaning that there were less jobs than employed residents. In the significant industries, Education and training has the highest ratio (1.10) and the only one to be over 1.00, while the lowest ratio was found in Financial and Insurance Services (0.25) closely followed by Information Media and Telecommunications (0.32). Health Care and Social Assistance has good employment capacity as the ratio of jobs to residents is 0.97. Manufacturing has a ratio of 0.73 recreation and services of 0.80.

VALUE ADDED

The analysis of the valued added by industry sectors in Penrith City in 2012/13 shows the three largest industries were:

- Manufacturing ($853 million or 13.7% versus 8.6% in NSW)
- Health Care and Social Assistance ($678 million or 10.9% versus 7.6% in NSW)
- Education and Training ($586 million or 9.4% versus 5.5% in NSW)

In combination these three industries accounted for $2,117 million in total or more than 34% of the total value added by industry in Penrith City.

The major differences between the value added by industries of Penrith City and New South Wales were:

- A larger percentage of value added by Manufacturing (13.7% compared to 8.6%)
- A larger percentage of value added by Education and Training (9.4% compared to 5.5%)
- A smaller percentage of value added by Financial and Insurance Services (4.1% compared to 13.8%)
- A smaller percentage of value added by Professional Scientific Technical Services (3.6% compared to 9.0%)

The total value added by industry in Penrith City increased by 856.5 million between 2007/08 and 2012/13.

The largest changes in the value added by industries between 2007/08 and 2012/13 in Penrith City were for:

- Construction (+$188 million)
- Health Care and Social Assistance (+$135 million)
- Wholesale Trade (+$109 million)
- Transport, Postal and Warehousing (+$99 million)
-

WORKERS PRODUCTIVITY

In Penrith City, Financial and Insurance Services had the highest productivity by industry, generating $288,536 per worker in 2012/13.

Penrith has a lower productivity per worker in every industry except Construction and public administration. That said, in some industries, Penrith is closing the gap it had for year, for example in Health Care and Education. Manufacturing and Finance and Insurance services workers generate slightly lower productivity than the state average but got more competitive are getting close to the state average. They are now just 5% below the state average.

If we look in detail, Building Construction sub group is highly competitive compared to the state average: a worker in this industry in Penrith generates $ 225,784 annually versus $ 139,381 for a NSW worker showing an impressive progression of $ 113,926 from the 2007/08 baseline. Heavy and Civil Engineering is also very competitive as Penrith workers in this sub-sectors generate $ 120,000 a year versus $ 94,400 for a NSW worker.

Some Manufacturing sub-sectors are also quite competitive: Non-metallic, Mineral Product (164,600 vs 147,700) Waste Collection, Treatment and Disposable Services, Fabricated Metal Product Manufacturing, Wood product Manufacturing, Textile, Leather, Clothing and footwear manufacturing, furniture and other Manufacturing. Road Transport workers are also more productive in Penrith than in NSW.

KEY OPTION FOR ECONOMIC DEVELOPMENT

In the CBD, Penrith needs to be a place for new opportunities in Information Media and Telecommunication, Logistics Services, and Professional, Scientific and Technical Services because they fit the current opportunity and population base.

Across the LGA, Penrith will have to be better connected employment locations, especially in the effort of creating coordination among key sub-sectors: advanced manufacturing and engineering, logistics, communications, sustainable construction and building. In addition for it to be an attractive place to live and work more concentration on developing and supporting visual and graphic arts will be required.

The following industries can be considered as the major industries for Penrith, because they are both employing a large proportion of people, they generate a significant part of the region value added and they support the skills and education of employed residents and local workforce.

The analysis identifies sub-sectors that are key for Penrith, both in terms of employment and competitiveness.

Manufacturing

- **Metal production** account for 3.2% of the total Penrith workforce which is significantly higher than state average (1.3%) and workers in this subsector are in line with state level of productivity.
- **Wood Product Manufacturing** employs 735 people which is significantly higher than the state average (1.2% against 0.5%) and workers in this industry are more productive than the state level of productivity
- **Non-Metallic Mineral Product Manufacturing** employs 575 people (1.0% against 0.5%) and workers in this industry are more productive than the state level of productivity
- **Furniture and other manufacturing** employs 480 people and workers in this subsector are in line with state level of productivity
- **Polymer Product and Rubber Product Manufacturing** employs 320 people and workers in this subsector are in line with state level of productivity

Construction is a key sector for Penrith as in all subsectors as

- Construction Services employs a much larger proportion of people than across the state and their productivity level as in line with the state average.
- Building Construction and Heavy and Civil Engineering Construction have a greater productivity per worker.

Logistics is an important sector for Penrith in term of employment especially because Road Transport (mainly Truck Drivers – if we look at occupation of local workforce) is providing a significant amount of jobs to the local workforce and their productivity is higher than the state productivity. The new airport will increase the quality and numbers of logistics jobs ranging from air freight forwarding to aircraft flight control and aircraft maintenance. Penrith resident are not currently prepared to fill these opportunities.

Education and Training and Health Care and Social Assistance are providing more than 22% of the local jobs. The higher proportion in preschool and school education is due to the fact that Penrith has a lower job base than other places, with a more residential role in the Metropolitan Area and with younger families. The higher proportion of workers in Tertiary Education is linked to the presence of the University of Western Sydney in Werrington and the TAFE in the CBD. The presence of the Nepean Hospital and other health care facilities account for much of the higher proportion of jobs in the Health Care industry. In those sub-sectors, productivity gains could be targeted as an economic development strategy.

The following industries are key growth and value generating sectors in the global and knowledge economy:

- Information Media and Telecommunications
- Professional, Scientific and Technical Services
- Arts and Recreation Services

The analysis of the table shows that Penrith has strong potential in those sectors, in terms of number of jobs but also in terms of productivity per worker. The challenge for Penrith is not necessarily to compete with the best in all those fields and sub-sectors. Competing with Sydney CBD on Finance and Insurance services would not be productive as the gap with Sydney is too big and Penrith comparative advantages are low. But finding a way to play a part in those sectors and sub-sectors is essential, either by keeping up with best practices or by having one or two specialities in each of those sectors that would put Penrith on a map. We will be able to see in the following sections (section II and section III) that Penrith can launch projects that can create momentum in those sectors even if the employment and productivity basis are not remarkable.

SECTION II - THE CASE FOR CHANGE

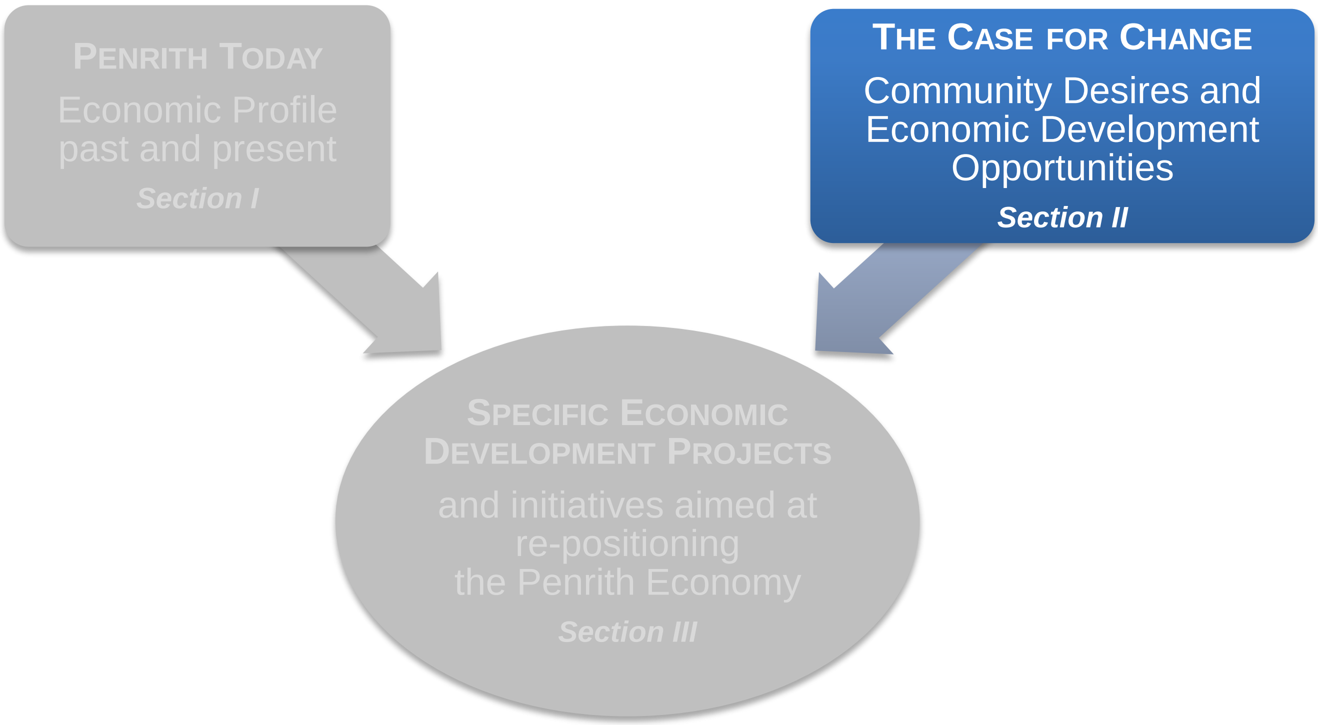
PREAMBLE

This section sets strategic perspectives for local economic development strategies.

It reviews global trends that show how Penrith – much like any other local economy – is embedded in a regional and global framework and why Penrith has to acknowledge that competition and distribution of quality arts a lifestyles is essential at the core of any economy.

It also puts forward essential drivers of local economic development that will be foundations for specific projects and initiatives.

It finally provides a summary of community and industries desires and needs in terms of economic development initiatives.



GLOBAL TRENDS

THE KNOWLEDGE ECONOMY AND THE MOVE TO HIGH END MANUFACTURING AND ENGINEERING IN DEVELOPED ECONOMIES

“The past three decades saw companies in developed economies make huge strides improving the productivity and organizational performance of an array of jobs. Aided by advances in technology and digital communications, companies automated, reengineered, and outsourced numerous tasks that had once required full-time, on-site employees. The trend, which began on production floors, moved next to offices, where a range of transaction-based jobs that could be standardized or scripted were automated, shifted to workers in low-wage countries, or both.

Interaction work is the fastest-growing category of employment in developed countries, where it already accounts for a large proportion of jobs. In the United States, for example, interaction work accounted for nearly all net new job creation over the past decade and now characterizes more than 40 percent of all jobs. Because technology has tended to complement, not replace, labour in interaction work, until recently many of these jobs had essentially been performed in the same ways for decades. (…)

Leading companies (…) - in aviation, business services, financial services, health care, high-tech manufacturing, and other industries - are exploring ways to revamp how, where, and by whom interaction work is performed. Companies that succeed in these efforts will enjoy productivity gains, greater flexibility in responding to opportunities, and better access to scarce talent.” McKinsey Nov 2012

Penrith economy and businesses, just like any other businesses and economies across the state, Australia and the world, have increasingly immerged and are still being progressively more involved in a global competitive market.

This has at least two main implications for the Penrith economy:

First, the movement into high end manufacturing is consistent with the macro economic factors of relatively high wages across the Australian economy driving out low cost manufacturing and should be pursued.

Then, Penrith needs to attract some highly skilled knowledge workers that will enable some sub-sectors and businesses to thrive and prosper.

“In today’s knowledge economy, competitive advantage is increasingly coming from the particular, hard-to-duplicate know-how of a company’s most skilled people: talented (and highly paid) engineers, salespeople, scientists, and other professionals.” McKinsey Feb 2013

THE DIGITAL REVOLUTION AND ACCELERATION OF INNOVATIONS AND TECHNOLOGIES

The Digital Revolution sometimes also called the Third Industrial Revolution refers to the advancement of technology from analog electronic and mechanical devices to the digital technology available today. This Information Era started to during the 1980s and is ongoing.

“The digital technologies underlying (…) competitive thrusts may not be new, but they are being used to new effect. Staggering amounts of information are accessible as never before—from proprietary big data to new public sources of open data. Analytical and processing capabilities have made similar leaps with algorithms scattering intelligence across digital networks, themselves often lodged in the cloud. Smart mobile devices make that information and computing power accessible to users around the world.

As these technologies gain momentum, they are profoundly changing the strategic context: altering the structure of competition, the conduct of business, and, ultimately, performance across industries.” McKinsey May 2014

Penrith has to acknowledge that change and disruption are at the heart of any economy. As such policies must be targeted at improving the resilience of the economy to these changes. Penrith should concentrate on what drives the ability of an economy to adapt, and thrive in these circumstances. Competitiveness and resilience must be at the heart of the educational arrangements that Penrith values and invests in to improve the stock of skills intrinsic to innovation, competitiveness and productivity.

But digital is not the only technology going to radically change whole sectors of the economy. Advances in biotechnology are transforming the way we build our homes, the way we heal and cure patients and the way we grow our food. 3D printing is starting to affect global flows of manufactured products. 4D printing could change the way we think about any manufactured good and tool as new techniques are making it possible to print responsive objects that adapt to their surroundings on their own. Scientists at MIT are working on a concept of underground water pipes that could change shape to help water movement across the network.

THE SUSTAINABILITY REVOLUTION

Growing number of citizens are increasingly concerned about the impacts of our lifestyles and modes of consumption on the natural environment and on other communities across the world. Those concerns are notably driving massive changes in consumer behaviours. Communities, businesses and governments alike are changing the way they consume, do business and deliver their public services in order to enhance environmental sustainability and social equity.

Like many other cities across Australia and the globe, Penrith needs to build resilient, sustainable community, one that can grow and yet maintain its liveability. Penrith needs to embrace social, energy, water and waste challenges and protect and nurture the natural environment for current and future generations.

Regarding business development, research has proven that high sustainability companies significantly outperform their counterparts over the long-term, both in terms of stock market as well as accounting performance. Serafeim & al. 2014.

Generation Z, today in their teens, want to make the world a better place and address all environmental and social issues in innovative and unconventional ways. Successful cities will be the one that will acknowledge this fact and create the conditions for them to thrive and find solutions to economic, social and environmental problems here and abroad.

DRIVERS OF LOCAL ECONOMIC DEVELOPMENT

This section provides a summary of extensive works done by researchers and organisations on cities that are economically efficient and attractive. It demonstrates how the following planning strategies create jobs, economic growth and well-being. References of reports, articles and books are provided.

DENSITY / COMPACTNESS / PROXIMITY / WALKABILITY / GRIDS OF ACTIVE TRANSPORT

Dense, compact, walkable neighbourhoods are being analysed, studied and recommended by a vast array of urban planners, researcher, writers, and psychologists.

Urbanist Jeff Speck in *Walkable City* shows how we can free ourselves from dependence on the car — which he calls "a gas-belching, time-wasting, life-threatening prosthetic device" — by making our cities more walkable and more pleasant for more people.

Writer and journalist Charles Montgomery has pursued the idea of the city as a machine for happiness in neuroscience and psychology, and in streetscapes from Mexico to Paris to Abu Dhabi. His adventures and insights are collected in his book, *Happy City: Transforming Our Lives Through Urban Design*. He links - with abundant references to behavioural, neuroscience and psychology studies and experiments - that community and individual may most probably be linked with greater and better social interaction, such interactions we can find in compact and diverse neighbourhoods, such interactions we tend to miss in low density suburbs and when you have to commute by car for your daily activities.

THE RISE OF LIFESTYLE - THE QUALITY OF PUBLIC DOMAINS AS AN ENHANCEMENT OF THE QUALITY OF LIFE – HOW PUBLIC INTERVENTION CAN MAKE A DIFFERENCE

"All around the world, highways are being torn down and waterfronts reclaimed: decades of thinking about cars and cities reversed, new publics spaces created" Michael Kimmelman, New York Times (2011)

"Investment in design quality brings quantifiable financial returns and people value improvements to their streets. Simply improving street design can make a major difference to market values. For the first time we can see that the best streets really are paved with gold". Cabe, 2007.

CULTURE, DIFFERENTIATION AND CREATIVE WORKERS

Few summarise as well as Charles Landry the importance of finding, rediscovering and reinventing a city's identity to retain and attract key workers and foster economic development. He shows how cities dominated by old industries, such as Glasgow, Perth, and Boise, have found in their cultural strengths and historical distinctiveness a way to reinvent themselves and build their uniqueness of their streets. He singles out three major concepts – Distinction, Variety and Flow – that are the foundations of a global hub. Even if Penrith is not a global hub – yet - it can build on the experiences of cities facing similar challenges:

"Distinction means avoiding sameness, offering an experience that cannot be had somewhere else. Most places accomplish this by means of an iconography that lets you know that here is not the same as there. This is the problem with global brands, Landry says; although the streets that welcome such brands may aspire to exclusivity, the brands' ubiquity undermines that principle. As soon as a great street like rue Saint-Honoré or Calle de la Reina becomes colonized by global retailers, people looking for an individual experience start to avoid it. Sameness creates boredom, and a hub cannot afford to be boring: it exists in order to stimulate.

Variety means creating a way for the small and large to exist together, a well-known company next to a quirky enterprise, a café alongside an art store adjoining a market. Variety exists when an extraordinary, remarkable destination is webbed within an ordinary, expected urban environment. Zoning codes kill variety (…) as does the constant turnover that results from a focus on maximizing rents; the demise of a beloved institution will undermine every business on the street.

Flow, (…) is also essential to the street, being manifested in a particular and idiosyncratic way. Flow results from giving people the ability to control their pace and to stop at will to consider what might be available. People resist directions that attempt to control their movements. And the smarter they are, the more they resent it." Helgesen 2010.

CONNECTIVITY

Penrith is well connected by major roads to the metropolitan area and regional NSW. But it lacks efficient public transport. When leveraged smartly, public transport hubs, such as a train station, and corridors, such as a metro or a light rail line, are fabulous drivers of growth. Examples, such as Denver, Jersey City and Portland are telling stories of how public transport oriented developments has enable impressive urban regeneration.

Soon, Penrith will be one of the closest LGAs to the Second Sydney Airport. Badgerys Creek is located in the Liverpool local government area but it is adjoining the Penrith LGA boundaries. This raises many development opportunities that are likely to happen on the Penrith local government area.

Connecting people, businesses, goods and services to the global marketplace, Penrith will seek to leverage the airport and its surrounding areas for economic growth. The airport will be a magnet for time-critical manufacturing, medical research and pathology labs and for distribution, tourism and conference industries. The Penrith local workforce is well-positioned in many of these industries and could leverage its position by upskilling and a constant focus on innovation, differentiation and value creation.

Catherine Evans, senior lecturer in the landscape architecture program at the University of New South Wales, has asked her students to work on the long term vision and urban landscape for the Western Sydney airport. Among the ideas, the detailed and ambitious responses, says Evans, was a group-conceived plan for a biomedical centre; "to develop Badgerys Creek as a gateway for Sydney to connect to the international field of biomedical research and development". Another student proposed that regenerated Cumberland Plain woodlands would be integral to the airport city: "Various configurations of tree planting will be tested for their capacity to assist with carbon capture, treatment of stormwater runoff and climate and pollution control."

Source: http://powering-people-city.theguardian.com/

GREEN GRIDS

Green grids refers to an integrated and connected network of open spaces and natural areas - such as urban woodlands and parks, rivers and waterways - but also green streets, squares and public realm will be utilised to create recreational areas, biodiversity shelters, cycleway and pedestrian routes and sustainable drainage and energy production systems.

Research shows that a greater presence of nature in our city will generate better urban microclimates. Rivers, lakes, trees and parks contribute to create cooler streets during hot days, dramatically reducing the need for air conditioning in commercial and residential buildings. Green infrastructure reduces needs and costs for energy production, water, heating, cooling or even lighting and help reduce all type of pollutions and weather-linked risks such as floods or heat waves. It improves air and water quality, noise and visual amenities and foster greater and stronger biodiversity.

Presence of green and blue amenities improves workplace productivity and reduces levels of worker sickness; it lowers healthcare costs by speeding recovery rates. It increases footfall in retail areas and property and land value. It can produce food and energy (biofuel) closer to where it is consumed. It encourages physical activity, improve childhood development and general physical, mental and emotional health. It increases social interaction and cohesion, lowers crime and provides visual delight for residents and visitors.

"Researchers from the University of Exeter, using data from 5,000 households over 17 years found that people reported lower levels of mental distress and higher degrees of life satisfaction when they were living in greener areas. Researchers agree that the boy of evidence is sufficient for urban planners to factor in the benefits derived from green spaces when designing developments." Mark Kinver, BBC News, Green Spaces "can save NHS billions"

Source: Arup 2014.

KEY MESSAGES

The critical point here is that the intersection between people and place creates jobs; not zoning, or government inducements. So, the new Penrith economy must start from its key urban area where the type of lifestyle demanded in the 21st century can be forged. If the Centre of the city is not transformed there is little hope to generate any form of sustainable economic development.

COMMUNITY DESIRES AND NEEDS

The following section provides a summary of community preferences from workshops, interviews and focus groups. These preferences are informed by information provided during the nearly yearlong process of the Penrith Progression Program.

Penrith Progression - Ideas and Opportunities Workshop on 8 August 2014 Report is an excellent format for assessing community preferences.

HEALTH

Penrith must leverage Penrith strengths in health and medicine through a greater focus on medicine at the University of Western Sydney (UWS).

The city can support and attract medical staff and specialists with better housing choices and good schools options. A new opportunity lies in MediHotels taking advantage of our beautiful environment

LIFESTYLE HEALTH

To enhance the economy and deal with a population that has excessive human induced health issues like obesity Penrith must invest in the River Master Plan (food and beverage) with transport shuttle to train station

Create a Fitness & Health Festival (Corporate Games) and a Penrith Ironman (Triathlon)

- Provide incentives for fitness events
- Leverage and coordinate sports venues to create a multi-precinct Western Sydney Sports Stadium

Penrith has a natural home for 'Medical Amenities' (physios and allied health) in the City Centre

CREATIVE AND DIGITAL ECONOMY

The city core can act as the core to coordinate a greater focus on digital economy and look for niches where Penrith can have a strong narrative

Western Sydney has no television broadcast identity which cripples it in the eyes of regional and national trade. TV is the main source of information for the world population, so with the assets of the UWS media centre Penrith is well positioned to broadcast its identity and enhance its visibility with a better branding, a Local magazine, and create more TV reports on what's happening in Penrith and the West..

It is time for Penrith to:

- Bring a major cultural institution such as the Powerhouse Museum
- Create a common culture and vision with Blue Mountains artists and creative workers
- Provide more opportunities for employees to work and study from home or smart work hubs

GLOBAL ADVANCED EDUCATION AND LOCAL EDUCATION

All places that wish to be globally competitive must provide a coordinated educational offering targeted to Asian migrants and visitors on Health (obesity), Languages (English, other Asian languages), Western Culture, Wellness and Environmental Studies. Therefore, the city core can harness:

- Strengthen the Environmental Education offering for Endangered species and Communities management, leveraging the Endangered ecological communities of the Cumberland Plain.
- Build world-class excellence in Crisis and Disaster Management Education leveraging programs existing at UWS, the Museum of Fire and the extreme weather risk mitigation expertise against floods and bushfires.
- Move UWS or increase UWS presence in the city centre. Improve public transport from and to UWS campus.
- Break down silos between disciplines, institutions, businesses and government through an innovative governance to create learning communities. Connect community college with university.
- Leverage digital and smart work hubs to offer online university services with courses from TAFE, UWS and all sorts of institutions and faculties.
- Identify spaces where artists can run, teach and follow courses as some courses cannot be done online.
- Provide accessible educational and training opportunities for all in the city core

ADVANCED LOGISTICS AND AIRPORT

It is important to coordinate a strategic alliance with stakeholders and target the key people/ firms i.e. airlines logistics/ support firms to base in Penrith. Make an offer to a key airport/ airline player i.e. do a deal with Virgin/ Jetstar regarding logistics/ etc. Make it compelling to base in Penrith

Penrith can be the preferred location for ‘check in’ terminal for air flights from the new airport bringing people to the core to spend time. We can package the offer for people stay and then to leave to the airport.

- Leverage the airport as a magnetic cultural precinct – with events and conferences
- Provide hotels and accomodations as a key support for airport for both travellers and flight crews
- Attract head offices of logistics companies in Penrith while cargo storage will happen in WSEA
- Initiate a defense hub on Pitt Street/ Glenbrook/ Richmond as defence use a portion of civil airfields
- Differentiate and offer entertainment and experience over our other local council competition Liverpool and Campbelltown. Leverage the vision of Penrith as a ‘Lifestyle City’ with fresh food, healthy and diverse lifestyle, adventure, conferences and events
- Leverage proximity of the airport for time-critical manufacturing, medical research and pathology labs.

HOUSING AND AMENITIES

We must provide and foster greater housing and lifestyle choices with adequate local infrastructure and services to attract all forms of professionals

Deliver the River Resort as part of improving the lifestyle and amenities offer close to Penrith CBD.

Attract and Art and Culture events, exhibitions and events

There is a need to deliver greater and better density in town, along the river and out of town with extended diversity of housing types for students, ageing population, professionals, academics, specialists. Get more from the city – village with walkability, public transport, taller buildings and density done well. High rise in the middle of Penrith on High Street. Mixed use in the City Centre

In a second stage, develop housing opportunities around the River to the North

We have to offer opportunities for residents to stimulate economic opportunities with studios for work from home or additional rental. Provide more rental opportunities for younger generations.

Strengthen the High Street café and restaurants precinct and provide a diversity of local shopping and entertainment experiences.

A good place will have cafés and restaurants along the river with dining opportunities

- Organise good food markets and events
- Allow ‘Pop-up’ Retailing
- Keep pace with trends with a mix of online retailing and physical presence. Virtual shopping wall + ‘Multi-dimensional’ shopping.
- Bring back night economy

PENRITH ASSETS AND CHALLENGES FROM COMMUNITY CONSULTATIONS AND FOCUS GROUPS

Assets

- Safe community
- Beautiful natural environment
- Land availability
- Great skill mix
- Good road infrastructure and presence of Railway
- Good education and presence of tertiary education institution
- Major health care facilities with partnerships with universities and education facilities
- Advanced Telecommunication Infrastructure with the NBN
- Sporting venue diversity
- Westfield as a pull factor
- Stable population growth
- Badgerys Creek Airport placement

Challenges

City structure

- Dispersed communities with little sense of belonging because remote from a civic sense of place
- Fragmentation of the urban fabric with disconnection from the river and important infrastructure such as highways and train line fragmenting the CBD and the LGA.
- Economic, social and environmental impacts of low density and car based living.
- Dispersed nature of employment centres and long distance and lack of reliable transport connections between main attractions CBD, Nepean River, Hospital, Panthers facilities.

Economic and employment trends

- Digital disruption and automation threatening Technicians and Trades, Clerical and Administrative Workers, Machinery Operators, Labourers and Drivers.
- Cheap global labour costs means local jobs in manufacturing are still under threat
- Ageing population and a decline in number of people who are of working age
- The retention of young people with higher level qualifications
- Underdeveloped clusters potential (health, education, manufacturing, tourism, retail)
- Competition from other CBDs – Sydney CBD, Parramatta, Liverpool, Chatswood
- Threat of governmental cuts of social welfare benefits for local persons with low income

Lifestyle and amenities

- Lack of evening economy and nightlife with no significant retail and dinning alternative to Westfield.
- Coordination for tourist attractions to be improved and poor level of attractions for teen/young residents

Real Estate

- High rental prices relative to other suburbs (for residential and commercial purposes)
- Historically small sized fractal CBD property ownership
- Lack of 4* accommodation or serviced apartments and facilities for executive residents
- Lack of housing in CBD - too expensive to invest in CBD housing

Climate and natural environment

- Hot weather in summer = energy consumption / comfort etc.
- Flood prone area with high subterranean water table driving up construction cost for underground parking

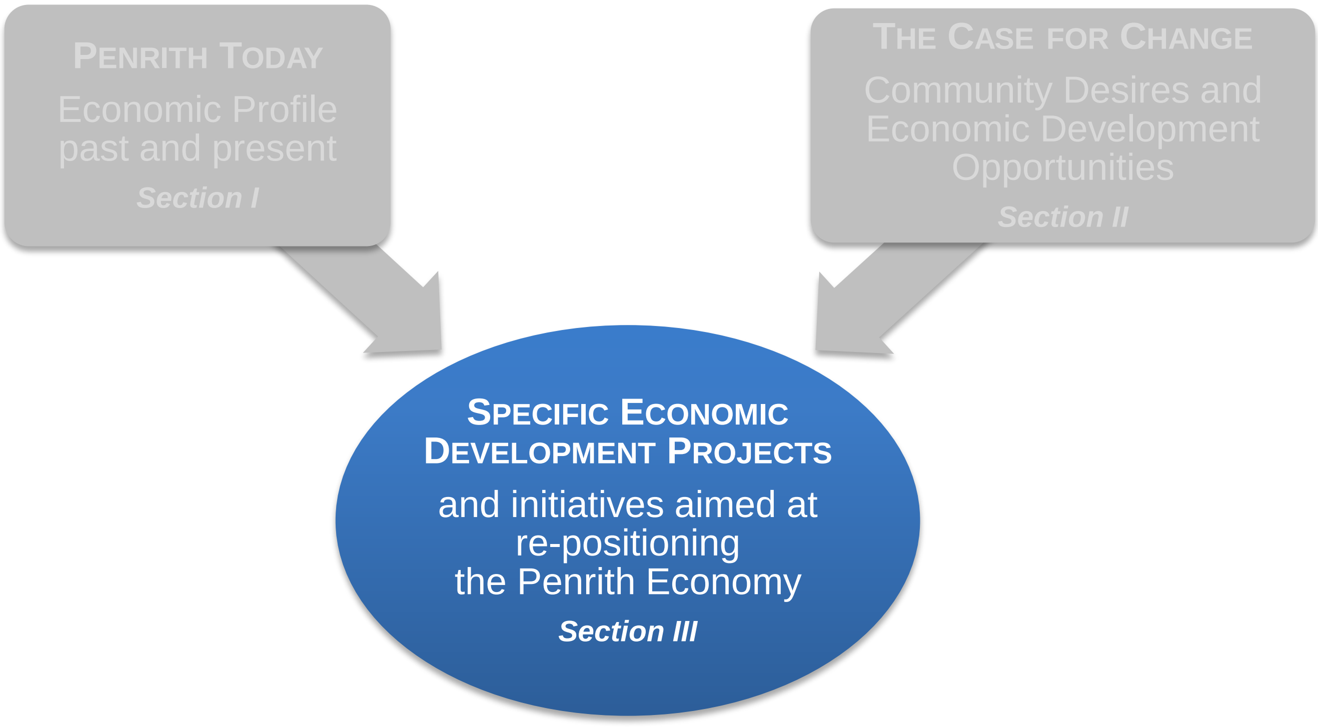
COMMUNITY PREFERENCES: PRIORITY PROJECTS VALUE AND POTENTIAL TIMEFRAMES

Value	1 – 2 years	3 – 5 years	5 years +
High	• Global Advanced Education – Governance structure + Asian education – health language, western culture and wellness + Disaster management education • Catalyst – River Resort • Retailing – Shopping and entertainment experiences + Virtual shopping wall • Creative Digital Media – Branding identity, magazines and inspiration and Adventure Capital	• Global Advanced Education – UWS presence in the city • Retailing – High Street café/ restaurant precinct • Catalyst – Art and culture – Major cultural institution locate in Penrith • Global Advanced Education – Inter Institutional Educational collaboration • Housing – Increase housing density, diversity and choices (demonstration project y1-2)	• Health and wellbeing – Stadium/ sports precinct
Medium	• Health and wellbeing – River activation • Creative Digital Media – Digital catalyst to broadcast through a media hub	Develop Higher Ed programs with US and European and perhaps Asian Universities as a unique set of offerings to attract student to Penrith — Environmental Education, the Arts and Disaster management might be key fields for such collaboratives	• Airport – Magnetic cultural precinct – conference facilities • Airport – Penrith airport check in and terminal • Health MediHotels
Low		• Environmental education endangered species	

SECTION III - ECONOMIC DEVELOPMENT PROJECTS AND INITIATIVES FOR PENRITH

PREAMBLE

This section aims at producing an economic development strategy with implementation proposals for the short and intermediate time scale—that is, 1-10 years. We anticipate the basic strategy outlined here will be the core of the long-term approach. But given the need to focus on the central business district as a starting point, we feel that building action plans for other areas and segment of the economy can follow from this core area. The basic position adopted in this strategy is that no matter what options and opportunities lie in the future, the core city must be the HUB as an attractor of new population, retention of younger productive workers and the creative base for new industrial opportunities that will define Penrith and give it a unique position to pursue a sustainable and productive future.



INDUSTRIES AND PROJECTS FOR PENRITH

IDENTIFICATION OF GROWTH SECTORS AND ASSOCIATED PROJECTS FOR PENRITH

If we combine GDP growth; that is dollars with sector growth we find a new interesting combination of sectors where Penrith can compete and create jobs. The following new emerging sectors have been developed, as the new competitive sectors and drivers for the Penrith Economy.

Lifestyle Health

Longevity and demographic changes along with changes in how, where and what people expect in their health from their own behaviour as well as their community design is driving a new industry based on preventive health systems. In this growing sector Penrith can offer

Senior Health And Wellbeing: how to keep an ageing population fit, healthy and happy longer and at a lower cost for everyone.

Allied Health and Non-Traditional Lifestyle Education: training in eating and exercise as well as occupational, arts and Asian therapy.

Physiotherapy: Both ageing and young require more physio therapy at different time, locations and with diverse methods.

Personal Training and Fitness and Food and Nutrition Programs: Coordination of what already exists across the city. Raise awareness about unhealthy lifestyles. Obesity and diabetes in Penrith among highest in NSW.

Day Hospital Surgery: small elective surgery in physician consulting rooms.

MediHotels: Faster recovery rates and more enjoyable stay for patients and cheaper cost for health system and insurances

Med/Surgery Tourism: high income overseas patients from Asia looking for high quality medical treatments.

Research, Innovation And Cooperation: stronger cooperation between universities, medium and large health institutions and research centres.

Geriatric Care: more acute surgery and care to serve the grander age population and strengthen an already strong position notably in cardiac and urology services.

Women and Children Health: services for a population with larger proportion of families and younger families.

Cosmetic Surgery: physique re-shaping facial and body

The present healthcare model is based on the later stages of delivering healthcare, typically focused on the healing and caring for the sick. The potential opportunity within this segment of the economy is the provision of wellness rather than healthcare. The subtle difference is the development of an economy that is based around the avoidance of the unintended consequences of our current lifestyles.

Penrith can and will be a city of wellbeing, where health is maintain and enhanced by healthier lifestyles and better prevention before having to use more acute and intensive care. This focus on preventive care and health will both create a number of industries and improve community's expectations in terms of the quality and longevity of life.

The shift to denser living, the provision of healthy grids of movement through the city and the benefits associated with it, such as proximity of work, amenities and activities will instantly promote walking, healthier lifestyles and increase physical activity. Obesity, diabetes and heart diseases related to the lack of physical activity and social interaction will decrease.

As Australia's population grows, more people will be living to a grand old age than ever before. Demands on the medical system will have to be managed as the population ages. Penrith is well positioned to address that growth in demand. The city will also progressively improve and adapt its public domain so that an ageing population can get around and access their daily destinations easily.

Acute care and health services delivered by hospitals, clinics and medical centres will have to continue to dramatically improve. In the near future, the use of technology and digital will soon enable machines to operate and perform medical interventions. The rise of nano-technology and bio-technology will take a significant place in the picture.

But before performing intensive and expensive operations, an important step in keeping a community healthy is early diagnose. And revolutionary imaging and scanning devices are and will enable early and accurate diagnoses which enable better and adapted interventions that are less costly – physically, emotionally and financially – than they used to be.

In the near future, big data and wearable technologies will also support a better understanding of how and why diseases occur. With a securitised and confidential connection – protecting users' privacy and identity – citizens will send information regularly on their health status (heartbeat, breathing rhythm, mood, level of fatigue, level of various components in the blood) to a database managed by a public body. This body would analyse data and link results with lifestyles to make general recommendations on how to keep healthy and happy. More personalised health plan could also be organised on this basis. Penrith can be part of this journey.

Health communities are becoming key to the desirability of particularly areas. The economic outcomes experienced by these communities are likely to be higher than those that are less healthy.

As part of a wider push to re position Penrith as part of a vibrant community, healthy activities such as decreased reliance on cars, increased active transport modes and high, healthy life expectancy is likely to lead to higher property values.

"Our current mind-set is that economic success requires increasing consumption – instead we should be valuing processes that reduce consumption – instead of focusing on GDP growth, we should place more value on improving health, education and quality of life" Peter Head "A new approach to resources" 2013.

Associated projects:

- Private hospital
- Allied health, senior health and wellness Centre
- Coordination with TAFE and University of Sydney and UWS for adapted courses
- Big data and health monitoring
- Community aggregate pedometer
- Fresh food market for more fruits and veg
- Walkability, green grids and cyclability
- Coordination of personal and group training
- Biggest looser competition

Creative Information and Digital Media and Telecommunication – Creative Arts

This area is one where Penrith and the Blue Mountains have not reached full potentials. UWS Penrith has internationally recognised graphics program and artists in Blue Mountains have national if not worldwide visibility as well as quality performance venues. UWS also has TV and other digital capacities to support this direction.

Telecommunication services and digital economy: emerging breakthrough with broadband and mobile data transmission could form the base of a new strong sector.

Design arts and graphics: strong UWS program with matching lifestyle assets. Emerging community in this area that can compete using NBN capacity globally.

Electronic Storage: digitalisation of records is moving to Penrith for cost and NBN capacities.

Libraries and Archives: strong fit—new specialised internet based libraries emerging along with new publishing options and opportunities.

Media, as it is currently constructed, accounts for very little of the Penrith economy. However, it is likely to become an increasing share of the economy irrespective of the actions of the Penrith Progression.

Penrith City is one of the first 40 communities across Australia to receive the National Broadband Network (NBN). Increased speeds and capacity of optic fibre technology will create a plethora of new possibilities. As such, Council has committed to help grow the high value digital sector.

Just as digital is an important driver of the health outcomes identified earlier, its importance as a key driver of opportunities into the future must be at the heart of the increase in human capital that should be at the heart of all interventions.

Penrith needs to transition to a nationally, and indeed internationally recognised digital economy. It will require a connected, digitally empowered and innovative community with enterprises at ease in the digital environment. This embodies the type of economy that Penrith needs to become: open, innovative and fast moving. An economy that is able to adapt quickly to the changing circumstances and technologies available to it. Penrith needs to encourage digital companies to either relocate or start in its economy. The natural preconditions are here, the community is willing and able. Now is the time to support the potential growth of this part of the economy.

Penrith needs to continually improve their understanding of the digital drivers in contemporary cities around the world and the role that they play in delivering a dynamic economy. Importantly the community needs to understand that the opportunities relating to a digital future are not restrained to media and telecommunications. Rather they are embedded throughout the economy in the way we able to interact across segments of the economy to drive innovation and improve competitive position.

In order for Penrith to take advantage from the digital future it requires an understanding that digital integration is as much about culture shift as technology and infrastructure. Any interventions across the media and telecommunications industry need to be focused on enhancing this cultural shift. They need to bring the everyday reality of the digital economy into the forefront of people’s minds.

The various opportunities need to include emerging industries rather than relatively out dated opportunities. There is a strong need for these opportunities to build over time. The interface with the design and visual arts and manufacturing will be areas of research. The combination of a relatively strong manufacturing arm has the potential to be a major advantage to furniture design, sustainable and modular construction and architecture.

The presence of high speed data linkage within the local community has the potential to help position Penrith at the heart of the data story. However, it is questionable as to the amount of employment that might be generated from this industry development. At the same time the ability to attract three or four large data users, such as an Airline, Freight Forwarders, Defence, the Tax office, may potentially foster a new industry cluster around the transportation of data. The corresponding IT requirements and high end job opportunities would go some way to addressing the relative decline in traditional transportation such as Postal services.

Without embracing technology and the digital creative economy Penrith will be unable to compete. Further, the ability to be a leader in this space will lead to a more innovative and open economy.

Associated projects:

- 5G lab
- Smart work hub
- International Education centre
- Online presence
- TV broadcasting unit

Advanced Engineering, Manufacturing and Construction:

Penrith presents a strong manufacturing base, mainly due to the proximity of main highways and freight routes and the affordability of land. Though considered fragmented and sometimes disconnected to the city centre, the manufacturing and construction sectors present some strengths Penrith can build on.

Customised Engineering, Manufacturing and Construction: Penrith's manufacturing base is composed of several new and old fields that in combination can play a role in the move to new sustainable a/or bespoke designed products

Polymers: Polymer technologies are very useful in sustainable production systems when combined with 3D printing. Should seek to position in sustainable and recycled sources in this industry.

Metal: Metal production (iron smelting and steel manufacturing) are key to move to a sustainable construction sector.

Advanced Engineering Systems: Penrith has globally competitive firms producing small high engineered products

Architecture and Interior Design: A few new firms are moving to Penrith to establish a beach-head in the area of bespoke sustainable building interior design mainly based on wood. The combination of metal and wood manufacturing can also lead the way to sustainable and high quality prefabricated structures and facades sector.

Furniture making: Penrith has a strong furniture making base that can produce new type of sustainable furniture for indoor and outdoor use

Food engineering: New forms of food products based on more natural processes for human and animals has strong roots in Penrith

Veterinary pharmaceutical: Relying on the LGA's urban rural interface and leveraging the proximity of the future airport, there is a potential to work with national and international clients, customs services and tertiary educational institutions to bring veterinary teaching and research to the area.

Penrith biggest advantages appear to be in the opportunities for localisation of the products within the metal production, polymers production, concrete fabrication, wooden structural production and other highly customisable product types. The jobs in those industries are likely to continue to be in strong demand, however, this assumes that the employers are able to adapt to the changing demands for these products.

Given the amount of technological advances within the industry there may be an opportunity to create a centre for high end construction materials. Bringing international competition on sustainable and modular construction techniques such as the Solar Decathlon will only help the diffusion of knowledge and innovative construction techniques.

Moreover, such a coordinated manufacturing, engineering and construction could be well position to serve the growth in the North West and South West Growth Centre planned to welcome 500,000 new residents. Penrith industry could offer a diversity of building types and construction techniques adapted to the environment and the climate, to a variety of needs from student accommodation to aged care facilities and fostering medium to high density type of settlements.

An additional benefit can be expected through the linkages with the rest of Sydney as the engine room for taking concepts or architectural excellence from concept to reality.

At the same time, the use of both wood and steel in the production of locally made furniture may also be an area that warrants additional analysis. A secondary benefit of this highly localised approach to furniture production may be the ability to compete with global chains by working with customers directly to design fit for purpose furniture as part of increasing the experiential offering at a retail level.

One other strong area for potential attraction of both additional employment and spill over employment in education, within the sub section of the manufacturing ecosystem is the market for Veterinary Pharmaceutical. Working in concert with the LGA's urban rural interface, there is a potential to work with tertiary educational institutions to bring veterinary teaching and research to the area. There is also an opportunity to work alongside quarantine services of the future airport that will require Veterinary expertise for animals arriving from overseas and other national locations.

In order to facilitate coordination and cooperation across sub-sectors – notably to build a centre of excellence in sustainable construction and products – Penrith will improve its internal transport solutions and better connect employment and industrial clusters both improving North South connections and mobility and accessibility cycleways and walkable paths.

The manufacturing sector has been facing automation disruption and global competition. Labourers and expert technicians with a unique and limited set of skills are getting out of jobs. Training and upskilling will be necessary for the manufacturing industry to maintain or even grow its employment base. Flexible forms of education will have to be imagined to perform training adapted to the manufacturing work place.

As industrial rents are usually lower than rents provided by whole sale and retail centres, some industrial activities are land is being pushed out by retail activities. If Penrith wants to stay competitive in its key manufacturing sector it needs to protect areas for industrial land use.

Allying capabilities in the Media, Telecommunication and Arts industries and the Engineering and Manufacturing sectors, the opportunity to create a start-up incubator is evident. It will foster entrepreneurial spirit, help retain dynamic and educated workforce, leverage re-skilled mature workers and bring the next generation of businesses. It would be a centre both to improve existing technologies and to seek to leap frog technology generations. As entrepreneurs and start-ups flock to cheap and busy places, Penrith will commit to provide numerous adaptable, cheap and reusable buildings associated with an affordable if not free rent. It will also commit to provide enough density and compactness in the city centre.

Associated projects:

- Sustainable construction and products centre and coordination
- Solar Decathlon Competition
- Advanced engineering and Logistics Centre – most of the industries involved in the planning, construction and operations of the Western Sydney Airport.
- Workforce training and up-skilling
- Veterinary Services and Pharmaceuticals

Global Advanced Education

Penrith has UWS campus with good opportunities to develop high quality education for national and international students who want to train in the field listed above as well as students seeking lifestyle based education using environment of water, mountains and agriculture. Strong appeal for student from China, India, Indonesia, Malaysia and UK and USA

Digital Based Education: with local and distance component for domestic and international students.

International Service Education: Many domestic and international students want to be educated in disaster mitigations, disaster relief, human settlement and relief-few programs anywhere in the world.

Environmental Education: Penrith ideal setting for environmental education which can be linked to international service education.

Multi-Lingual Education: Traditional education translated on demand for subjects.

Special Education: Increasing demand for education for children and adults with various adaptive educational needs.

US or UK Education Centre: Both US and UK options for education in any other above fields should be sought especially linked to media and graphics.

Education and retraining of local workforce: In order to have a more resilient and adaptive economy, Penrith workers need to update their skills and knowledge to compete and bring value in the established and emerging economies.

Penrith welcome three major tertiary education institutions: the TAFE NSW, the University of Western with the Werrington and Kingswood campuses and the University of Sydney with the Sydney Medical School Nepean.

All those assets should be leverage to re-skill an ageing workforce. With the doubling of Penrith’s population of over 65 year olds in the next three decades, re-skilling current workers will become increasingly important. As retirement age increases, the number of blue collar workers seeking to transition into less physical work will increase, putting growing demands on the increase of jobs that are suitable and relevant to older workers competing with well-qualified young workers.

Change and disruption are at the heart any economy. As such our policies must be targeted at improving the resilience of the economy to these changes. Competitiveness and resilience must be at the heart of the educational arrangements that Penrith values and invests in to improve the stock of skills intrinsic to innovation, competitiveness and productivity.

At present our educational industry is focused on the attainment of a certificate rather than acquisition of knowledge. As the economic systems and business models evolve the acquisition of knowledge rather than certificates will increase in importance. This is extremely important in the Penrith context given the relatively high number of people employed in the retail sector and other industries that face considerable disruption. These parties are going to need to be key trained and up skilled to ensure that the movement towards high value jobs does not pass them by.

As such, any investment in the educational market needs to focus on the provision of both technical skills and broader competencies such as problem solving, collaboration and design thinking to ensure that there is advancement from the jobs of today into the jobs of tomorrow. It will be important to consider the manner in which the educational environment has at its core the education and rededication of those people living and working in Penrith to make a relatively straight forward transition to new higher value jobs rather than losing them from both the workforce and potentially the area.

The system of education really needs to focus on providing programs and services

- to people entering the workforce,
- people already in the workforce
- and people who are outside the workforce, and often marginalised from getting in.

The educational system must be used to underpin occupational mobility, and helps people re-tool for the new opportunities and jobs of the future. This is the only way that we can expect to grow the existing human capital stock to move from lower to higher value jobs. Once our community has been up skilled the programs and the learnings from this process will in themselves retain value and be potentially saleable and exportable.

The changing technological and economic dynamic will mean that unskilled labour will increasing be under threat. Given the current price differential within the Penrith economy compared to the NSW average, the vast majority of jobs are at this level. As such continuous training is required to ensure that there are jobs into the future. This training will help people keep pace with changing technology and thinking.

While traditionally training increases workforce participation, in this example without this training there would be a material decrease in the participation of our most vulnerable workers.

Interestingly it is about the model of attainment as much as the model of delivery, potentially we should focus on attracting someone like Swinbourne who are all about the model of attainment, ie. you decide which qualification model you want to target and can easily move from one to the next. The importance of this will be particularly felt in the retail sector of the Penrith economy where Shop floor staff will need to become retail experts. Customers will be more informed about services and products in future, aided by the smartphone and associated specialised applications. In response, staff will need to become even more knowledgeable about the products and services they sell. This will not be achieved through university qualifications, rather it will be achieved through vocational training models.

For example consider the furniture design opportunity provided above, the shop floor staff will not need a degree in this but they will need to be trained sufficiently to guide the customer through the various nuances of the design process. This will required some design training that will be delivered as part of vocational training. As retailing becomes more experience led, it will require chefs and cooking skills to demonstrate the potential food offering, detailed knowledge and appreciation of wine to sell wine, and the ability to express the value of a product clearly and precisely.

The direct impact of this investment will be the provision of jobs in the vocational employment industry, assuming that this is doubled from the current level this would be an increase of 500 jobs. Translated into economic outputs this is likely to generate an additional 1% of GDP. However, the primary benefit would be in the dynamic impact of this investment, the legacy of a more appropriately skilled workforce that is able to meet the needs of a changing economy.

Regarding, Crisis Management and Disaster Mitigation and Relief courses, there are a growing number of disaster management courses in NSW but there is limited standardisation. UWS with other tertiary education institutions (CSU, JCU, and New Castle University) could leverage their program and coordinate a centre of excellence in this field, taking advantage of the proximity of the river, the flood prone areas, the swiftwater rescue capabilities at the Olympic Penrith Whitewater Stadium and the Museum of Fire. Cross learning opportunities could also be attained with an emerging sector in sustainable and modular construction industry that could leverage their excellence to create rapid shelter and emergency habitat solutions for climate and crisis refugees in remote areas.

Associated projects:

- International education centre in the CBD
- Coordination of programs:
    - International services, mitigation and relief, human settlement, crisis management
    - Asian students focus
    - Environmental and sustainable construction, products and design
- Community and workforce training and upskilling

Advanced Logistics

Advanced logistics goes beyond the movement of goods by truck drivers and warehousing to the demands created for international freight handling and movements that are already emerging in the Penrith area with the M7 and will be enhanced with a new airport at Badgery's Creek.

Freight Forwarding-Moving goods using information systems to the right customers at the right time—requires strong IT base

Transportation Support Services

Insurance, ticketing, flight, truck movements etc.

Courier Services: Daily package movement is outpacing mail delivery and will be handled close to new airport

Airport Engineering and Maintenance Services: New airport will require thousands of jobs in this sector

Off Airport Passenger Services: New airport might be serviced by out terminals for cost and security. Penrith is an ideal site.

Advanced Warehousing: Combines information and hard good handling

At the moment the industry, within Penrith, is predominately comprised of Truck drivers with over 50% of those that identify as being part of the industry employed in these activities, which include a variety of tasks including, furniture moving, haulage, freight transport, towing, and truck hire.

The prevalence of truck drivers is both an opportunity and potential a risk to the wider Penrith economy, on the one hand the logistical opportunities this presents are relatively enticing. However, the relatively low value added within the industry is some cause for concern. Digital disruption within the industry is very real with UPS in the US having generated considerable efficiencies from drivers through hand held computerised tracking and distribution tools.

Should this be the natural hub within Western Sydney for truck drivers, the ability to attract a depot to Penrith to act as the hub for a wider distribution network is only improved with the investment in the airport. At the same time the introduction of highly automated processes across the industry is placing continued pressure on the existing models of operations.

The economic opportunity potentially available from the economic performance of the transport and warehousing industry will be largely driven from the ability to leverage the "First Western Sydney" airport. Strong IT bases will be required to deliver advanced freight forwarding, postal services and warehousing. Time-critical manufacturing - notably health and veterinary products, medical research and pathological labs - will benefit from these high performing shipping services.

The City also has potential as a future agricultural hub, using its logistics sector and new technologies to bring fresh produce from the region to local markets.

Associated projects:

- Advanced engineering and Logistics Centre – most of the industries involved in the planning, construction and operations of the Western Sydney Airport.
- Penrith Check-In Terminal

IDENTIFICATION OF SUPPORTING INITIATIVES FOR PENRITH

IDENTIFICATION OF SUPPORTING INITIATIVES FOR PENRITH

Housing, Amenities and Lifestyle - Density and grids of movement	
A mix of housing types are required to serve growing and diverse needs from students and young professionals, ageing population, home buyers, visiting executives, regional, national and overseas visitors, airport professionals and airline personel. **Penrith can quickly capitalise on its growing image as the "*Adventure Capital*" of the West. Numerous leisure activities that are already attracting visitors can be easily leveraged with greater coordination, better media communication and TV broadcasts.**	
Density, mixed use, amenities and services	Millennials like to be close to everything, including transportation, work, coffee shops & bars. Ageing population also need to be close to everything for health and lifestyle and better connecting with their grand-children. Creative workers but also doctors, managers, executives but also the wider community value retail diversity and variety. Finally businesses thrive in places that fertilise ideas and where their talents have access to an attractive lifestyle and feel they can make a difference
Flow, walkability and diversity of transport solutions	Streets will enable people to flow and enjoy wandering in the city. Walkable neighbourhoods are essential in this regard. Grids of movements allied with green infrastructure will connect people and places, new squares, improved public domain, an enhanced river precinct and other urban woodlands and parks.
Lifestyle City and Adventure Capital	With a multitude of entertainment venues and activities Penrith could coordinate and leverage its image as the Adventure Capital of the West to attract visitors, businesses and residents. Penrith could also expand its already important leisure and lifestyle offering. The ability to create a hub for people to spend time within the Penrith economy rather than at the airport could be an important branding opportunity.
Schooling options	Penirht can bosst an already significant pool of high quality schools. Community focus groups have identified a need to foster private schools, both for residents but also for Asian migrants. Moreover, some worker value various types of education for their children such as Motessori preschool and schools.

Housing, Amenities and Lifestyle – Intensity / Density and grids of movement

A mix of housing types are required to serve growing and diverse needs from students and young professionals, ageing population, home buyers, visiting executives, regional, national and overseas visitors, airport professionals and airline personnel.

Penrith can quickly capitalise on its growing image as the "Adventure Capital" of the West. Numerous leisure activities that are already attracting visitors can be easily leveraged with greater coordination, better media communication and TV broadcasts.

Density, mixed use, amenities and services: Millennials like to be close to everything, including transportation, work, coffee shops & bars. Ageing population also need to be close to everything for health and lifestyle and better connecting with their grand-children. Creative workers but also doctors, managers, executives but also the wider community value retail diversity and variety.

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Flow, walkability and diversity of transport solutions: Streets will enable people to flow and enjoy wandering in the city. Walkable neighbourhoods are essential in this regard. Grids of movements allied with green infrastructure will connect people and places, new squares, improved public domain, an enhanced river precinct and other urban woodlands and parks.

Lifestyle City and Adventure Capital

With a multitude of entertainment venues and activities Penrith can coordinate and leverage its image as the Adventure Capital of the West to attract visitors, businesses and residents.

Penrith should expand its already important leisure and lifestyle offering. The ability to create a hub for people to spend time within the Penrith economy rather than at the airport could be an important branding opportunity.

Schooling options: Penrith can boast that it has a significant pool of high quality schools. Community focus groups have identified a need to foster private schools, both for residents but also for Asian migrants. Moreover, some workers value various types of education for their children such as Montessori preschool and schools.

Adventure Capital

With indoor and outdoor skydiving, white water rafting, 737 Flight simulator, cable water-ski, rock-climbing, racing tracks, BMX tracks, Panthers stadium, horse and harness racing and other entertainment venues and activities Penrith has been branded as the Adventure Capital of the West by TV channels and the Daily Telegraph. Coordination is needed to better leverage the perception of Penrith as a destination for thrilling and exciting activities and increase demand. This strategy could enable the city to be a destination for a day or a weekend for families and group of friends across the metropolitan area.

Golf courses, aquatic centres on rivers and lakes, the international regatta centre for rowing but also wineries and dining experience on and along the river will attract a complementary clientele. An improved public domain, and an increasing diversity and quality of shops, stores, cafés and restaurants will certainly entice visitors to stay longer in Penrith in take advantage of the cultural and entertainment offering.

The ability to create a hub for people to spend time within the Penrith economy rather than at the airport could be an important branding opportunity. The additional benefits to support the business cases for conference venues, hotels and other short term accommodation opportunities for visitors from and to the airport and crew staffs, and indeed other retail and hospitality benefits suggests that this could have considerable incremental benefits to the position of Penrith.

The idea raised during community workshops to bring a major museum icon in the city centre is in line with this strategy of offering various entertainment and lifestyle options to residents and visitors. Various cities around the world have based their renewal on an international cultural icon, with the best case scenario being Bilbao Guggenheim Museum. Community members were thinking of bringing part of the Powerhouse Museum collection that is not on display in the Ultimo location. Though this is an appealing project to chase, it can take time to convince key stakeholders and find, refurbish or build an appropriate location. The lifestyle quality momentum has to take root in the coming years.

The Panthers World of Entertainment is currently studying a redevelopment masterplan with a main objective of restructuring the existing car park into a mixed use development. Thornton by UrbanGrowth is also developing a denser vision of urban living. Density and walkability is an ongoing process that can have quick and progressive wins. Penrith will progressively create great places to live, work and play in the city and will build on them over time.

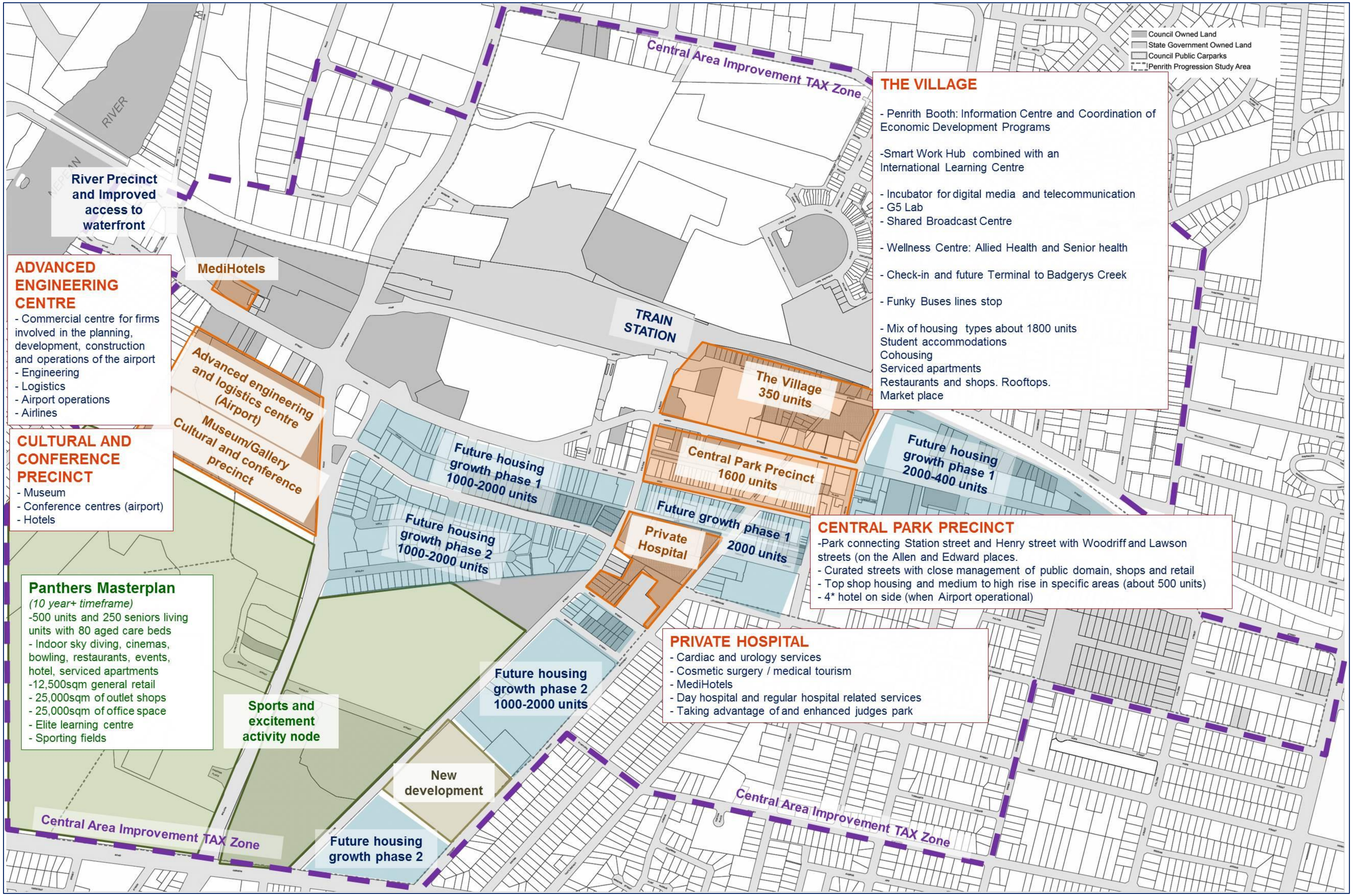
THE PENRITH CBD ECONOMIC DEVELOPMENT PLAN DENSITY DIVERSITY DIGITAL

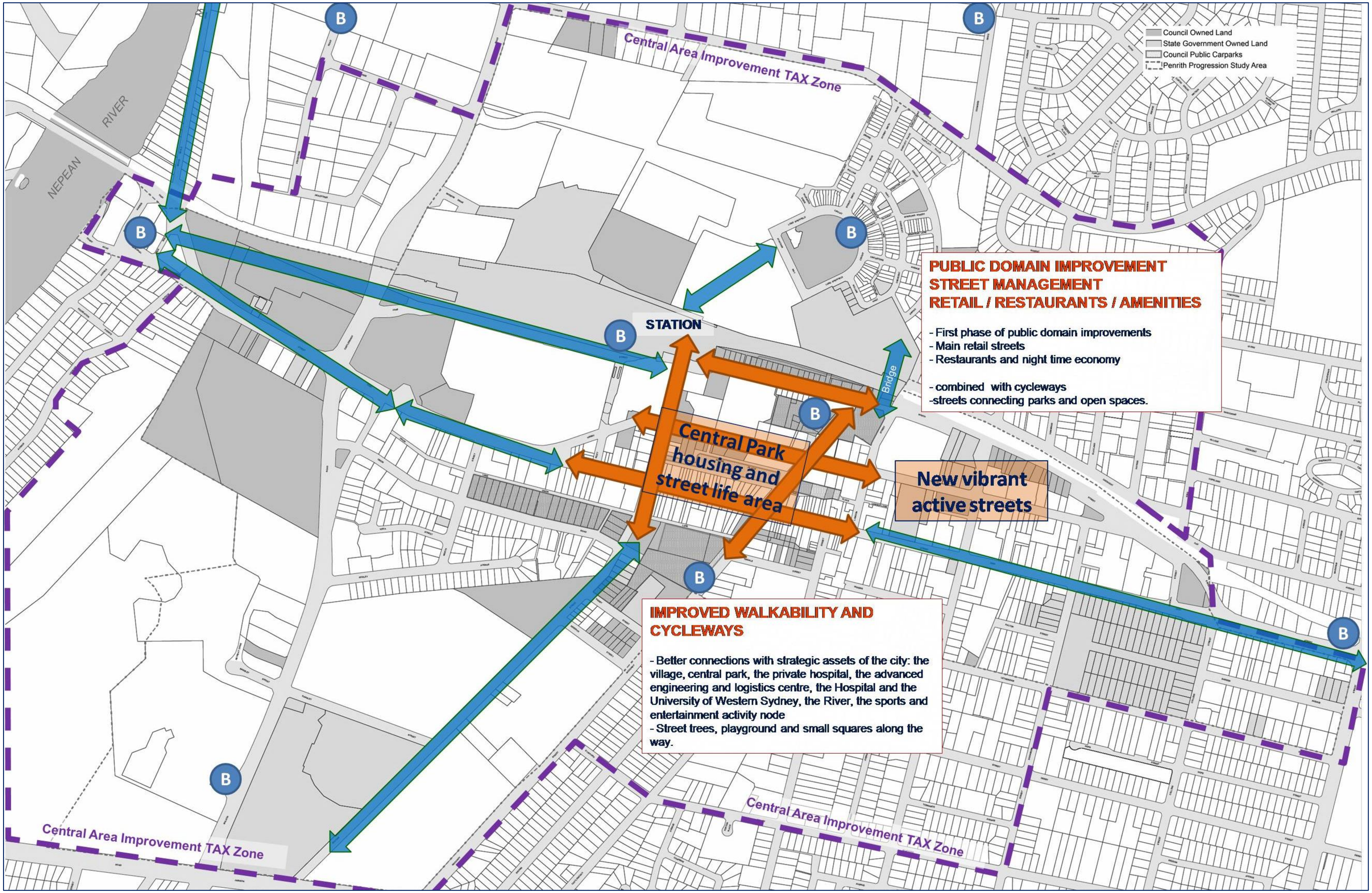
PREAMBLE

The plan shown here represents a potential option for moving forward with regard to a full economic development strategy. Exact locations and projects can be modified based on council preferences and market demand. But the mix is critical. Too often councils have based on collective or individual and even developer preferences generated non-economic scenarios. In this case the entire package is the plan and not merely pieces of it. Timing may vary but it is fundamentally important that the mix is right for the heart of the city.

As Long Branch, New Jersey showed with a remarkably vital re-birth, sticking to its vision was fundamental to realising dreams that no one thought possible. Penrith has to do the same. (See Long Branch story in Appendix)

A PLAN FOR THE PENRITH CBD-HEART OF CITY RECOVERY



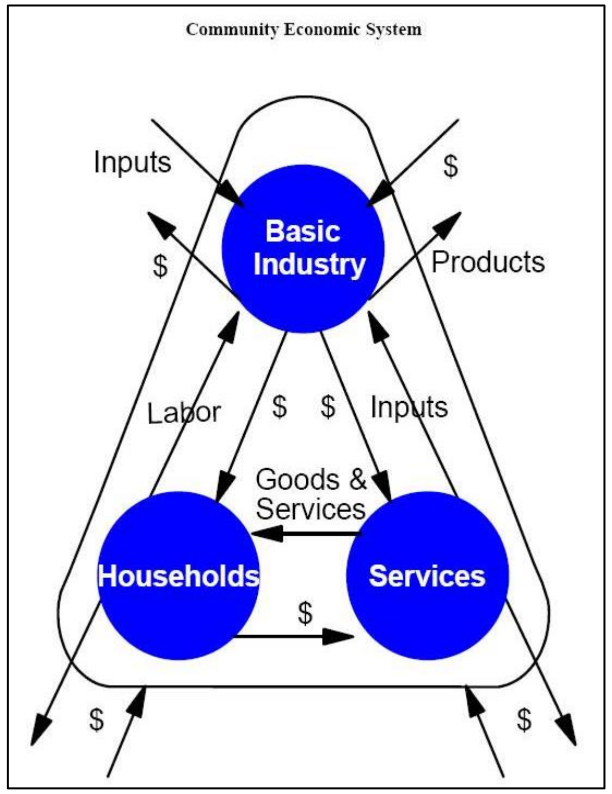

Council Owned Land
State Government Owned Land
Council Public Carparks
Penrith Progression Study Area
Central Area Improvement TAX Zone
NEPEAN
RIVER
STATION
Bridge
B
Central Park housing and street life area
New vibrant active streets
PUBLIC DOMAIN IMPROVEMENT
STREET MANAGEMENT
RETAIL / RESTAURANTS / AMENITIES
- First phase of public domain improvements
- Main retail streets
- Restaurants and night time economy
- combined with cycleways
-streets connecting parks and open spaces.
IMPROVED WALKABILITY AND CYCLEWAYS
- Better connections with strategic assets of the city: the village, central park, the private hospital, the advanced engineering and logistics centre, the Hospital and the University of Western Sydney, the River, the sports and entertainment activity node
- Street trees, playground and small squares along the way.
Central Area Improvement TAX Zone
Central Area Improvement TAX Zone

CENTRAL PARK HOUSING AND STREET LIFE AREA

ALIGNMENT OF PROJECTS WITH ECONOMIC TRENDS, DRIVERS AND COMMUNITY INTEREST

Sector	Statistics, Trends and Drivers	Community Interest	Penrith CBD Economic Development Plan
Economic Development	Public coordination and vision		Information centre and coordination of economic development programs Simplified planning and business procedures
Global Education	- Need for high level and competitive education - Workforce training - Generation Y and Z aspirations - Asian Century	- Disaster Management education - Asian education (health language, western culture and wellness) - Workforce training	Smart Work Hub and International Learning Centre
Housing and Accommodation Retail and Entertainment	Lifestyle Density and compact living Diversity and proximity Creative workers Talent attraction and retention	Density and Proximity Diversity: premium and affordable housing Housing choice - Student accommodation - Retiree Housing - Urban housing for young people) - Accommodation for professionals, executives and specialists Local Shopping, Entertainment and Art High Street Café and Precinct Laneway activation Pop up stores / Café allowed on the curb Reduced traffic in retail areas.	Mix of housing types in the Village - Student accommodations - Cohousing - Serviced apartments - Apartments and lease to own - Restaurants and shops. Rooftops. - Market place High Street, Henry Street, Station Street, Woodriff Street, and to a certain extend Belmore Street retail, café, restaurants, streets curation and management High quality apartments and accommodating on central park for executives, professionals, health specialists, visitors.
Airport Engineering Professionals Logistics	Airport as magnet for time-critical manufacturing and engineering Manufacturing move to high value products and services	Strategic Alliance around the Airport project	Advanced Engineering and Logistics Centre
Arts and Creation Tourism and Conferences	Importance to attract creative workers, talents and high-revenue workers. Airport as a magnet for tourism and conference industries	Magnetic Cultural Precinct	Museum/Gallery and Cultural and Conference precinct on Carpenters
Transport	Transport as a key driver of change, growth and equity	Need better connection across the city to connect with the river, the UWS, etc. In the future better connection with the airport when under construction and in operation.	Different funky buses for different routes: - a knowledge, education and health route - an airport route - an adventure route
Health		MediHotels Acute Health and specialisation Tele Health	Private Hospital MediHotels
Health and lifestyle	Healthier lifestyle and preventive health	Stadium Sports precinct Multi-purpose stadium sport and entertainment professional health and fitness training	Panthers Masterplan Wellness centre in the Village Aggregate pedometer
Digital economy	One of the most powerful driver of disruption and change: be in or be out	Creative Digital Media – Digital catalyst to broadcast through a media hub	Smart Work Hub 5G Lab Shared broadcast centre
Airport	Magnet for travellers, tourism and conferences	Airport check-in terminal	Airport check-in terminal in the Village near the Penrith train Station
Lifestyle and Wellbeing	The rise of lifestyle	River activation	River precinct Wellness centre in the village

CALCULATING IMPACTS



SOME BASIC CONCEPTS OF COMMUNITY ECONOMICS AND ENCOME AND EMPLOYMENT MULTIPLIERS

The figure below illustrates the major flows of goods, services, and dollars of any economy. The foundations of a community's economy are those businesses that sell some or all of their goods and services to buyers outside of the community. Such a business is a **basic industry**.

The two arrows in the upper right portion of the figure represent the flow of products out of, and dollars into, a community. To produce these goods and services for "export" outside the community, the basic industry purchases inputs from outside of the community (upper left portion of the figure), labour from the residents or "households" of the community (left side of the figure), and inputs from service industries located within the community (right side of the figure).

Source:
Economic Impact of the Health Sector on the economy of Seiling Municipal Hospital Medical Service Area
Oklahoma State University March 2005

Equation for calculation

pcl = .8 (Propensity to consume locally)

icles = .25 (Income created by local consumption sales (per $ of sales)

(a) Income (Use) Y = C + S Income use in a closed economy without government

(b) Y = Cl + Cnl + S Local & non-local consumption

(1) Income (Origins) Y = Yb + Yn "Basic" and "Non-basic" Income

(2) Local Consumption Cl = .8 Y

(3) Local Income Yn = .25 Cl

(4) Yn = .25 x .8 Y

(5) Y = Yb + .2 Y

(6) Yb = Y - .2 Y

(7) Yb = Y (1 - .2)

(8) Y =...Yb (1

----

1 - .2)

(9) Y = Yb x 1.25

Multiplier = 1

1 - .8 x .25 = 1

.8 = 1.25

THE VILLAGE






Description	Outcomes and impacts	housing	jobs	payroll	local spending
The Village is the catalyst project for economic development of the central city. It acts as the new entry statement for moving people from the train and bus hubs as well as peripheral parking to the downtown area. The Village intentionally moves people south-east away from big box retail to a new engaging lifestyle hub that acts as the entrance for a mixed use-green-central park anchored downtown. The Village sits next to the train station acting as the welcome centre for the new community. It will have a small but clearly marked "*Welcome Centre*" where we suggest that the Penrith Business Alliance should be located. Along the railroad side there will be in addition to the Welcome Centre, a new smart work and learn hub so that commuters will not move to their cars going or coming from central city commutes. Across Belmore Street is the Village heart. It would be the "*funky*" core area for arts, information tech and visitor accommodation along with student short and intermediate term housing. We propose a cohousing building for resident artists where they share central food preparation and display facilities. We envision an active participatory arts program on these grounds that might house several forms of visual arts.	Higher density and affordability will attract working and studying population that create identify and bring character to the area. Visible from the trains, it will be telling commuters to other job centre that it is possible to work, study and live in the Penrith CBD and that it is an attractive place to work, learn and create. With students, artists, media and information technology experts along with the business and executive workers here for a short stay, the Village will be place for creation, fertilisation and implementation of ideas. The Village will have at least 350 short term stay units (serviced apartments, cohousing, student accommodation). If occupied at 80% x 325 days a year x $200 it generates $ 18 million in revenue annually. And it supports 60 staffs with average revenue of $75,000 a year. Moreover, the clientele will spend an average $ 60 per day. That generates an additional $ 8 million in local consumption spending.	350	60	$ 4,500,000	$ 8,190,000
The Wellness Centre (senior health and allied health): Associated with these arts programmes there will be a large Wellness Centre, where senior health and other associated health and lifestyle programmes will be offered. A healthy foods centre with restaurant, on the model of US Whole Foods would feature local products daily. All services: such as medical advice, physiotherapy, dietetics, personal training, yoga, pilates and spas and massages have courses oriented to serve an ageing population but also welcome a clientele composed of students, young and experienced professionals and elite sportsmen.	About 50 people composed of physios, dieticians, trainers, yoga teachers, doctors, spas and massages professionals. With associated building management personnel and secretaries. - Primary Jobs 75. ABS Health multiplier: 1.935 excluding one job created in the basic industry - Estimated final jobs: About 225 jobs. The basic jobs (50) work 6 billable hours at $ 100 per hour x 6 days a week x 50 weeks x 50 people generating about $ 9 million of revenue per year with about a third spent locally on supply and equipment. An additional $ 4 million of revenue will be generated with ambulatory services and supplies such braces, physical supports and food, with part of it purchased from local suppliers.		225	$ 13,500,000	$ 4,000,000
International Education Centre: A multimedia hub where students and workers can access tertiary education on-line courses of their choice from multiple universities and institutions across NSW and Australia. This will partly drive a greater presence of the University of Sydney in the CBD. **Smart Work Hub**: A shared space, to which corporations and businesses with head offices across the city can subscribe, the smart work centre would enable employees to work close to home at least some of the time in an environment that conforms to occupational health and safety standards. Unlike working from home, it would provide social interaction and cross-fertilisation of ideas. It offers the social-equity bonus for workers who have been driven to live far from the CBD for reasons of housing affordability but who for any number of reasons – disability, caring for children or elderly parents, the sheer cost of commuting – can't get to an office far from home. **An Entrepreneurship and Innovation program** will either sit within this combined smart work-and-learn hub or in another space in the Village. It will benefit from the 24/7 activity brought by various knowledge and creative workers.	About 5 professionals and 5 semi-professionals. Local jobs are primarily made of organisational and IT professionals. It can also grow as Penrith fields of expertise increasing, for example, sustainable and modular construction techniques. The 5 basic jobs are paid at around $ 100,000 per year. With a 1 / 1 ratio, they generate $500,000 in local spending. This hub will start attracting about 15 workers and students per day going up to about 150 people (full time equivalent). In the long term, the 150 people will spend about $20 per person per day with 200 working days, generating $ 600,000 in local spending. In general, a full time education course generates 10 Mo of local educational jobs and 21Mo spinoffs in the general economy.		10	$ 1,000,000	$ 600,000
Creative Arts + Information and Graphics: Creative arts stimulate community participation and draw people to the area. In addition, they have a spread affect for the entire downtown populating pop up shops, providing crafts for small stalls and giving life to all the community precincts even acting as therapy for hospital and therapeutic care patients. **5G Lab + TV studio and shared broadcast centre**. Both projects would dramatically increase Penrith visibility across the region and globally as few places have started working on 5G technology. The shared broadcast centre could be used by various TV channels to broadcast news, events and reports on Western Sydney and Penrith.	Most artists are solo performers. We estimate their full time equivalent as 50 full time jobs for nearly 200 people. Wages are low--based on ABS about $ 40,000 per year. This yields about $2,000,000 annually; but much of that will be spent locally. The 5G Lab is a driver of future growth that can become exponential but in the short term their revenues are not calculable and so are their impacts. TV Broadcast Centre: about 5 or 6 people. Just like the 5 G Lab, it is mainly relying on start-ups and future growth, and the short-term impacts are hard to estimate.		50	$ 2,000,000	$ 1,500,000

Check-in Terminal: The ability to create a hub for people to spend time within the Penrith economy rather than at the airport could be an important branding opportunity. A check-in Terminal close to the train station and to the Welcome Centre would provide airport users with	When operational, it will employ about 30 staff from check-in professionals to baggage handlers, drivers, etc. The impacts are much broader as it will bring people from or visiting the region in Penrith who will attend the various lifestyles and adventure activates offered in the city.		30	$ 1,800,000	
Elevated car park between Belmore street and rail tracks - with retail on ground floor and commercial on the second floor. It will free space to build mixed buildings, closer the tracks.	About 450 car parking places. With a conservative daily revenue of $15 a day per space. It generates 15 x 450 x 300 = about $ 2 Million annually that will pay for the structure and the operations of the elevated parking.				
Bridge over rail line: a beautiful pedestrian bridge would connect the Village to Thornton. It will create another north-south connection that does not go through the train station and foster stronger grids of movement downtown.	Improved accessibility, connectivity, walkability and views. Joining communities together.				
Different funky buses for different routes: - a knowledge, education and health route - an adventure route - an engineering and manufacturing route connecting employment hubs	Subscriptions will be used to offset the costs of operations. Local organisations such as the adventures businesses, health facilities, etc. will contribute.				

CENTRAL PARK PRECINCT

Description	Outcomes and impacts	housing	jobs	payroll	local spending
This Park is the new core location for the downtown which will integrate housing within the central area. The Park will add to the property values of the area and make it a preferred location to live. We suggest a mixed use approach with first level street oriented retail with parking on the upper levels along with housing. This approach is similar to the new "main streets" method that has revitalised hundreds of American smaller cities. Main streets emphasize a mix of local shops, housing above shops, parking at the back or on the edges with a core of walkability. Most main streets remain open to light traffic but can be closed for events or during the day. - Fresh food market, other events, etc. - Streets curation and management - High quality apartments on central park for executive, professional and health specialist clientele.	In the short term, 400 units x 1.5 people x median disposable household income ($650 per week) = $ 25 million of disposable income. In the medium term (6-10 years), the precinct would have 800 units so about $ 50 million of disposable income. In the long term, Central Park precinct will welcome 1600 units would represent $ 100 million of local disposable income (not inflation adjusted). The following give an approximate number of people per type of store across a region. For an enriched downtown, competitive with major retail centre, the following is required: Food service and drinking places 476 people Grocery stores 2,958 Convenience stores 3,829 Gift, novelty, and souvenir shops 4,180 Pharmacies and drug stores 6,929 Sporting goods stores 7,369 Hardware stores 7,727 Florists 8,443 Specialty food stores 8,854 Family clothing stores 8,916 Women's clothing stores 9,172 Shoe stores 9,514 Furniture stores 9,723 Used merchandise stores 10,897 Jewellery stores 11,086 Book stores 12,142 Computer and software stores 19,317 Men's clothing stores 28,976	1600	120	$ 4,800,000	$ 2,400,000

PRIVATE HOSPITAL

Description	Outcomes and impacts	housing	jobs	payroll	local spending
Private hospital would be the economic anchor of the downtown. - Day hospital and regular hospital and related services - Cardiac and urology services - Cosmetic surgery / Medical tourism. Taking advantage of and enhanced Judges park, it will be complementary to the Nepean and Westmead hospitals. Continued specialisation across the hospital sector is likely to lead to this private Hospital to focus in as the centre of excellence in at least one area.	For 100 bed hospital you need 100 physicians and specialists (FTE). 4 times that number in patient carers (nurses, attendance, nutritionists, therapists). And 3 time the sum of nurses and doctors to run all the other services necessary for the hospital operations. So primary job creation is about 2000 people. 2000 x $ 80,000 = $ 160 million in payroll. Multiplier of 1.37 excluding one job created in the basic industry (source US BEA). Estimated spin-off jobs of 2,700 jobs so a total of about 4,700 jobs.		4700	$ 322 million	$ 96,600,000

ADVANCED ENGINEERING CENTRE AND CULTURAL AND CONFERENCE PRECINCT

Description	Outcomes and impacts	housing	jobs	payroll per year	annual local spending
Advanced engineering and logistics centre engineering firms in sync with the planning, development, construction and maintenance of the airport, the rings roads, and the public transportation system.	About 700 professionals from various engineering firms with an average payroll of $ 100,000 meaning $ 70,000,000 of payroll. Each of these basic jobs generates at least 2 local jobs: 1400 jobs. A total of 2,100 jobs.		2100	$ 154 million	$ 46 million
Museum/Gallery: Magnetic Cultural Precinct (Some 'local' i.e. Australian and South Pacific Flavour) Uniqueness. Narrative as to why it is Penrith. A suitable site. Develop brand/ perceptions to overcome cultural snobbery. George Pompidou Museum of Contemporary art in Paris revolutionary idea = free floors with all utilities and servicing space on the outside / display building excellence / flexibility / energy positive. Picture of the George Pompidou / solar / wind.	About 150 people when it is fully running. ABS Cultural and recreational services multiplier (1.730). We retain a 1 on 1 multiplier for local jobs. A total of 300 jobs.		300	$ 21 million	$ 6,3 million

NEPEAN RIVER PRECINCT MASTERPLAN





Description	Outcomes and impacts	housing	jobs	payroll	local spending
This project is therefore an important first step in reinforcing those connections between the river and its community. The master plan acts as a catalyst in adding momentum to a suite of parallel projects and trends already evident in the region, including: • A resurgent local economy • New communities developing within walking distance of the river • Progressive improvements in river health and ecology • Parallel recreational activity and projects focused on the river • The pending return of Penrith Lakes to public ownership • Adjoining communities adopting more active and healthy lifestyles • A revitalising regional centre in the river corridor.	Improved amenities and outdoor activities within walking and cycling distance of the CBD. Acts as an asset to attract new residents, talents and skilled workers looking for a great lifestyle.	X	X	X	X

PANTHERS MASTERPLAN



Description	Outcomes and impacts	housing	jobs	payroll	local spending
500 units and 250 senior living units with 80 aged care beds. Entertainment: Vertical wind tunnel, cinemas, bowling, restaurants, events, hotel, serviced apartments: 12,500sqm general retail & 25,000sqm of outlet shops, elite learning sport centre, sporting fields, office park (25,000sqm).	According to business case projections: $850m end value and generation of 5,000 jobs with 2,100 post construction	850	2100	X	X

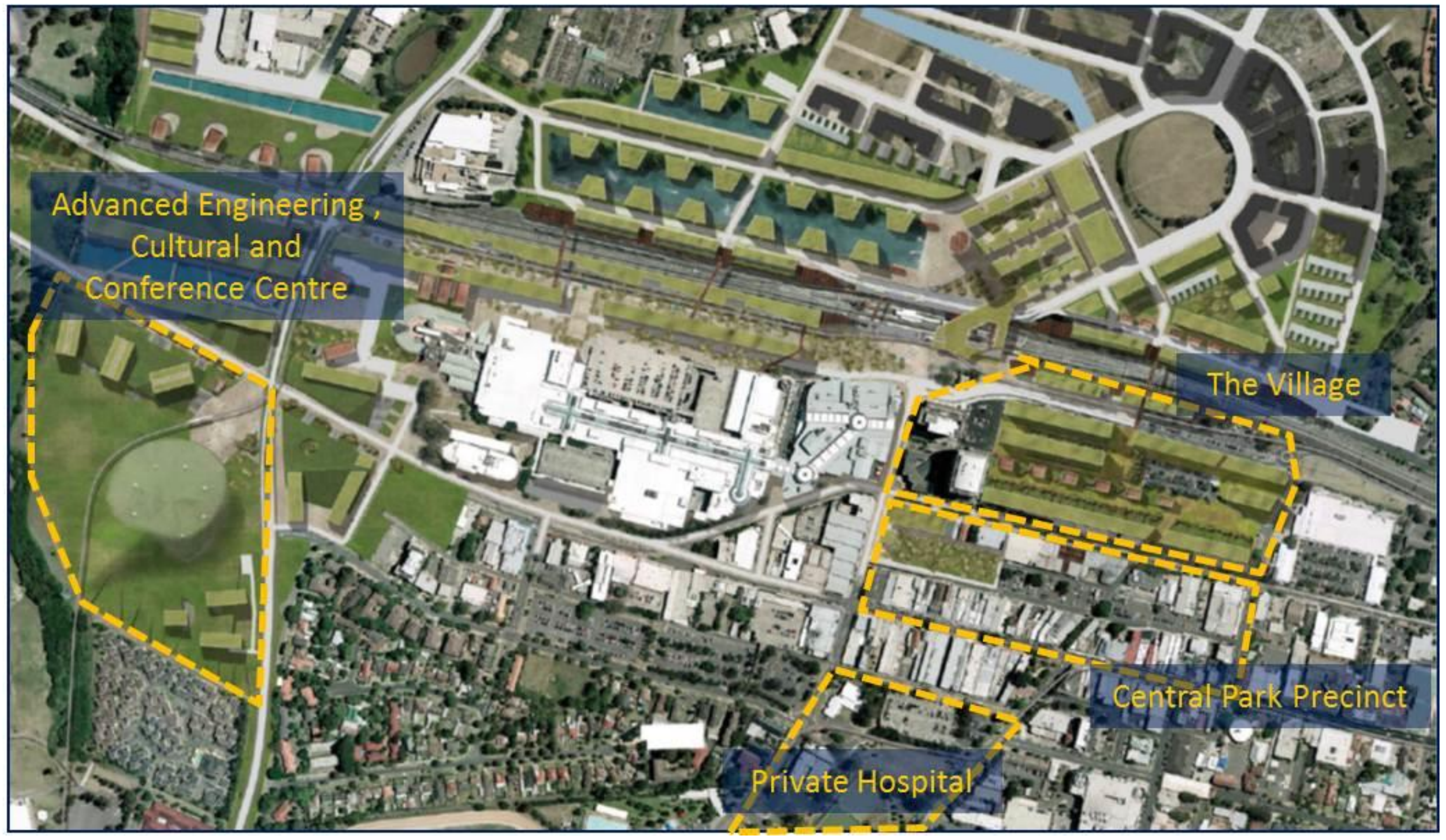
Housing units	Number of jobs	total payroll before tax	local spending
2800	9695	$ 524 million	$ 165 million

GOVERNANCE, IMPLEMENTATION AND SCHEDULE

CBD Projects	year 1		year 2 - 4		5-10 years	
	Activities	**Impacts**	**Activities**	**Impacts**	**Activities**	**Impacts**
Governance	- zoning + planning + retail + housing + parking strategies - establish a governance structure such as a downtown development corporation structure - establish the central area improvement tax district - street management and project curation program - Join Future Cities collaborative and attend visits of similar sites and cities in the USA.	Council staff, developers, mobilised and all plans approved	- Align Penrith Business Alliance mission and directions with this approach - An agenda post state-election is in place	Penrith image is increased and coordination of programs that are in place and patent.	- New governance structure in place to evaluate and monitor programs and projects - Value Capture system set to finance the program	Capacity to meet the challenges.
The Village	- Village development masterplan - Issue an EOI for appropriate developers and tenants	Council staff, developers, mobilised and all plans approved	- Commence building - Redo parking and street scape - Improve connection with station - Build bridge over rail line - Public domain improvements - Funky bus system in place	50% of all the jobs in the wellness centre and arts precinct at the end of year 4. 100% of the 5G and TV and broadcast centre	- All aspects of the Village should be completed. - Students, artists, should be in residences. - Serviced apartments, smart work hub should be in full steam operation.	Residents and shops and events will bring life to the downtown making it an attractive place to live.
Central Park precinct	- Implementing existing zoning existing for mixed-use using strategic development procedures that give developers the right to build based on specific designs and financing. - Parking management program, integrated with residential, retail and commercial needs. - Central Park master planning	Council staff, developers, mobilised and all plans approved	- Commence building - Redo parking and street scape - Improve connection with key sites and activity nodes - Public domain improvements - Green grids, cycleways, walkable paths, River precinct should be in place.	Central Park delivered. Streetscape complete. First set of housing on the park complete.	- Housing (1600 units) around the park should be built or underway. - The new streets should be in full operation with full time curator for events and schedules and retail management.	Residents and shops and events will bring life to the downtown making it an attractive place to live. 24/7 city feasible.
Private hospital	- Find an operator - Refine the strategy and positioning - Refine the location in the CBD on council owned land. - Develop a pre-DA package	Council staff, developers, mobilised and all plans approved	- Refine plans and specialisation - Commence building - Redo parking and street scape - Public domain improvements	First patients arriving at end of year 4.	- Fully in operation and staff with shuttle buses with other means of transportation and communication with other hospital in the region.	- Largest job and activity anchor for the downtown activating the entire downtown during the day.
Advanced engineering and logistics centre	- Develop a forum with potential end users to refine the size and best location for the program - Refine the location in the CBD on council owned land - Develop a pre-DA package	Council staff, developers, mobilised and all plans approved	- Identify, attract end-users and find temporary accommodation and commercial space for them	-planning complete and temporary buildings on site. - tenants ready to move in.	- First building should be fully built and tenanted - Second phase of building should be under way.	- Strong industrial and engineering image. - High value jobs - Strong link to the new airport
Museum/Gallery	- Negotiate with a major Museum/Gallery and gain minister approval and funding - Refine the location in the CBD on council owned land - Develop a pre-DA package	Council staff, developers, mobilised and all plans approved	- Find curator (full-time) to define the Museum/Gallery mission and program. - Organise a design competition in line with the Museum/Gallery identity - Create a small pop-up Museum/Gallery program using existing buildings, parks, or containers, etc.	- Pop-up Museum/Gallery in operation and the first phase of final museum under-construction	- First building should be open with exclusive programs and regular events.	- Biggest identity and magnet for adventure and lifestyle activities in the Penrith Area.
River precinct	- Stakeholder management - EOI for development		- Under construction - find tenants for cafes and restaurants and activities		- Completed	
Panthers masterplan	- Coordination of the Panthers project with CBD-Council led projects		- Initial programs under construction		- Precinct in activity - Transportation and communication completed	

LGA Projects	**year 1**		**year 2 - 4**		**5-10 years**	
Sustainable construction and design	- Sustainable products and human performance centre - ideas factory - Eco Sustainable building - Coordination in place - Identify key businesses and tertiary courses at UWS and TAFE - Set a strategy and start learning from national and international best practices		- Solar Decathlon or similar organised in the LGA - Training of construction workforce to innovative and environmentally friendly construction techniques. - First sustainable homes built		- Key centre of expertise on modular and sustainable construction for medium and high density.	
Crisis and Disaster Management Education and Global Education coordination	- Capture the diversity of providers - Build civic pride/ reputation/ story - Attract intellectuals/ inventors, increase capacity		- Free introduction to UWS Pensioners pass - Bring community into university, listen, link, lead - Land – providing resources to new companies – magnet for education – increase reputation/ capacity - Werrington Business Incubator delivered and full			

ALIGNEMENT WITH PREVIOUS STUDIES AND PLANS



Left: Cleveland's work 2008

Right: Campement Urbain 2012 – Future of Penrith

We examined plans previously delivered to the Penrith Council by Cleveland and Campement Urbain. We find close proximity in the objectives especially regarding Central Park Precinct and the densification and mixed-use close to the station that we have grouped in the Village. Those plans sent a long term urban form and urban design vision for the CBD. The Economic Masterplan we put forward provides short and medium term trigger projects that are underpinned by comprehensive economic analysis and aimed at creating a momentum that could end up producing the visions created by Cleveland and Campement Urbain in the Future of Penrith.

PROJECTS THAT SIT OUTSIDE THE CBD BUT THAT ARE WORTH PURSUING ALONGSIDE PROJECTS IN THE CBD

- Sustainable products and human performance centre - ideas factory - Eco sustainable building
- Crisis and disaster and crisis management education
- Global advanced education and training and workforce upskilling
- Adventure Capital
- Werrington Park
- Sydney Science Park
- Digital storage
- Local primary and secondary school strategy
- Veterinary industry and other advanced engineering and manufacturing

CONCLUSIONS

This report aims at re-positioning Penrith's economy and physical attributes. Based on current local economic development research both are necessary. No place, irrespective of native resources is competitive any longer unless it meets the needs of a rising well educated and capable population. Some communities are knowledge centres but they are unable to harness the human capital they develop. Small university communities are no better off than many areas with or without universities. However, university communities that harness the relationships between science and quality places to live like Emeryville, California boast enormous returns on their human capital. So, it is important to create a physically attractive place where local youth want to participate in the future with the education and skill they have to offer the job market place. So, jobs now move to people. PENRITH as this report shows is well endowed. It has all the attributes of a quality community. But it lacks the "buzz" of urbanity that the new generations seek. As our report shows, local leaders are well aware of this. Both current leadership and youth seek to change Penrith's direction without altering it physical appeal. Therefore, this report indicates how to re-position Penrith—not change it.

The report shows that Penrith's population is essentially an hour glass with large numbers of ageing people at the top and similarly large number of pre-workforce or early workers at the bottom. The middle is small and being drained away. Some people are drawn to the LGA for its less expensive housing but too many of them 65% commute out of the city for work. An hour plus commute leaves little time for civic involvement or educational enrichment. So, even those younger productive people who reside in the LGA are not engaged in the community. How do we build a better place for them and all of the community is the aim of this approach to local economic development.

As we point out, re-shaping the civic centre is the essential focus to meet Penrith's economic potential. We propose key anchors for this transformation of the city core area. Create the following:

- Rail Proximate Village—a place where education, work and the arts intersect;
- Central Park—downtown with a lively new street bordering on a new Central Park similar to the New York Highline district;
- New Private Hospital—designed to complement the Nepean but with attractive specialisations that might attract overseas medical treatments;
- Advanced Logistic Hub—aimed at structuring a strong position between Penrith's proximity to the proposed airport combined with the warehousing road rail and related transport access along with digital storage

We have examined this direction from an economic perspective. This approach aligns well with previous studies emphasizing a denser, smarter downtown as well as taking advantage of the Nepean River and other assets. Moreover, there is consistent community leadership support for the directions laid out here.

We propose these directions be taken as an integrated program and not taking one project or another. The approach we offer is a single cloth. Taking preferred pieces wont work. Locations are a bit more flexible but the Village and downtown proposals are not interchangeable. In essence, this is a formula. Our assessment is that the Market will respond to a clear plan. But a good plan is not a prescription led by regulations but a direction facilitated with good local leadership.

We show ways to get to the intended objective of the Council. This will require developing a cross bureaucracy team to take on the program, manage and deliver it. I also requires bold actions by the Council of bundling assets for sale to gain funds necessary to build the Village and Central Park Downtown by investing in new housing, generating new source of income and creating a governance structure to manage the process into the future.

Finally, we know "the past is no longer prologue". The Council will need to be bold in pursuing the future even with many residents longing for the past.

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Speck, Jeff – The Walkable City 2013

The Guardian and General Electric - Powering People – in the city - http://powering-people-city.theguardian.com/

Appendix Story of Long Branch

LONG BRANCH, NJ

Howard Woolley, Business Administrator at the City of Long Branch, explained that the town was once a major destination for beachgoers but its fame as the nation's first seaside resort waned in the years following World War II.

With the assistance of the Thompson Design Group and the Regional Plan Association a 20-year economic and social master plan was devised for the city. Principal of the Thompson Design Group Pratap Talwar spoke to the delegation about recent initiatives to increase development and economic opportunities in Long Branch including the Broadway Centre, an entertainment and commercial hub. This complex is planned to offer retail shops, cafes, bars, restaurants and two performing arts theatres as well as 500 new residences sitting atop a 1,500-space car park.

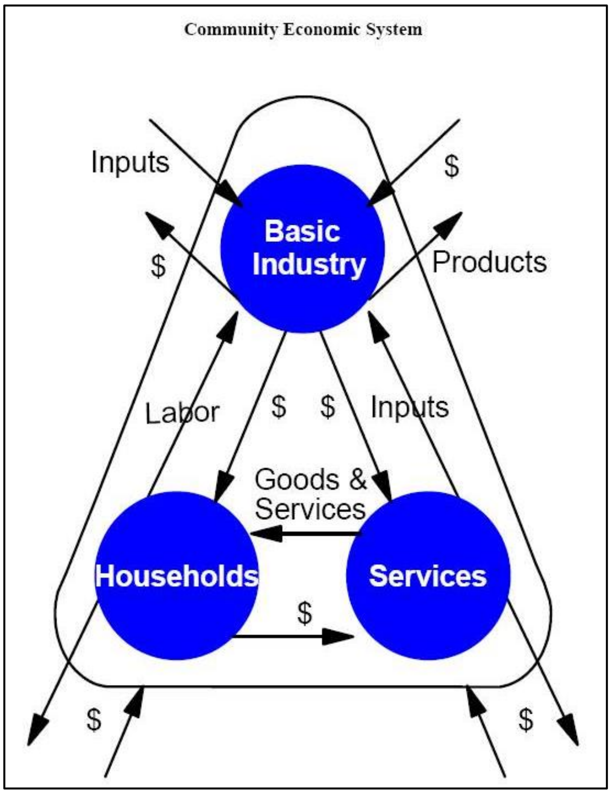
Figure 5 Old Long Branch

Figure 6 New Long Branch

Appendix – Multipliers and Retail Ratios

SOME BASIC CONCEPTS OF COMMUNITY ECONOMICS AND ENCOME AND EMPLOYMENT MULTIPLIERS

The figure below illustrates the major flows of goods, services, and dollars of any economy. The foundations of a community's economy are those businesses that sell some or all of their goods and services to buyers outside of the community. Such a business is a **basic industry**.



The two arrows in the upper right portion of the figure represent the flow of products out of, and dollars into, a community. To produce these goods and services for "export" outside the community, the basic industry purchases inputs from outside of the community (upper left portion of the figure), labour from the residents or "households" of the community (left side of the figure), and inputs from service industries located within the community (right side of the figure).

Households using their earnings to purchase goods and services from the community's service industries complete the flow of labour, goods, and services in the community (bottom of the figure).

It is evident from the interrelationships illustrated in this figure that a change in any one segment of a community's economy will have reverberations throughout the entire economic system of the community.

Consider, for instance, the closing of a hospital. The services section will no longer pay employees and dollars going to households will stop. Likewise, the hospital will not purchase goods from other businesses and dollar flow to other businesses will stop. This decreases income in the "households" segment of the economy. Since earnings would decrease, households decrease their purchases of goods and services from businesses within the "services" segment of the economy. This, in turn, decreases these businesses' purchase of labour and inputs.

Thus, the change in the economic base works its way throughout the entire local economy. The total impact of a change in the economy consists of direct, indirect, and induced impacts. Direct impacts are the changes in the activities of the impacting industry, such as the closing of a hospital. The impacting business, such as the hospital, changes its purchase of inputs as a result of the direct impact. This produces an indirect impact in the business sectors.

Both the direct and indirect impacts change the flow of dollars to the community's households. The households alter their consumption accordingly. The effect of this change in household consumption upon businesses in a community is referred to as an induced impact.

Source:

Economic Impact of the Health Sector on the Economy of Seiling Municipal Medical Service Area.

Oklahoma Cooperative Extension Service –Office of Rural Health - Oklahoma State University – March 2005

FORWARD AND BACKWARD LINKAGES OR INPUT - OUTPUT MULTIPLIERS

Forward and backward linkages are another word for input / output multipliers. Historically, and easy way to estimate the impact of economic development projects was to use the input-output multipliers from the ABS national accounts.

Australian Bureau of Statistics Input / Output Tables and Multipliers

Multipliers are derived from input-output tables. These tables show the structure of the country's entire production system for a particular period (usually one year). They show the value of goods and services produced by each industry and who purchases them (e.g. some goods, such as cars, are mainly sold to final consumers, while others, such as steel, are used as inputs to other industries in producing more goods and services).

Thus input-output tables show the relationships that exist between industries. From these tables, it is possible to determine what types of inputs any industry uses, such as raw materials, manufactured goods and labour. By setting out the links amongst different industries, input-output tables present a picture of the structure of the economy.

The impact of an activity on the economy can be evaluated by using Input-Output multipliers. Input-Output multipliers can be used to provide answers about the likely impacts of an increase in demand for the output of an industry, the likely impact of new projects and the likely results of import replacement strategies, not only on the industry itself, but on all other industries in the economy.

Output multiplier shows the relationship between the initial increases in output (in dollar terms) required from an industry and the total increase in output (in dollar terms) by all industries. Note that this multiplier involves double-counting as the increased output of one industry can be used as an input into another industry and so can be counted more than once. For this reason, this multiplier must be used with care as it overstates the economic impact resulting from the initial increase in output, caused, for example, by a new project.

The problem of double-counting can be avoided by using a 'gross value added multiplier' (the gross value added by an industry excludes the value of goods and services provided by other industries that is used in producing the output).

Gross value added multiplier shows the relationship between the initial increase in output (in dollar terms) required from an industry and the total increase in gross value added by all industries (this comprises compensation of employees plus gross operating surplus earned by businesses, and excludes the value of goods and services provided by other industries that is used in producing the output).

Example: The gross value added multiplier for secondary industry (as defined in table 1) in 1996-97 was 1.32. This number cannot be seen in the table, but can be calculated using matrix algebra as described in Information Paper: Australian National Accounts: Introduction to Input-Output Multipliers (ABS Cat. no. 5246.0). A value of 1.32 means that the increase in value added required from all industries in Australia to satisfy an increase in demand of $301 for output from secondary industry was (1.32 x $301), or $397. In other words, this increase of $397, which excludes double-counting, is approximately the amount by which Gross Domestic Product (GDP) increases if there was an increase of 301$ in demand for secondary industry..

Employment multiplier. Multipliers can also be calculated for other aggregates that vary with output, such as employment. Consequently, it is possible to calculate an '**employment multiplier**' which shows the number of extra persons employed for an initial expenditure of $1m on output from an industry. Note that businesses may respond to an increase in demand in a number of ways. For example, for short-term events, businesses may not take on extra staff but cater for the change in demand by paying overtime. Thus, even though full-time equivalent (FTE) employment (as measured by the employment multiplier) would increase, the actual number employed may remain relatively unchanged. Similarly, if businesses respond to the change in demand by employing part-time workers, the actual number employed may not change by the full number of new jobs created, as some of these people may have another job elsewhere.

For information purposes, we will provide employment multipliers using the ABS *Information Paper Australian National Accounts – Introduction to Input-Output Multipliers*, and the last Input-Output multipliers published in the 1998-99 issue of the *Australian National Accounts Input-Output Tables*.

Australian Bureau of Statistics

cat.no. 5209.0.55.001 Australian National Accounts: Input-Output Tables - Electronic Publication

TABLE 22. OUTPUT MULTIPLIERS, DIRECT ALLOCATION OF COMPETING IMPORTS 1998-99

	INDUSTRY	Initial Effects	Type 1A Multipliers	Type 1B Multipliers	Type 2A Multipliers	Type 2B Multipliers
1	Agriculture; hunting and trapping	1.000	1.418	1.771	2.392	1.392
2	Forestry and fishing	1.000	1.449	1.850	2.745	1.745
3	Mining	1.000	1.400	1.730	2.377	1.377
4	Meat and dairy products	1.000	1.749	2.389	3.263	2.263
5	Other food products	1.000	1.623	2.222	3.109	2.109
6	Beverages, tobacco products	1.000	1.596	2.134	2.873	1.873
7	Textiles	1.000	1.566	2.070	2.982	1.982
8	Clothing and footwear	1.000	1.481	1.951	2.883	1.883
9	Wood and wood products	1.000	1.540	2.025	2.997	1.997
10	Paper, printing and publishing	1.000	1.431	1.798	2.765	1.765
11	Petroleum and coal products	1.000	1.418	1.741	2.122	1.122
12	Chemicals	1.000	1.497	1.933	2.752	1.752
13	Rubber and plastic products	1.000	1.410	1.769	2.656	1.656
14	Non-metallic mineral products	1.000	1.561	2.060	2.928	1.928
15	Basic metals and products	1.000	1.596	2.144	2.896	1.896
16	Fabricated metal products	1.000	1.545	2.095	3.158	2.158
17	Transport equipment	1.000	1.438	1.830	2.618	1.618
18	Other machinery and equipment	1.000	1.442	1.861	2.805	1.805
19	Miscellaneous manufacturing	1.000	1.452	1.890	2.900	1.900
20	Electricity, gas and water	1.000	1.451	1.803	2.428	1.428
21	Construction	1.000	1.456	1.881	2.796	1.796
22	Wholesale trade	1.000	1.587	2.071	3.329	2.329
23	Retail trade	1.000	1.508	1.929	3.320	2.320
24	Repairs	1.000	1.269	1.504	2.299	1.299
25	Accommodation, cafes and restaur	1.000	1.539	2.051	3.094	2.094
26	Transport and storage	1.000	1.473	1.856	2.870	1.870
27	Communication services	1.000	1.356	1.642	2.537	1.537
28	Finance and insurance	1.000	1.360	1.609	2.709	1.709
29	Ownership of dwellings	1.000	1.122	1.221	1.344	0.344
30	Property and business services	1.000	1.473	1.861	3.047	2.047
31	Government administration	1.000	1.422	1.762	3.181	2.181
32	Education	1.000	1.117	1.210	2.989	1.989
33	Health and community services	1.000	1.179	1.327	2.935	1.935
34	Cultural and recreational services	1.000	1.413	1.747	2.730	1.730
35	Personal and other services	1.000	1.375	1.678	2.959	1.959

The following provides a brief explanation of each type of employment multipliers displayed in the table above.

Each of the seven types of employment multipliers (initial, first round, industrial support, production induced, consumption induced, simple and total) corresponds to the additional employment (number of persons employed) generated by producing the extra output induced by each of the first seven output effects in 1 above.

In the tables, the employment multipliers relate to an extra 1 extra job in one industry.

Type 1A: For one extra person employed in the industry being studied, column Type 1A displays the extra number of persons employed in all industries in the economy, after the initial and first round of induced output. For each extra person employed in the Wood and wood product industry, an extra 1.540 persons are employed, after the initial and first round induced output.

Type 1B: For one extra person employed in the industry being studied, column Type 1B displays the extra number of persons employed in all industries in the economy, after the initial, first round and industrial support induced output. For each extra person employed in the Wood and wood product industry an extra 2.025 persons are employed, after the initial, first round and industrial support induced output.

Type 2A: For one extra person employed in the industry being studied, column Type 2A displays the total number of extra persons employed in all industries in the economy. The number includes the original increase of one person employed in the industry being studied.

For each extra person employed in the Wood and wood products industry, 3 persons (2.997) are employed by all industries in the economy. The number includes the original increase of one person employed by the Wood and wood products industry.

Type 2B: For one extra person employed in the industry being studied, column Type 2A displays the total number of extra persons employed in all industries in the economy excluding the original increase of the one person employed in the industry being studied.

Type 2B equals Type 2A less the original increase of one person employed by the Wood and wood products industry. For each extra person employed in the Wood and wood products industry, 2 other persons are employed in all other industries in the economy.

Limitations of input–output multipliers for economic impact assessment

The ABS has not published I–O multipliers since the 1998–99 issue of our product Australian National Accounts: Input–Output Tables (cat. no. 5209.0.55.001) and does not plan to compile and reissue this table. Production of multipliers was discontinued for several reasons. There was considerable debate in the user community as to their suitability for the purposes to which they were most commonly applied, that is, to produce measures of the size and impact of a particular project to support bids for industry assistance of various forms.

Input–Output multipliers are most commonly used to quantify the economic impacts (both direct and indirect) relating to policies and projects. While their ease of use makes Input - Output multipliers a popular tool for economic impact analysis, they are based on limiting assumptions that results in multipliers being a biased estimator of the benefits or costs of a project.

There are some qualifications which must be attached to any analysis which uses multipliers. Multipliers describe average effects; they do not take into account economies of scale, unused capacity, and various response strategies from organisations or technological change.

More specifically inherent shortcomings and limitations of multipliers for economic impact analysis include:

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.

Not applicable for small regions: Multipliers that have been calculated from the national I–O table are not appropriate for use in economic impact analysis of projects in small regions. For small regions multipliers tend to be smaller than national multipliers since their inter–industry linkages are normally relatively shallow. Inter–industry linkages tend to be shallow in small regions since they usually don't have the capacity to produce the wide range of goods used for inputs and consumption, instead importing a large proportion of these goods from other regions.

No consideration for technological change: the mix of inputs that an industry uses may be affected by changes in technology. This is particularly so in industries which are subject to rapid technological change.

While Input–Output multipliers may be useful as summary statistics to assist in understanding the degree to which an industry is integrated into the economy, their inherent shortcomings make Input–Output based estimates of job impacts only an exercise in approximation. Those estimates should not be interpreted as though they are literal (in terms of whether they are directly observable) or precise (in terms of certainty that the exact number of jobs estimated will eventuate).

More complex methodologies, such as those inherent in Computable General Equilibrium (CGE) models, are required to overcome these shortcomings.

Developing region based models to find more solid and appropriate estimates require a specific expertise, extensive studies and an appropriate time-frame.

Sources:

Information Paper Australian National Accounts – Introduction to Input-Output Multipliers

http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/5246.0Main+Features11989-90?OpenDocument

Australian National Accounts: Input-Output Tables, 2009-10 Quality Declaration

Latest ISSUE Released 20/09/2013

http://www.abs.gov.au/AusStats/ABS@.nsf/Latestproducts/5209.0.55.001Main%20Features42009-10?opendocument&tabname=Summary&prodno=5209.0.55.001&issue=2009-10&num=&view

INDICATORS OF NUMBER OF PEOPLE PER STORE

The following table provides information about the average number of people per store in Maine (USA). The number corresponds to the number of people living in Maine divided by the number of stores in each category.

It gives a rough estimate of how many people are required to make each type of retail business commercially viable. We consider that if those businesses exist, they are still in operation and so making enough money to survive economically if they are not thriving.

The number of stores per category is not freely available in New South Wales or Australia.

If we consider that retail and consumption patterns are approximately similar in New South Wales and Maine, this table gives us valuable information about the number of people required to make a shop or commercially viable. There is, for example, one book store for every 12,000 people. This means that if Penrith wants to foster its retail offering in the CBD, a new book store on Henry street or High Street would have to attract enough people across the region to be viable and that there will be 8 petrol station and 3 convenience for every book shop.

In order to revitalise retail the Penrith CBD, upgrade, expand and diversify the offering, we cannot overestimate the importance of creating a sufficient pool of local residents in the CBD. Simultaneously enhancing the quality of the public domain and the overall pedestrian experience will be essential to attract people in neighbouring residential areas reinforcing the footfall of the city centre streets and the viability of its shops.

People per Store by Category, Maine, 1999*

County Business Patterns Business Category	**Number of People per Store[2]**
Food service and drinking places	476
Gasoline service stations	1,472
Hotels and motels	2,229
Building material and supplies stores	2,456
Grocery stores	2,958
Convenience stores	3,829
Gift, novelty, and souvenir shops	4,180
Pharmacies and drug stores	6,929
Sporting goods stores	7,369
Hardware stores	7,727
Florists	8,443
Specialty food stores	8,854
Family clothing stores	8,916
Bed and breakfast inns	9,042
Women’s clothing stores	9,172
Shoe stores	9,514
Furniture stores	9,723
Used merchandise stores	10,897
Jewellery stores	11,086
Book stores	12,142
Retail nurseries and garden centres	18,477
Household appliance stores	19,029
Computer and software stores	19,317
Department stores	19,614
Men’s clothing stores	28,976

Source: County Business Patterns and U.S. Census Bureau

[1] As of 1999

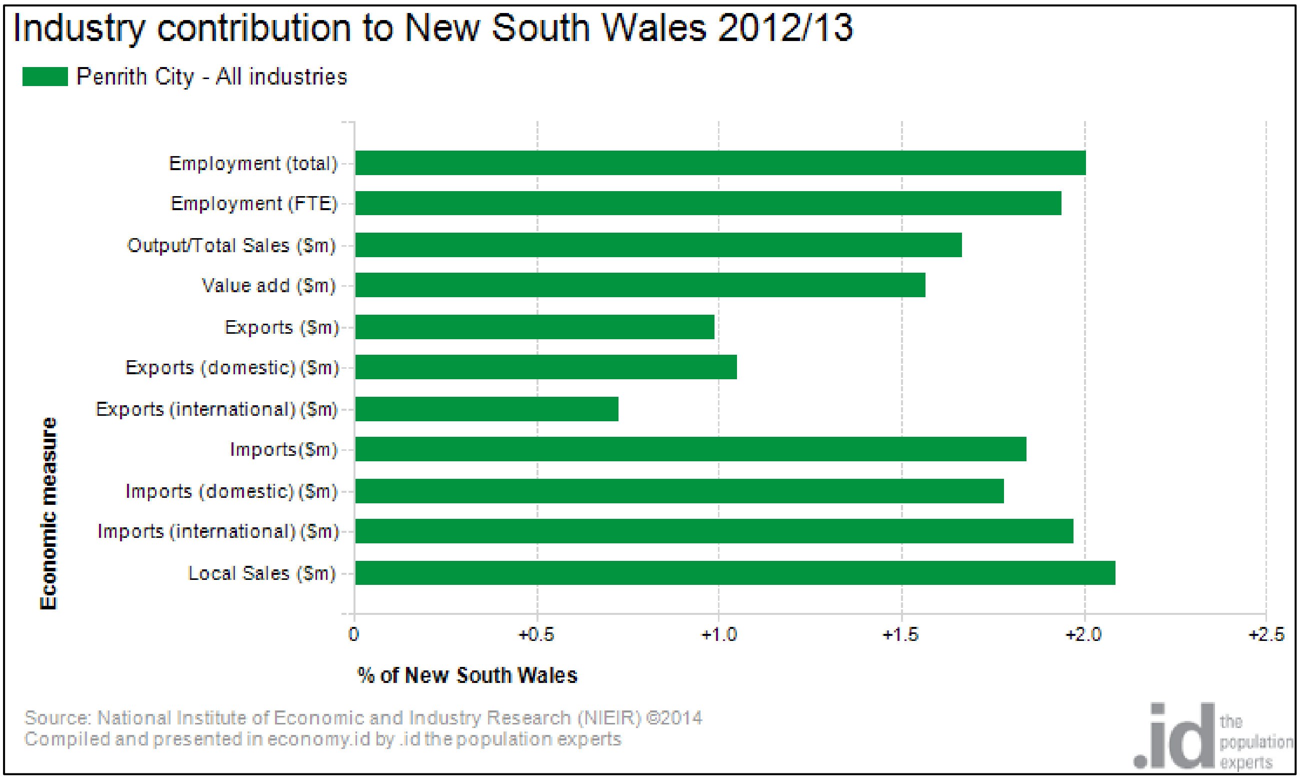
[2] 2000 State population (1,274,923) divided by the number of stores

Appendix Economic Profile Past and Present

LOCAL JOBS AND ECONOMY

GROSS REGIONAL PRODUCT

Penrith City's Gross Regional Product is estimated at $7.24 billion, which represents 1.6% of the state's GSP. In 2012/13, Penrith City contributed 2.0% of New South Wales's employment and 1.6% of its value add.



FULL-TIME EQUIVALENT EMPLOYMENT IN PENRITH

Penrith City provides over 71,000 local jobs (NEIER 2012) to the regional workforce – those include part-time and full-time jobs. This figure corresponds to 59,000 full-time equivalent jobs. Over 5000 full time jobs were created in Penrith City during the 5 years between 2006 and 2011.

There are around 97,000 Penrith city employed residents (2012) and more than a third of them work in Penrith LGA when around 60% to 65% commute outside the Penrith LGA for work.

Penrith has historically enjoyed lower unemployment and higher labour forces participation rates than Western Sydney and the rest of Australia. Penrith's unemployment rate in December 2013 was less than many other NGAAs and just under the national rate in that time period: 6.39% which is also relatively low on national and international standards. Unemployment is an important indicator of the economic success of an area.

Note: a low unemployment rate can indicate an affluent area with a high rate of access to jobs, or a place where those who can't find jobs leave the area for work.

Full-time equivalent employment by industry sector

Penrith City

Industry	Number 2012/2013	Change s. 2007/08	Penrith %	NSW %
Health Care and Social Assistance	7,548	+1,366	12.8	10.6
Manufacturing	7,027	-331	11.9	8.8
Construction	6,730	+222	11.4	9.1
Retail Trade	6,597	-353	11.2	8.9
Education and Training	5,631	+448	9.5	6.9
Public Administration and Safety	4,645	+326	7.9	5.9
Accommodation and Food Services	3,705	+244	6.3	6.1
Transport, Postal and Warehousing	3,546	+311	6.0	5.7
Other Services	2,761	+81	4.7	4.1
Wholesale Trade	2,253	+282	3.8	4.3
Professional, Scientific and Technical Services	2,046	-16	3.5	9.2
Administrative and Support Services	1,503	+253	2.5	3.1
Electricity, Gas, Water and Waste Services	995	-69	1.7	1.2
Rental, Hiring and Real Estate Services	941	+7	1.6	1.9
Financial and Insurance Services	832	-31	1.4	5.5
Arts and Recreation Services	775	+96	1.3	1.5
Agriculture, Forestry and Fishing	718	+95	1.2	2.9
Information Media and Telecommunications	445	-85	0.8	2.7
Mining	329	+95	0.6	1.5
Total industries	**59,026**	**+2,943**	**100.0**	**100.0**

Source: National Institute of Economic and Industry Research (NIEIR) ©2014.

Compiled and presented in economy.id by .id the population experts www.id.com.au

The table above shows the number of full-time employment in the Penrith City sorted by number of jobs provided. The lines in white are the industries with a higher proportion of jobs than in NSW. The lines in grey are the industries with a lower proportion of jobs versus the NSW average.

Health Care and Social Assistance, Manufacturing, Construction, Education and Training and Transport, Postal and Warehousing total 51.6% of the jobs provided in Penrith city. These industries also account for more than 2000 jobs created since 2007/08 making more than two third of the growth in jobs in the LGA.

Professional, scientific and technical services - representing 3.5% of total local workforce - Financial and Insurance services - representing 1.4% of the total local workforce – and Information Media and Telecommunications - representing 0.8 of the total local workforce - witness the biggest gap with the NSW average, respectively with 9.2%, 5.5% and 2.7% of the NSW workforce employed in these industries.

Retail trade, wholesale trade and Accommodation and Food services account for more than 20% of the local workforce but as can be seen later in the document this retail industry is only the fourth largest contributor to the GDP of Penrith

WORKFORCE - WHO WORKS IN PENRITH

WORKERS' OCCUPATION AND WHERE THEY COME FROM

Penrith City provides approximately 71,000 local jobs (NEIER 2012) to the regional workforce.

Though there is a gap in the census figures and significant differences between the ABS census data sets (54,991 local jobs and 87,224 employed residents) and the NEIER data sets (71,022 local jobs and 97,366 employed residents) – relying on the census figure of 2011 we can estimate that Penrith residents account for 56% of Penrith's workforce.

The remaining 44% of Penrith's workforce commute into Penrith from outside of Penrith City for work. 24% of these workers commute from Blacktown, 26% from the Blue Mountains, 10% from Hawkesbury, 3% from Wollondilly, and 3% from Liverpool. The map below shows where workers travel from, to work in Penrith LGA.

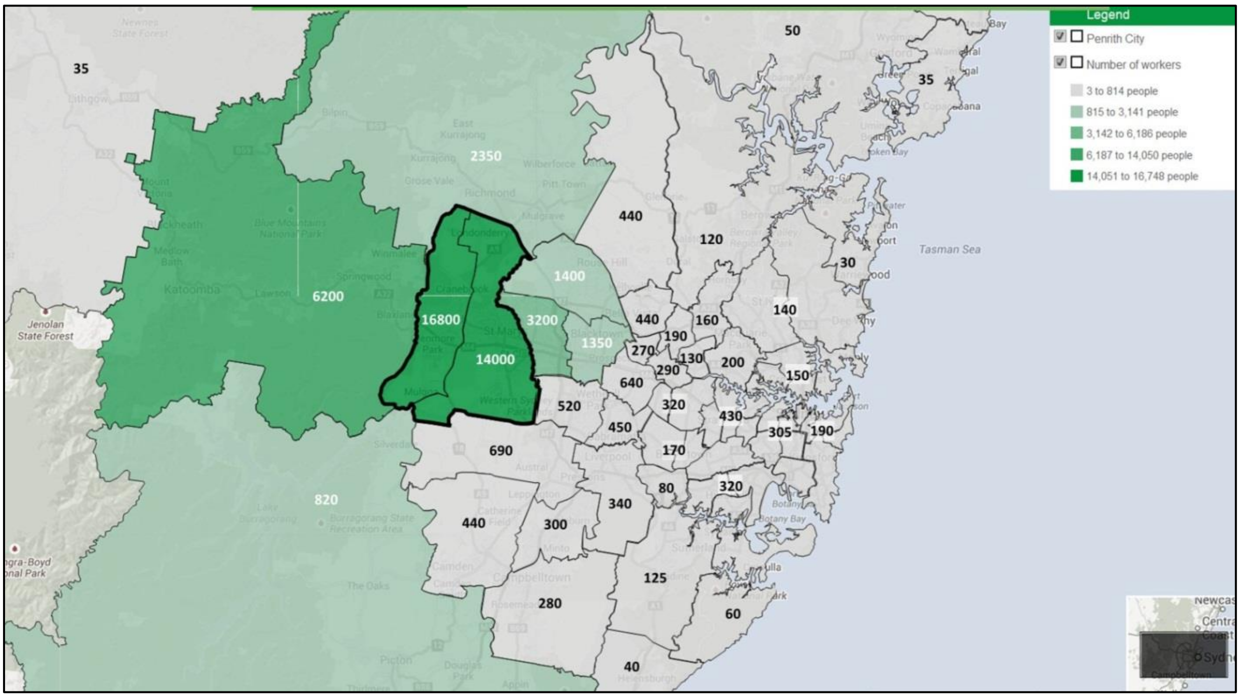


Figure 7 Residents location of workers in Penrith by SLA – All industries – ABS Census 2011

Note: It is important to note that the census undercounts the number of jobs. Nevertheless, this map provides a good idea of the number and proportion of workers travelling to Penrith for work and the distance they travel.

Workforce occupations

Penrith City - All industries

Occupations	Number 2011	Penrith %	Change s. 2006	Sydney SD%	NSW %
Professionals	10,554	19.2	+1,070	23.8	23.0
Clerical and Administrative Workers	9,153	16.6	+504	16.7	15.2
Technicians and Trades Workers	6,876	12.5	-139	12.7	13.2
Sales Workers	6,164	11.2	-340	9.5	9.4
Community and Personal Service Workers	5,816	10.6	+686	8.0	9.6
Managers	5,781	10.5	+60	13.2	13.5
Machinery Operators And Drivers	5,156	9.4	+1,089	6.0	6.3
Labourers	5,036	9.2	-277	8.0	8.6
Inadequately described or not stated	458	0.8	+2	2.1	1.1
Total [genders]	**54,994**	**100.0**	**+2,655**	**100.0**	**100.0**

Source: Australian Bureau of Statistics, Census of Population and Housing 2006 and 2011. Compiled and presented in economy.id by .id, the population experts. http://www.id.com.au

The table above shows the occupations of workers in Penrith sorted by number. In white, are the occupations that are under-represented in Penrith compared to the state and the Sydney region average. In grey are the occupations where Penrith has a proportion of workers than the state and the Sydney region average.

Managers - 10.5% of the workforce - and professionals - 19.2% of the workforce - show the most significant gap with the state and the metropolitan average that have respectively above 13% and 23% of people in those occupations. Linked with its industrial and manufacturing capabilities, Penrith has a higher proportion of Labourers, Machinery Operators and Drivers.

Workers' industry information is provided in the previous section on full-time employment

WHERE ARE JOBS LOCATED IN PENRITH

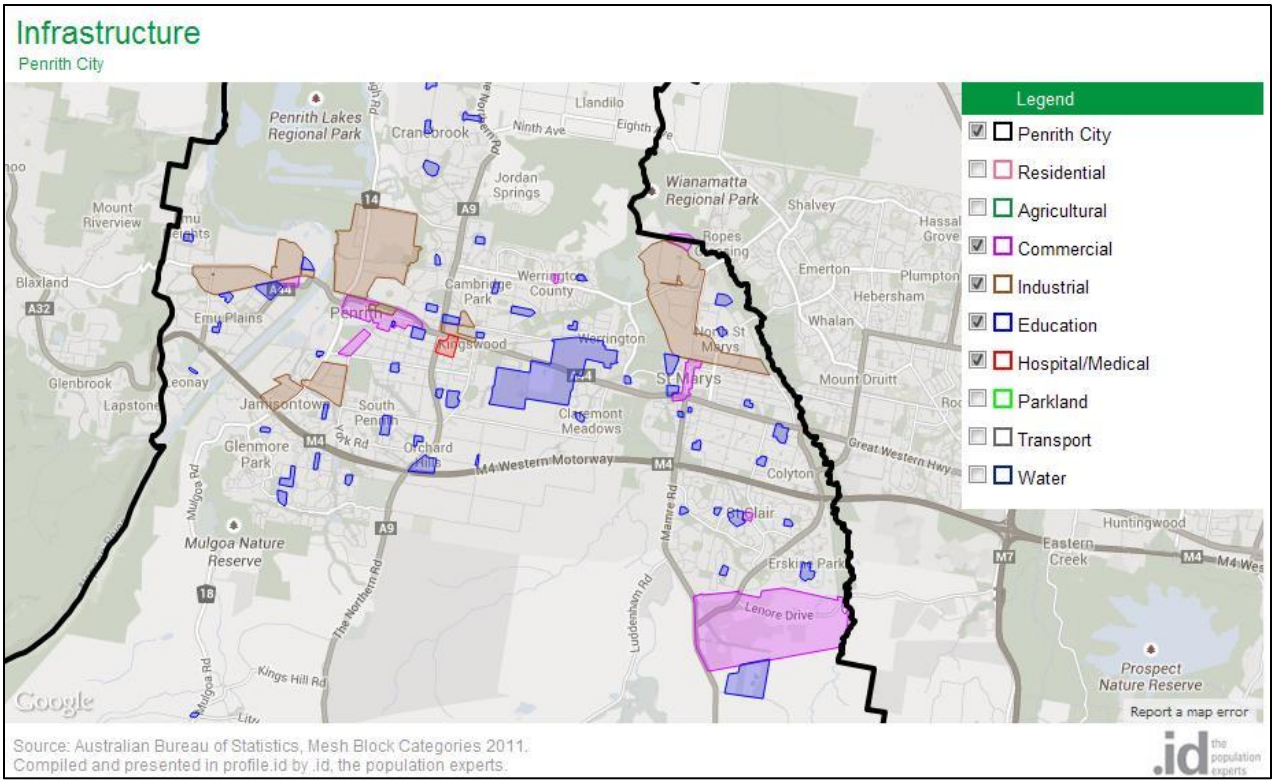


Figure 6: Land Use and major infrastructure – ABS Mesh Block Categories 2011 - Compiled and presented in profile.id by .id, the population experts

Note: The land use shown in the map is derived from ABS Mesh Block categories. Mesh Blocks broadly identify land use and are not designed to provide definitive land use. It is purely an indicator of the main planned land use for a Mesh Blocks.

The map below shows where jobs are located across the Penrith LGA.

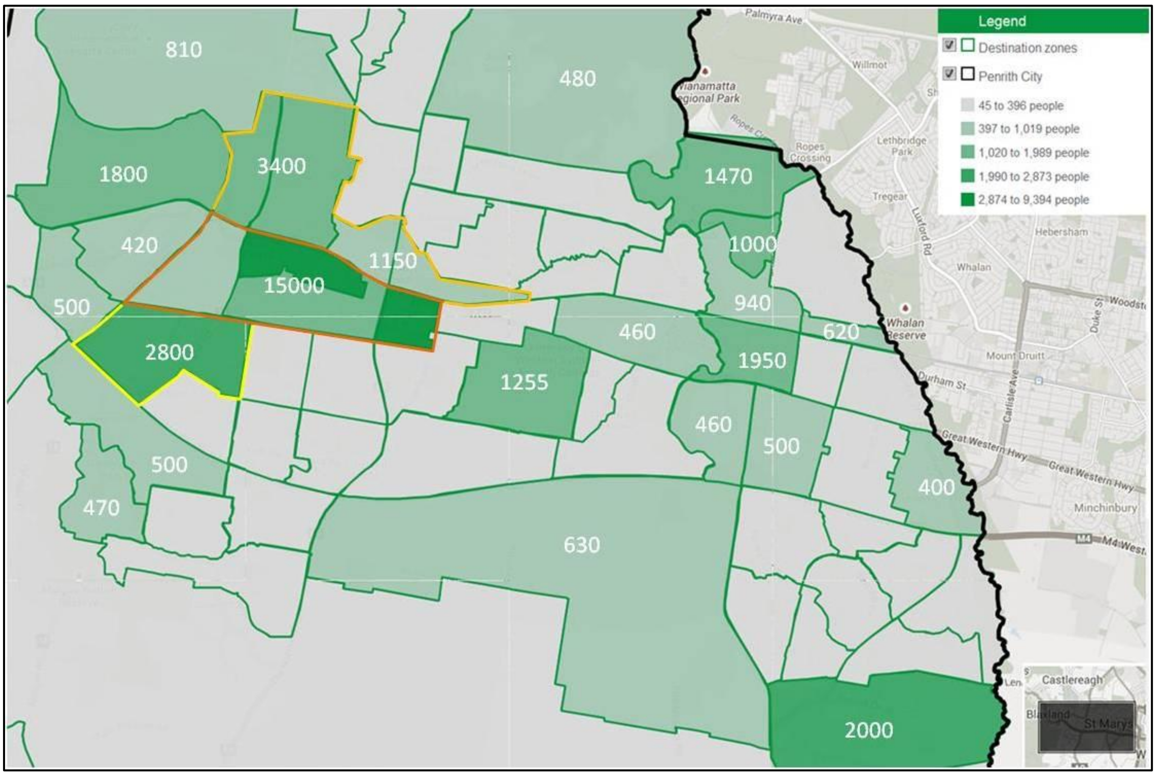


Figure 7: Job location in Penrith – All Industries – ABS Census 2011

Place of Work data, mapped to Destination Zones, provide an excellent spatial representation of where each industry's economic activity is conducted within Penrith City. Some industries are clustered in business parks, or along major transport routes. Others are associated with institutions such as schools, universities and hospitals.

In the map above, 70% of jobs in Penrith City are located in the areas with a number. The CBD (area with orange outline) accounts for 30% of all jobs in Penrith City. If extended to the north of the railway (area with light orange outline) it accounts for 39% of all jobs in Penrith City. With Jamisontown (area with bright yellow outline), the whole area accounts for 45% of all jobs in Penrith. With Emu Plains across the river, the area has more than 50% of the Penrith workforce. Other major job centres are St Marys and St Marys North, Erskine Park and the University of Western Sydney.

Manufacturing jobs are mainly located in St Marys North, North Penrith, Emu Plains, Jamisontown and Erskine Park. In the map below, the areas with a figure represent 5400 manufacturing jobs out of the 5900 jobs counted across the LGA in the 2011 Census.

Construction jobs are also located in these areas but are also located on major construction sites on the city's outskirts. In the map below, the areas with a figure represent around 1750 jobs (Census 2011). By its nature, the construction sector is more dispersed across the different employment areas and construction sites.

The Transport, Postal and Warehousing industry is also heavily widespread but key employment centres are the Penrith CBD, Erskine Park and St Marys.

About 1200 workers are employed as truck drivers. Their role to pick-up and deliver goods across the region and across industries contributes to the dispersed nature of their job.

With 47.5% of the workforce of *Information Media and Telecommunication*, 45% of the workforce of *Financial and Insurance Services*, and 40% of the workforce of *Professional, Scientific and Technical Services* jobs, Penrith CBD gathers a key proportion of the creative class and high value / spin-off jobs. Other key locations for those jobs are St Marys and Erskine Park.

Health care and social assistance jobs are mainly located in and around the Nepean Hospital Precinct and in the Penrith CBD with more than 66% of the jobs in this industry located in the area outlined in orange in the map below.

Retail locations

Major retail centres include Westfield Penrith, Penrith CBD and St Marys CBD, with numerous other significant centres (Centro Lennox, Centro Nepean, Colyton, Erskine Park Village, Glenmore Park, Mount Pleasant, Southlands, St Clair, St Marys Village, Station Plaza and Werrington County Village).

Industrial locations

The main industrial areas are located in Emu Heights, Emu Plains, Erskine Park, Jamisontown, North St Marys, Penrith and St Marys, with smaller industrial areas at Agnes Banks, Castlereagh, Kingswood and Londonderry

EMPLOYED PENRITH RESIDENTS

INDUSTRY, OCCUPATION AND WHERE THEY GO TO WORK

Relying on the census figures, more than a third of Penrith residents work in Penrith. In those living and working in Penrith 15% work in Retail Trade and over 9% in accommodation and food. 13% work in Health Care and Social Assistance. 10% work in Manufacturing. Almost 9% work in Education and 8% work in Construction.

The proportion of people living in Penrith and commuting elsewhere for work has increased between 2006 and 2011, growing from 63% to 64.7%.

The map below show the employment location/ place of work of employed Penrith Residents:

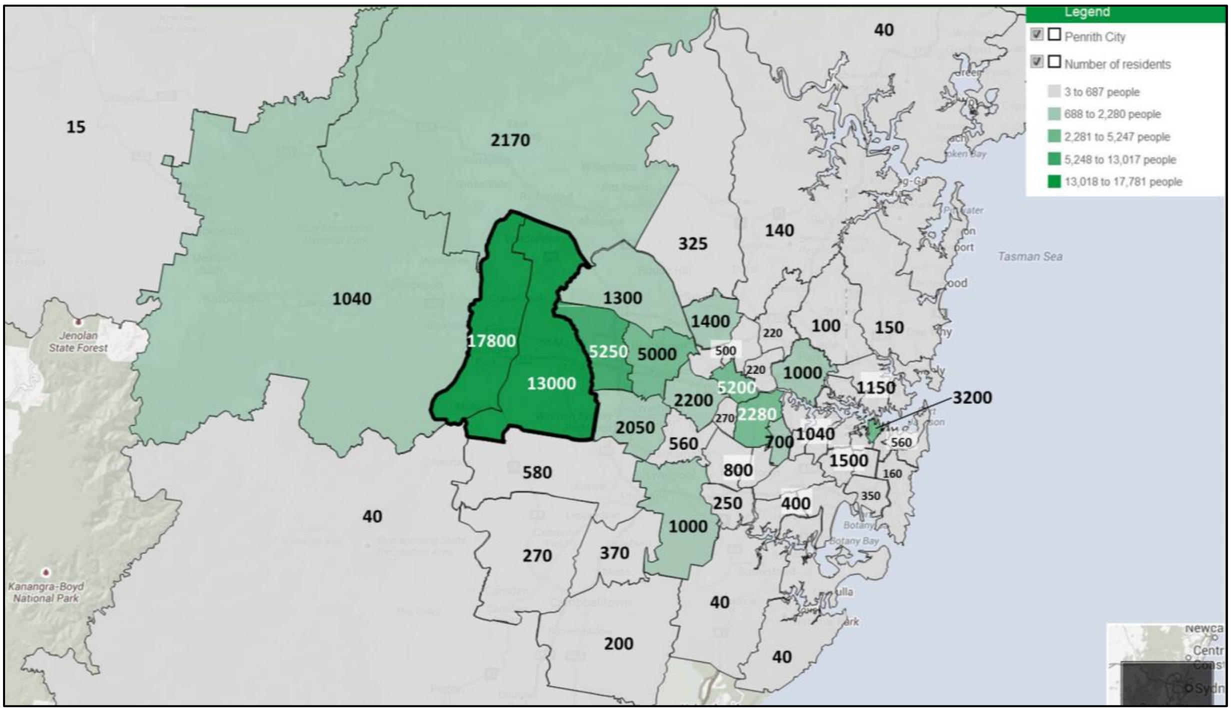


Figure 8: Residents place of work - All Industries – ABS Census 2011

More than 15,000 Penrith residents travel to Blacktown to work. 12% in Manufacturing, 12% in Retail Trade, 10% in Transport Postal and Warehousing, 8% in Health Care and Social Assistance, 8% in Education and Training, 8% in Financial and Insurance services (more than those in the industry travelling to Sydney CBD) 5% in Professional, Scientific and Technical services.

Over 10,000 Penrith residents travel to Parramatta, Holroyd and Auburn to work. 16% in Manufacturing, over 13% in Public Administration and Safety, over 11% in Health Care and Social Assistance, almost 11% in Financial and Insurance Services, 8% in Transport, Postal and Warehousing and 5% in Construction.

More than 3,200 Penrith residents travel to Sydney CBD to work. 32% of them work in Financial and Insurance services, 18.5% work in Professional Scientific and Technical services, more than 10% work in Public Administration and Safety.

Around 2,500 Penrith residents travel to Fairfield to work, 2,200 to Hawkesbury, 1,900 to the Hills Shire, 1,600 to Liverpool, around 1,000 to the Blue Mountains and 1,000 to Ryde.

Employed residents occupations

Penrith City - All industries

Occupations	Number 2011	Penrith %	Change s. 2006	Sydney SD%	NSW %
Managers	8,772	10.1	+359	13.2	13.5
Professionals	12,146	13.9	+1,419	23.8	23.0
Technicians and Trades Workers	13,289	15.2	+12	12.7	13.2
Community and Personal Service Workers	8,433	9.7	+1,303	8.0	9.6
Clerical and Administrative Workers	16,643	19.1	+668	16.7	15.2
Sales Workers	8,622	9.9	-81	9.5	9.4
Machinery Operators And Drivers	9,338	10.7	+572	6.0	6.3
Labourers	8,345	9.6	-447	8.0	8.6
Inadequately described or not stated	1,637	1.9	-52	2.1	1.1
Total [genders]	**87,225**	**100.0**	**+3,753**	**100.0**	**100.0**

Source: Australian Bureau of Statistics, Census of Population and Housing 2006 and 2011.
Compiled and presented in economy.id by .id, the population experts. http://www.id.com.au

Manufacturing is Penrith's largest industry, comprising 1 in 8 of all Penrith employed residents (11.8%). Health care and social assistance follows employing 1 in 10 persons in the Penrith employed residents workforce and Construction employing almost 1 in 10 persons.

Retail activities (retail trade, wholesale trade and accommodation and food services) employs 1 in 5 (22%) of Penrith workers which a slightly higher proportion than NSW (21%).

Local labour force industry of employment

Penrith City

Industry	Number 2011	Penrith employed residents %	NSW %	Change from 2006
Manufacturing	10,294	11.8	8.4	-668
Retail Trade	9,900	11.3	10.3	-280
Health Care and Social Assistance	8,845	10.1	11.6	+1,414
Construction	8,142	9.3	7.3	+280
Public Administration and Safety	6,466	7.4	6.1	+596
Transport, Postal and Warehousing	6,424	7.4	4.9	+457
Education and Training	5,796	6.6	7.9	+681
Accommodation and Food Services	4,829	5.5	6.7	+214
Wholesale Trade	4,783	5.5	4.4	+139
Financial and Insurance Services	3,802	4.4	5.0	+65
Other Services	3,648	4.2	3.7	+187
Professional, Scientific and Technical Services	3,582	4.1	7.9	+102
Administrative and Support Services	2,637	3.0	3.3	+233
Industry not classified	2,349	2.7	2.5	+132
Electricity, Gas, Water and Waste Services	1,336	1.5	1.1	+209
Rental, Hiring and Real Estate Services	1,298	1.5	1.6	-11
Information Media and Telecommunications	1,251	1.4	2.3	-88
Arts and Recreation Services	1,125	1.3	1.5	+163
Agriculture, Forestry and Fishing	553	0.6	2.2	-37
Mining	170	0.2	1.0	-20
Total [genders]	**87,230**	**100.0**	**100.0**	**+3,768**

Compiled and presented in economy.id by .id, the population experts.
Source: Australian Bureau of Statistics, Census of Population and Housing 2006 and 2011.

The table above shows the number of Penrith residents employed in each industry. In white are the industries where Penrith residents are in larger proportion than the NSW average. A large proportion of the residents work in Manufacturing, Construction and Transport, Postal and Warehousing industries. The Health Care industry, though slightly below the state average, has experienced the highest growth among Penrith residents followed by Education and Training.

INCOME

Penrith City - All industries	Employed residents individual income			Workforce individual income		
Gross weekly individual income	**Number 2011**	**Penrith %**	**Sydney SD %**	**Number 2011**	**Penrith %**	**Sydney SD %**
Negative Income/ Nil income	805	0.9	1.0	486	0.9	0.8
$1-$199	4,129	4.7	4.5	3,344	6.1	4.3
$200-$299	3,158	3.6	3.8	2,416	4.4	3.5
$300-$399	4,385	5.0	5.0	3,272	5.9	4.6
$400-$599	10,247	11.7	10.8	7,204	13.1	10.2
$600-$799	14,362	16.5	13.9	9,100	16.5	13.7
$800-$999	13,306	15.3	12.5	7,540	13.7	12.5
$1,000-$1,249	12,833	14.7	12.6	7,100	12.9	12.8
$1,250-$1,499	8,464	9.7	9.3	4,767	8.7	9.7
$1,500-$1,999	8,972	10.3	11.7	5,879	10.7	12.5
$2,000 or more	4,726	5.4	13.2	3,178	5.8	14.3
Not stated	1,831	2.1	1.6	707	1.3	1.0
Total	**87,218**	**100.0**	**100.0**	**54,993**	**100.0**	**100.0**

Source: Australian Bureau of Statistics, Census of Population and Housing 2006 and 2011.
Compiled and presented in economy.id by .id, the population experts. http://www.id.com.au

EMPLOYMENT CAPACITY

Employment capacity is a simple way of looking at whether Penrith City could theoretically provide jobs for all its residents if they were to choose to work locally. Employment capacity is simply the number of local jobs in an industry, divided by the number of local residents employed (anywhere) in that industry. A figure over 1.0 means there are more jobs available than residents employed in that industry. Under 1.0 means there are more residents employed than jobs available in that sector. This is a theoretical exercise as, even if there are enough jobs provided locally, there will always be some people who choose to commute out of the area.

The jobs to residents ratio for Penrith City in 2011/12 was 0.73, meaning that there were less jobs than employed residents. In the significant industries, Education and training has the highest ratio (1.10) and the only one to be over 1.00, while the lowest ratio was found in Financial and Insurance Services (0.25) closely followed by Information Media and Telecommunications (0.32). Health Care and Social Assistance has good employment capacity as the ratio of jobs to residents is 0.97. Manufacturing has a ratio of 0.73 recreation and services of 0.80.

Employment capacity by industry

Penrith City - 2012/13

Industry	Local jobs	Employed residents	Ratio of jobs to residents
Health Care and Social Assistance	9,628	9,878	97%
Retail Trade	9,228	11,845	78%
Manufacturing	7,447	10,165	73%
Education and Training	7,409	6,716	110%
Accommodation and Food Services	6,200	6,556	95%
Construction	6,025	8,548	70%
Transport, Postal and Warehousing	3,772	7,530	50%
Other Services	3,178	4,812	66%
Wholesale Trade	2,662	5,611	47%
Professional, Scientific and Technical Services	2,536	4,545	56%
Administrative and Support Services	1,997	3,479	57%
Public Order, Safety and Regulatory Services	1,467	2,317	63%
Arts and Recreation Services	1,307	1,643	80%
Rental, Hiring and Real Estate Services	948	1,241	76%
Electricity, Gas, Water and Waste Services	935	1,309	71%
Agriculture, Forestry and Fishing	929	892	104%
Financial and Insurance Services	890	3,587	25%
Information Media and Telecommunications	618	1,924	32%
Total industries	**71,022**	**96,876**	**73%**

Source: National Institute of Economic and Industry Research (NIEIR) ©2014.
Compiled and presented in economy.id by .id the population experts
http://www.id.com.au

SELF-CONTAINTMENT AND SELF-SUFFICIENCY

In Penrith, there is one local job for every 2.7 residents, one of the best 'job to person' ratios of NSW's NGAAs. There is one local business for every 14.7 Penrith residents. Nonetheless Employment Capacity, Self-Containment and Self-Sufficiency show that Penrith does not provide enough jobs in most industries for employed residents to work locally, forcing most of them to leave the council area every day for work.

The table below - sorted by number of employed residents - presents the number of employed residents compared to the proportion of residents employed in Penrith City (column = C / A). This column corresponds to self-containment. The table below also presents the % of jobs in the city filled by residents (column = C / B). This column corresponds to self-sufficiency.

Employment self-containment and self-sufficiency by industry

Penrith City 2011	A	B	C	= C / A	= C / B
Industry	**Total employed residents**	**Total local workers**	**Residents employed in Penrith**	**% working residents employed in Penrith**	**% of jobs in the city filled by residents**
Manufacturing	**10,261**	6,532	3,075	30.0	47.1
Retail Trade	**9,900**	7,235	4,656	47.0	64.4
Health Care and Social Assistance	**8,866**	7,689	3,928	44.3	51.1
Construction	**8,163**	3,596	2,336	28.6	65.0
Public Administration and Safety	**6,474**	4,635	2,292	35.4	49.4
Transport, Postal and Warehousing	**6,421**	2,732	1,599	24.9	58.5
Education and Training	**5,801**	5,985	2,723	46.9	45.5
Accommodation and Food Services	**4,834**	3,940	2,837	58.7	72.0
Wholesale Trade	**4,772**	2,227	1,039	21.8	46.7
Financial and Insurance Services	**3,806**	895	540	14.2	60.3
Other Services	**3,640**	2,280	1,458	40.1	63.9
Professional Scientific Technical Services	**3,574**	1,955	1,217	34.1	62.3
Administrative and Support Services	**2,648**	1,234	783	29.6	63.5
Industry not classified	**2,355**	585	357	15.2	61.0
Electricity, Gas, Water and Waste Services	**1,321**	773	319	24.1	41.3
Rental, Hiring and Real Estate Services	**1,300**	904	562	43.2	62.2
Information Media and Telecommunications	**1,245**	424	238	19.1	56.1
Arts and Recreation Services	**1,113**	749	482	43.3	64.4
Agriculture, Forestry and Fishing	**560**	453	293	52.3	64.7
Mining	**170**	168	73	42.9	43.5
Total industries	**87,224**	**54,991**	**30,807**	**35.2**	**56.0**

Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2006.
http://www.id.com.au

Self-containment measures the proportion of employed residents who are employed within the boundaries of the Local Government Area or region. It indicates the propensity of residents to seek employment outside the Local Government Area or region in which they live. In 2011, 35.2% of Penrith City's working residents were employed locally and this proportion has decreased since 2006.

In the following key sectors over 65% of employed residents have to leave the LGA to work: *Professional, Scientific and Technical Services*, *Manufacturing*, *Construction*, *Transport Postal and Warehousing*.

In *Information Media and Telecommunications* and *Financial and Insurance Services* over 80% and 85% of the employed workforce seek a job outside the LGA notably in Blacktown, Parramatta and Sydney CBDs.

Self-sufficiency measures the proportion of workers in the local area who also live in the Local Government Area or region. It indicates the level at which the local residents meet the labour requirements of the local industries or businesses. In 2011 56.0% of Penrith City's workforce was local residents and this proportion has decreased since 2006. There are no significant discrepancies across industries.

Self-containment and Self-sufficiency are likely to be lower in metropolitan areas and is influenced by:

- The nature of employment opportunities versus the skills and qualifications of residents;
- Transport options available and commuting times;
- Relationship between wages and salaries and house prices in the area; and
- The geographic size of the area.

A PROGRESSIVELY MORE EDUCATED EMPLOYED POPULATION AND WORKFORCE

Penrith is a leading skills city, with Penrith residents more likely to be educated vocationally (Certificate III or IV) than most other NSW NGAA cities (excluding Camden) with 22% of the workforce having a vocational certificate.

But Penrith workforce has a lower bachelor and higher degree attainment than the Sydney Region or NSW averages with 10.6% of people employed in Penrith having a bachelor or higher degree. Penrith sits behind all NSW NGAA cities.

Of Penrith residents with a post-school qualification, 44% have a certificate, 14% have an advanced diploma, 16% have a bachelor degree, and 5% have a postgraduate certificate, diploma or degree.

In Penrith City, there are 1,692 more women than men that hold a bachelor or higher qualification, presenting significant opportunities to make higher levels of tertiary education more accessible and attractive to male residents.

Within Penrith City, most key sectors workforces have a lower proportion of tertiary qualifications than New South Wales (*Manufacturing / Construction / Transport and Warehousing / Education and Training / Professional, Scientific and Technical Services / Financial and Insurance Services / Information Media and Telecommunications*).

Within Penrith City, only the *Health Care and Social Assistance* workforce has a higher proportion with tertiary qualifications than New South Wales.

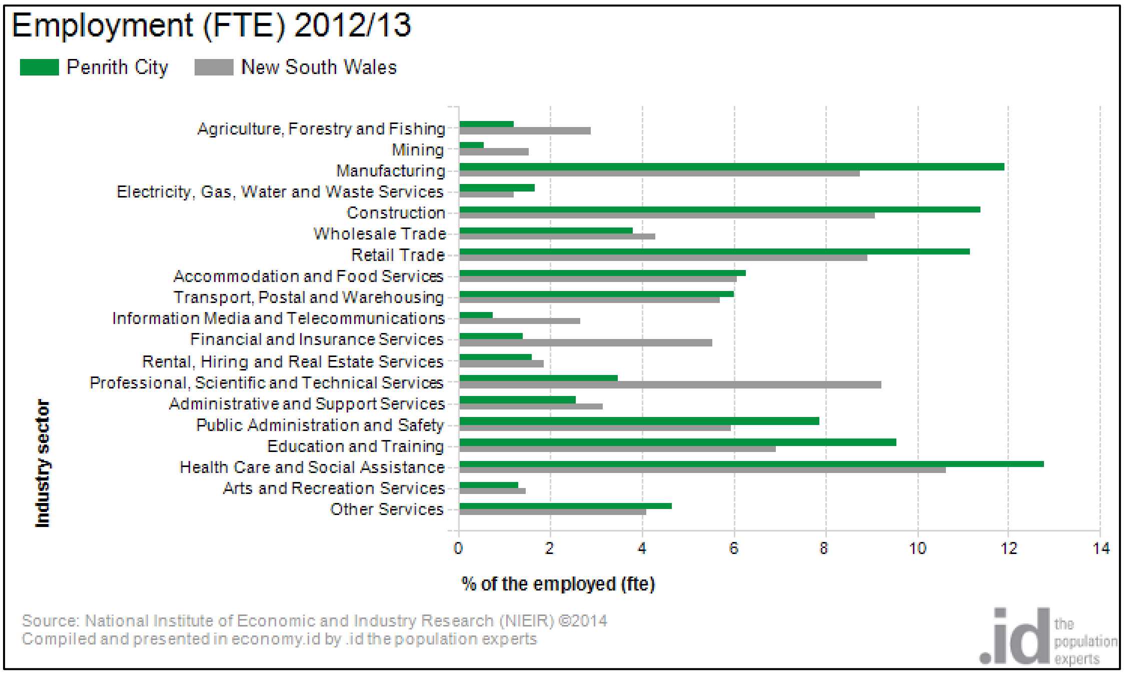
Qualification levels help to evaluate the economic opportunities and socio-economic status of workers in a particular industry.
The level of qualifications in a workforce relate to a number of factors including:
•The age of the workforce;
•The skill and qualification level required to enter an industry;
•The professional or working ambitions of people (to seek education as youth or retraining as adults);
•The opportunities afforded to people to continue studying beyond compulsory schooling.

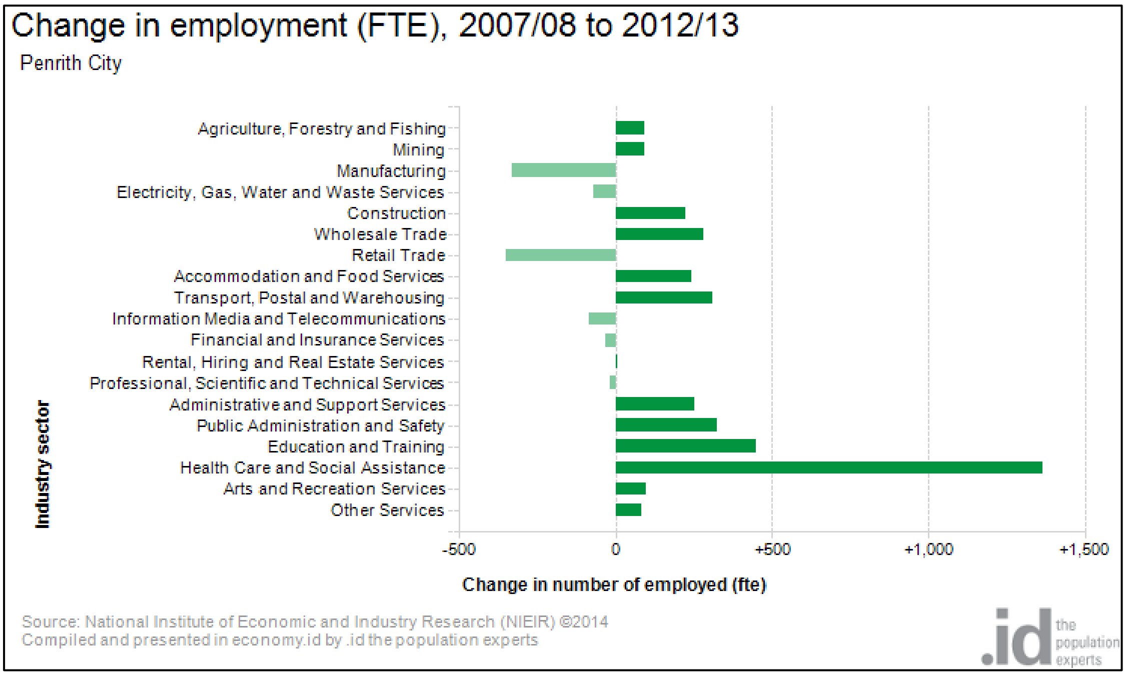
ECONOMIC SECTORS AND SUB-SECTORS IN PENRITH

EMPLOYMENT BY INDUSTRY

In Penrith City, Health Care and Social Assistance is largest employer, generating 7,548 FTE jobs in 2012/13.

Full-time equivalent (FTE) employment is modelled by NIEIR and takes into account differences in hours worked between industry sectors. It is a measure that allows direct comparison of employment between industries in Penrith City.





The analysis of the jobs held by the full-time equivalent workforce in Penrith City in 2012/13 shows the three largest industries were:

- Health Care and Social Assistance (7,548 FTEs or 12.8% versus 10.6% in NSW)
- Manufacturing (7,027 FTEs or 11.9% versus 8.8% in NSW)
- Construction (6,730 FTEs or 11.4% versus 9.1% in NSW)

In combination these three industries accounted for about 21,300 people in total or more than 36% of the workforce.

Penrith City	Full-time equivalent employment in Penrith				Productivity per worker	
Industry	**Number of FTE jobs 2012/13**	**Change s. 2007/08**	**Penrith %**	**NSW %**	**Penrith in $ constant price 2012/13**	**NSW in $ constant price**
Manufacturing	**7,027**	**-331**	**11.9**	**8.8**	**114,577**	**120,266**
Primary Metal and Metal Product Manufacturing	1,253	-76	2.1	0.8	82,215	90,794
Machinery and Equipment Manufacturing	774	-74	1.3	1.5	98,975	106,285
Food Product Manufacturing	738	+84	1.3	1.7	86,329	88,211
Wood Product Manufacturing	736	+0	1.2	0.5	78,497	77,890
Fabricated Metal Product Manufacturing	629	-102	1.1	0.5	144,946	140,915
Non-Metallic Mineral Product Manufacturing	576	-184	1.0	0.4	164,631	147,731
Transport Equipment Manufacturing	495	+27	0.8	0.5	125,443	125,764
Furniture and Other Manufacturing	481	+15	0.8	0.5	63,535	63,474
Polymer Product and Rubber Product Manufacturing	361	-28	0.6	0.3	234,810	239,793
Basic Chemical and Chemical Product Manufacturing	321	+27	0.5	0.6	182,190	207,604
Textile, Leather, Clothing and Footwear Manufacturing	236	-57	0.4	0.4	75,364	75,236
Construction	**6,730**	**+222**	**11.4**	**9.1**	**92,510**	**84,792**
Construction Services	5,081	+238	8.6	6.0	59,453	62,837
Building Construction	1,222	-169	2.1	2.4	225,784	139,381
Heavy and Civil Engineering Construction	427	+153	0.7	0.7	120,233	94,405
Transport, Postal and Warehousing	**3,546**	**+311**	**6.0**	**5.7**	**97,450**	**119,498**
Road Transport	2,179	+174	3.7	2.3	78,003	75,421
Postal and Courier Pick-up and Delivery Services	575	+13	1.0	0.8	67,423	69,897
Warehousing and Storage Services	399	+76	0.7	0.5	171,830	192,760
Rail Transport	209	-1	0.4	0.6	157,555	159,356
Transport Support Services	165	+41	0.3	0.7	179,422	201,739
Education and Training	**5,631**	**+448**	**9.5**	**6.9**	**79,111**	**82,299**
Preschool and School Education	3,537	+65	6.0	4.2	82,061	87,236
Tertiary Education	1,522	+143	2.6	1.8	91,430	98,542
Adult, Community and Other Education	572	+241	1.0	1.0	35,544	40,013
Health Care and Social Assistance	**7,548**	**+1,366**	**12.8**	**10.6**	**70,415**	**71,968**
Hospitals	2,583	+79	4.4	3.0	88,959	90,035
Medical and Other Health Care Services	2,235	+526	3.8	3.4	74,713	82,385
Social Assistance Services	1,975	+551	3.3	2.6	49,644	51,438
Residential Care Services	755	+209	1.3	1.6	53,632	52,825
Information Media and Telecommunications	**445**	**-85**	**0.8**	**2.7**	**160,170**	**212,092**
Telecommunications Services	242	-56	0.4	1.1	242,550	296,493
Publishing (except Internet and Music Publishing)	84	+3	0.1	0.5	119,664	170,574
Motion Picture and Sound Recording Activities	56	+7	0.1	0.4	36,189	81,341
Library and Other Information Services	25	-5	0.0	0.1	98,765	134,793
Broadcasting (except Internet)	22	+7	0.0	0.5	149,181	213,157
Internet Service Providers Web Search Data Processin	16	-36	0.0	0.1	90,083	170,996
Internet Publishing and Broadcasting	0	-3	0.0	0.0	157,928	169,231
Financial and Insurance Services	**832**	**-31**	**1.4**	**5.5**	**288,536**	**303,562**
Finance	517	-54	0.9	2.8	351,091	399,263
Auxiliary Finance and Insurance Services	222	+29	0.4	1.7	149,052	166,873
Insurance and Superannuation Funds	93	-6	0.2	1.0	242,182	250,311
Professional, Scientific and Technical Services	**2,046**	**-16**	**3.5**	**9.2**	**89,131**	**118,997**
Professional, Scientific and Technical Services	1,828	-35	3.1	6.9	85,366	111,218
Computer System Design and Related Services	218	+19	0.4	2.3	126,936	145,091
Arts and Recreation Services	**775**	**+96**	**1.3**	**1.5**	**51,709**	**71,404**
Sports and Recreation Activities	560	+50	0.9	0.7	51,273	60,923
Creative and Performing Arts Activities	117	+20	0.2	0.4	24,307	40,111
Gambling Activities	49	+18	0.1	0.2	99,708	125,663
Heritage Activities	49	+8	0.1	0.2	92,396	118,852
ALL INDUSTRIES	**59,026**	**+2,943**	**100.0**	**100.0**	**87,472**	**111,987**

Source: National Institute of Economic and Industry Research (NIEIR) ©2014. Compiled and presented in economy.id by .id the population experts
http://www.id.com.au

The major differences between the jobs held by the full-time equivalent workforce of Penrith City and New South Wales were:

- A larger percentage of FTEs employed in Manufacturing (11.9% compared to 8.8%)
- A larger percentage of FTEs employed in Education and Training (9.5% compared to 6.9%)

- A smaller percentage of FTEs employed in Professional, Scientific and Technical Services (3.5% compared to 9.2%)
- A smaller percentage of FTEs employed in Financial and Insurance Services (1.4% compared to 5.5%)

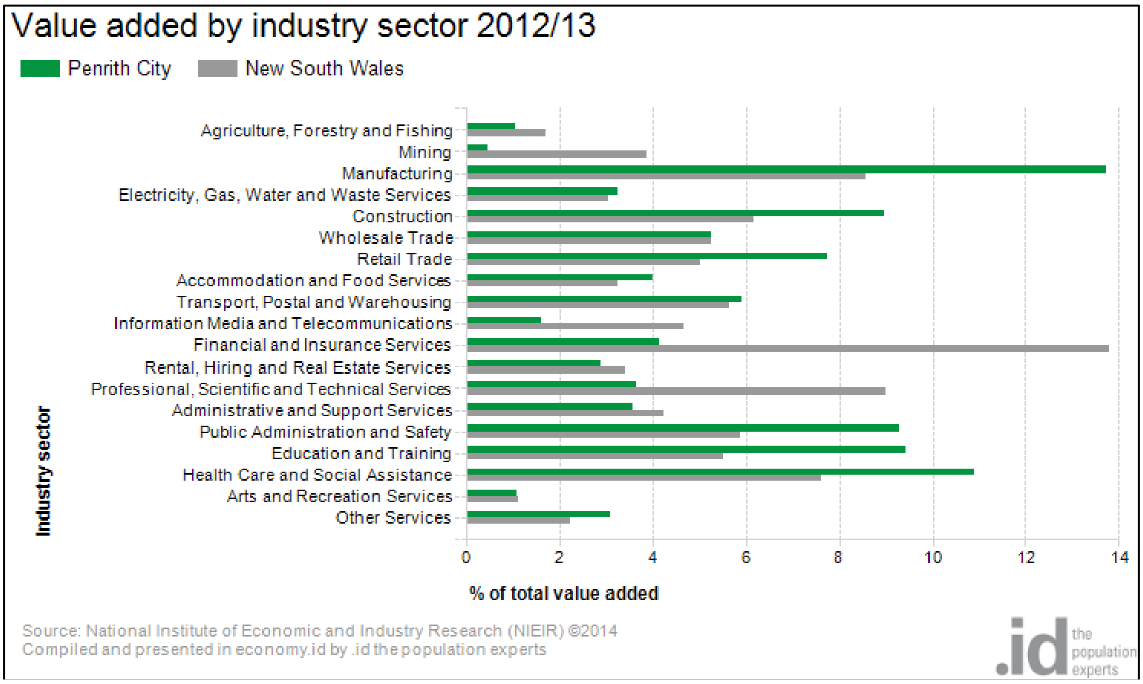
The number of people in the full-time equivalent workforce in Penrith City increased by almost 2,950 between 2007/08 and 2012/13. The largest changes in the jobs held by the full-time equivalent workforce between 2007/08 and 2012/13 in Penrith City were for those employed in:

- Health Care and Social Assistance (+1,366 FTEs)
- Education and Training (+448 FTEs)
- Retail Trade (-353 FTEs)
- Manufacturing (-331 FTEs)

VALUE ADDED

In Penrith City, Manufacturing is the most productive industry, generating $853 million in 2012/13.

Value added by industry is an indicator of business productivity in Penrith City. It shows how productive each industry sector is at increasing the value of its inputs. It is a more refined measure of the productivity of an industry sector than output (total gross revenue), as some industries have high levels of output but require large amounts of input expenditure to achieve that.



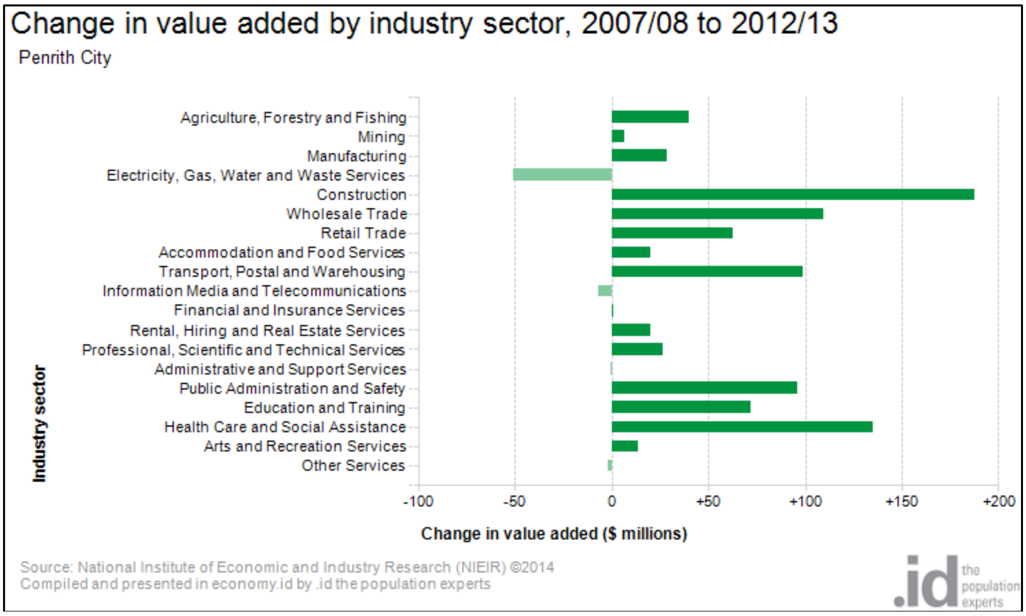
The analysis of the valued added by industry sectors in Penrith City in 2012/13 shows the three largest industries were:

- Manufacturing ($853 million or 13.7% versus 8.6% in NSW)
- Health Care and Social Assistance ($678 million or 10.9% versus 7.6% in NSW)
- Education and Training ($586 million or 9.4% versus 5.5% in NSW)

In combination these three industries accounted for $2,117 million in total or more than 34% of the total value added by industry in Penrith City.

The major differences between the value added by industries of Penrith City and New South Wales were:

- A larger percentage of value added by Manufacturing (13.7% compared to 8.6%)
- A larger percentage of value added by Education and Training (9.4% compared to 5.5%)
- A smaller percentage of value added by Financial and Insurance Services (4.1% compared to 13.8%)
- A smaller percentage of value added by Professional Scientific Technical Services (3.6% compared to 9.0%)



The total value added by industry in Penrith City increased by 856.5 million between 2007/08 and 2012/13. The largest changes in the value added by industries between 2007/08 and 2012/13 in Penrith City were for:

- Construction (+$188 million)
- Health Care and Social Assistance (+$135 million)
- Wholesale Trade (+$109 million)
- Transport, Postal and Warehousing (+$99 million)

Value added by industry sector

Penrith City - Constant prices - 2012/13

Industry	Value added 2012/13 in $m	Change s. 2007/08	%	NSW %
Manufacturing	853.3	+28.3	13.7	8.6
Health Care and Social Assistance	678.0	+135.3	10.9	7.6
Education and Training	586.1	+71.9	9.4	5.5
Public Administration and Safety	577.3	+95.7	9.3	5.9
Construction	557.4	+187.8	9.0	6.2
Retail Trade	481.9	+62.5	7.8	5.0
Transport, Postal and Warehousing	367.6	+99.0	5.9	5.7
Wholesale Trade	325.6	+109.3	5.2	5.2
Financial and Insurance Services	256.7	+1.1	4.1	13.8
Accommodation and Food Services	248.0	+19.7	4.0	3.3
Professional, Scientific and Technical Services	226.1	+26.6	3.6	9.0
Administrative and Support Services	221.8	-0.3	3.6	4.2
Electricity, Gas, Water and Waste Services	202.8	-51.0	3.3	3.0
Other Services	191.4	-1.9	3.1	2.2
Rental, Hiring and Real Estate Services	179.1	+19.9	2.9	3.4
Information Media and Telecommunications	99.0	-6.7	1.6	4.7
Arts and Recreation Services	67.6	+13.4	1.1	1.1
Agriculture, Forestry and Fishing	65.2	+39.6	1.0	1.7
Mining	27.7	+6.2	0.4	3.9
Total industries	**6,212**	**+857**	**100.0**	**100.0**

Source: National Institute of Economic and Industry Research (NIEIR) ©2014.
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WORKER PRODUCTIVITY

In Penrith City, Financial and Insurance Services had the highest productivity by industry, generating $288,536 per worker in 2012/13.Worker productivity by industry is calculated by dividing the industry value add by the number of persons employed in that industry. It shows which industries generate the most value add per employee. Some industry sectors, such as retail trade, are not highly productive per worker, but they employ a lot of people. Other industries, such as Finance, employ fewer people but generate high levels of productivity. Each plays an important role in the economy.

As we can see in the following table, Penrith has a lower productivity per worker in every industry except Public Administration and Construction. That said, in some industries, Penrith is closing the gap it had for year, for example in Health Care and Education . Manufacturing and Finance and Insurance services workers generate slightly lower productivity than the state average but got more competitive are getting close to the state average. They are now just 5% below the state average.

If we look in detail, Building Construction sub group is highly competitive compared to the state average: a worker in this industry in Penrith generates $ 225,784 annually versus $ 139,381 for a NSW worker showing an impressive progression of $ 113,926 from the 2007/08 baseline. Heavy and Civil Engineering is also very competitive as Penrith workers in this sub-sectors generate $ 120,000 a year versus $ 94,400 for a NSW worker.

Some Manufacturing sub-sectors are also quite competitive: Non-metallic, Mineral Product (164,600 vs 147,700) Waste Collection, Treatment and Disposable Services, Fabricated Metal Product Manufacturing, Wood product Manufacturing, Textile, Leather, Clothing and footwear manufacturing, furniture and other Manufacturing. Road Transport workers are also more productive in Penrith than in NSW.

Productivity per worker (annual) by industry

Penrith City - Constant prices

Industry	Penrith 2012/13	NSW 2012/13	Change s. 2007/08
Financial and Insurance Services	288,536	303,562	+6,593
Electricity, Gas, Water and Waste Services	216,850	302,169	+5,085
Rental, Hiring and Real Estate Services	188,876	221,083	+7,805
Information Media and Telecommunications	160,170	212,092	-41,115
Wholesale Trade	122,321	148,970	+3,422
Public Administration and Safety	119,687	112,312	+8,880
Manufacturing	114,577	120,266	+5,993
Administrative and Support Services	111,085	136,974	-11,521
Transport, Postal and Warehousing	97,450	119,498	+21,358
Construction	92,510	84,792	+33,943
Professional, Scientific and Technical Services	89,131	118,997	+4,247
Education and Training	79,111	82,299	+11,434
Health Care and Social Assistance	70,415	71,968	+8,994
Agriculture, Forestry and Fishing	70,217	82,585	+28,456
Other Services	60,216	61,395	-6,308
Mining	56,573	349,708	-98,410
Retail Trade	52,222	54,531	+4,171
Arts and Recreation Services	51,709	71,404	+312
Accommodation and Food Services	40,001	49,417	+2,173
Total worker productivity	**87,472**	**111,987**	**+7,747**

Source: National Institute of Economic and Industry Research (NIEIR) ©2014.
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BUSINESSES

The Construction industry had the largest number of total registered businesses in Penrith City, comprising 23.3% of all businesses, compared to 14.2% in New South Wales.

Registered business by industry shows how many businesses there are in Penrith City within each industry sector using the Australian Bureau of Statistics (ABS) Business Register which itself is derived from the GST register held by the Australian Tax Office (ATO). Businesses are included if they are registered with the ATO, with an ABN used within the previous two financial years. Businesses are split up between employing and non-employing businesses. Non-employing businesses may include sole traders and registered ABNs which are part of larger enterprises.

The distribution of businesses may reflect the industry structure of the area, or may differ significantly. For instance, the largest industry in an area may consist of one very large business, with a large number of employees, while a sector with a lower value-added could have a lot of small and micro businesses.

Registered businesses by industry

Penrith City - Total 2013

Industry	Number 2013	Change from 2009	Penrith %	NSW %
Construction	2,885	-209	23.3	14.2
Rental, Hiring and Real Estate Services	1,287	-69	10.4	11.0
Transport, Postal and Warehousing	1,265	-143	10.2	6.0
Professional, Scientific and Technical Services	970	-52	7.8	13.1
Retail Trade	794	-76	6.4	6.6
Other Services	762	-22	6.2	4.0
Manufacturing	692	-51	5.6	3.6
Financial and Insurance Services	638	+109	5.2	8.5
Health Care and Social Assistance	551	+49	4.5	5.7
Administrative and Support Services	515	-15	4.2	4.1
Wholesale Trade	452	-45	3.7	3.8
Industry not classified	428	+246	3.5	4.0
Accommodation and Food Services	315	-5	2.5	4.0
Agriculture, Forestry and Fishing	305	-35	2.5	6.7
Education and Training	152	+32	1.2	1.3
Arts and Recreation Services	149	-14	1.2	1.4
Public Administration and Safety	78	+8	0.6	0.4
Information Media and Telecommunications	73	-5	0.6	1.2
Electricity, Gas, Water and Waste Services	52	-8	0.4	0.2
Mining	19	-7	0.2	0.2
Total Industries	**12,380**	**-310**	**100.0**	**100.0**

Source: Australian Bureau of Statistics, Counts of Australian Businesses, including Entries and Exits, 2008 to 2012 Cat. No. 8165.0NOTE: "Non-employing businesses includes sole proprietors where the proprietor does not receive a wage or salary separate to the business income.

The number of businesses in Penrith City should be viewed in conjunction with Employment (Total) and Value-Added datasets to see the relative size of industries, and with Employment Locations data to see where business employment occurs within the area.

If we divide the number of FTE by the number of businesses we have an average size of the business. For example, Construction businesses have on average 2.3 employees. This means, though the industry employs significant proportion of the local workforce and residents, it is vastly fragmented and composed of lots of small businesses. Manufacturing businesses have on average 10.2 employees.

Business formation: Penrith has experienced a reduction in the number of businesses formed. It is not necessarily linked with less job creation, but most probably to a greater integration of businesses.