Wagga Wagga Special Activation Precinct

Strategic Economic and Employment Analysis

PREPARED FOR NSW DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT

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macroplan

Important Notice

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Executive Summary

The NSW Government has identified four key global forces that will shape regional NSW's economy being the rise of Asia, rapid urbanisation, demographic and social change and digital disruption. These global forces are already influencing the population and employment profile and growth of many regional areas including Wagga Wagga LGA and the Eastern Riverina Region. In addition to these global forces, there are a number of other trends and factors which are likely to influence future employment opportunities for regional NSW and the Wagga Wagga LGA. These include: the global demand for food, particularly from Asia's growing middle class; changing diets; moving away from a linear economy towards a circular economy; demand for alternative energy sources; innovative products and manufacturing techniques; as well as investment and funding for Defence. Changes in government policies and systems (such as migration policies and tax incentives) have the potential to also influence population and employment growth in regional NSW. Identifying opportunities to optimise the benefits that can eventuate from these forces and trends and policy changes within regional NSW will be important to stimulating local economies and creating opportunities for growth.

The NSW Government has introduced Special Activation Precincts (SAP) as a new way of planning and delivering infrastructure projects in certain regional locations in NSW, to attract and grow businesses, stimulate the local economy and provide more local employment opportunities. A SAP was declared for Wagga Wagga in January 2019 centred around the Bomen Employment Lands area. The NSW Department of Planning, Industry and Environment (DPIE) is responsible for preparing a Master Plan for the Wagga Wagga SAP. Macroplan has been engaged to consider the economic stimulus that a SAP would generate in Wagga Wagga – in terms of population and employment – and as a result, the demand for land in the Bomen Employment Lands area.

Wagga Wagga is the largest inland regional city in NSW with a broad industry base, from agriculture and agribusiness, to education and health services, to defence, through to manufacturing and freight and logistics. Importantly, it is located halfway between Australia's two largest urban centres of Sydney and Melbourne. Connectivity to these markets and two of Australia's largest container ports – Port Botany and Port of Melbourne - will be significantly improved, as well as the opportunity to connect with the Port of Brisbane with the delivery of Inland Rail and the RiFL Hub. The freight and logistics potential for the precinct is significant, offering industry increased opportunities to service larger markets and locally drive new economic and employment opportunities, particularly in Bomen.

Other key sectors that will drive the success of the SAP include advanced manufacturing, agribusiness, and renewable energy. Australian manufacturers are realising their competitive advantage when compared to developing countries relates to the delivery of value rather than cost – such as advanced manufacturing. Bomen has many competitive advantages to leverage and attract advanced manufacturers including its affordability (looked for by SMEs), large land parcels (crucial to some businesses) and existing innovators (e.g. Enirgi and Southern Oil). With renewable energy and energy supply more broadly creating opportunities in the regions, there is scope for this to lead to further investment in Bomen.

From an agribusiness perspective, the SAP's location in the Riverina Murray which is responsible for 13% of New South Wales agricultural output, means the region will provide opportunities for further growth in agribusiness and ag-tech. With an established base of existing food manufacturers, support from a strong research base at

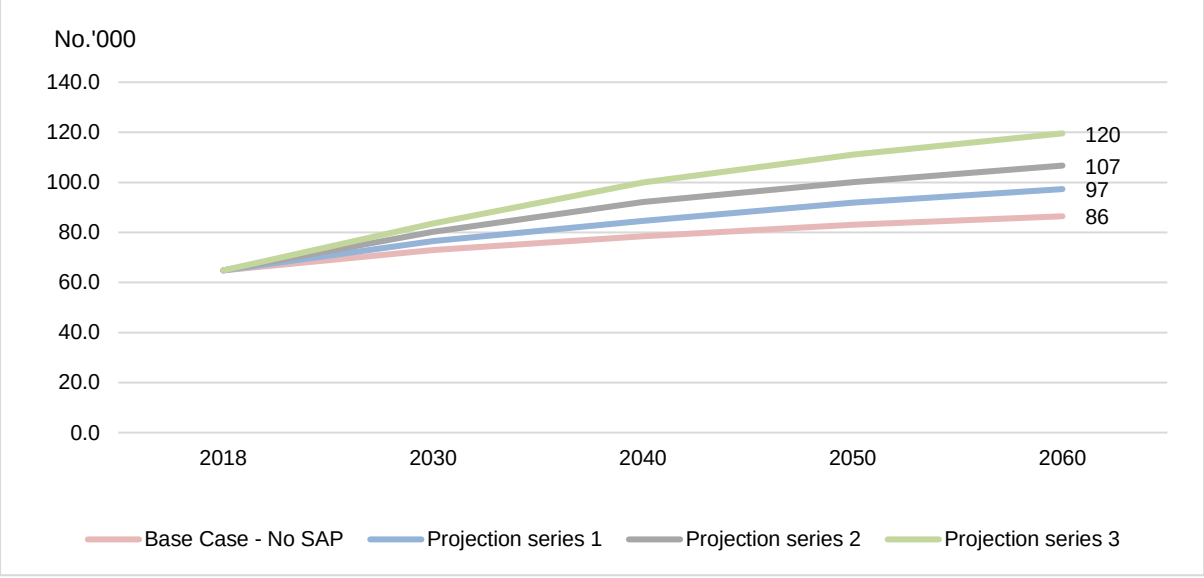
tertiary education institutions, Bomen provides industry with the space and resources for businesses to expand and thrive.

While the volume of land, infrastructure delivery, locational advantages, large land parcels and general affordability of land in Bomen will be key attractors for businesses, securing tenants will require a change in public policy and government support. The SAP itself involves a major change in public policy to streamline the planning process – to remove what has emerged as a major impediment to businesses investing. Feedback from existing manufacturing and logistics businesses in the Bomen Employment Land area highlighted the difficulties in obtaining development approvals as well as the cost associated with the planning approval process. Businesses also flagged that this has resulted in investment opportunities being lost to other states or overseas. This has confirmed the substantial potential for improved planning approval processes, via a SAP in Wagga Wagga LGA, to stimulate investment and job growth.

The SAP also involves significant potential investment in infrastructure which would be an added attractor. In addition, the Government may need to consider more broadly other factors which could make Bomen more competitive to businesses considering investing. The Government should consider the competitiveness of State charges and incentives, and direct engagement with businesses that are suitable to be located within the SAP.

In the absence of a SAP, macroplan estimates that the population of Wagga Wagga LGA will grow from 68,000 in 2018 to about 78,000 in 2040 and 87,000 in 2060. The growth of the Bomen Employment Lands area would remain constrained and its employment base could grow from 1,475 in 2018 to 2,250 in 2060. This could leave Bomen a significantly under-utilised asset.

Figure 1. Wagga Wagga LGA Population Projections With and Without a SAP



The delivery of Wagga Wagga SAP in Bomen could result in a significant positive impact on growth in employment in the Bomen Employment Lands area and in turn leading to a significant positive impact on the future growth in population and employment in the entire Wagga Wagga LGA. Based on assumptions on the size and impact of the introduction of a SAP, macroplan estimated three series of employment projections for Bomen

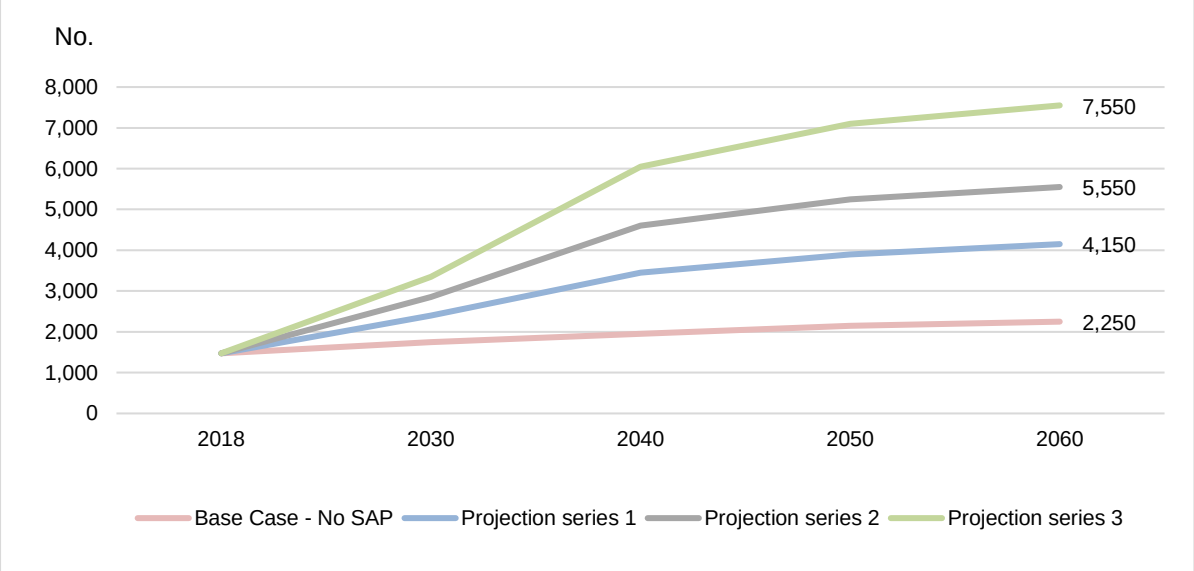
and corresponding employment and population projections for Wagga Wagga LGA for the period 2018-2060 which are summarised in Table 1.

Table 1. Population and Employment Projections Summary Table

Scenario	Detail and assumptions
Base Case	Based on the DPIE projections but incorporates some net increase in migration flows into Wagga Wagga LGA. ▪ Population at 78,000 by 2040 compared with 64,800 in 2018 (Figure 1). ▪ Employment at 38,800 by 2040 compared with 32,800 in 2018. Employment in Bomen rises from 1475 in 2018 to 1950 by 2040 (Figure 2). Assumes continuation of past trends, some benefit from RIFL and inland rail, no-policy change, no SAP and trend expansion in the region's agricultural and general infrastructure base.
Scenario 1	SAP is introduced that lifts growth due chiefly to a more streamlined approval process for development applications and other related policy changes. These changes lower the barriers to entry such as up-front capital costs and the time cost in delays imposed under the current planning regime. Substantially lifts the benefit of the RIFL. ▪ Population at 85,000 by 2040 and 97,000 in 2060. ▪ Employment in Bomen rises to 3459 in 2040 and in Wagga to 42,100..
Scenario 2	Assumes a higher success rate in attracting new investment in response to lower cost planning regime, and also the greater strategic commitment by the Wagga Wagga City Council and NSW Government in infrastructure provision. Achievable but lower probability than series 1. ▪ Population at 90,000 by 2040. ▪ Employment at 4,600 in Bomen and 45,700 in Wagga Wagga by 2040.
Scenario 3	Assumes the ambitious target for Wagga Wagga's population to rise to 100,000 by end of 2030s is achieved. Requires an even higher success rate for SAP but also other policy measures to lower cost of firms operating in Bomen/Wagga Wagga ▪ Population at 100,000 by the end of 2030s. ▪ Employment at 6,050 in Bomen and at 50,500 in Wagga Wagga by the end of 2030s.

As illustrated in Figure 2, the series 1 projection has employment at Bomen rising to 4,150 in 2060 and has Wagga Wagga LGA's population rising to 85,000 in 2040 and 97,000 in 2060, while the series 2 projection has employment at Bomen rising to 5,550 in 2060 and Wagga Wagga LGA's population reaching 92,000 in 2040, 100,000 in 2050 and 110,000 in 2060. The higher growth (series 3) projection has employment at Bomen reaching 7,550 in 2060 – it has the 100,000 population mark being reached in 2040 and the population reaching 120,000 in 2060.

Figure 2. Projected Employment Growth in the Bomen Employment Lands Area 2018-2060



In terms of demand for land and based on a most probable low-density mix of land uses by industry, macroplan estimated the requirement for an additional 480 hectares of developable land by 2060 (Table 2). Allowing for green and physical infrastructure and spare capacity, this would require a gross 920 hectares of land to be added to the land currently used by businesses in Bomen. This estimate of long-term demand has been factored into the final structure plan developed for the Bomen Employment Lands area.

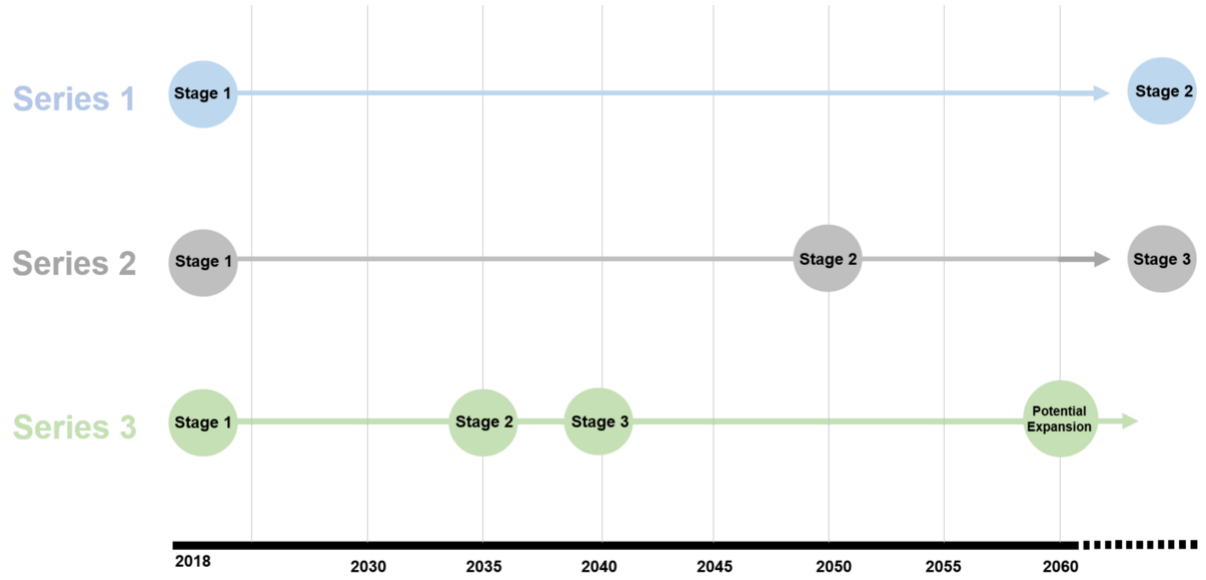
Table 2. Staged Development of Land in Bomen Employment Lands Area (i.e. New Regional Enterprise Area)

Employment Land – Hectares	Total	Cumulative	At 80% Capacity	Cumulative	Potential Employment
Stage 1	350	350	280	280	3,280
Stage 2	90	440	72	352	4,118
Stage 3	164	604	131	483	5,654

These projections were also used in developing a timeline for the three stages for investment in the development of new lands in the Bomen Employment Lands area. Stage 1 will accommodate employment growth to 2030 including on the high growth scenario. Stage 2 will need to be activated with medium growth (series 2) outcome circa 2050 but with high growth bringing that forward to the mid-2030s. Stage 3 will provide for longer term employment growth on the low and medium growth scenarios, but with the high growth outcome requiring consideration for activation in about 2040.

The potential which the SAP has to lift the growth of Wagga Wagga LGA over the medium-to long-term would represent a very worthwhile commitment of public policy and investment in support of regional NSW.

Figure 3. Indicative Staging of Development in Bomen (i.e. New Regional Enterprise Area) 2018-2060



Section 1: **Introduction**

A Special Activation Precinct (SAP) was declared for Wagga Wagga in January 2019 centred around the Bomen Business Park approximately 10 km north east of Wagga Wagga's Central Business District known as the Wagga Wagga SAP. The focus for all SAPs is a 20-year vision for job creation and regional economic development. SAPs are a place-based approach to 'activate' strategic locations and areas of State or regional significance.

Wagga Wagga Local Government Area (LGA) has locational strengths with it located halfway between Sydney and Melbourne, as well as hosting a strong industrial core which will be further enhanced upon the development of the Inland Rail and the Bomen Business Park's future freight and logistics terminal. The SAP will focus on the economic opportunities associated with freight and logistics, agribusiness and advanced manufacturing, as well as exploring opportunities to grow and expand renewable energy options due to the proximity of the Bomen Solar Farm.

The NSW Department of Planning, Industry and Environment (DPIE) is responsible for preparing a Master Plan for the Wagga Wagga SAP. A broader study area has been identified for the preparation of the Master Plan, that is the Wagga Wagga SAP Investigation Area, which covers approximately 4,180 hectares of land (Figure 4). Approximately 600-750 hectares of this land has already been developed as a business park (i.e. the Bomen Business Park) and hosts a variety of businesses including food manufacturing, an abattoir, chemical manufacturing, oil refinery, manufacturing industries, equipment, lead and battery recycling as well as Council's Livestock Marketing Centre. Furthermore, 235 hectares of land within the Wagga Wagga SAP Investigation Area has been approved for the development of solar farms.

In addition, the new Inland Rail route is due to be operational by 2025 and will provide improved rail access to ports along the eastern Australian seaboard. The proposed Riverina Intermodal Freight and Logistics (RIFL) Hub, located within the Bomen Business Park is due to commence operations in 2020 and will benefit from the Inland Rail project.

Macroplan has been engaged to develop a strategic economic and employment analysis to support the Wagga Wagga SAP Master Plan. This includes considering the potential impact of the declaration of SAP within the Wagga Wagga SAP Investigation Area on the long-term growth of the Wagga Wagga economy, for the period from 2018 to 2040 and longer term to 2060.

This report considers the:

- strategic context of Wagga Wagga LGA and the Eastern Riverina Region at a state and national level;
- global and industry trends which are influencing and could influence future employment opportunities for Wagga Wagga LGA and more specifically the Wagga Wagga SAP Investigation Area;
- historic trends in population growth for Wagga Wagga LGA and the local economy;
- current economic and employment base in Wagga Wagga LGA and the Eastern Riverina Region;
- Bomen Business Park's role and position from an economic perspective to Wagga Wagga LGA
- a strength, weakness, opportunities and threats (SWOT) analysis of the three concept structure plans.

- proposed and known investment opportunities for Wagga Wagga LGA with a focus on the Wagga Wagga SAP Investigation Area.

Based on this analysis, macroplan has produced projections in relation to Wagga Wagga LGA's future population and labour force and estimated land required to support employment growth and facilitate the intended outcomes of the Wagga Wagga SAP.

Figure 4. Wagga Wagga SAP Investigation Area

Source: DPIE (2019)

Section 2: **Stakeholder Consultation**

2.1 Consultation

As part of considering the future growth potential and needs of Wagga Wagga LGA, a number of stakeholders were consulted. Stakeholders generously gave their time in face to face meetings. Those consulted represented:

- State government agencies including Department of Premier and Cabinet and DPIE
- Wagga Wagga City Council
- The community, specifically residents of the Eunony Valley
- Businesses operating in the Wagga Wagga SAP Investigation Area including the Sale Yards, ROBE, Enirgi, Southern Oils Refinery and Proway Livestock Equipment.

Stakeholder feedback informed our analysis and findings, specifically providing an understanding of the factors that attract businesses to Wagga Wagga LGA and the potential for employment growth and future demand for industrial land.

Key themes identified during the stakeholder engagement process are detailed below.

NSW Planning System

- Business indicated they had plans for expansion however, they found the planning system complex, costly and took too long to obtain approval.
- One business redirected their plans for expansion in Wagga Wagga to Queensland after a series of issues with the NSW planning system over a number of years. The Queensland planning system allowed for the project to be approved within months.
- The identification of a SAP which delivers a streamlined process is supported by existing businesses.
- If the process of approving new investment cannot be fast tracked, there will continue to be a significant loss of economic opportunities for Wagga Wagga and the broader region.

Employment

- Businesses requiring blue collar staff indicated they had significant staff turnover and reported it difficult to attract new staff.
- Businesses noted some staff were sourced from overseas with issues attracting local employees with the required skills and experience. Retaining staff in the longer term is an issue with employees from overseas leaving Wagga Wagga after receiving permanent residency due to the lack of employment opportunities for their spouse and / or private secondary and tertiary education opportunities for their children.

Education, Training, Skill Transfer and Innovation

- Most companies indicated the majority of staff training was done on the job or within the company.
- Businesses were supportive of opportunities to build stronger relations with local education providers (TAFE and universities) helping to match courses provided with the qualifications required to work for local employers and industry sectors.

Why Wagga Wagga?

- Businesses identified one of the key reasons for locating in Wagga Wagga LGA was its location which is halfway between Sydney and Melbourne.
- Some industrial facilities currently located within the Sydney and Melbourne urban areas are facing pressures from the urban intensification and also need to be up-scaled and modernised. Consideration is being given to re-location to Wagga Wagga because of its connectivity and access to the growing population base of Sydney and Melbourne.
- Businesses were also attracted to Wagga Wagga due to the affordable price of land.

Enabling Infrastructure

- Some businesses in the Bomen employment lands area raised the inadequate service capacity, mostly in reference to the internet and electricity.
- Many businesses indicated that poor internet connection had adverse impacts on their capacity to operate and move towards more innovative ways of operating their business.
- To improve productivity and continue to grow, businesses identified the critical importance of upgrading the regions provision of internet via the NBN.
- Some businesses indicated that upon the completion of enabling transport infrastructure notably the RiFL Hub and the Inland Rail project, they have plans to invest in expanding their business.

SAP Location and Uses

- The local community, mostly residents of Eunony Valley, were concerned about the location and proposed uses within the SAP.
- The community had major concerns over the scale and size of the SAP. The community assumed that the entire 4,100 hectare investigation area would form part of the final SAP.
- The community's biggest concern was the visual impacts of development, particularly along the eastern ridgeline.
- Members of the community were of the opinion that industrial development should be restricted to the western side of Byrnes Road.
- The community requested the plantation of trees as visual screening and height restrictions for any development proposed on the eastern side of Byrnes Road.

Summary of Consultation Findings

- Wagga Wagga LGA's location mid-way between the two key markets of Sydney and Melbourne is a significant advantage for businesses. With Sydney and Melbourne's populations expected to grow strongly, the advantage can be enhanced.
- Inland Rail will enhance the connectivity of Wagga Wagga to import and export markets.
- Potential for industry to continue to invest in Wagga Wagga and move away from populated urban areas of Sydney and Melbourne due to land price affordability and transport connectivity.
- The complex and costly planning process is impacting on existing businesses willingness to expand and new businesses to invest in the region with the process being quicker and less complicated in other states such as Queensland. The identification of a SAP which delivers a streamlined process is supported by existing businesses.
- If the process of approving new investment cannot be fast tracked, there will continue to be a significant loss of economic opportunities.

Section 3: **Economic Narrative**

"The ambition of the Wagga Wagga Special Activation Precinct is to be a sustainable hub of high value production and manufacturing, connected to the world and supporting Australia's richest food and agricultural region"

The Wagga Wagga LGA is a thriving and diverse economy, leveraging from the strong and agricultural sector which spans across the Eastern Riverina Region. The employment and community benefits from such a rich food and agricultural region will be supported by the Wagga Wagga SAP.

Wagga Wagga LGA is the largest regional inland city in NSW accommodating a range of services from education, health, defence through to manufacturing and freight and logistics. Importantly it is strategically located halfway between Australia's two largest urban centres of Sydney and Melbourne. Connectivity to these markets and two of Australia's largest container ports – Port Botany and Port of Melbourne - will be significantly improved, as well as the opportunity to connect with the Port of Brisbane with the delivery of Inland Rail and the RiFL Hub. The freight and logistics potential for the precinct is very significant, offering industry increased opportunities to service larger markets and locally drive new economic and employment opportunities.

Wagga Wagga LGA offers a well skilled local labour force, which is continuing to attract interest by businesses to set up operations locally. With increasing global demand for premium food products, Wagga Wagga LGA's transport infrastructure and connectivity to international gateways will provide significant opportunities to compete in the global economy.

Bomen has the potential to play an increasing role in the long-term growth of Wagga Wagga LGA and in allowing the LGA to maximise its growth potential. Existing businesses in Bomen operate on approximately 300 hectares of land (including the 104 hectares of sale yard) and in 2018 employed an estimated 1,475 people. The Bomen Structure Plan provides scope for an additional 919 hectares of land for industrial and commercial use over the next four decades which allowing for a generous amount of green and physical infrastructure, could allow up to an additional 5,650 people to be employed by 2060.

The State Government's commitment to declaring Bomen a Special Activation Precinct will see continued investment in the precinct's infrastructure and will expedite and simplify the planning process. Amongst other factors, this will make Bomen significantly more competitive as a location to invest in compared with interstate and overseas options.

Manufacturing has continued to operate and have a strong presence in Wagga Wagga LGA, even whilst in absolute terms it has declined across Australia. With Wagga Wagga LGA's skilled labour force growing, the region has the capacity to develop innovative products, components or services within global supply chains and grow its advanced manufacturing base.

Notwithstanding the above, food manufacturing presently dominates as the major employer, which reflects the strength of the Riverina region in agriculture and the advantages of Wagga Wagga LGA, in terms of its nodal location and its strong workforce. There is scope for new firms to establish in Wagga Wagga LGA and Bomen with the potential to further build on the agricultural endowments of the region.

The educational offerings from Charles Sturt University and the TAFE as well as industry / business partnerships are a critical ingredient in sustaining and increasing the skill base of the workforce. There is potential for these higher education institutions to build partnerships with local businesses and to match future industry opportunities to skills sets, particularly in subjects relating to science, technology, engineering and maths (STEM).

The region is transport rich with the existing road networks and increased investment in freight rail infrastructure. There is also potential to capitalise on Wagga Wagga LGA's Airport, which currently exports beef via Sydney Airport to global markets. The proximity to Canberra Airport, which operates direct international flights to Singapore and Doha, also provides an opportunity to utilise the airport's dedicated freight terminal. While export markets are key for most food manufacturers, the demand generated by the projected growth in the Sydney and Melbourne domestic markets will also support business expansion.

The role of innovation and the need for businesses to identify new opportunities to minimise its environmental impacts and operating cost provides significant opportunity to grow Wagga Wagga's local economy and compete on a national and global scale. Industry in the region have been active in exploring the opportunities within the supply chain in creating an active circular economy. As energy prices continue to increase in Australia and the manufacturing sector being identified as one of the largest industrial consumers of electricity, companies in Bomen are likely to take steps to decrease usage and / or move towards the use of renewable energy which may result in other renewable energy developments within Bomen and / or as part of an individual business use.

The NSW Government has identified four key global forces that will shape regional NSW's economy being the rise of Asia, rapid urbanisation, demographic and social change and digital disruption. These global forces are already influencing the population and employment profile and growth of many regional areas including Wagga Wagga LGA and the Eastern Riverina Region. In addition to these global forces, there are a number of other trends and factors which are likely to influence future employment opportunities for regional NSW and the Wagga Wagga LGA. These include: the global demand for food, particularly from Asia's growing middle class; changing diets; moving away from a linear economy towards a circular economy; demand for alternative energy sources; innovative products and manufacturing techniques; as well as investment and funding for Defence. Changes in government policies and systems (such as migration policies and tax incentives) have the potential to also influence population and employment growth in regional NSW. Identifying opportunities to optimise the benefits that can eventuate from these forces and trends and policy changes within regional NSW will be important to stimulating local economies and creating opportunities for growth.

Section 4: **Strategic Context**

Wagga Wagga LGA is located within the Riverina Murray and Eastern Riverina regions of NSW. A number of strategic plans and strategies have been prepared by commonwealth, state and local governments to guide the future growth and direction of Wagga Wagga LGA over the next 20 years and beyond. A summary of key plans and strategies of relevance to Wagga Wagga LGA's economic and employment narrative and the development of the Wagga Wagga SAP Investigation Area are outlined below.

4.1 Riverina Murray Regional Plan 2036

The *Riverina Murray Regional Plan 2036* has been prepared to guide the NSW Government's land use planning priorities and decisions over the next 20 years for the Riverina-Murray Region. The NSW Government's vision for the Riverina-Murray is to create a diversified economy founded on Australia's food bowl, iconic waterways and a strong network of vibrant and connected communities.

The Plan is structured around four goals for the region including directions and actions to achieve the NSW Government's vision. The four goals for the region include:

- A growing and diverse economy
- A healthy environment with pristine waterways
- Efficient transport and infrastructure networks
- Strong, connected and healthy communities.

An overview of the Plan's relevance to Wagga Wagga LGA's economic and employment narrative is included below.

Goal 1: A growing and diverse economy

Rural and natural resources are the pillars of the economy, which is strengthened by a diverse range of employment opportunities including manufacturing, retail, health, tourism and education. Protecting agricultural lands and its supply chains is identified as a key priority given its associated relationship with the expansion and diversification of agribusinesses as well as new value-added manufacturing opportunities.

The Plan notes that the region has a shortage of skilled workers, particularly in agribusiness, health, education and manufacturing that may affect future economic potential[1]. As such tertiary education and training is identified as being crucial to overcoming the shortage of skilled workers to meet future workforce demands. Charles Sturt University and TAFE campuses including the Primary Industries Centre in Wagga Wagga LGA play and will continue to play an important role in meeting workforce demands and jobs for the future.

Goal 2: A healthy environment with pristine waterways

The region supports a wide range of environmental assets and native vegetation communities. Protecting these values is important to communities and the economic and environmental wellbeing of the region. These

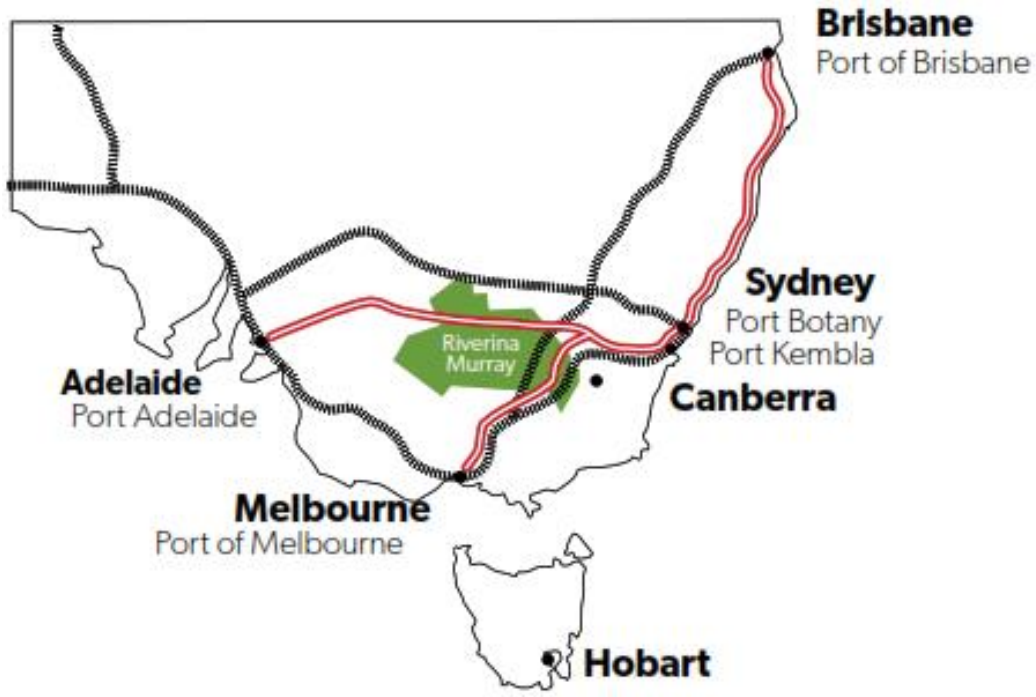
[1] NSW Department of Planning and Environment, *Riverina Murray Regional Plan 2036*, p23

environmental assets support agriculture; contribute to the lifestyle and amenity of communities; and provide tourism and recreational opportunities.

Goal 3: Efficient transport and infrastructure networks

The region is one of the most significant locations for freight and logistics in Australia with a number of freight and logistics hubs (including intermodal terminals) already located in Wagga Wagga, Albury and Griffith LGAs. The region also has the potential to continue to leverage off the major freight and transport corridors between Adelaide, Melbourne, Sydney and Brisbane as well as new freight infrastructure investment (e.g. Inland Rail project) (Figure 5).

Figure 5. Riverina Murray's Strategic Location



Source: Riverina Murray Regional Plan 2036

The Plan states that maximising industry productivity and reducing transport costs will help industry to grow into the future and that the connectivity of the road networks within the region will influence its economic potential.

The region's largest commuter airports are in Albury, Griffith, Wagga Wagga and Narrandera– Leeton. In addition to traditional domestic uses, air-based operations support essential community services, such as the Royal Flying Doctor Service, and defence and training operations, such as the Royal Australian Air Force (RAAF), which has a substantial airbase in Wagga Wagga LGA.

Goal 4: Strong, connected and health communities

The Plan states that population growth across the region will not be evenly distributed, with Albury, Wagga Wagga and Griffith LGAs projected to experience the highest rates of growth. Investment in major services, facilities and industrial activity is predicted to drive growth in these places, distributing benefits across the region. The growth of these regional cities is important to the economic prosperity of the region as they can be an attractor for new residents and for businesses to invest.

Most of the housing required to support the region's population growth is likely to be delivered in these regional cities. Significant release areas are located at Thurgoona and Wirlinga in Albury; Estella, Lloyd and Boorooma in Wagga Wagga; and Hanwood and Lake Wyangan in Griffith. The Plan noted that these areas will provide sufficient housing to accommodate the projected demand for 12,600 new dwellings.

As the population grows and changes, there will be demand for new housing and a greater variety of housing than just single detached dwellings. This includes the demand for housing and accommodation from seasonal workers to support agribusiness industries, including wine, orchard fruit (including citrus and nuts) and cotton and berry industries, particularly during harvest periods.

4.2 A 20-Year Economic Vision for Regional NSW (2018)

In 2018, the NSW Government released *A 20-Year Economic Vision for Regional NSW* which sets out a broad vision and economic strategy for all of regional NSW, except the metropolitan areas of Greater Sydney, Newcastle and Wollongong. The strategy document observed that regional NSW is Australia's largest and most diverse regional economy. It is rich with natural resources, is home to a third of the state's population and produces one-fifth of NSW's gross state product.

The strategy categorises regional NSW into 37 functional economic regions (FERs. Wagga Wagga, along with Coolamon, Junee and Lockhart LGAs, is located within the Eastern Riverina FER and has been identified a 'growth centre' due to its increasing population including people migrating to Wagga Wagga LGA, attracted by their lifestyles and employment industries.

The 20-year strategy has three core objectives:

- Amenity – to provide quality services and infrastructure in regional NSW
- Growth – to align policies to support growth in regional centres
- Potential – to identify and activate economic potential in regional NSW

There are seven principles underpinning strategies for future investment include:

- Improved travel between regional centres and to/from cities and international gateways
- Freight networks that will increase the competitiveness of key regional sectors
- Affordable, reliable and fast internet to support people and businesses
- Reliable and accessible water and energy
- A skilled labour force for current and future needs of the regions
- Recognising each region's strengths and underlying endowments
- Regulation and planning to promote commercial opportunities.

The priorities set out in the Vision statement complement other NSW initiatives already committed and recommended under other government strategies and long-term plans, such as the *Future Transport Strategy 2056*, *NSW State Infrastructure Strategy* and the *Riverina Murray Regional Plan 2036*.

The strategy identifies four key megatrends affecting regional NSW i.e. the rise of Asia, rapid urbanisation, demographic and social change, and digital disruption. These megatrends present opportunities for regional NSW if capitalised upon.

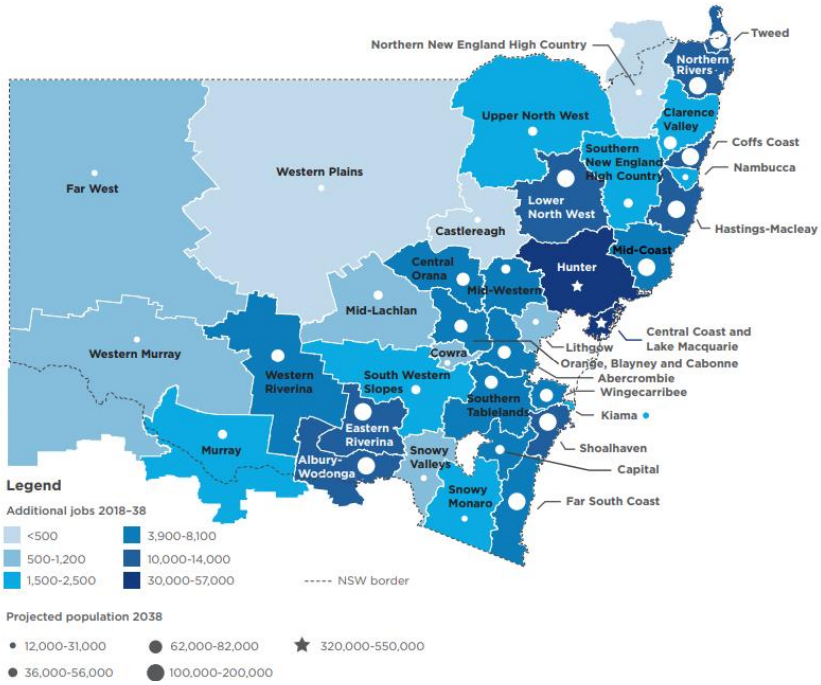
The strategy identifies 10 'engine industries' that will drive regional NSW economies over the next 20 years, as show below (Figure 6).

Figure 6. Future 'engine industries' in regional NSW

Source: A 20-Year Economic Vision for Regional NSW

Through the implementation of the strategy, the NSW Government has projected that the Eastern Riverina FER could grow to 100,000-200,000 people and increase by 10,000 to 14,000 jobs by 2038 (Figure 7). Specifically, the strategy forecasts that Wagga Wagga LGA could have a population greater than 100,000 by 2038. To achieve such growth, Wagga Wagga LGA's population would need to increase by at least a CAGR of 2.2% per annum[2].

Figure 7. Regional NSW Job Forecasts



Source: A 20-Year Economic Vision for Regional NSW

[2] Assumes Wagga Wagga LGA's population in 2018 was 64,820 and will be 100,000 in 2038.

4.3 Eastern Riverina: Regional Economic Development Strategy (2018)

The NSW Government with the Centre for Economic and Regional Development has also worked with Local Councils across Regional NSW to develop Regional Economic Development Strategies. The *Eastern Riverina Regional Economic Development Strategy 2018–2022* sets out a long-term economic vision and associated strategy for the Region's economic development for the four LGAs of Wagga Wagga City, Coolamon Shire, Junee Shire and Lockhart Shire (the Region) (Figure 8). The Strategy aims to leverage on the Region's endowments, being:

- its key strategic location with freight and transport routes to five capital cities
- liveability and lifestyle appeal
- natural resource endowments for food production purposes
- major infrastructure including hospitals, airports and intermodal hubs
- strong local institutions and businesses across a variety of sectors
- good educational institutes and a skilled local workforce

The Strategy identifies a number of sector-specific priorities and actions aimed to ensure long-term sustainable development for the Region. Specifically, there are six elements to the Strategy:

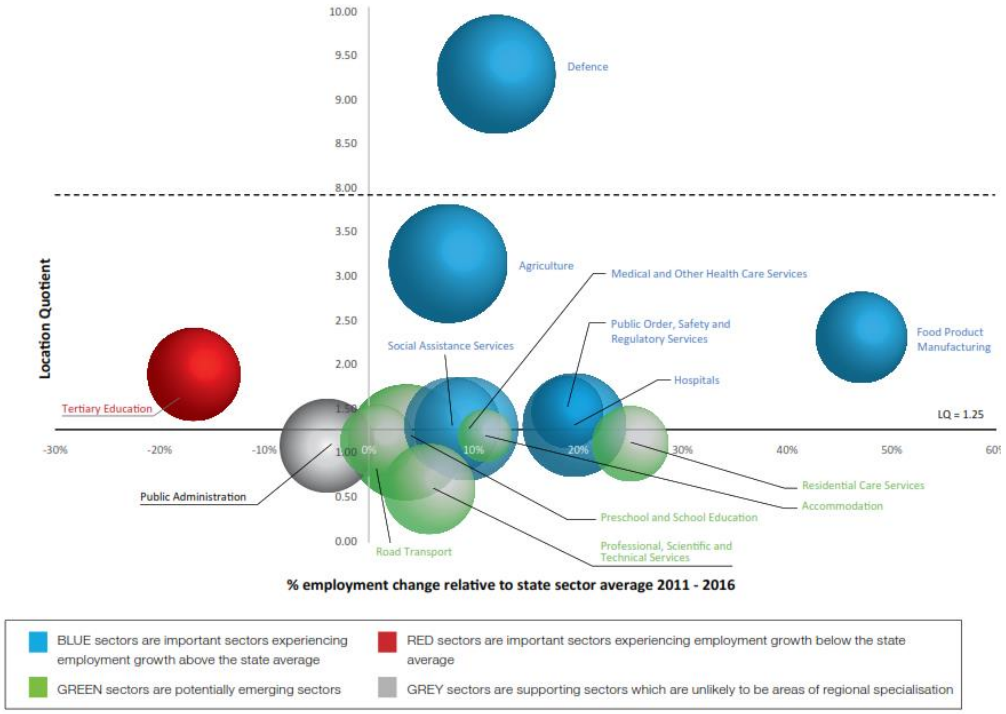
- Leverage the Region's strategic location by developing the Transport and Logistics and Manufacturing sectors
- Support and grow Agribusiness
- Support the expansion and growth of the Health Care and Social Assistance sector
- Upskill the workforce and drive innovation and entrepreneurialism
- Improve utilities, energy and telecommunications
- Increase efforts to attract new residents and visitors supported by improved amenity offerings.

Figure 8. Eastern-Riverina Region Boundary

Source: Eastern Riverina Regional Economic Development Strategy 2018–2022

The Strategy also identifies the Eastern Riverina Region as having a number of industry specialisations which provide the region with competitive advantages. Industries identified in blue bubble below (Figure 9) (e.g. Defence, Agriculture and Food Product Manufacturing) are the Eastern Riverina Region's specialisations and likely to be in the future with industries identified in the green bubble (e.g. Residential Care Accommodation, Professional, Scientific and Technical Services, Road Transport and Preschool and Secondary School Education) as potential future specialisations for the region and having the potential to drive the future economic growth. While Tertiary Education is a major employer in the Region, its employment grew less than the overall state industry performance for that sector.

Figure 9. Employment by sector in the Eastern Riverina Region – degree of specialisation and future potential



Source: Eastern Riverina Regional Economic Development Strategy 2018–2022

4.4 New South Wales: Strong, smart and connected. The NSW Government Defence and Industry Strategy 2017

The strategy represents the NSW Government's vision for supporting defence and growing Defence industries and related jobs, investment and innovation across the state.

The key concepts in the strategy are:

- **Strong** – economic strength and diversity
- **Smart** – leading industry expertise, research and education
- **Connected** – both regionally, interstate and globally

NSW is home to the largest number of Defence bases and capabilities of any state or territory and is home to one quarter of Australia's military and Defence civilian personnel. NSW is recognised as a leader in manufacturing, logistics, electronics, information and communication technology (ICT), business services and other areas

relevant to Defence needs and global defence markets. NSW currently has the largest number of defence-related skilled workers in Australia with a skills base that strongly aligns with key areas of defence growth and investment including engineering, ICT, manufacturing and systems integration, including aerospace[3].

The skill sets required in the Defence industry such as coding, simulation, robotics and material science are strongly aligned to the jobs of the future. Therefore, education and training opportunities associated with Charles Sturt University and vocational education and training organisations (e.g. TAFE) will be critical to supplying the future workforce for the defence and aerospace industry in the Riverina-Murray Region.

The Defence presence in Wagga Wagga LGA consists of the RAAF Base Wagga Wagga (which includes the National Aerospace Training Centre, and aviation Initial Technical Training—ITT—for Navy personnel), and Blamey Barracks base at Kapooka (which includes the national Army Recruit Training Centre).

The skills and knowledge gained in the Army begin with soldier training at the 1st Recruit Training Battalion which is undertaken at the Blamey Barracks Kapooka located to the south-west of Wagga Wagga's city centre. The barracks provide a variety of physical and academic training activities including the use of firing and weapons ranges, and fire training.

4.5 NSW Freight and Ports Plan 2018-2023

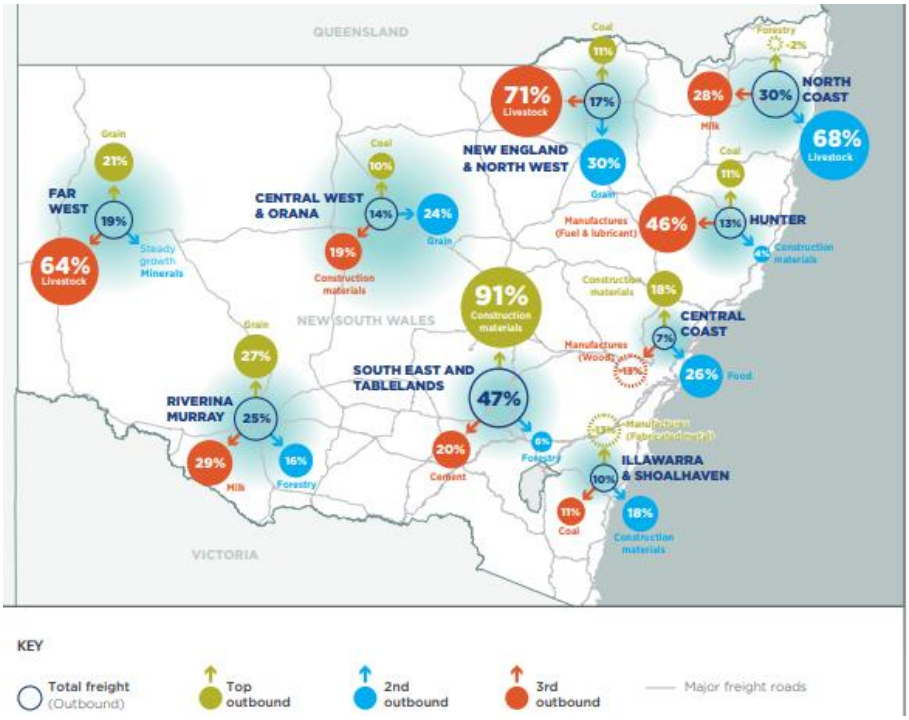
The *NSW Freight and Ports Plan 2018-2023* was released in September 2018. Regional NSW's freight task is forecast to grow by around 12 per cent by 2036 from 255 million to 286 million tonnes[4], with significant growth forecast in livestock and red meat sectors.

Economic activity in regional NSW has become increasingly specialised, with larger scale operations consolidating activity in the most competitive locations and increasing movement of goods between regions[5]. By 2036, and based on those trends continuing, Transport for NSW is projecting the Riverina-Murray Region to increase its milk shipments (from the region) by 29% and grain shipments by 27% (Figure 10).

[3] NSW Government, *New South Wales: Strong, smart and connected. The NSW Government Defence and Industry Strategy 2017*

[4] TfNSW, *NSW Freight and Ports Plan 2018-2023*, p36
[5] TfNSW, *NSW Freight and Ports Plan 2018-2023*, p36

Figure 10. Forecast growth in the three highest volume outbound freight commodities in each NSW Region to 2036



Source: TfNSW, NSW Freight and Ports Plan 2018-2023

4.6 Wagga Wagga Spatial Plan 2013-2043

The *Wagga Wagga Spatial Plan 2013-2043* was prepared by Wagga Wagga City Council to provide Council with a strategy to manage growth, and to provide strategic direction for land use in the LGA over a 30-year period and beyond. The Plan's directions are summarised below:

- Use sports, recreation, arts and leisure as ways of staying connected.
- Protect our heritage.
- Have a variety of transport options.
- Provided with the opportunity to be involved with decisions impacting us.
- Improve the quality of our environment
- Plan for a growing community.
- Maintain our current and future infrastructure.
- Arrangements are in place to respond to and recover from natural disasters.
- Have access to affordable housing options.
- There is growing business investment in our community.

The 'direction' of relevance to this report is Council's objective to grow business investment with the Plan acknowledging that the supply of well located, competitively valued, industrial lands being a key factor for local and regional prosperity. The Plan identifies the following key changes for supplying industrial land in the LGA:

- The amount and type of industrial land needed to meet demand and strategic opportunity.
- Capitalising on local competitive advantages or industry specific relationships (e.g. clustering).
- Providing for future industrial opportunities in the face of uncertain requirements as to lot size and servicing needs.

- Protecting industrial activity and capacity by buffering its impacts.
- Zoning choices and clarity on what uses should be allowed as complementary to industry, and what is not.
- Maintaining and improving environmental performance.
- Providing expeditious and effective development assessment and regulatory systems, while recognising the changing needs of business.

The Plan identified the Bomen Employment Lands area as having the potential to be a high-quality and nationally renowned place for transport and logistics-based enterprises, well designed and integrated with existing industry, that would meet the requirements of a targeted range of businesses and supporting activities.

4.7 Bomen Employment Land Structure Plan (2018)

In April 2018, Wagga Wagga City Council, in conjunction with Jacobs, prepared the *Bomen Employment Lands Structure Plan* (April 2018). The Plan reviewed the existing Bomen Employment Lands area to determine the current opportunities and limitations across the park. Based upon their analysis of key issues, the Structure Plan set a strategic vision and principles for the precinct.

The Plan identifies the following vision statement for Bomen (p30):

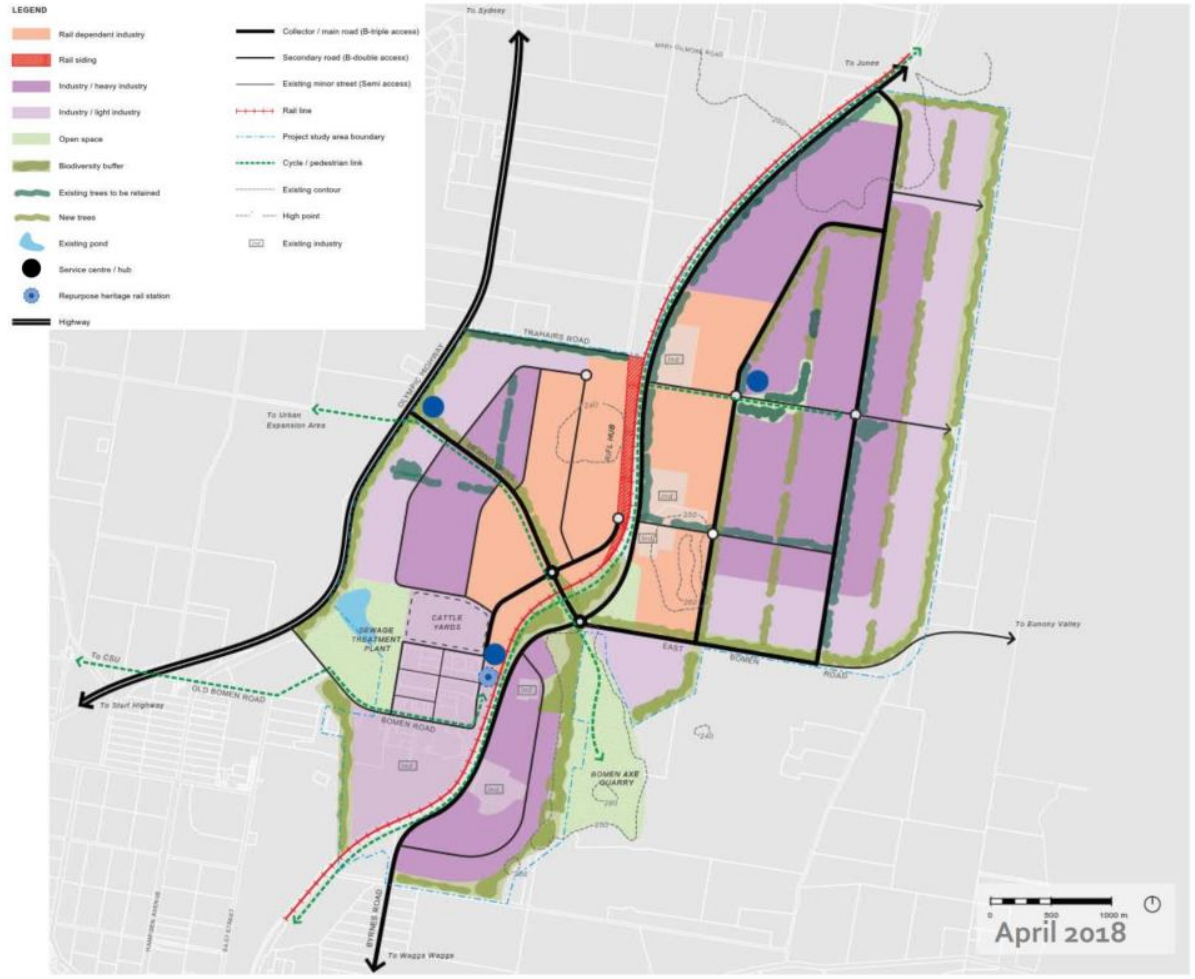
> *Bomen Employment Lands is a hub for freight and logistics that supports a nationally significant agribusiness and manufacturing employment and economic hub in the Riverina.*

The key themes identified in the Structure Plan for the Bomen Employment Lands included:

- Establish certainty for development delivery.
- A plan for growth and continued investment.
- A fluid design to facilitate a mix of industry.
- A community-focused plan.
- A nationally connected freight and logistics hub.
- A regionally identifiable logistics centre.

Based on the above, and in consultation with stakeholders and the community, the below Structure Plan (i.e. a land-use plan) was developed.

Figure 11. Bomen Employment Land Final Structure Plan

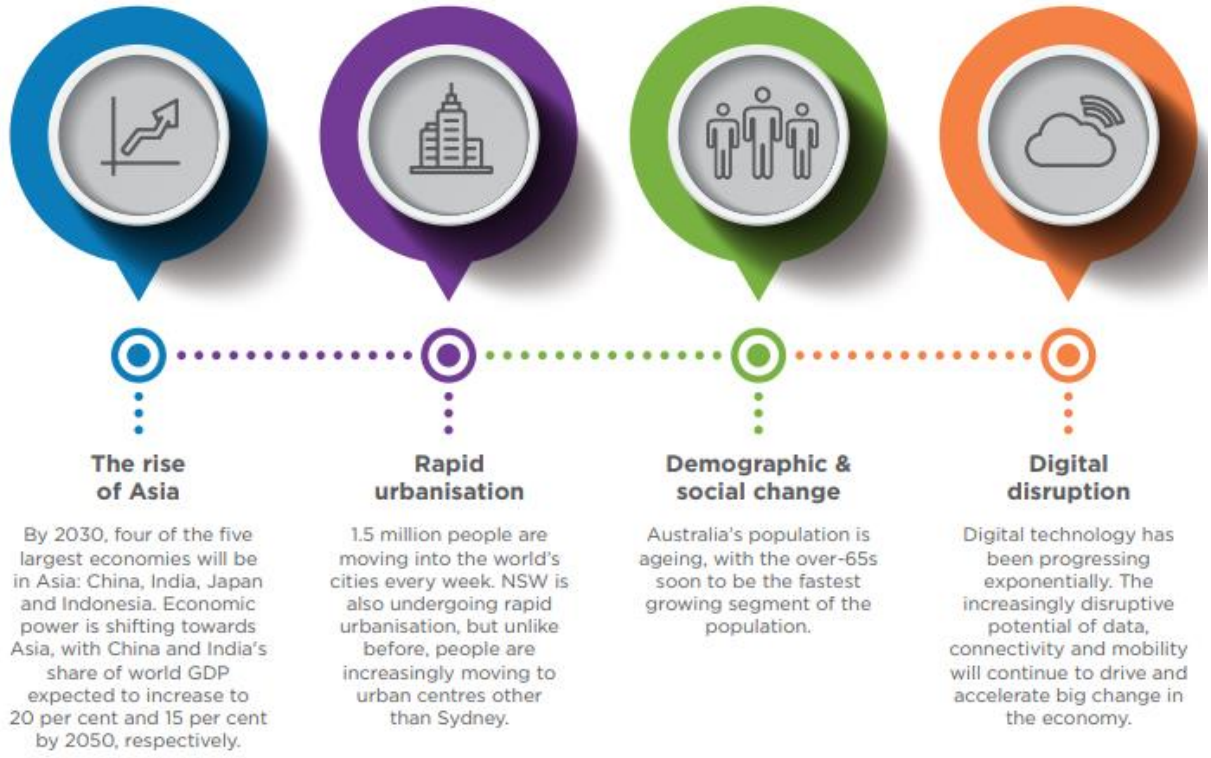


Source: Jacobs (2018) Bomen Employment Lands Structure Plan

Section 5: **Economic Drivers and Trends**

The NSW Governments' *A 20-Year Economic Vision for Regional NSW* (July 2018) identified four key global forces that will shape regional NSW's economy being the rise of Asia, rapid urbanisation, demographic and social change and digital disruption (as discussed in Section 4.2 and Figure 12 below). These global forces are already influencing the population and employment profile and growth of Wagga Wagga LGA and the Eastern Riverina Region. Specifically, existing businesses such as ROBE export premium and quality products to India and South-East Asia with ROBE being Australia's only Certified Non-Genetically Modified Canola manufacturing plant. Existing health and medical facilities including both public and private hospitals in Wagga Wagga LGA provide amenity and services to a growing urbanised regional city as well as an ageing population.

Figure 12. Megatrends affecting regional NSW



Source: A 20-Year Economic Vision for Regional NSW

In addition to these global forces, there are a number of other trends and factors which may influence future employment opportunities for regional NSW and the Wagga Wagga LGA as outlined below:

- **Global demand for food:** Global demand for food is predicted to grow by between 59% to 98% by 2050, with significant demand for premium products from Asia's growing middle class[6]. Being able to export goods to international markets provides businesses with access to a larger population base and market for their products supporting the growth of the Eastern Riverina Region. NSW is renowned globally for its world class food and fibre producers and for producing 'clean, green and safe' produce

[6] NSW Trade & Investment, *Competing Globally: NSW Trade and Investment Action Plan 2017-18, p6*

however, the speed and handling of products for export will take on more importance than cost for certain products, particularly perishable goods. Continued investment in infrastructure connectivity to global gateways (i.e. ports and airports) from the region will be critical to supplying the Asian market with our premium products.

- **Changing diets:** Rising incomes in new middle-income countries, particularly China and other countries in east Asia, is leading to a rise in meat consumption as these emerging middle-income countries move towards a western diet. The United Nations projected an increase in global meat consumption of 76% by 2050, including a doubling in the consumption of poultry, a 69% increase in beef and a 42% increase in pork[7]. Teys, located within the Wagga Wagga SAP Investigation Area, already exports meat products via ports as well as Wagga Wagga Airport to Sydney Airport for export. This abattoir and meat processing facility has the potential to expand and grow to supply both domestic and global markets if land use conflicts are managed appropriately. While demand for meat remains strong and is forecast to increase, there is also a global growing interest in veganism and vegetarianism. Australia has been identified as the third-fastest growing vegan market in the world[8]. Plant-based diets are also growing across Asia. New dietary guidelines released by the Chinese government encourage the nation's 1.3 billion people to reduce their meat consumption by 50%[9].

- **A circular economy:** Signs of resource depletion across the global economy, the quest for substantial improvement in resource performance and policy changes in the global community (such as China's National Sword policy) are factors leading to the movement away from a 'linear economy' to a 'circular economy'. The NSW Government's *NSW Circular Economy Policy Statement* (February 2019) and commitment to implementing initiatives throughout the product life cycle, from design, manufacturing, and retail to end-of-life-disposal is a firm commitment towards the circular economy model in NSW. There are significant opportunities for businesses to partake in the circular economy and lead to innovative resource and waste management solutions as well as the management and reuse of water. Enirgi, located in the Wagga Wagga SAP Investigation Area and established in 2010, is the largest lead battery recycler in Australia and provides a good example of new technology being implemented to avoid a reusable resource from being disposed to landfill. Southern Oil, also located in the Wagga Wagga SAP Investigation Area, collects oil from mining machinery and refines the oil for reuse in domestic and global markets.

- **Alternative energy sources:** With Governments around the world committing to reduce carbon emissions, new energy sources will continue to be explored, trialled and adopted. For example, in 2018 Qantas operated the world's first dedicated biofuel flight between the United States and Australia (QF96 from Los Angeles to Melbourne) which operated with approximately 24,000kg of blended biofuel (an industrial type of mustard seed), saving 18,000kg in carbon emissions[10]. NSW is well endowed in renewable energy sources with the opportunity to become a net exporter of renewable energy in the

[7] Food and Agriculture Organization of the United Nations, Agricultural Development Economics Division (June 2012), ESA Working Paper No. 12-03, p137

http://www.fao.org/fileadmin/templates/esa/Global_persepctives/world_ag_2030_50_2012_rev.pdf

[8] Food Revolution Network (2018)

[9] Food Revolution Network (2018)

[10] https://www.qantas.com/travel/airlines/sustainable-aviation-fuel/global/en

longer term[11]. A number of solar facilities are currently being developed in the Wagga Wagga SAP Investigation Area in response to the need to provide alternative energy sources which will reduce our carbon emissions. There is potential for other energy facilities to be established, particularly as part of the circular economy (e.g. food waste could be recycled into compost and animal feed while generating methane gas (through anaerobic digestion) for energy use).

- **Innovative products and manufacturing techniques:** Innovation is changing the way goods are produced, bought, sold and transported. International connections and collaboration between capital, industry, research institutions and government will continue to play a role in refining the value-add the State and businesses provide within a broader global community. Proway Livestock Equipment have developed software which produces an augmented reality experience for its clients to show them the design of livestock pens on the client's property before the order is confirmed. The size of the digital files means that telecommunication infrastructure is critical to their business successfully applying this technology from their workshop to other regional offices around Australia. As such, digital technology will continue to be a key enabler to regional NSW's talent and innovative insights which will also need to be supported via educational establishments (i.e. TAFE NSW and Charles Sturt University).

- **Defence:** Funding for Defence (excluding operations) by the Commonwealth Government is projected to increase gradually to 2 per cent of Australia's GDP by 2023-24 and then remain at 2 per cent of GDP by 2054-55[12.] Projections of Defence expenditure do not include funding for future international operations and hence could be higher than the projected spending of 2 per cent per annum. However, it should be noted that the Commonwealth Government's spending on Defence is not linked explicitly to demographic factors and tends to be variable and highly dependent on discretionary government decisions. With NSW being home to the largest number of Defence bases and key platforms across maritime, land and air domains within Australia and employing the largest number of military and civilian Defence personnel of all Australian states and territories i.e. approximately 26%, or around 26,000, of the nation's military (including ADF reserve) and civilian personnel[13], Defence investment and spending is likely to continue to have a significant positive impact on a wide range of industry and employment sectors including regional NSW. While Defence uses / activities may not establish themselves within the Wagga Wagga SAP Investigation Area, the presence of the Defence sector within Wagga Wagga LGA may encourage firms to invest in the Investigation Area due to the skilled workforce of the Defence sector and future opportunities for those workers to apply their skills to current and emerging industries (i.e. supporting an agglomeration economy).

[11] NSW Trade & Investment, *Competing Globally: NSW Trade and Investment Action Plan 2017-18*, p7

[12] The Treasury of the Australian Government, *2015 Intergenerational Report, Australia in 2055* (March 2015)

[13] NSW Government, *New South Wales: Strong, smart and connected. The NSW Government Defence and Industry Strategy 2017*, p20

Section 6: **Key Sectors in the Wagga Wagga Economy**

6.1 Health

The health care and social assistance industry is the number one source of employment in Wagga Wagga LGA. The sector provides a wide range of employment opportunities for specialists, general practitioners, allied health professionals, aged care professionals, among others. Between 2006 and 2016 employment in health care and social assistance increased by 46.6% to a total of 5,009 people, most of which were employed in one of the LGA's two hospitals; Wagga Wagga Base Hospital and Calvary Riverina Hospital.

Wagga Wagga Base Hospital is the main public service hospital in the LGA and is the largest referral hospital in the Murrumbidgee Local Health district. The hospital supports 500 beds and provides all major sub-specialities excluding neurosurgery and cardiothoracic surgery. The Calvary Riverina Hospital is a 99-bed private hospital which provides a range of services including maternity and women's health services as well as hosting a surgical centre and an award-winning drug and alcohol centre.

In 2017, the NSW Department of Planning Infrastructure and Environment (DPIE) implemented a priority action plan through its *Riverina Murray Regional Plan 2036*. The Plan included a commitment to "establish health precincts around hospitals in the regional cities of Albury, Wagga Wagga and Griffith" (p23).

Wagga Wagga City Council, in partnership with DPIE and the NSW Ministry of Health, developed a draft Master Plan in June 2019 (i.e. the *Wagga Wagga Health and Knowledge Precinct Master Plan*) to deliver both increasing employment opportunities and providing increased services to the wider Murrumbidgee region. To promote growth of the wider precinct, the NSW Government also committed $431 million[14] to redeveloping the Wagga Wagga Base Hospital providing it with brand new facilities including aged care and mental health services as well as an expanded emergency department with dedicated acute, ambulator and an emergency medical unit. The redevelopment of the hospital will be delivered across three stages with stage one and two already completed and the third and final stage currently under construction.

6.2 Education

Wagga Wagga LGA hosts all three tiers of education with primary, secondary and tertiary institutions located in the region. The significant number of education facilities provide widespread employment opportunities with education in 2016 being the region's second largest employer, providing 3,198 jobs, 265 more than in 2006.

[14] http://www.wwhsredev.health.nsw.gov.au/

6.2.1 Primary and Secondary Education

With nineteen primary schools (11 public, 8 private) and eight secondary schools (3 public, 5 private), Wagga Wagga LGA provides widespread access to both public and private education. Serving these schools is a large teaching workforce. In 2016, there were 1,550 education professionals employed in primary and secondary schools in the Wagga Wagga LGA. Since 2016, plans for a new primary school located on the Charles Sturt University campus has been announced[15] and with plans for the North Wagga Wagga residential expansion area indicating the development of an additional six schools, opportunities for employment in education will continue to grow.

6.2.2 Tertiary Education

Several universities and TAFEs have campuses in Wagga Wagga LGA with 1,253 people employed in tertiary education in 2016, 310 more than in 2006. The key tertiary education provider in the region is Charles Sturt University (CSU). CSU has a number of campuses across Australia with Wagga Wagga LGA its biggest, spanning more than 640 hectares including a campus farm, equine centre, vineyard, winery and a range of technical and industry standard facilities. The university provides degree programs and courses across a number of disciplines; however, it is known for its courses in agricultural science, animal and veterinary sciences and education.

CSU's agricultural science courses are particularly notable with them recognised nationally and supported by its one-of-a-kind AgriPark. In 2016, CSU launched phase 1 of its AgriPark. The AgriPark provides space for international agricultural companies, agribusinesses, food producers, innovative small-medium enterprises and the university to work side-by-side to research global issues. The 19-hectare park hosts 23 serviced lots for individual, purpose-built tenant facilities, large open space to foster collaboration, walking and cycle ways, retail outlets and serviced offices. To operate in the AgriPark, invitations are required with invitations based on synergy with the region, alignment with CSU's values and research, ability to contribute to a cohesive program, and potentially offer new emerging opportunities for the region.

Other universities which have satellite campuses in Wagga Wagga LGA include the University of New South Wales (UNSW) and the University of Notre Dame. Both schools provide clinical training courses with the University of Notre Dame working in conjunction with Calvary Health Care Riverina to educate its students, whilst the UNSW Rural Clinical School works with the Wagga Wagga Base Hospital.

TAFE NSW Riverina Institute is the key TAFE service provider in Wagga Wagga LGA and the largest TAFE in the Riverina. The TAFE offers over 100 courses across a range of disciplines offering students the opportunity to obtain diplomas, advanced diplomas, and range of certificate level qualifications. Notable disciplines include hair and beauty training, IT, business administration, engineering, carpentry and on-site restaurant training which is open to the public. The TAFE also has an on-site gallery and exhibition space, and a childcare centre.

15 City of Wagga Wagga, *Economic Snapshot Wagga Wagga 2018*

6.2.3 Future Education Investment

With Wagga Wagga LGA supporting a strong educational core and a growing population, investment in both schools and tertiary education are planned. CSU are investing $104 million[16] through to 2022 with plans to increase its base of courses, increase online subject delivery, improving IT and engaging more with local schools regarding the skills needed to be successful in the future. Other key investments include the development of a brand-new primary school at Estella at a cost of $36 million[17].

6.3 Defence

Wagga Wagga LGA is one of Australia's key Defence hubs hosting two major Defence facilities including the Army Recruit Training Centre Kapooka and a RAAF Base. In 2016, Defence was Wagga Wagga LGA's largest employer when measured at an industry subdivision level[18] with a total of 1,932 people employed in Defence, 349 more than in 2006.

6.3.1 Army Recruit Training Centre Kapooka

Army Recruit Training Centre (ARTC) Kapooka is an Australian Army basic training establishment located within Blamey Barracks in Wagga Wagga LGA. ARTC provides initial recruit training for all regular and reserve recruits for the Army. All full-time soldiers in the Australian Army must first complete Soldier Training at the Army Recruit Training Centre Kapooka. On campus, there is provision of a small amount of Defence housing and a primary school, however, there is additional Defence housing located throughout Wagga Wagga LGA. Other facilities include a gym, post office, a golf club, gym, cinema and a recreation centre.

6.3.2 RAAF Base Wagga

The RAAF Base Wagga Wagga LGA delivers initial employment and postgraduate training. The Base hosts the headquarters of two key Wings from the Air Force Training Group - RAAF College and Ground Training Wing - plus four major training units including No 1 Recruit Training Unit, School of Postgraduate Studies, RAAF School of Technical Training and RAAF School of Administration and Logistics Training.

6.3.3 Future Defence Investment

In 2018, the Department of Defence announced it planned to invest in enhancements to both Kapooka and the RAAF base at a total cost of over $960 million[19] over the seven-year period to financial year 2025/26.

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16 https://news.csu.edu.au/latest-news/charles-sturt-university-reveals-bold-new-brand

17 City of Wagga Wagga, *Economic Snapshot Wagga Wagga 2018*

18 The ABS publish employment data using ANZSIC 2006 classifications. This includes 4 categories including; Division, Subdivision, Group and Class Codes and Titles. Defence fall in the Subdivision classification under the Division Public Administration and Safety. Each industry has Subdivisions, in the case of Wagga Wagga LGA, at a subdivision level, defence is the highest employer.

19 City of Wagga Wagga, *Economic Snapshot Wagga Wagga 2018*

6.4 Industry

Currently industrial uses in Wagga Wagga LGA are focused in two key areas - East Wagga Wagga industrial precinct, along Hammond Avenue to the east of the rail line, and the Bomen Employment Lands area.
In 2016, there were 3,964 people employed in industry[20] in Wagga Wagga LGA including 2,016 jobs in manufacturing, 1,195 jobs in transport and warehousing and 801 jobs in wholesale trade. In total 1,080 people were employed out of the East Wagga Wagga industrial precinct and a further 1,004 people out of Bomen Employment Lands. Whilst East Wagga Wagga hosted more industry jobs in 2016, between 2011 and 2016 industry jobs fell by 204 (or -15.9%) in the precinct whilst industry employment in Bomen Employment Lands increased by 126 jobs (or +15.3%).

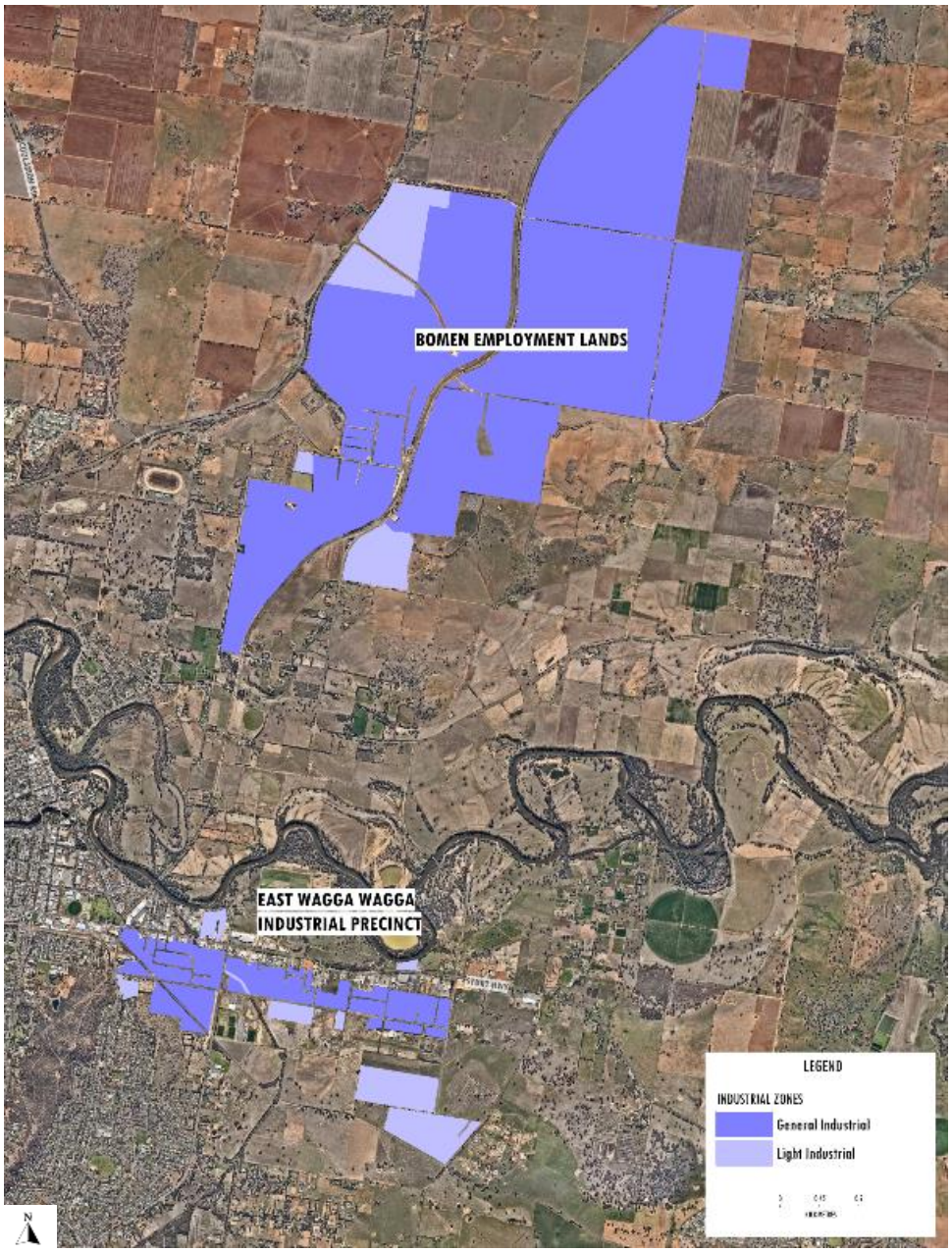
The decline in East Wagga Wagga is likely to be attributed to land parcel sizes in the precinct in comparison to the Bomen Employment Lands area which has sites generally greater than 25 hectares in size. Bomen Employment Lands area growth could also be attributed to its ability to expand and grow as well as current and future transport and infrastructure investment for the area.

6.4.1 East Wagga Wagga Industrial Precinct

The East Wagga Wagga Industrial Precinct (Figure 13) has been the historical core of the LGA's industrial sector with it supporting a range of wholesale trade and manufacturing businesses. However, the lots available in East Wagga Wagga Industrial Precinct are small and restrictive leaving existing businesses with minimal room to expand and for the most part, not large enough to support the needs of businesses moving to the LGA. The Precinct occupies approximately 240 hectares of land of which approximately 120 hectares has been developed.

[20] MacroPlan has identified industry jobs as jobs in manufacturing, transport, postal and warehousing and wholesale trade.

Figure 13. Core Industrial Employment Lands in Wagga Wagga LGA



Source: macroplan (2019)

6.4.2 Bomen Employment Lands Area

The Sale Yards, which occupies about 104 hectares and were established in Bomen in 1979, and the Teys beef abattoir and the Vinidex manufacturing plant which have operated since the 1980s, have been the cornerstone of Bomen. The abattoir expanded the size of its operation to its current capacity (workforce from 475 to 800) in 2004. There has been steady expansion of other industrial and warehousing activity since the mid-2000s with e.g. ROBE, Enirgi, and Southern Oils establishing operations in Bomen.

The 2016 employment profile of Bomen Employment Lands area[21] indicated the region had become an industrial hub with employment focused around manufacturing, transport and warehousing and wholesale trade. Between 2011 and 2016, employment in the manufacturing industry had increased by 14.3%, wholesale trade employment by 14.6%, whilst the transport, postal and warehousing experienced an increase of 14.3%.

In 2016, over 55% of manufacturing jobs in Wagga Wagga LGA were based in the Bomen Employment Lands with 814 people employed in manufacturing. Employment in manufacturing was largely supported by meat and meat product manufacturing (574 of jobs), with other key manufacturing jobs including motor vehicle/parts (39 jobs), petroleum and coal product (35 jobs), fruit and vegetable processing (35 jobs) and oil and fat manufacturing (29 jobs). The transport, postal and warehousing industry supported 96 jobs in this area, mostly through road freight transport (77 jobs) and warehousing and storage services (13 jobs). The wholesale trade industry provided a further 94 jobs with agricultural product wholesaling and grocery, liquor and tobacco product wholesaling both providing 22 jobs each and a further 18 jobs provided by mineral, metal and chemical wholesaling.

The Bomen Employment Land area (Figure 13) covers 1,800 hectares of land zoned for industrial uses. The existing businesses (other than the Saleyards) operate on approximately 194 hectares of this land. These businesses have expansion plans. While some businesses may need to re-locate to larger premises, these expansion plans will mostly be accommodated on their existing sites. There have also been recent development plans for solar farms which will occupy approximately 500 hectares of land.

6.4.3 Future of Industry

There is a substantial amount of land remaining in the Bomen Employment Lands with potential to accommodate significant further expansion in manufacturing activity, and also logistics, wholesaling and transport businesses. The volume of land means that it can accommodate firms that need land extensive sites. If the SAP makes the planning process more encouraging to existing and new businesses than has been the case in the past, there will be scope for this potential to be more fully realised. This could also include businesses operating in other parts of Wagga Wagga LGA (e.g. East Wagga Wagga) where sites are constrained and inhibit expansion. The shift from East Wagga Wagga to Bomen Employment Land in the period 2011-16 is indicative of this.

While manufacturing has contracted in absolute terms in Australia in the period 2001-16, it has broadly held its ground in Wagga Wagga. This reflects the mix of manufacturing in sectors in which Australia has a natural competitive advantage vis-à-vis international competitors. Food manufacturing presently dominates as the major employer, which reflects the strength of the Riverina region in agriculture and the advantages of Wagga Wagga, in terms of location and its workforce, for these businesses. These advantages are reflected in the expansion plans of existing businesses and suggest that there is scope for new firms to establish in Wagga Wagga. While export markets are the key for most food manufacturers, the demand generated by high projected growth in the Sydney and Melbourne markets will also support expansion.

In terms of manufacturing, it is the success of the recycling manufacturers (oil, batteries (lead)) which reflects Wagga Wagga LGA's locational advantage, being roughly equi-distant to the two major markets in the Sydney-

[21] MacroPlan is using the Destination Zone (DZN) 112688818 to infer employment numbers for Bomen Estate. DZN's are the smallest areas in which employment is measured by the ABS Census.

Melbourne corridor, and the availability of suitable sites in Bomen, which is most encouraging on the potential for future growth. Other key drivers of growth will be the significant investment planned for the region, including the RiFL Hub and Inland Rail.

6.4.4 Riverina Intermodal and Freight Logistics (RiFL) Hub

In 2013, Wagga Wagga City Council secured funding from the Federal Government to support the development of the Riverina Intermodal Freight and Logistics (RiFL) Hub. To deliver the project in full, the Council required a public-private partnership, which Council secured with Visy in 2018[22]. The RiFL Hub, is planned to accommodate rail infrastructure, including a master siding servicing the intermodal terminal, turnouts off the Main Southern Railway Line to facilitate construction of the RiFL Hub master siding, an intermodal terminal for the transfer of containers between road and rail development and an industrial land development. The RiFL Hub will occupy approximately 80 hectares of land with approximately 20 hectares of this land being dedicated to the intermodal terminal and another 60 hectares for industrial and freight and logistics and warehouse uses. The Hub will encourage the expansion of industrial production in Bomen with it providing a direct link to major state terminals and ports.

6.4.5 Inland Rail

The Inland Rail, planned for operation in 2025, will complete the spine of the national freight rail network, offering less than 24-hour transit time between Melbourne and Brisbane. The Bomen Employment Lands will be the location of one of the rail stations. With Wagga Wagga LGA already halfway between Sydney and Melbourne by road, the addition of a rail connection to Brisbane (and Melbourne) will make the region one of the most highly accessible regional townships in NSW.

6.5 Impact of the SAP on Industry

While many existing businesses in the region have expressed an intention to expand, policy constraints have made it difficult to grow. The Wagga Wagga SAP aims to alleviate restrictive policy and provide businesses with the opportunity to expand without significant delays. The Wagga Wagga SAP will also encourage the establishment of new businesses in Wagga Wagga LGA within an increasingly accessible location.

[22] https://wagga.nsw.gov.au/city-of-wagga-wagga/council/news/media-releases/2018/august-2018/wagga-wagga-city-council-and-visy-logistics-partner-on-proposed-rifl-hub

Section 7: **Future Industry Sectors**

7.1 Overview

This section provides an overview of new and emerging global trends in industry to explore potential opportunities for the Wagga Wagga SAP Investigation Area including existing uses and infrastructure the region could leverage from. Macroplan has identified advanced manufacturing, food and agribusiness, freight and logistics and renewable energy as industry sectors that are undergoing transition and change and for which Australia's industry sector is well suited to embrace including the future development of employment lands in Bomen. Macroplan has also considered and identified a number of actions and measures that could assist with the establishment of these new and emerging industries in the SAP Investigation Area.

7.2 Advanced Manufacturing

The CSIRO define advanced manufacturing[23] as:

"the set of technology-based offerings, systems and processes that will be used to transition the current manufacturing sector into one that is centred on adding value across entire supply chains. Advanced manufacturers are companies that rapidly create or adopt these technologies"

The transformation of the manufacturing industry has been driven by both demand and supply factors. On the demand side the rise of Asia has led to a significant expansion in the world's consumer pool whilst consumers in developed countries are demanding new products at a faster speed. On the supply side, advances in technology such as 3D printing, sensors and automation are allowing for the development of new innovative products with superior quality.

In 2016, the CSIRO identified the megatrends it believed would have the most significant impact on the further transformation of the industry sector over the next 20 years. These global megatrends included[24]:

1. **Made to measure:** advances in technology and greater consumer expectations are causing a shift from mass production of goods to custom-made solutions.
2. **Service expansion:** manufacturers are expanding their role in the value chain from making 'widgets' to developing tightly integrated service-product bundles.
3. **Smart and connected:** advances in data capture and analytics are optimising operations across the manufacturing value chain and the factory floor.
4. **Sustainable operations:** resource scarcity and increasingly valued environmental and social credentials are encouraging manufacturers to look for more efficient and sustainable processes and operating models.
5. **Supply chain transformations:** specialisation is promoting greater collaboration in some markets while technological advancements are enabling the vertical integration of others.

[23] CSIRO (2016) *Advanced Manufacturing, A Roadmap for Unlocking Future growth opportunities for Australia*

[24] CSIRO (2016) *Advanced Manufacturing, A Roadmap for Unlocking Future growth opportunities for Australia*

In order to maintain Australia's competitive position in the industry it must leverage its comparative advantages and have a good understanding of its disadvantages. The figure below outlines the key advantages and disadvantages identified by the CSIRO.

Figure 14. Australia's Competitive Position – Comparative Advantages and Disadvantages

Source: CSIRO (2016)

Based on Australia's competitive landscape, the CSIRO identified three major growth opportunity themes for Australia as follows:

1. customised high-margin solutions;
2. sustainable manufacturing; and
3. selling services.

7.2.1 Customised High-margin Solutions

Increasing wealth of consumers in developing countries coupled with increasing expectations of consumers in developed countries has created increasing demand for customised product offerings. Customisation creates opportunities for profit margins across the entire value chain from R&D, to after sales services and end-of-life management.

Australia is well suited to move into the customisation space for the following reasons:

- Australia's large proportion of SMEs of which are well suited to adapting to changing and divergent customer demands. SMEs can specialise in niche markets for high value specialised products and components such as mining, agriculture and defence;
- Customisation decreases the importance of economies of scale meaning Australia's small domestic market is not a significant limitation; and
- In some cases, Australia has a cost advantage, particularly when it comes to complex, high value solutions that require innovation and advanced skills. For example, in 2016, wage costs for high skilled

workers in aerospace and medical technologies was around 40% lower in Australia than in the United States.

7.2.2 Sustainable Manufacturing

The need for sustainable practices and technologies in manufacturing is being driven by both demand (e.g. consumer preferences) and supply (e.g. scarce water) factors. Sustainable operations can include reducing costs, resources and emissions through cleaner energy sources, leaner processing techniques and smarter designs which maximise efficiencies across value chains.

Australia's large land area, access to renewable energy sources and a strong agricultural sector provides it with prime opportunities in sustainable food and renewable energy (e.g. wind, hydro and solar farms).

7.2.3 Selling Services

In developed economies, consumer preferences are shifting away from tangible products to services. In 2012, it was estimated that 30% of sales of service-providing manufacturers were services, with expansion into services offerings seen as core to growth by 86% of global manufacturers due to the significant profitability of services offerings[25]. Other benefits of service offerings include allowing the manufacturer to build direct customer relationships which encourage loyalty as well as the ability to upsell through a better understanding of customer needs.

Offering services is a good way for manufacturers in high-cost countries like Australia to differentiate themselves thus participate in global value chains. In addition, Australian's maintain a high level of education, this, coupled with its skillset, means Australia has access to a highly skilled labour force, a competitive edge compared to developing countries.

Table 3 below details key strengths, weaknesses, opportunities and threats for advanced manufacturing in relation to Wagga Wagga SAP Investigation Area.

[25] CSIRO (2016) *Advanced Manufacturing, A Roadmap for Unlocking Future growth opportunities for Australia*

Table 3. Future of Advanced Manufacturing in Wagga Wagga SAP Investigation Area – SWOT matrix

S

Strengths

- Land affordable - attractive for SMEs.
- Larger parcels of land available allowing for future expansion and more intensive uses.
- The region has already attracted innovators such as Enirgi and Southern Oil.
- National freight corridors traverse the region
- The existing airport, the provision of direct flights between Sydney and Wagga Wagga LGA and travel distances to and from Sydney and Melbourne allow for 'specialists' to provide in person and valuable support to business needs.

W

Weaknesses

- Businesses ensuring the access to market is a viable proposition operationally.
- Manufacturing is seen to be a dying industry with young people not viewing it as a viable career path, educational institutions should review the course structure.
- Limited local STEM (science, technology, engineering and maths) graduates. This is also a national problem. Graduates would need to be sourced from beyond the region, which may prove difficult.

O

Opportunities

- Opportunities for government, tertiary education providers and the private sector to collaborate. Industry and educators can assist each other from both a research and training perspective.
- Existing businesses have a willingness to train new staff, partnerships can be explored.
- There are numerous investment initiatives being undertaken by both State and Federal government and agencies e.g. NSW Advanced Manufacturing Connect Program, CSIRO initiatives, Industry 4.0, Federal Advanced Manufacturing Fund, NSW & Federal funding to increase skills and training where there are industry shortages such as STEM.
- Increased use and reliance on renewable energy sources.

T

Threats

- STEM skills are crucial to advanced manufacturing, Graduates will need to be sourced from beyond the region, attracting students to a regional township may be difficult.
- Significant Government investment has been made in Western Sydney, particularly the Western Sydney Aerotropolis, for the region to become the global hub for advanced manufacturing, notably science infrastructure and technology, and research and development.
- Utility infrastructure and energy supply may not be sufficient to support proposed industry developments.

7.1 Food and Agribusiness

Wagga Wagga LGA is located in the Riverina Murray which is responsible for 12.7% of New South Wales agricultural output[26]. This means the region has plenty of opportunity to develop supporting industries in agribusiness and ag-tech.

Like manufacturing, the food and agribusiness (F&A) industry is changing as result of the emerging needs of global customers. Signs of this shift were identified in an Austrade analysis which indicated that in the three years to 2016, for the first time in history, Australia's value-added foods[27] accounted for the majority of food export growth (60%).

The CSIRO has identified the megatrends it believes will have the most significant impact on the further transformation of the industry sector of the next 20 years. These global megatrends include:

1. **A less predictable planet:** supply of limited resources is being further constrained by more severe and unpredictable climate events and more potent microbes, pests and diseases. This has caused food producers to more seriously consider the environmental life cycle impact of food production activities.
2. **Health on the mind:** an ageing population, rising levels of chronic disease and increasing social awareness around the health and wellbeing are creating demand for foods that provide specific and holistic health outcomes.
3. **Choosy customers:** rising wealth, increasing choice and greater market access are driving demand for a more diverse range of foods and food service options that are tailored to individual preferences and lifestyles.
4. **One world:** as food and beverage value chains become increasingly global, new market opportunities are created while at the same time introducing competition and supply resilience risks in a volatile world.
5. **Smarter food chains:** increasing demand for food, the use of big data and more sophisticate e-commerce platforms are driving the creation of leaner, faster, more agile and low waste value chains.

Macroplan has explored food and agribusiness that could be established in Bomen.

7.1.1 Waste Conversion

On average, 312,000 tonnes of food is wasted by the Australian food manufacturing industry each year[28]. Opportunities to reduce waste streams is being continually explored. Minimising waste has numerous benefits both environmentally and economically by extracting the maximum value from a product. For example, there has been development of products that can be produced using bovine blood. Recent R&D has identified new uses, for example, using bovine blood to extract immunity boosting compound for use in dietary supplements and ingredients.

[26] Department of Primary Industries (2018), *Riverina Murray Region Agricultural Profile*
[27] Value-added foods include foods; that have changed in their physical state or form (e.g. strawberries to jam); the production of a product that enhances its value (e.g. organically produced); The physical segregation of an agricultural product in a manner that results in the enhancement of the value (such as an identity preserved marketing system).
[28] CSIRO (2017), *The Future of Food*

7.1.2 Sustainable Packaging

Single use plastics span beyond plastic bags to, for example, packaging, most of which ends up in landfill. Recently Australian's have become increasingly conscious of their usage of single use plastics, encouraged by the 2018 ban on single-use plastics bags at Coles and Woolworths. This has led to significant investment in R&D to create lower impact packaging options including biodegradable plastics, reusable containers or packaging made from recycled materials.

7.1.3 Premium Interactions

Ageing populations, increasing wealth and busy lifestyles has seen an increasing number of households turning to convenient ready-made-meals.

Currently, industry is looking at direct delivery of food using automated digital systems, portion innovation (e.g. packaging, labelling and portioning aligned to daily serving requirements) and functional packaging that helps to control microwave performance and is easier to open for frailer hands.

7.1.1 Traceability

Food fraud is a global epidemic, that is, the sale of an inferior product represented as a more valuable one (e.g. the product has been substituted, diluted, tampered with or misrepresented ingredients). To provide consumers with confidence that the product they are consuming is authentic, both virtual and physical traceability systems are being developed. Some examples of future packaging technologies include packaging with built-in-trackers, unique, inimitable identifiers on packaging.

7.1.2 Food Safety and Biosecurity

Food safety and biosecurity is a huge issue particularly in Asia which has resulted in their growing middle and upper class to look to imported foods and beverage from countries considered 'safe' like Australia.
Current R&D is looking at ways Australia can further tap into Asia such as ways to increase product shelf life and as well as exploring methods which would mean food does not require frozen storage thus reducing energy costs.

7.1.3 Collaboration and Business-to-Business

The Australian agricultural industry is predominately made up of small business. Without scale, it can be very hard for businesses to adapt to the rapidly changing market and value chains.

Currently, Australia lacks the amount of business-to-business (B2B) collaboration required to expand the agribusiness sector. Most B2B relationships are up or down the value chain, however, businesses need to expand their approach to include knowledge and resource sharing with local and international competitors. A key action that could support increased B2B is the development of a regional hub.

Table 4 below details key strengths, weaknesses, opportunities and threats for agribusiness in relation to Wagga Wagga SAP Investigation Area.

Table 4. Future of Agribusiness in Wagga Wagga SAP Investigation Area - SWOT matrix

S

Strengths

- Riverina Murray region which is responsible for 12.7% of NSW agricultural output.
- Located halfway between Melbourne and Sydney.
- National freight corridors traverse the region and extend to Sydney, Melbourne, Brisbane and Adelaide.
- The provision of direct flights between Sydney and Melbourne and Wagga Wagga airport and Wagga Wagga LGA's proximity to Canberra's airports which have direct international flights, is an advantage for the export of high value and premium fresh produce.
- The Inland Rail project and future RiFL Hub will give the agricultural sector more efficient and cost-effective freight rail access and connectivity.
- CSU's new AgriPark.

W

Weaknesses

- Whilst CSU'S new AgriPark in the long run may be of benefit (e.g. potential to collaborate), in the short run agribusiness may prefer to locate in the AgriPark with it already established and operating.
- Limited local STEM graduates.
- Existing or new businesses willingness to take the financial risk in a regional location as well as business experience and knowledge.
- Understanding the depth of local employment to service industry growth.
- Product will be compared to other regional markets, so price needs to be considered.

O

Opportunities

- There are existing local businesses such as Teys in which new businesses could collaborate to deliver new products (e.g. Bovine Blood products).
- Businesses may be able to collaborate with education providers in CSU's new AgriPark.
- CSU AgriPark is limited at just 19-hectares and has 23 serviced lots. If the park reaches capacity, Bomen could be a good proximate alternative.
- Collaborate with Government and industry bodies who are promoting regional products and brands to identify growth / niche markets that could be serviced
- Increased use and reliance on renewable energy sources.

T

Threats

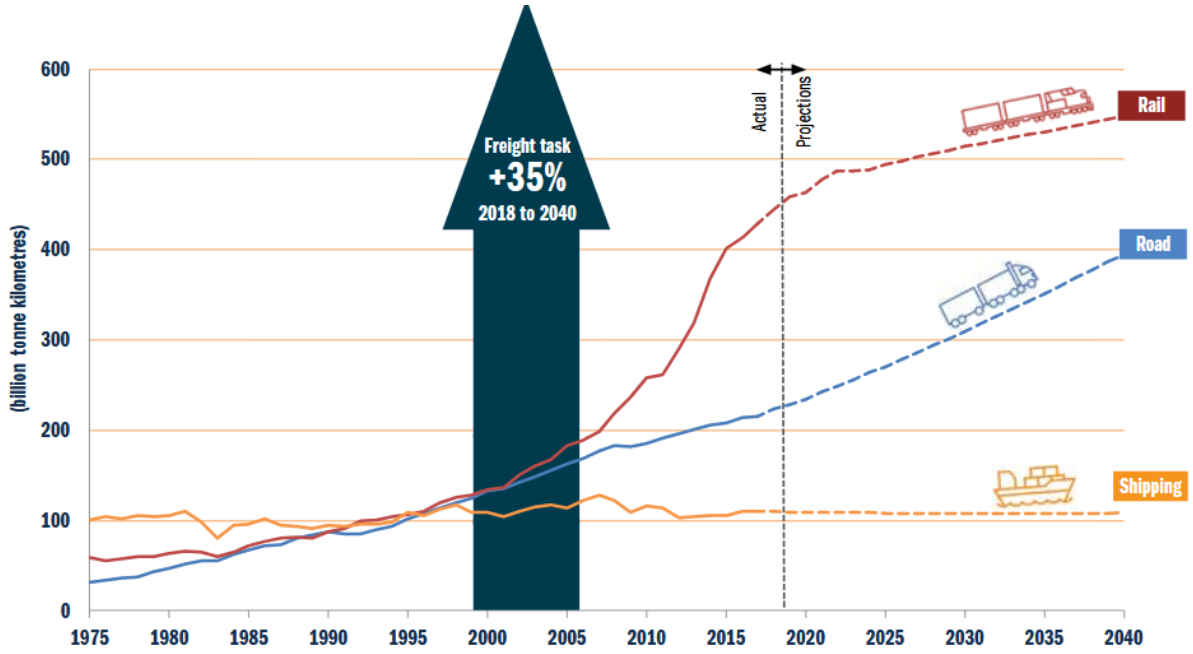
- Agribusinesses choose to locate within Charles Sturt University's AgriPark and not in Bomen given the university's specialisation of the precinct for these uses as well as research and business support.
- Attracting STEM (science, technology, engineering and maths) graduates from beyond the region may be hard.
- Biosecurity requirements, standards and measures do not meet market demands and / or are not followed.
- Utility infrastructure and energy supply is not sufficient to support proposed industry developments.

7.2 Freight and Logistics

Australia's freight task is growing. The volume of freight carried is expected to grow by over 35% between 2018 and 2040, an increase of 270 billion tonnes[29]. Despite extensive growth, freight productivity and costs have plateaued since the 1990s and urban infrastructure is reaching capacity due to road congestion, greater noise and environmental regulation, and corridor and precinct encroachment. With the nature of freight changing alongside growing population pressures (urban freight is forecast to grow by nearly 60% over 20 years to 2040), regional and remote Australia will play an increasingly important role in ensuring both the domestic and international markets are accommodated.

Australia's freight supply chains (e.g. producers, transporters, customs officials, brokers and inspectors) are the key to the future economic success of the industry alongside the strengthening of connections between our regions and urban centres. Businesses involved in the freight supply chain need to work together to build resilience to meet emerging issues associated with the environment, security and increasing consumer demands to maximise economic and environmental value.

Figure 15. Projected freight growth by mode in Australia



Source: National Freight Supply Chain Strategy (2019)

Alongside a booming export market, increasing demand from the local economy is progressively contributing to growth in the volume of freight carried. Whilst population growth has been the largest contributor to increased freight volumes (e.g. more food required), the digital economy is also playing an increasingly important role, particularly in the last mile delivery space.

[29] Department of Infrastructure, Transport, Cities and Regional Development (2019), *National Freight and Supply Chain Strategy*

7.2.1 E-Commerce

The popularity of e-commerce in Australia is continuing to increase, from the home delivery of food (e.g. supermarket deliveries, Hello Fresh, takeaway), to clothes, homewares, electronics – almost all consumer goods are now available for purchase online. In 2017, online spending growth outstripped traditional retail by 16.2%. However, Australia still has a long way to go with the market share of online retail spend just 6.8%[30], the remaining 93.2% of retail spend is still directed toward bricks and mortar stores. Despite Australia's existing share of online purchases, based on trends seen in countries such as the UK where online retail sales hold a market share of 18.6%[31], it is likely that Australia's online spending share will continue to rise. This growth will be supported by both increased consumer awareness and system trust, features such as buy now pay later and in the longer-term improvements in technology making the experience easier, for example, home security devices and smart appliances that order and accept deliveries.

The evolution of e-commerce has been met with increased consumer expectations in relation to delivery time, delivery cost, and ease of returns. Research by Australia Post and PwC indicated that[32]:

- 65% of Australians have abandoned an online shopping cart due to high delivery costs.
- 30% would pay an extra $5.80 to select a 2-hour delivery time slot between 9am and 9pm at the time of purchase.
- 24% would pay an extra $8.80 to receive an item with 2-3 hours.

As consumer expectations continue to grow, particularly in the speed of delivery space, regional cities and towns of Australia may not be able to provide quick delivery services and therefore will need to put strategies in place to ensure they can tap into this growing market. This could include the development of strategies to increase cost efficiency. Currently only around 26-39% of retailers offer free delivery - even with a minimum spend with free shipping[33]. If regional areas can increase their cost efficiency in terms of direct to the consumer or retailer delivery and delivery to last mile delivery spaces, this may give retailers the opportunity to decrease their shipping 'losses' and harvest the consumers who indicated they would shop more if shipping/returns were free and who are abandoning their "carts" due to shipping costs.

Table 5 below details key strengths, weaknesses, opportunities and threats for freight and logistics in relation to Wagga Wagga SAP Investigation Area.

[30] National Australia Bank (2019)
[31] UK Office for National Statistics
[32] Australia Post (2019), *Inside Australian Online Shopping*
[33] Australia Post (2019), *Inside Australian Online Shopping*

Table 5. Future of Freight and Logistics in Wagga Wagga SAP Investigation Area – SWOT matrix

S

Strengths

- Significant amount of agricultural products required to be shifted either by road, rail or plane.
- Increasing global demand for goods.
- Located halfway between; Melbourne and Sydney,
- National freight corridors traverse the region and extend to Sydney, Melbourne, Brisbane and Adelaide.
- The provision of direct flights between Sydney and Melbourne and Wagga Wagga airport as well as Wagga Wagga LGA's proximity to Canberra's airport
- The Inland Rail & RiFL provide competition in the cost of transporting freight via road or rail and can result in reduced transport / supply chain costs for producers.
- Industry such as manufacturing and agribusiness are dependent on freight.

W

Weaknesses

- Increasing demand from consumers for speedy delivery (e.g. same day, 2-3 days). With Australia's largest consumer base in the metropolitan areas – places like Wagga Wagga LGA can only provide for certain product types.
- Consumers are shifting towards free/decreased shipping costs, addressing the cost impacts to business along the supply chain will be difficult. To decrease costs, there may need to be significant collaboration from businesses across the supply chain – a very difficult notion.

O

Opportunities

- Increased rail transport efficiency and the utilisation of rail (Inland Rail & RiFL Hub).
- Utilising rail transport provides the potential for productivity savings for the freight sector and businesses.
- Cold storage facilities for the storage of perishable products at freight terminals.
- New investment and business growth provide additional opportunities for the freight and logistics industry to invest in the precinct with freight acting as an enabler and facilitator for other businesses.
- Permit a variety of freight-related land uses (not necessarily rail related) within the RiFL Hub via short to medium term leasing arrangements to cement the locality being a hub for the freight and logistics sector.

T

Threats

- The location and distance of other intermodal terminals could impact on the success of the RiFL Hub and establishment of freight and logistics businesses.
- The volume of freight to be handled by a single freight business entity for rail transport is too small to warrant investment in warehousing within the RiFL Hub.
- The volume of freight the region generates including competition from other freight generating catchments with access to multiple modes of transport (e.g. rail, road and air) could impact the freight throughput via the RiFL Hub.
- Rail transport pricing is not competitive with road transport costs resulting in the need for additional investment in road infrastructure to service freight volumes.
- Underutilisation of rail infrastructure, as a result of road transportation being more price competitive, impacts on the frequency of rail services and operational hours and services available at the new RiFL Hub's intermodal terminal.

7.3 Renewable Energy

Renewable energy is produced using natural resources that are constantly replaced and never run out, these include solar, wind power, and hydropower. Australia is a member of Mission Innovation (MI), a global initiative of 23 countries and the European Union that aims to dramatically accelerate global clean energy innovation through a combination of increased public investment, concerted international research collaboration, and improved engagement with the private sector[34]. Macroplan has identified which investment initiatives would be well suited to Wagga Wagga LGA.

7.3.1 Solar[35]

Solar Photovoltaic (PV) generated 3.1 per cent of Australia's electricity in 2016-17, the majority of which came from small-scale rooftop PV with around 21 percent, of Australian households accommodating rooftop solar as solar panel sales continuing to rise. Solar energy has many benefits; it provides an alternative to fossil fuels reducing carbon footprint, is affordable and reliable renewable energy. There are currently two solar farms approved for development in Bomen.

7.3.2 Batteries[36]

Batteries are an energy storage technology that uses chemicals to absorb and release energy on demand. New technology has allowed lower cost batteries to store renewable energy generation, such as solar energy. This means that energy can be stored during times of low demand and released at times of peak demand. Batteries can be installed in small or large quantities for different uses. For example, a large number of batteries installed together, known as grid-scale or large-scale battery storage (LSBS), can act as a large-scale power generator connected into the electricity transmission system. Due to the technology's versatility and falling costs, the use of battery storage for renewable energy is expected to increase over the coming years with many projects, such as Gannawarra Energy Storage System currently under development.

7.3.3 Renewables for Industry[37]

Industry is the largest user of energy in Australia, with around two thirds of that energy used to produce heat for industrial and other processes. Renewable energy provides around 10 per cent of direct (non-electricity) energy use in Australian industry. Most of this (around 75%) is derived from sugarcane residue left over after the sugar has been removed. The remaining 25% is derived from wood or wood products which are mostly used in the pulp and paper industry.

Table 6 below details key strengths, weaknesses, opportunities and threats for renewable energy in relation to the Wagga Wagga SAP Investigation Area.

[34] http://environment.gov.au/climate-change/government/renewable-energy
[35] https://arena.gov.au/renewable-energy/solar/
[36] https://arena.gov.au/renewable-energy/battery-storage/
[37] https://arena.gov.au/renewable-energy/renewables-for-industry/

Table 6. Future of Renewable Energy in Wagga Wagga SAP Investigation Area SWOT matrix

S

Strengths

- Two solar farms approved for development in Bomen. This could be an attractor for industries looking at supply chain opportunities such as battery storage.
- Large land allotments with careful planning will minimise risk of community issues and correct buffer zones to maximise operations.
- An agglomeration of similar types of industry allows for specialisation and support from education / training through to collaboration with supporting businesses.

W

Weaknesses

- Renewable energy is still not widely used on an industrial scale due to cost inefficiencies. This means the current consumer base is relatively small.
- Limitations to the types of renewable energy sources that would be feasible and suitable for Bomen.
- Can occupy significant areas of land and generate minimal direct employment.

O

Opportunities

- Collaboration between industry and the renewable resource sector to develop industry specific energy solutions and reduce energy consumption.
- Increase industry's use of sustainable energy sources and marketability.
- Precinct could become self-sufficient for energy supply to local businesses.
- Increased renewable energy use will help Australia meet its national and global environmental commitments.

T

Threats

- There are high costs associated with the development of new technologies.
- May require multiple businesses and Government to fund a renewable energy project.
- Renewable energy projects may not be supported by the local community.

Section 8: **Prospective Business Types**

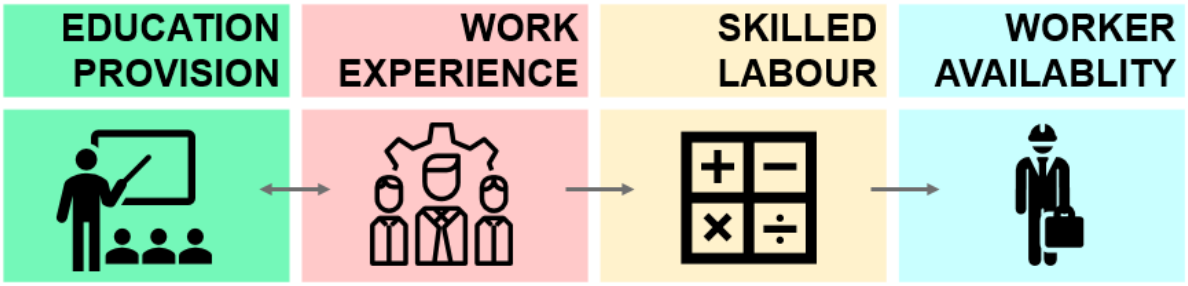
8.1 Overview

Based upon the identified industry trends, coupled with the strengths and opportunities identified in Wagga Wagga LGA, this section provides case studies on businesses whose operations or similar to, could be located in the SAP. The case studies provide a company profile and identify the businesses products and/or services, its location as well as identifying current staffing and skillsets.

8.2 Education and Business

A theme identified throughout this section of the report is that the future of industry will rely heavily on skilled labour notably STEM skills to operate successfully. With CSU and TAFE NSW both present in Wagga Wagga LGA there is an opportunity for businesses and education institutions to collaborate. This could benefit both businesses and CSU, for example, businesses will have access to a pool of local talent whilst CSU may be able to entice students to study with them by offering placements or graduate programs at local businesses.

The SAP is an ideal location for a TAFE with it providing an opportunity to facilitate collaboration and training of skilled labourers. If a TAFE did locate to Bomen, there could be an opportunity for increased placement of students in traineeships and / or undertaking hands on work at local business. A TAFE could offer courses tailored to the needs of the businesses operating in the SAP e.g. Food Science, Production and Processing courses – a win-win for both institutions.



8.3 Advanced Manufacturing

Keech Australia is a Bendigo-based manufacturer that has been operating for over 85 years, designing and manufacturing steel casting. In recent years, Keech launched the operation of a new high-tech production line, which incorporates the latest Industry 4.0 sensor and computer programming technology creating one of the world's most efficient production lines. Keech's products are distributed both nationally and internationally and are utilised within mining, excavation, construction, agriculture, rail transport and defence.

The Keech group offer an integrated service to their clients – incorporating innovation, design, manufacturing, supply, inventory management and product support. The firm still uses induction furnaces but has also introduced 3D printing. With various sizes of 3D printers, Keech can make prototypes and moulds quickly (some cases, overnight), to demonstrate what a proposed part will look like to a customer.

The firm identified early in their technological progression that they could not survive as just a local supplier and have since established distributors in South Africa, Papa New Guinea, Chile, Philippines, United States, Canada, Kazakhstan and Australia. Their aim – to align themselves with high-quality, key manufacturers elsewhere in the world which allowed them to build a partnership-type approach. These relationships were established so that Keech could provide input into a client's design criteria and to understand other businesses customer base.

Keech indicate their strategy is to deliver quality, customisable products and go the extra mile with servicing to take the focus away from product price. For example, Keech introduced faster change-out times for a mining product. This saved Keech money, secured their customer base and meant price was no longer such an issue because the service went beyond just supplying a part.

Skillsets

To deliver and service Keech Group's wide range of products, there are a range of skillsets required with a range of occupations available, including (but not limited to):

- Materials and technical engineers
- Scientists
- Designers and patternmakers
- Quality Assurances specialists
- Labourers

NDF Disc Planters

NDF Ag-Design- is a privately-owned Australian company founded in 2001. NDF Ag-Design's design and manufacturing plant is located at Narromine in central NSW but competes in a global market. NDF Ag-Design makes disc planters that are pulled behind a tractor to plant seeds directly into soil. Unlike a traditional plough, these machines insert the seeds without turning over the soil, allowing paddocks to keep soil moisture and retain the stubble of the previous crop to prevent erosion. NDF Ag-Design employs 15 staff, who with the help of technology, manufacture 95% of the planters components in-house, to maintain quality control and monitor product flow. With NDF Ag-design manufacturing its own disc planters, unlike mass produced planters, they can be adjusted to minimise soil disturbance and for different sowing depths.

The Australian market for these machines is dominated by mass-produced imports, with minimal local manufacturers. Some of NDF Ag-Design's products are double the price of imports, however, they do not require servicing as often as imported machines. Product quality has resulted in major cost savings for NDF Ag-Design in the long run with little time lost for repairs. NDF Ag-design stated that their continuous design improvement and services is key to the success of NDF Disc Planters in a market dominated by cheaper imports.

Skillsets

To deliver and service NDF Ag-Design range of products, the main skillsets required (but not limited to):

- Materials and technical engineers
- Designers
- Labourers

BioBag International AS started life as a privately-owned polyethylene film and bag manufacturer in Norway in the late 1950's. In 1993 the company introduced the BioBag range of products and has been producing compostable bags, sacks and films for waste management, retail, commercial, industrial and agricultural applications. BioBags are compostable alternatives to plastic bags that break down anywhere oxygen and microorganisms exist, with no toxic or microplastic residues. BioBag sells a range of products including bin liners, dog waste bags, kitchen caddies, produce bags and a range of compostable films suitable for other applications including nappies, feminine hygiene products, bed linen, laminated products and agricultural products.

BioBag has factories, market and distribution partners around the world. Peakfresh an Australian company located in Netley, South Australia, entered a joint venture with BioBags and in 2019 began manufacturing compostable plastic bags in Netley, South Australia. The Netley operation plans to manufacture around 15 million compostable BioBags a year to service increasing demand from businesses looking to use environmentally friendly alternatives to plastic bags. BioBag's Adelaide factory is run 90 percent on solar electricity.

BioBag operates in a circular economy with its product useable as compost, which is then used to produce food, this food is used to develop Mater-Bi (some examples of Mater-Bi inputs include starches, cellulose, vegetable oil). Mater-Bi is then used to develop BioBags in which food is packaged for consumption.

Skillsets

Mater-BI is currently produced and continuing to be developed in Italy, as such most of the highly skilled workers such as the chemical engineers are located offshore. However, if an Australian company was to develop the input for a product such as biodegradable packaging, skillsets including engineering, chemistry and other sciences (e.g. STEM skills) would be key. In terms of the delivery of the output, e.g. BioBags – management and labourers are more critical than STEM skilled professionals.

8.4 Agribusiness

Richmond Dairies, part of the Longley Farm Group, is located in Casino in northern NSW. Richmond Dairies produces a range of dairy products, however, renowned for its technical expertise in producing frozen and powdered milk products. The company uses unique fast-freeze technology to ensure its products are consistently high quality which has made their products highly valued by customers. Richmond Dairies Casino factory produces a range of frozen milk products including frozen creams, cream blends and milk concentrates, as well as milk-based powders that are used by food manufacturers around the world. The company is also the only manufacturer in Australia manufacturing a certain yoghurt powder. The company identifies itself as a technology company operating in the dairy industry, constantly investing in its technology, plant and equipment, refrigeration and storage facilities.

Whilst a leading exporter of dairy products, Richmond Dairies is a relatively small regional dairy processor with just 50 people employed in its Casino plant. The company see its size as its strength, allowing it to be flexible and responsive to its customers' needs.

Skillsets

To deliver Richmond Dairies products, there are a range of skillsets required with a range of occupations available, some key skillsets include (but not limited to):

- Engineers
- Scientists
- Quality Assurances specialists
- Labourers

Omega-3 oils are polyunsaturated fatty acids that are considered 'healthy oils'. Docosa-hexaenoic acid (DHA) is a long-chain omega-3 oil and a key structural component of cellular membranes in the human body. It is vital for early childhood growth particularly, brain and eye development. DHA can also reduce blood pressure and the risk of coronary heart disease as well as stroke, type 2 diabetes, Alzheimer's disease, inflammatory disease and asthma.

Fish is the world's primary source of dietary omega-3 oils, however, they do not create their own DHA, they acquire DHA when they eat microalgae. Fish accumulate high levels of DHA, which in turn can be consumed by humans as a source of DHA. With more people recognising the health benefits of DHA, demand has reached a point where it is now growing faster than can be sustainably supplied from wild fish stocks.

In 2011, Nuseed collaborated with the CSIRO and the Grains Research and Development Corporation (GRDC) in Australia to genetically modify a canola seed. The GM would give the canola seed a unique profile that includes long-chain omega-3 fatty acids. Nuseed estimate that 1 hectare of this canola has the potential to provide the omega-3 oil yield from 10,000 fish weighing 1 kg each.

Australian regulators have granted approval for the production and use in feed and human consumption of Nuseed's proprietary omega-3 canola. This approval facilitates additional regulatory applications in other markets that recognise Australia as a reference country. Nuseed received USDA deregulation approval for cultivation in 2018 and doubled its contract production of Nuseed Omega-3 Canola in 2019.

Nuseed's omega-3 oil will be used as an ingredient in aquaculture feed (Aquaterra®) and in human nutrition (Nutriterra®) upon regulatory approvals. This seed-based solution will deliver a new and sustainable source of long-chain omega-3 for improved health, while relieving the pressure on wild fish stocks. Both products are more than just alternative sources of omega-3; they are uniquely rich in DHA, a vital building block of good nutrition.

Skillsets

Genetic modification requires a broad range of both high and low skillsets, notably:

- Science such as chemistry, genetics and agricultural science
- Engineering such as chemical engineering
- Other tertiary level STEM skills and education
- Labourers e.g. gardeners

This could be well suited to Wagga Wagga LGA with its growing reputation for international agricultural research, education and technology with its cluster of AgTech research centres including Charles Sturt University, TAFE, CSU Tech Incubator, CSU AgriPark, the Graham Centre, Wagga Wagga Agricultural Institute, the NSW Centre of Excellence for Southern Farming Systems and Viticulture, and AgriFutures Australia. Education institutions, industry groups and businesses coupled with its canola production could make a GM project such as this viable.

Australian Eatwell

Australian Eatwell Pty Ltd is a 100% Australian owned company which produces both vegan and vegetarian foods such as vegetable based burgers and sausages. In 2003, the company moved from Melbourne to Donald in rural Victoria. In 2009, Australian Eatwell acquired the Simply Better Food brand and expanded their product range to include tofu made from local chickpeas and soy cheese. Their product is distributed by IGA, Foodworks, speciality supermarkets (e.g. Lamanna Direct) and many health foods stores.

Life Health Foods

Life Health Foods produces fresh, healthy and convenient plant-based foods in its purpose-built manufacturing facility located in Berkeley Vale on the NSW Central Coast. Almost all production takes place in Australia, excluding the Savoury Vegie Mince which is produced in New Zealand. Life Health Foods most notable brand is Vegie Delights which was acquired from Sanitarium in 2014. The company offer a variety of chilled, frozen and canned products. Some notable products include, vegie roast, Thai chilli & lime cakes, koftas, sausages, burgers meatballs and savoury mince. Vegie Delights' products are carried by Woolworths, Coles as well as many independent supermarkets.

RESEARCH

Veganism and plant-based diets[22]

- While demand for meat remains strong and is forecast to increase, search data from Google Trends shows a worldwide increase in the interest in veganism from 2004 to 2018. Top regions include Israel, Australia, Canada, Austria, and New Zealand.
- In Australia, between 2014 and 2016, the number of food products launched carrying a vegan claim rose by 92%. Australia is the third-fastest growing vegan market in the world.
- There's been a 600% increase in people identifying as vegans in the U.S in the last three years. According to a report by research firm GlobalData, only 1% of U.S. consumers claimed to be vegan in 2014. In 2017, that number rose to 6%.
- In the UK, the number of people identifying as vegans increased by 350%, between 2008 and 2018, according to research commissioned by the Vegan Society in partnership with Vegan Life magazine.
- Veganism was a top search trend in Canada in 2017.
- Plant-based diets are growing across Asia. New dietary guidelines released by the Chinese government encourage the nation's 1.3 billion people to reduce their meat consumption by 50%. Research predicts that China's vegan market will grow more than 17% between 2015 and 2020. And in Hong Kong, 22% of the population reports practicing some form of a plant-based diet.
- Mainstream health organisations are recommending a plant-based diet. Including, among others: Kaiser Permanente, the largest healthcare organization in the U.S.; the Dietary Guidelines Advisory Committee; and the American Institute for Cancer Research.

Skillsets

Alongside the global increase in vegetarians and vegans, people are trying to reduce their total meat consumption with some health organisations indicating it could be good for a person's health in the long term. While there has been growth in plant-based products there is still limited product choice particularly at local supermarkets, as well as limited products that are reasonably priced. There is also a trend, to make products look and taste like meat, for example, vegan 'beef' meat mince that looks and tastes exactly like real beef mince. Many consumers are also cautious of what ingredients are being used to substitute flavours and mimic textures and taste and whether these "inputs" allow a person to achieve a healthy dietary outcome. Based upon the research and development stage, through to food production, skills required include:

- Science such as chemistry and biology
- Quality Assurance professionals
- Labourers

[38] Food Revolution Network (2018)

8.5 Freight and Logistics

Visy [39] is one of Australia's largest privately-owned enterprises and one of Australia's largest waste recovery companies. Visy operate in packaging, paper and resource recovery industries and are known for their high quality, innovative and sustainable packaging products and solutions in the packaging automation sector. Across Australia, Visy recovers and recycles materials such as cardboard, paper, plastic, steel, aluminium and glass, which otherwise would have been destined to landfill.

In 2017/18, Visy produced:

- Fibre packaging: 843,000 tonnes
- Steel food cans: 545 million
- Beverage cans: 1.7 billion
- Beverage cartons: 749 million
- Plastic containers: 2.1 billion
- Plastic preforms: 1.2 billion

In 2017/18, Visy recycled:

- Paper and cardboard: 1.8 million tonnes
- Glass: 186,000 tonnes
- Plastics: 95,000 tonnes
- Metals (e.g. aluminium and steel cans): 35,000 tonnes

Visy Logistics[40]

Visy Logistics was established in 2006 to consolidate Visy's own internal domestic and international supply chains. Visy Logistics offers Australian freight services, international freight services and warehouse logistics. Currently, Visy has a national warehouse footprint of greater than 130,000m2 within Australia, and 50+ warehouses globally.

Visy Logistics Australia services include road freight (metropolitan and linehaul), rail freight, domestic sea freight (coastal shipping), intermodal freight, 3PL logistics and air freight. Visy's international freight services include international sea freight, air freight, freight forwarding, container transport, customs clearance and coastal shipping.

Visy Logistics employs 320 staff over 120 sites, across Australia, New Zealand, USA and Singapore. The company also has a significant sub-contractor network within Australia, and an agency network worldwide. The key sectors and industries Visy serve include; manufacturing, industrial, waste, fmcg & retail and commodities trading & project cargo

Known for its innovation, in 2017, Visy launched 'Visybility' an integrated IT platform that includes Transport Management System (TMS) and Warehouse Management System (WMS) functionality and coordination across metropolitan distribution, linehaul and warehousing. Key warehousing features of Visybility include:

- Warehousing integrated to multi-modal operations
- Multi UOM support
- FIFO & Batch methodology
- Automation in warehousing
- Warehouse cross docking
- Batch management
- Cycle counting
- Storage contract

[39] https://www.visy.com.au/about/visy
[40] https://www.visy.com.au/logistics/about

In 2017, Visy Logistics announced that it would co-invest with Wagga Wagga City Council to develop the RiFL terminal.

8.6 Renewable Energy

Gannawarra Energy Storage System (GESS)[41]

The Gannawarra Energy Storage System (GESS) is a 25 megawatt (MW)/50 megawatt-hour (MWh) lithium-ion battery to be co-located with the 60 MW(DC) Gannawarra Solar Farm located west of Kerang in north western Victoria. The $41.2 million project is being financed by Edify Energy in a consortium with Wirsol Energy as co-investors, Tesla as battery provider, RCR Tomlinson as EPC contractor, Energy Australia as long-term operator. In support of the project, ARENA and the Victorian Government as provided $22.73 million of grant funding.

Gannawarra is an existing solar farm that is being retrofitted with battery storage creating an integrated renewables and battery system. The Gannawarra energy storage system will be the first in Victoria and among the first in Australia and among the largest integrated renewables and battery systems in the world.

To maximise the integration of solar and batteries, the battery will store energy at times of relatively low value and use stored energy at times of relatively high value. The project is also exploring how it could further maximise it service looking at other grid services such as frequency control ancillary services and, if it is established under the electricity market rules, a Fast Frequency Response.

Not only is energy integration good for the environment, but the use of large-scale batteries also provides different benefits to the electricity system, including improving grid stability and power quality, and has the potential to help integrate more variable renewable energy into the grid. For example, the battery could assist by reducing curtailment of future renewable energy generation on what is a relatively constrained line in the Victorian electricity system hence supporting higher levels of renewables in the region by reducing or controlling peak loading on these circuits.

AgBioEn

AgBioEn, renewable energy company will become the first in Australia to use specialised technology to produce renewable biofuels on a commercial scale. In July 2019, AgBioEn confirmed they were developing a plant at Katunga, Victoria, that will transform feedstock waste into renewable diesel and bio-jet fuel. This production process will deliver a net-carbon-negative outcome for Victoria's environment.

AgBioEn operates as a fully integrated renewable energy business, utilising world class technology to deliver clean, low emission renewable energy and liquid fuels from biomass. It's renewable energy facilities utilise a combination of pyrolysis technology and Fischer-Tropic gas-to-liquid processing to convert biomass into a number of renewable fuels. The entire fuel and energy processing system is fully integrated and closed loop to ensure minimum carbon footprint.

[41] https://arena.gov.au/projects/gannawarra-energy-storage-system/

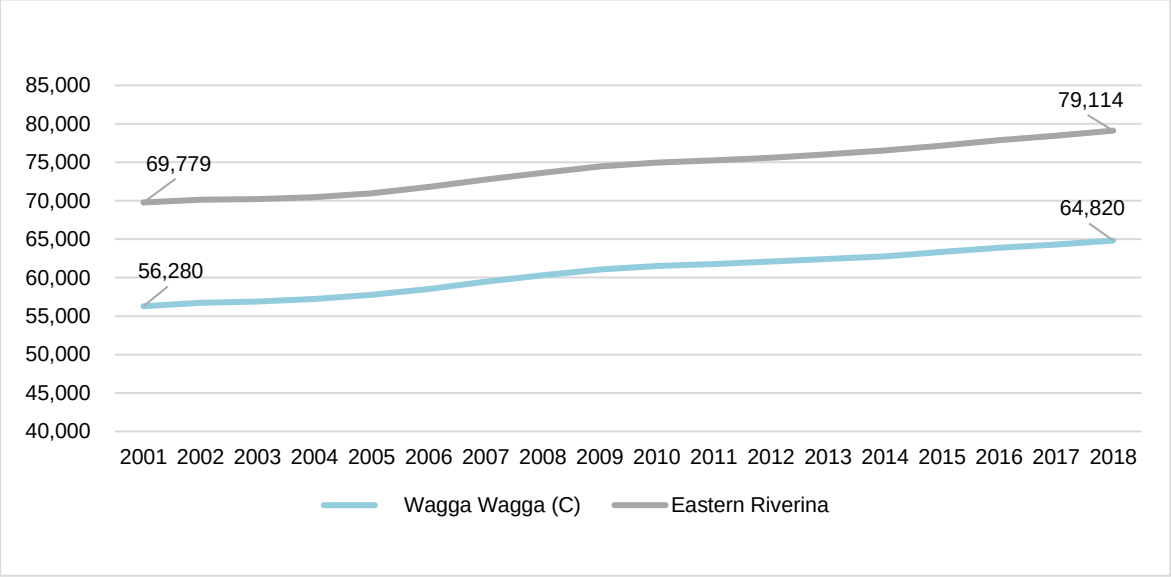
Section 9: **Socio-demographic Context**

The Eastern Riverina Region is a regional economic hub consisting of four local government areas (LGAs) including Wagga Wagga City, Coolamon Shire, Junee Shire and Lockhart Shire. Wagga Wagga LGA forms the region's economic core with 89% of the 34,418 jobs recorded in the Eastern Riverina in 2016 located in the LGA. Whilst the focus of employment is in Wagga Wagga LGA, the surrounding LGA's account for a significant source of employees, hence the socio-demographic profile of surrounding residents, particularly their skills and level of education, play an important role in ensuring a sustainable and successful local and regional economy.

9.1 Population

In 2018, the population of the Eastern Riverina was 79,114 people, 9,335 more than in 2001 and representing average growth of 0.75% per annum (Figures 16 and 17). Around 82% of the Eastern Riverina's population lives in Wagga Wagga LGA (64,820 people) and its share of total population has steadily increased, accounting for over 90% of the growth in the Eastern Riverina between 2001-18. Wagga Wagga's growth averaged closer to 0.85% per annum during this period.

Figure 16. Eastern Riverina and Wagga Wagga LGA Population 2001-2018



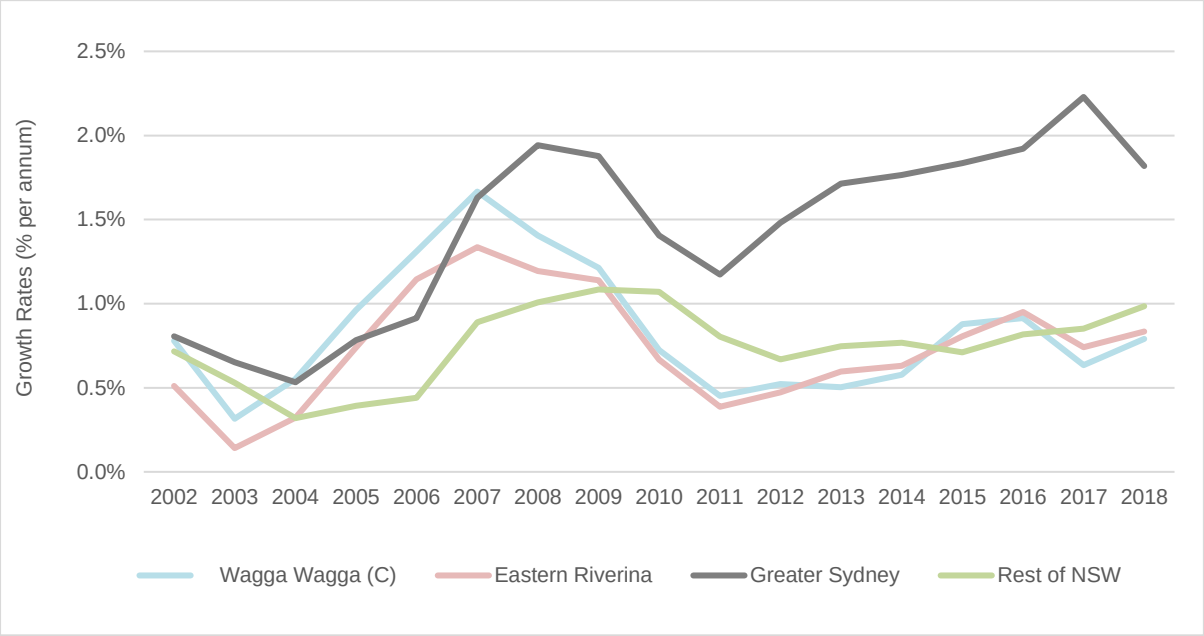
Source: ABS (2019)

The region had a particularly strong 5-year period of growth between 2004-09 when Wagga Wagga LGA's growth averaged just over 1.3% per annum which was then on a par with growth in Greater Sydney. This boosted the Eastern Riverina region's growth to 1.1% which was a faster pace than regional NSW (Rest of NSW[42]). During this period a significant number of urban development projects were underway including Glenfield Park in Wagga Wagga LGA. These new developments saw the region attracting many new residents, particularly from nearby

[42] The ABS allocate two main statistical areas to each state in Australia as part of its Greater Capital City Statistical Area category. In NSW, the two main divisions include Greater Sydney (the metropolitan area) and Rest of NSW (regional area).

regions such as the Tumut Shire and Griffith LGAs. Then from 2009-14, the rate of growth decelerated and averaged only about 0.55%. More recently 2014-18 has seen the rate of growth lift again to an average over 0.8% per annum.

Figure 17. Eastern Riverina and Wagga Wagga LGA Population Growth Rates 2002-2018



Source: ABS (2019)

9.2 Age Profile

The Eastern Riverina region and Wagga Wagga LGA have a young population when compared to both Greater Sydney and regional NSW. The median age in Wagga Wagga LGA in 2016 was 35, a year younger than the Greater Sydney median and 8 years younger than the median age of regional NSW.

The comparative youth of the population is evident in the 0-19 age cohort, with 26.9% of the Eastern Riverina and 27.3% of Wagga Wagga LGA's population. This compares to 24.6% in Greater Sydney and 24.4% in Regional NSW. Census data indicates couple families with children households in Wagga Wagga LGA had more children per household than those families in the metropolitan area which is consistent with the LGA's larger cohort pre-schoolers and school aged children which underpins demand for school and tertiary education.

Persons aged 20-24 years old also form a comparatively large age cohort in both Wagga Wagga LGA and the Eastern Riverina. This age cohort accounted for 7.5% of the Eastern Riverina's population and 8.0% of Wagga Wagga LGA's population (Table 7), higher than for Greater Sydney (7.1%) and significantly higher than regional NSW at just 5.6%. This age cohort has long been prominent, largely driven by the presence of tertiary education institutions in Wagga Wagga LGA as well as the types of industry opportunities available such as health and defence which are known to attract a young population, particularly defence with 48.2% of Australians employed in defence aged between 20-34. Reflecting those factors, the Eastern Riverina and Wagga Wagga LGA's share of the 25-34 age cohort is also high compared with regional NSW but, with for example defence personnel being posted after their training (in Wagga Wagga) to army bases elsewhere, it is below that for Greater Sydney.

Despite its younger age profile, in line with national trends, the Eastern Riverina and Wagga Wagga LGA are ageing. Between 2006 and 2016 Wagga Wagga LGA's median age increased from 35 to 37. Every age cohort over 50 years old increased its share of Wagga Wagga LGA's population whilst every age cohort under 50, apart from the 25-34 age cohort, decreased its share of the population. The increase in the 25-34 age cohort is a positive indicator that either fewer young people are leaving for job opportunities outside Wagga Wagga or that more young people are moving into the region seeking jobs and more affordable living. The lift in this age cohort occurred in the period 2011-16 which is consistent with the uptick in Wagga Wagga's population growth rate in the more recent period.

Table 7. Eastern Riverina region and Wagga Wagga LGA Age Profile, 2006-2016

	2006				2016			
	Wagga Wagga	**Eastern Riverina**	**Greater Sydney**	**Regional NSW**	**Wagga Wagga**	**Eastern Riverina**	**Greater Sydney**	**Regional NSW**
0-19	30.6%	30.2%	26.2%	27.3%	27.3%	26.9%	24.6%	24.4%
20-24	8.6%	7.9%	7.2%	5.5%	8.0%	7.5%	7.1%	5.6%
25-34	12.6%	12.3%	15.3%	10.7%	13.8%	13.2%	16.1%	11.0%
35-49	20.0%	20.3%	22.5%	20.9%	18.2%	18.2%	21.1%	18.0%
50-64	15.9%	16.5%	16.6%	19.1%	17.5%	18.1%	17.2%	20.5%
65-79	8.9%	9.3%	8.7%	12.1%	11.0%	11.7%	10.2%	15.2%
80+	3.4%	3.6%	3.6%	4.4%	4.2%	4.3%	3.8%	5.3%
Median Age	**33**	**na**	**35**	**37**	**35**	**na**	**36**	**43**

Source: ABS Census (2006 &2016)

9.3 Education

In 2016, the highest level of education attained by most residents in the Eastern Riverina was a secondary education – years 10 and above with a total of 36.2% of Eastern Riverina residents and 35.8% of Wagga Wagga LGA residents having completed their secondary education. A high proportion of the working age population have vocational educational skills, with 31% of residents in the Eastern Riverina and Wagga Wagga LGA having attained a TAFE Certificate III & IV, Diploma or Advanced Diploma. This compares with just under 24% of residents in Sydney.

While strong in terms of vocational skills, the region's share of residents with a university grade education is below levels in the capital cities. Just over 17% of residents in the Eastern Riverina and 18.5% of residents in Wagga had a bachelor's degree or higher, which compares with 31% of residents of Sydney.

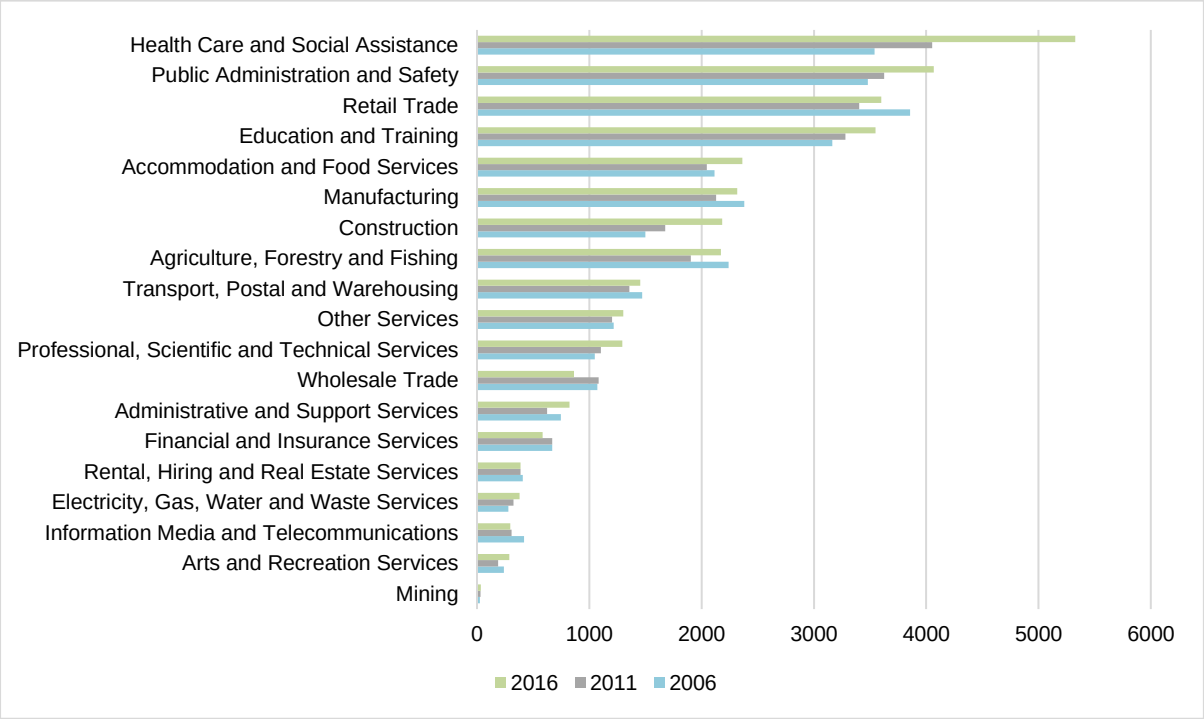
For many agricultural and industrial uses, a TAFE level education is sufficient to support the functioning, maintenance and operation of land uses. However, as Wagga Wagga LGA continues to grow into an economic hub through the support of the SAP, there will be a requirement to attract more skilled labour, particularly as the region plans to move toward a more innovative and ideas-driven labour force.

9.4 Historic Employment

Over the 10-year period to 2016, the number of jobs in the Eastern Riverina increased by 11.4% to just over 33,000 people, led by 12.9% growth in Wagga Wagga LGA which increased to almost 30,000 in 2016. It is estimated that the number employed in Wagga Wagga LGA increased to 32,800 in 2018 – see section 9.5 below. In terms of the other LGAs in the Eastern Riverina region, Lockhart and Coolamon lost a combined 146 jobs while Junee saw growth of about 173 jobs.

Industries driving growth across the Eastern Riverina over the 10-year period 2006-16 included health (+1,787 jobs), construction (+684 jobs), public administration and safety (+586 jobs) and education and training (+386 jobs). In contrast, notable industries where employment fell included retail (-257 jobs), wholesale trade (-210 jobs) and information media and telecommunications (-124 jobs).

Figure 18. Eastern Riverina Jobs by Industry, 2006-16



Source: ABS Census (2006,2011&2016)

9.5 Labour Force Status

In 2018, Wagga Wagga LGA's labour force – which includes the total number of employed and unemployed persons - was approximately 35,600 people including 32,800 employed and 2,800 people unemployed. The participation rate for the working age population (15+ years), has been trending upward over the past 17 years, increasing from around 77.4% in 2001 to 79.9% in 2018. This trend has been seen across Australia, mostly due to the increase in labour force participation rate by the female population, and also rising participation rates amongst older workers, caused by a number of a factors including as the improvement in health of the older population. However, as the 65+ share of the working age population (15+) rises, and the share of the 15-64 age cohorts decline, there is an expectation that this trend could be reversed.

Alongside an increasing participation rate, the region experienced a falling unemployment rate as the region's job creation continued to increase in the period 2001-18. In 2001, 7.2% of the labour force were unemployed, by 2018 this had fallen to 5.5%.

9.6 Skills and Occupations of Wagga Wagga LGA Workforce

The largely varied skill levels in Wagga Wagga LGA is a direct reflection of the various industries located in the region (Figure 19). Professionals was the most common occupation in the LGA (20.3%), higher than the share in Regional NSW (18.5%), however lower than for Greater Sydney (27.5%). Those employed as professionals mostly worked in education and health. The second most common skilled workers were technicians and trade workers, forming 15.1% of the working population, 4.2% higher than Greater Sydney and 1.1% higher than regional NSW. This was driven by the automotive and engineering trades workers, whilst community and personal service workers contributed a significant share supported by defence and carers (i.e. aged care).

Blue collar workers such as machinery operators and drivers and labourers, formed a much smaller proportion of the workforce when compared to Regional NSW, that is 15.1% compared to 18.5%. However, when compared to Greater Sydney in which blue collar workers form just 12.8% of its total workforce, the share in Wagga Wagga LGA is still significant.

Figure 19. Key Occupations of Wagga Wagga LGA Workforce, 2016

Source: ABS Census (2016)

9.7 Where the Wagga Wagga LGA / SAP Workforce Lives

Almost all of Wagga Wagga LGA's workforce live within the LGA itself (88.3%) with just 5.3% living in the balance of the Eastern Riverina. Whilst the total number of people commuting from the balance of the Eastern Riverina is small, when measured as a proportion of these smaller LGA's total working population, Wagga Wagga LGA is a key employer. Over 33% of Coolamon's working population are employed in Wagga Wagga LGA, whilst the Wagga Wagga LGA employed 27% of Junee's residents and 35% of Lockhart's residents. The large share of residents travelling to Wagga Wagga LGA for work is a direct reflection of the broader range of employment

opportunities available in Wagga Wagga, with health care and education the most common industries commuters are employed in.

9.8 Amenity for the SAP Workforce

The quality of the working environment in an industrial and commercial precinct is in part a function of the level of amenity which is available in reasonable proximity. In the case of the Wagga Wagga SAP Investigation Area, a feature of the location is the lack of amenity. Within this area, there is one café and one petrol station. The two nearest hotels are the Red Steer (2.1 kms or 3 minutes by car from nearest Bomen businesses) and the Palm and Pawn (5.3 kms or 6 minutes by car) located in North Wagga Wagga but they are not within walking distance from most businesses. In short, there is not much in the way of lunch-time offerings. With the projected growth in the workforce proposed within the Wagga Wagga SAP, the demand for a level of amenity consistent with a high-quality working environment will only grow.

Section 10: **Projections for Growth in Wagga Wagga LGA**

This report considers a number of projections for long-term growth in employment and population in Wagga Wagga LGA for the period to 2060. These projections are interrelated with projections for growth in employment in the Bomen Employment Lands (see section10.2) which are outlined.

10.1 Population and Employment Projections

In generating the population and employment growth series for Wagga Wagga LGA, macroplan has considered the following key inputs:

- Long-term trends in population growth and the changing population profile in the Wagga Wagga LGA;
- The NSW DPIE (2016) population projections for NSW, regional NSW and the Wagga Wagga LGA 2016-2036, and ABS population projections for regional NSW for the period 2017-61. These projections incorporate an assumption about the future trajectory of the Federal Government's immigration policy which is a major driver of population growth nationally and regionally. Changes in policy could impact on all the population projections but in which direction they might go in the short term and longer term (lower or higher) is uncertain;
- The impact of changes in net migration into Wagga Wagga LGA on population projections for Wagga Wagga LGA and the potential for its relative competitiveness in cost of living to increase net migration into the region. Federal and State Government policies to direct migrants to the regions might impact on these net flows but more in the short term than in the long term;
- Long-term trends in workforce and employment growth and participation rates in the Wagga Wagga LGA, and the skill profile of its workforce;
- Long-term trends in employment by industry sector in Australia, NSW, regional NSW and in Wagga Wagga LGA;
- The relative strengths and weaknesses of Wagga Wagga LGA and the Bomen Employment Lands from an industry perspective, and the impact of constraints on growth;
- The potential for a SAP to minimise constraints on growth, to maximise the strengths of Wagga Wagga LGA and Bomen, and the potential to attract new industry and lift the long-term growth.

The above factors have been incorporated into the development of the following growth series of population and employment for the Wagga Wagga LGA, that is:

- Base case – no SAP: based on the DPIE projections but incorporating some net increase in net migration into Wagga Wagga LGA, with some benefit from the RIFL and inland rail;
- Series 1 – a SAP is introduced which lowers costs to investing in Bomen and lifts growth as it captures the firms for which Wagga Wagga has significant locational advantages. The planning changes in the SAP increase the benefit from the RIFL and inland rail;
- Series 2 – the SAP achieves a higher success rate in attracting new investment, and growth is correspondingly higher. This is achievable but a lower probability outcome than Series 1, as it requires

capturing investments where the locational advantages of Wagga Wagga are more marginal which is why a lower probability necessarily attaches to this outcome; and

- Series 3 – there is much higher growth with Wagga Wagga LGA achieving a population of 100,000 by the end of 2030s. To achieve this ambitious target, investment attraction activities undertaken as part of SAP delivery will need to be streamlined and well targeted.

In the base case, an increase in the relative affordability of in-land regional cities compared with the capital cities and coastal regional cities, from the perspective of both firms and the labour force, leads to an increase in the net migration into the Wagga Wagga LGA. In the series 1, 2 and 3 projections, the affordability factor is accentuated for Wagga Wagga LGA by its pro-growth policies in terms of accommodating both residential and industrial demand. Other factors which could drive higher growth particularly in series 2 and 3, include:

- Increased depth in the labour force in Wagga Wagga LGA increasing the opportunities for both firms and workers, adding to the momentum generated by the affordability factor.
- Policy and regulatory reform and change by local, state and commonwealth governments and the global community (e.g. movement towards a circular economy; Paris Climate Change Agreement 2015; China's National Sword policy; etc.) create new job and employment opportunities which favour inland cities such as Wagga Wagga.
- Global and economic trends which are currently influencing Wagga Wagga LGA's economy including the Rise of Asia and the demand for premium food products and protein, have a more accentuated impact on growth in regional economies, including Wagga Wagga LGA.

Figure 20. Wagga Wagga LGA Population Projections (2018 – 2060)

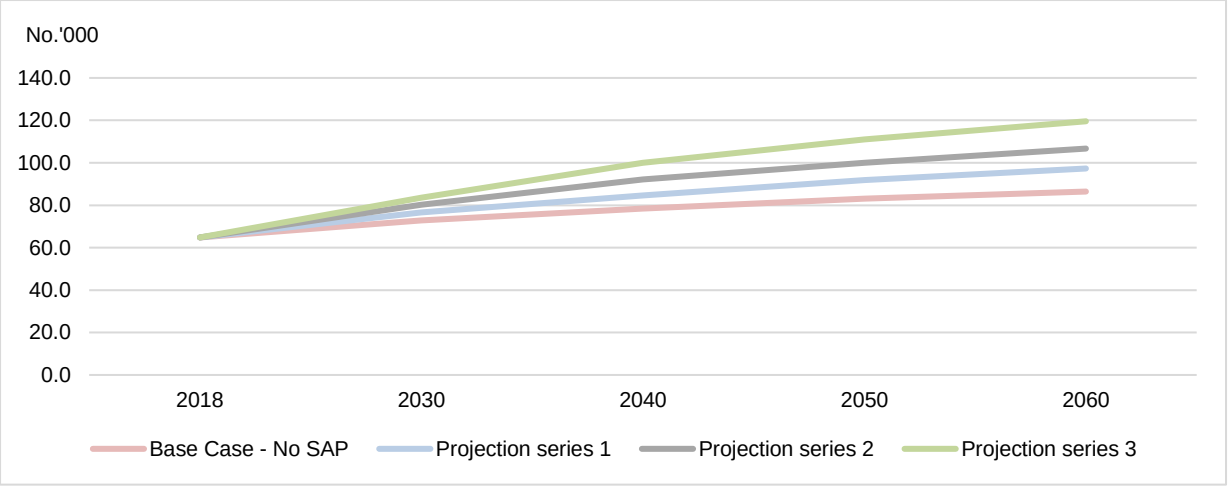


Table 8. Wagga Wagga LGA Population Projections (2018 – 2060)

	Population as at					Period Change			
No.'000 / % CAGR	**2018**	**2030**	**2040**	**2050**	**2060**	**18-30**	**30-40**	**40-60**	**18-60**
Base Case- No SAP	64.8	72.9	78.4	83.0	86.4	8.1	5.5	8.0	21.6
Period Growth - %		*0.98%*	*0.73%*	*0.57%*	*0.40%*				
Projection series 1	64.8	76.6	84.6	91.9	97.3	11.8	8.1	12.7	32.5
Period Growth - %		*1.40%*	*1.01%*	*0.83%*	*0.57%*				
Projection series 2	64.8	80.2	92.1	100.0	106.7	15.4	11.8	14.6	41.9
Period Growth - %		*1.79%*	*1.39%*	*0.83%*	*0.65%*				
Projection series 3	64.8	83.5	100.0	111.0	119.6	18.7	16.5	19.6	54.7
Period Growth - %		2.14%	1.81%	1.05%	0.75%				

CAGR = compound average annual growth rate (% per annum) for the period

Figure 21. Wagga Wagga LGA Employment Projections With and Without a SAP (2018 – 2060)

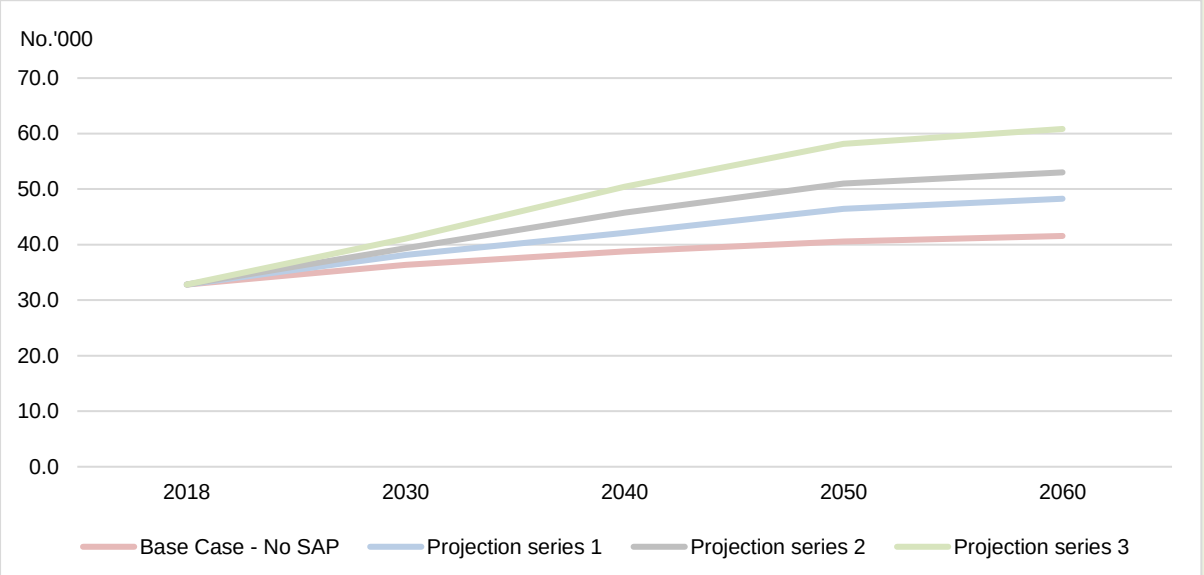


Table 9. Wagga Wagga LGA Employment Projections With and Without a SAP (2018 – 2060)

	Employment as at					Period Change			
No.'000 / % CAGR	**2018**	**2030**	**2040**	**2050**	**2060**	**18-30**	**30-40**	**40-60**	**18-60**
Base Case - No SAP	32.8	36.4	38.8	40.6	41.6	3.6	2.4	2.8	8.8
Period Growth - %		0.86%	0.64%	0.44%	0.25%				
Projection series 1	32.8	38.2	42.1	46.5	48.3	5.3	4.0	6.1	15.5
Period Growth - %		1.27%	0.99%	0.99%	0.38%				
Projection series 2	32.8	39.3	45.7	51.0	53.0	6.5	6.4	7.3	20.2
Period Growth - %		1.52%	1.52%	1.10%	0.38%				
Projection series 3	32.8	41.1	50.5	58.1	60.8	8.3	9.3	10.4	28.0
Period Growth - %		1.90%	2.07%	1.43%	0.46%				

CAGR = compound average annual growth rate (% per annum) for the period

10.1.1 Base Case – Growth with no SAP

The starting point for this growth series is the DPIE (2016) medium scenario population growth projection for Wagga Wagga LGA for the period 2016 to 2036, which has been extended out to 2040 and 2060 using the ABS (2018) projections for regional NSW and the observed relationship between Wagga Wagga LGA and regional NSW growth. In addition, the series incorporates a modest lift in net migration into the Wagga Wagga LGA.

The base case is the no-policy change, business as usual case with no SAP introduced. It largely incorporates a continuation of past trends and would, for example, include some trend expansion in the region's agricultural base, and some investment in infrastructure. It would incorporate some of the benefit to the region's growth due to the commitment to investment in Inland Rail and the RIFL. While the RIFL will generate some benefit to Wagga Wagga, in the absence of the planning changes in the SAP, the potential benefit from the RIFL is only partially realised.[43] A SAP, or more specifically the streamlined planning regime proposed, would lead to a fuller benefit of the Inland Rail being realised and this is incorporated in the Series 1-3 projections. In line with long-term trends, but giving higher weight to recent trends, it incorporates a further decline in the industrial sector's – manufacturing, wholesale, transport and storage (MWT) – share of employment.

The base case has Wagga Wagga LGA's population growing from 64,800 in 2018 by an average growth rate of over 0.8% to 78,400 in 2040. Then 2040-60, average population growth of about 0.5% would lift the population to about 86,400 in 2060. Over the whole period, population growth averages about 0.7%, slightly slower than its average for 2001-18.

A feature of this projection is the impact of the aging of the population. The population 65-84 is projected to grow by an average 1.6% pa taking its share of the population from 13% in 2018 to 18.8% in 2060. The 85+ share rises even more sharply at an average 2.4% pa doubling its share from 2.1% to 4.3% of the population. This growth in the retiree population will lead to increased demand for health and medical services, and aged care facilities. At the other end of the spectrum, the 0-14 age population is expected to grow by only 0.4% pa, with its share of the population declining from 20.6% to 18.3%. This still means growth in demand for education and childcare services and for community and sporting facilities. The flipside to the high growth of the 65+ age groups is slower growth in the population 15-64 which is projected to grow at only 0.5% pa, with its share declining from 64.3% to 58.7%. As the 65-84 age group has a low workforce participation, the rise of this group and decline in the 15-64 age group, is expected to lead to a decline in the overall workforce participation rate, even with a rise in age-group participation rates. This underlies the projection for growth in employment (about 0.6% per annum, Table 10) to be slower than the 0.7% population growth.

This will represent a deceleration in employment and economic growth compared with recent periods. In the period 2001-18, the employed workforce had expanded faster than population growth as the 15-64 age group had grown its share and the participation rate of the female population had risen. This lagged impact of the aging of the population will be a factor impacting the Australian economy and labour force more broadly. For regional economies and for Wagga Wagga LGA in this case it will mean that, with demand for employment in the health services sector rising, the supply of labour to accommodate growth in other sectors will be constrained.

[43] As discussed in the Appendix, in our view, the AEC (2014) study which had the RIFL generating 3,400 jobs, is not achievable in the absence of changes to the planning regime.

Table 10. Wagga Wagga LGA Population Growth Profile – Base Case with No SAP

No.'000/ % share	2018	% share	2030	% share	2040	% share	2050	% share	2060	% share	Growth 18-60
Pop 0-14	13.4	20.6%	14.4	19.7%	14.7	18.7%	15.3	18.5%	15.8	18.3%	0.4%
Pop 15-64	41.7	64.3%	44.0	60.4%	46.2	58.9%	49.5	59.6%	50.7	58.7%	0.5%
Pop 65-84	8.4	13.0%	12.5	17.1%	14.7	18.7%	14.6	17.6%	16.3	18.8%	1.6%
Pop 85+	1.4	2.1%	2.0	2.8%	2.9	3.7%	3.6	4.3%	3.7	4.3%	2.4%
Pop Total	**64.8**		**72.9**		**78.4**		**83.0**		**86.4**		**0.7%**
Employment	**32.8**		**36.4**		**38.8**		**40.6**		**41.6**		**0.6%**

10.1.2 Series 1 Projected Growth 2018-60

The projections in series 1 assume that the introduction of a SAP (e.g. a more steam-lined approval process) and other related policy changes will lower the barriers to entry (e.g. up front capital costs) for firms / businesses which will stimulate investment (by existing and new firms) and therefore will in turn lift the growth rate of the Wagga Wagga economy. While the base case includes some of the benefit of the RiFL Hub and the Inland Rail, the SAP reinforces the benefit (in terms of attracting new business) of these investments.

In the period 2018-40, Wagga Wagga LGA's population grows at a CAGR of 1.2%, lifting Wagga Wagga LGA's population to about 84,600 in 2040. In the period 2040-60, projected growth of 0.7% could see the population rise to about 97,500 in 2060. Over the whole period, population growth averages about 1% pa (vs 0.7% with base case) and ahead of its average growth rate for 2001-18.

This higher growth would require a higher net migration into the Wagga Wagga LGA of working age adults, concentrated in the 20-39-year age cohorts. In part, this could reflect more locals staying but it is likely to also lead to larger gross inflows of people from outside, whether it be from the capital cities, from other regions, or from overseas. This would also translate to an increase in younger families, and children, and overall this would lead to a younger population profile for Wagga Wagga LGA. This will boost growth in the 0-14 age cohort (0.7% vs 0.4% in base case) and 15-64 age cohort (0.8% vs 0.5%).

In terms of services, the higher growth in the 0-14 age cohort will mean increased demand for education and childcare services and for community and (with higher growth in 15-64 age group) sporting facilities. The growth rate of the 65+ age cohorts increases only marginally an the 85+ age cohort is unchanged, but their share of the population is lessened with more resources available (in particular, larger workforce) to meet the demand for health and medical services, and aged care facilities. With a lag, however, as the increased 15-64 age group itself ages, there will be higher longer-term growth in the 65+ age cohorts.

In terms of employment, the higher growth in the 15-64 age cohort, in conjunction with higher participation rates, means that employment growth will rise by 0.9% and only marginally lags population. Expansion plans by existing and new firms will require a workforce which in part has generic skills but, in some instances have more specialised or firm-specific skill sets. There is potential for local education providers to meet the demand for generic skill sets and some more specific skills but inevitably firms will need to source some specific skills from outside the Wagga Wagga LGA. Nonetheless, while needing to source some skills externally, this growth will increase the depth of the skilled labour market, which will be advantageous to both employers and employees.

Table 11. Wagga Wagga LGA Population Growth Profile – Series 1 Projection 2018-60

No.'000/ % share	2018	% share	2030	% share	2040	% share	2050	% share	2060	% share	Growth 18-60
Pop 0-14	13.4	20.6%	15.6	20.4%	16.0	18.9%	17.0	18.5%	18.2	18.7%	0.7%
Pop 15-64	41.7	64.3%	46.4	60.7%	51.1	60.4%	56.7	61.7%	58.5	60.1%	0.8%
Pop 65-84	8.4	13.0%	12.5	16.3%	14.7	17.3%	14.6	15.9%	16.9	17.4%	1.7%
Pop 85+	1.4	2.1%	2.0	2.7%	2.9	3.4%	3.6	3.9%	3.7	3.8%	2.4%
Total	64.8		76.6		84.6		91.9		97.3		1.0%
Employment	32.8		38.2		42.1		46.5		48.3		0.9%

10.1.3 Series 2 Projected Growth 2018-60

The series 2 projections incorporate a higher success rate for the SAP and a more sustained commitment by Wagga Wagga City Council and the NSW Government to investment in infrastructure and setting the framework and policies to encourage expansion by existing firms and attract new firms. Compared with Series 1, while achievable, its dependence on a higher success rate also means a lower probability is attached to this growth being achieved.

This series would have the population of Wagga Wagga LGA growing by 1.6% per annum in the period 2018-40 to 92,000 in 2040 and would rise to the 100,000 mark in 2050. Over the period 2018-60 growth of 1.2% would be about 0.5% per annum faster than the base case. The higher growth rate would mean higher again net migration into the Wagga Wagga LGA, which will further mitigate the longer-term trend to an aging population and lead to a younger again age profile.

In particular, there will be a further boost to growth in the 0-14 age cohort (0.9% vs 0.4% in base case) and in 15-64 age cohort (1.1% vs 0.5%). The 0-14 age cohort will be 20% or about 3,000 higher in 2040, and 25% or about 4,000 higher in 2060. In terms of services, the higher growth in the 0-14 age cohort will mean significantly increased demand for education and childcare services and for community and sporting facilities.

Table 12. Wagga Wagga LGA Population Growth Profile – Series 2 Projection 2018-60

No.'000/ % share	2018	% share	2030	% share	2040	% share	2050	% share	2060	% share	Growth 18-60
Pop 0-14	13.4	20.6%	16.8	21.0%	17.7	19.2%	18.2	18.2%	19.8	18.5%	0.9%
Pop 15-64	41.7	64.3%	48.9	60.9%	56.9	61.8%	63.6	63.6%	65.6	61.5%	1.1%
Pop 65-84	8.4	13.0%	12.5	15.6%	14.7	15.9%	14.6	14.6%	17.6	16.5%	1.8%
Pop 85+	1.4	2.1%	2.0	2.5%	2.9	3.1%	3.6	3.6%	3.7	3.5%	2.4%
Total	64.8		80.2		92.1		100.0		106.7		1.2%
Employment	32.8		39.3		45.7		51.0		53.0		1.1%

The growth rate of the 65-84 age cohorts increases marginally to 1.8% (or 1,300), but their share of the population is lessened with more resources available (in particular, larger workforce) to meet the demand for health and medical services, and aged care facilities. With a lag, however, as the increased 15-64 age group itself ages, there will be higher longer-term growth in the 65+ age cohorts.

In terms of employment, the higher growth in the 15-64 age cohort, in conjunction with higher participation rates, means that employment growth will rise by 1.1%, significantly ahead of the base case growth (0.5%). This higher level of growth will increase the depth of the skilled labour market, which will be advantageous to both employers and employees.

10.1.4 Series 3 Projected Growth 2018-60

Wagga Wagga City Council and the NSW State Government have an ambition to accelerate population growth at a faster pace, with a target to lift the population of the Wagga Wagga LGA to the 100,000 mark in the period 2018-40. This would have population growing on average by about 2% per annum in this period. In the period 2040-60, population growth is expected to moderate to 0.9% per annum which would nonetheless off a higher base see the population increase towards 120,000. Overall, population growth will average 1.5% over the period 2018-60, more than double projected growth in the base case.

With significant in-migration of workers driving this population growth, the 15-64 age group will grow strongly with growth expected to average 1.4% per annum, compared with 0.5% in the base case. Growth in the period 2018-40 will be about 2% per annum before decelerating to 0.9% in 2040-60. In terms of jobs, it would also have growth averaging 2% per annum in the period 2018-40, which would generate 17,700 jobs in the Wagga Wagga LGA, increasing total jobs to 50,500 in 2040. From this high base, the momentum would generate growth in 2040-60 of 0.9% per annum which would add another 10,300 jobs.

In this high growth scenario, there will be a further significant boost to growth in the 0-14 age cohort (1.2% vs 0.4% in base case). The 0-14 age cohort will be 34% or about 5,000 higher in 2040, and 42% or about 6,600 higher in 2060. This will mean significantly increased demand for particularly education and childcare services but also for all community and sporting facilities.

Again, the growth rate of the 65-84 age cohort is only marginally higher than the base case, but their share of the population is significantly lessened in this period with more resources available (in particular, larger workforce) to meet the demand for health and medical services, and aged care facilities. However, with a lag, the increased growth in the 15-64 age group will lead to higher longer-term growth in the 65-84 and 85+ age cohorts.

Table 13. Wagga Wagga LGA Population Growth Profile – Series 3 Projection 2018-60

No.'000/ % share	2018	% share	2030	% share	2040	% share	2050	% share	2060	% share	Growth 18-60
Pop 0-14	13.4	20.6%	18.0	21.5%	19.7	19.7%	20.3	18.3%	22.3	18.7%	1.2%
Pop 15-64	41.7	64.3%	51.1	61.2%	62.9	62.9%	72.7	65.5%	75.4	63.0%	1.4%
Pop 65-84	8.4	13.0%	12.4	14.8%	14.5	14.5%	14.5	13.0%	18.1	15.2%	1.8%
Pop 85+	1.4	2.1%	2.1	2.5%	2.9	2.9%	3.6	3.2%	3.7	3.1%	2.4%
Total	64.8		83.5		100.0		111.0		119.6		1.5%
Employment	32.8		41.1		50.5		58.1		60.8		1.5%

10.1.5 Summary - Age Profile Projections

As discussed above, the base case and the series 1-3 population projections have Wagga Wagga LGA's population growing significantly over time compared with the DPIE (2016) population projections.

The higher population growth in the base case (vs DPIE) comes from a net in-migration of adults predominantly in the 20-39 age group and a major impact of the in-migration is a lift in the working age population. In life cycle terms, the 20-39 age cohort is also settling down and forming families, either bringing young families to Wagga Wagga LGA or lifting births, so that it also leads to an increase in the school-age population.

The flipside to the growth in the young and working age cohorts is that, while the number of retirees continues to grow as projected by the DPIE 2016 projections, the share of the 65-84 and 85+ age cohorts rises by less. Overall, the population is younger.

In absolute terms, the older population continues to grow. And longer term, as the increased 15-64 age cohort ages, this will see the growth rates in the older population significantly higher in the post-2060 period.

10.2 Employment Growth in Bomen

For each of the projections for aggregate employment growth in the Wagga Wagga LGA, there will be significant implications for jobs in the Bomen Employment Lands area (Bomen) within the Wagga Wagga SAP Investigation Area. Bomen's purpose is a location for industrial firms and jobs, which comprises heavy and light manufacturing and transport and logistics. In addition, there will be supporting jobs in retail and food and accommodation services, and commercial activities providing administration support and supplying other services to the industrial firms.

At present, about 1,180 jobs or over 80% of the total 1,475 jobs in the Bomen are industrial jobs and this represents 26% of industrial jobs in the Wagga Wagga LGA. The Bomen accounts for 4.5% of total jobs in Wagga Wagga.

In the base case, that is in the absence of a SAP, growth in jobs in Bomen will be modest in the period 2018-40, rising by only about 500 jobs (including about 400 MWT jobs) towards 2,000 in 2040, with further modest growth to about 2,250 jobs in 2060.

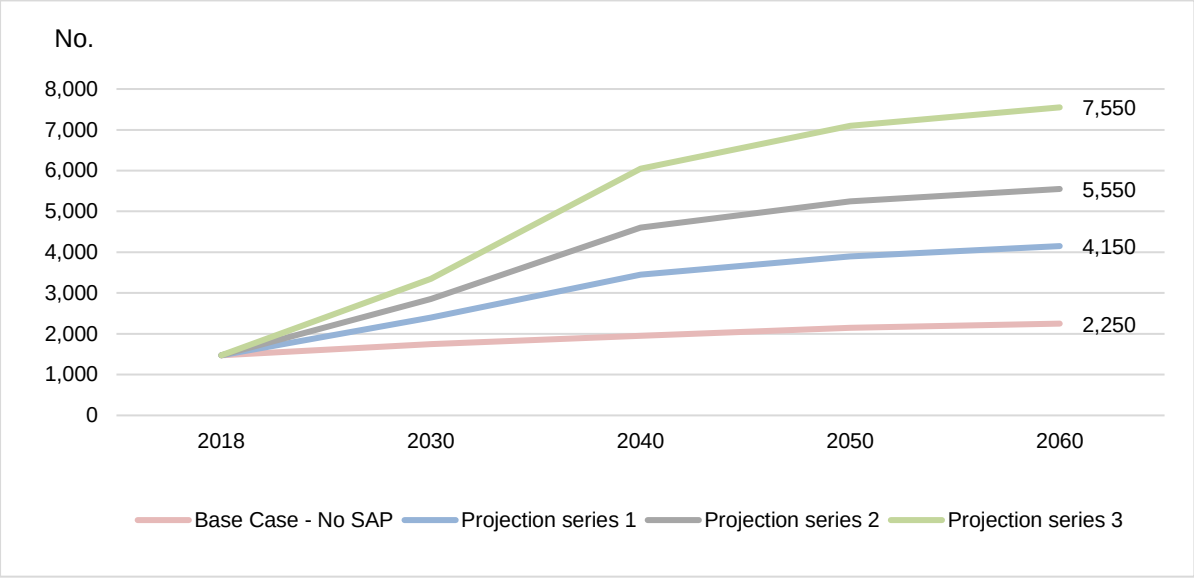
A feature of the base case is the continued decline in industrial jobs as a share of total jobs in the Wagga Wagga LGA, from 13.8% in 2018 to 12.6% in 2040 and 11.4% in 2060. However, the SAP is designed specifically to stimulate jobs in the industrial sector in Wagga Wagga LGA and in the series 1,2 and 3 projections, this is expected to act as a counter to the long-term decline in the share of these jobs in Wagga Wagga LGA's economy. In terms of the three growth projections, given that Bomen is a key factor in attracting industrial jobs and driving growth in the Wagga Wagga economy, this is reflected in jobs growth in Bomen.

The series 1 projections have employment in Bomen rising to about 3,400 in 2040 and 4,200 in 2060. Series 2 will see employment in Bomen rising to about 4,600 in 2040 and 5,600 in 2060. Series 3 will see employment in Bomen rising to about 6,100 in 2040 and 7,500 in 2060.

Table 14. Bomen Employment Scenarios With and Without a SAP

		At Year				Period Change			
No.% CAGR	**2018**	**2030**	**2040**	**2050**	**2060**	**2018-30**	**2030-40**	**2040-60**	**2018-60**
Base Case- No SAP	1,474	1,750	1,950	2,150	2,250	250	200	300	750
Period Growth - % CAGR		1.4%	1.2%	0.8%	0.6%				
Projection series 1	1,474	2,400	3,450	3,900	4150	950	1,050	700	2,700
Period Growth - % CAGR		4.2%	3.6%	1.3%	0.6%				
Projection series 2	1,474	2,850	4,600	5,250	5,550	1,350	1,750	950	4,050
Period Growth - % CAGR		5.6%	4.9%	1.3%	0.6%				
Projection series 3	1,474	3,350	6,050	7,100	7,550	1,850	2,700	1,450	6,050
Period Growth - % CAGR		7.1%	6.1%	1.6%	0.6%				

Figure 22. Bomen Employment Projections With and Without a SAP



10.3 Population and Employment Projections Summary

The base case and the three series 1-3 projections discussed above are summarised in the Table below.

Table 15. Population and Employment Projections Summary

Scenario	Detail and assumptions
Base Case	Based on the DPIE projections but incorporates some net increase in migration flows into Wagga Wagga LGA. ▪ Population at 78,000 by 2040 compared with 64,800 in 2018 (Figure 1). ▪ Employment at 38,800 by 2040 compared with 32,800 in 2018. Employment in Bomen rises from 1475 in 2018 to 1950 by 2040 (Figure 2). Assumes continuation of past trends, some benefit from RIFL and inland rail, no-policy change, no SAP and trend expansion in the region's agricultural and general infrastructure base.
Scenario 1	SAP is introduced that lifts growth chiefly due to a more streamlined approval process for development applications and other related policy changes. These changes lower the barriers to entry such as up-front capital costs and the time cost in delays imposed under the current planning regime. Substantially lifts the benefit of the RIFL. ▪ Population at 85,000 by 2040 and 97,000 in 2060. ▪ Employment in Bomen rises to 3459 in 2040 and in Wagga to 42,100..
Scenario 2	Assumes a higher success rate in attracting new investment in response to lower cost planning regime, and also the greater strategic commitment by the Wagga Wagga City Council and NSW Government in infrastructure provision. Achievable but lower probability than series 1. ▪ Population at 90,000 by 2040. ▪ Employment at 4,600 in Bomen and 45,700 in Wagga Wagga by 2040.
Scenario 3	Assumes the ambitious target for Wagga Wagga's population to rise to 100,000 by end of 2030s is achieved. Requires an even higher success rate for SAP but also other policy measures to lower cost of firms operating in Bomen/Wagga Wagga ▪ Population at 100,000 by the end of 2030s. ▪ Employment at 6,050 in Bomen and at 50,500 in Wagga Wagga by the end of 2030s.

Section 11: **Evaluation of Concept Structure Plan Scenarios**

11.1 Overview

As part of the development of the structure plan for the Wagga Wagga SAP Investigation Area, three concept scenario options were developed (known as scenarios 4, 5 and 7, see Figure 23, 24 ,25) in a short enquiry by design workshop held in August 2019 and then evaluated and critiqued in the first instance. Macroplan designated sub-precincts within the Bomen Employment Lands area for each of the scenarios and in Table 16 the critique of each precinct is summarised. Scenario 5 is discussed first because it is the compact scenario to which the other two concept scenarios add to. As part of the evaluation process of the concept scenarios, macroplan identified the amount of developable land and evaluated a low-density and a high-density industry land use typology to assess the number of jobs that could be generated in the Wagga Wagga SAP Investigation Area. In addition, macroplan undertook a SWOT analysis to determine the most and least favourable features of each concept scenario. This section of the report provides this analysis.

11.2 Potential Land Use Requirements for the Three Concept Structure Plan Scenarios

11.2.1 Scenario 5 – Compact Scenario

Scenario 5 was a 'compact' scenario focussed on developing north and south of Merino Drive (Figure 23). This scenario had the largest 'commercial gateway' allocation but significantly less land for new industrial developments.

The bulk of the new industrial land – 238 hectares - is in the area designated Precinct A in Figure 23. This is largely land acquired by the Wagga Wagga City Council with the intent of encouraging industrial development in Bomen. Land in existing area of Bomen (precincts C-E in Figure 23) add an additional 47 hectares, giving a total of 285 hectares for industrial land the size of Precinct A means it is highly flexible in terms of the size of operations it can handle. In the other two scenarios, Precinct A also provided a significant amount of new land.

Under Scenario 5, 51 hectares of land along Bomen road was designated for commercial activity (precinct G – commercial gateway).

These are gross estimates which did not make allowance for green space and for road and utilities infrastructure. In the next stage of the structure planning process, more detail was given to estimating green infrastructure.

The RiFL land (designated R in Figures 23-25) in each of the scenarios includes the terminal operation and land which the Wagga Wagga City Council has designated for use by transport and logistics and wholesale firms. The land outside the immediate terminal operation available for development is included as part of Precinct A.

Estimates (AEC Group 2014[44]) are that 96 people will be employed in the RiFL Hub of which approximately 10 people will be employed in the intermodal.[45]

11.2.2 Scenario 4 – High Growth Scenario

Scenario 4 was a 'high growth scenario'. It included Precinct A but allocated 31 hectares of that to the Commercial Gateway and also made specific provision for green infrastructure (about 30 hectares), in aggregate reducing the supply of industrial land to about 176 hectares. Within Precinct A, this concept design also featured a central area for low amenity 'stack' industries close to and surrounding the RiFL Hub (see Figure 24).

This Scenario had precincts B-D on the east side of Byrnes Road expanded (versus Concept 5) to add an additional 140 hectares. In addition, Scenario 4 added about 300 hectares in Precinct K to the west of the Olympic Highway and 40 hectares in Precinct H north of Trahairs Road (and Precinct A). Precinct K due its closer proximity to residential areas was considered for high amenity technology and other cleaner industries.

Macroplan estimated that Scenario 4 would generate 850 hectares of employment land for industrial uses. In this Scenario, the Gateway Commercial land (31 hectares) is located in two sections in precincts A and K and adjacent to the intersection of Merino Road with the Olympic Highway.

11.2.3 Scenario 7 – High Growth Scenario

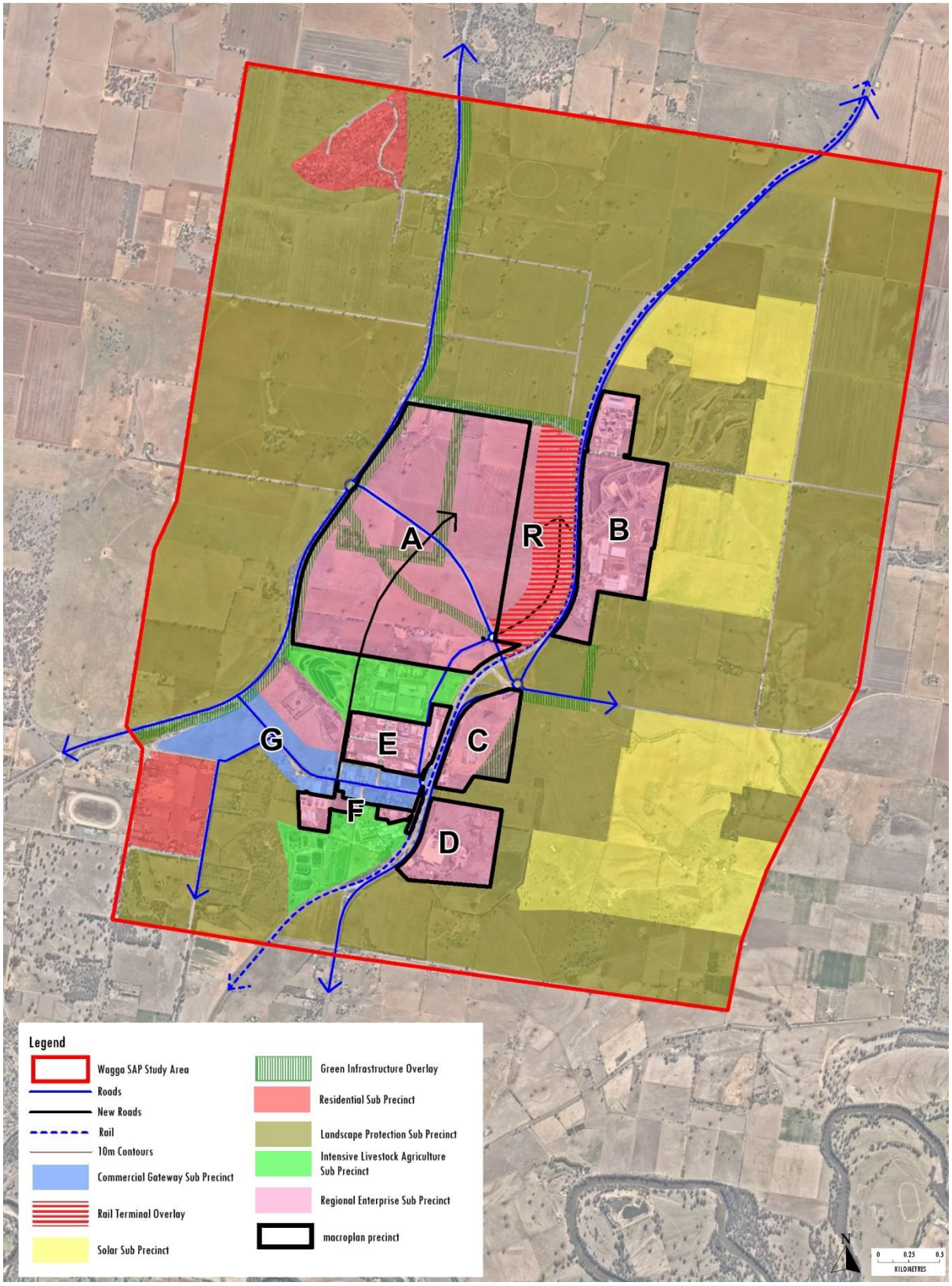
Scenario 7 was also a 'high growth' scenario but, in contrast with Scenario 4, additional development was directed north and north-east (Figure 25). Precinct A adds 225 hectares, while precincts B-D add about 170 hectares. The scenario includes industry zoned land north-east of Byrnes Road (Precinct J – 176 hectares) and a significantly expanded Precinct H north of Trahairs Road (250 hectares versus 40 hectares for Scenario 4).

Macroplan estimates Scenario 7 has the largest 'regional enterprise' land use allocation with an aggregate 925 hectares. In this Scenario, the Commercial Gateway is located within Precinct A in two parts at either end of Merino Road.

[44] AEC Group (2014) *Riverina Intermodal Freight and Logistics Hub Feasibility and Economic Impact Assessment, Final Report Mach 2014*

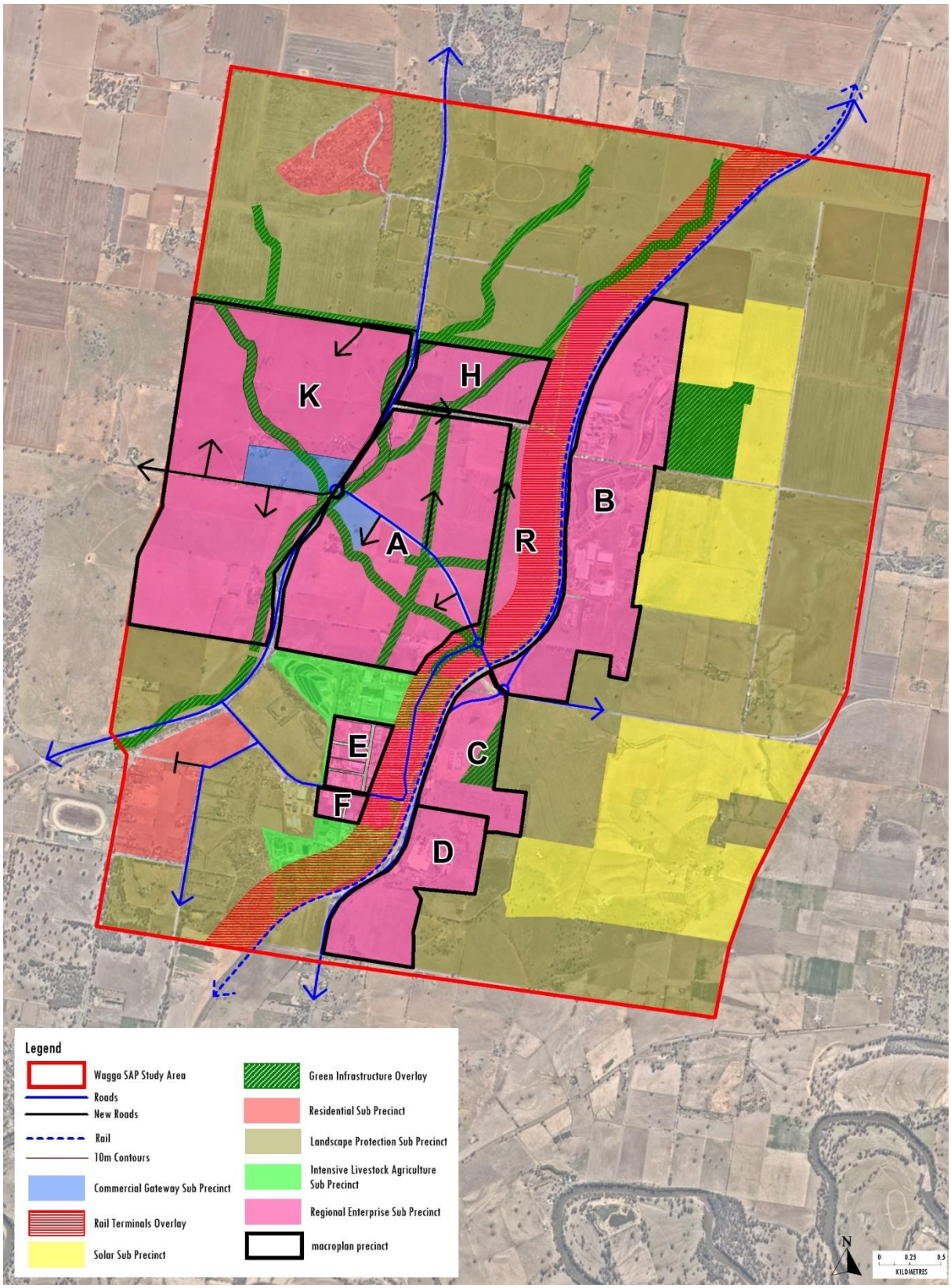
[45] This is distinct from the persons employed in the lands developed adjacent to the RIFL hub itself and which were part of the RIFL investment.

Figure 23. Scenario 5 Structure Plan



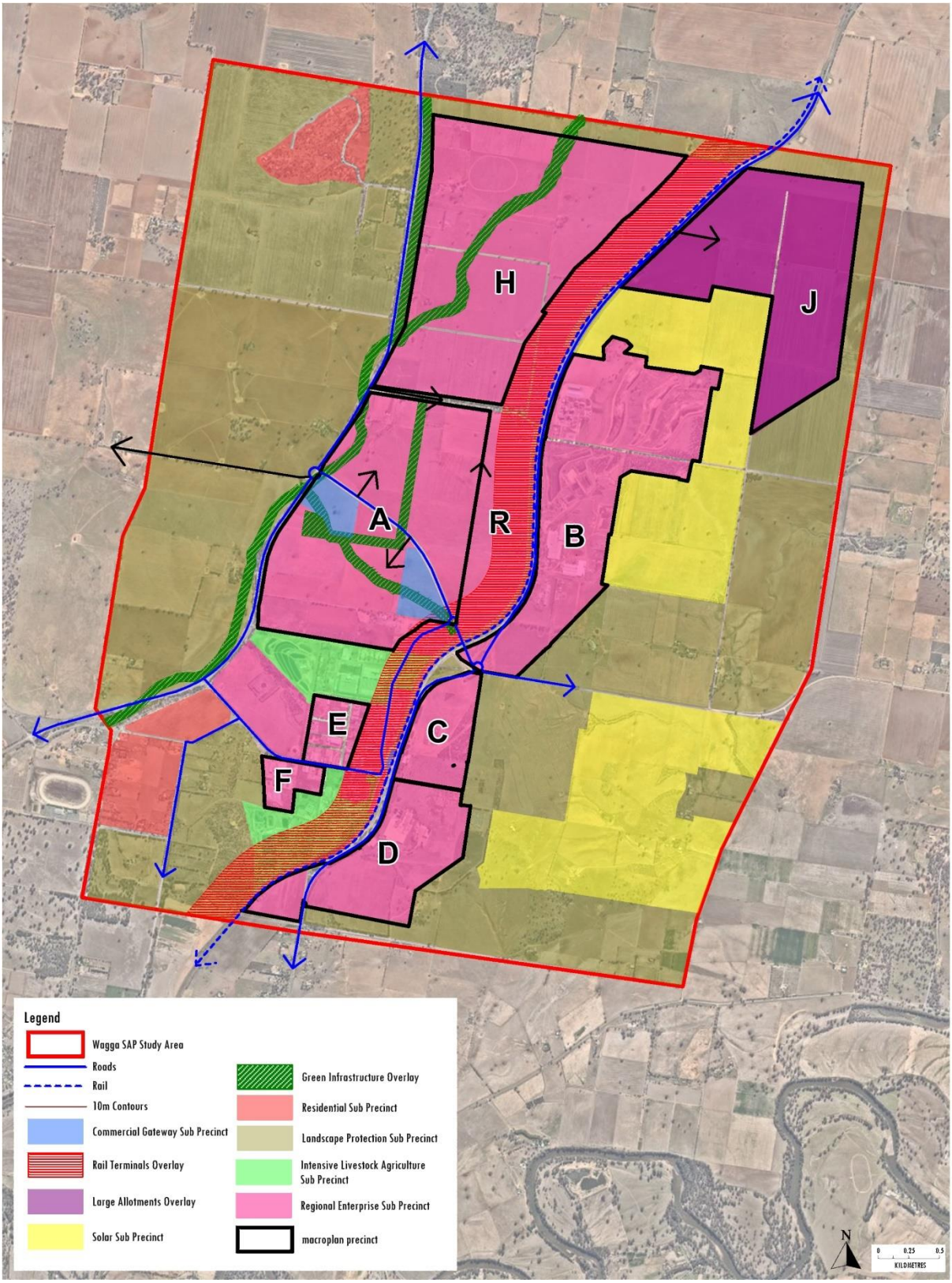
Source: Jensen Plus, macroplan (2019)

Figure 24. Scenario 4 Structure Plan



Source: Jensen Plus, macroplan (2019)

Figure 25. Scenario 7 Structure Plan



Source: Jensen Plus, macroplan (2019)

Table 16. The Concept Structure Plan Scenarios and the Potential Addition of New Employment Land

Scenario 5 – Compact	Comment	ha	Scenario 4 – Expand West	Comment	ha	Scenario 7 – Expand North	Comment	ha
Precinct R (RiFL)		60	**Precinct R (RiFL)**	As per Scenario 5.	60	**Precinct R (RiFL)**	As per Scenario 5.	60
Precinct A	The size of Precinct A means it is highly flexible in terms of the size of operations it can handle.	238	**Precinct A**	Commercial gateway.	176	**Precinct A**	Land adjacent to the inland rail terminal designated for transport and logistic activity.	225
Precinct B	Precincts B is partly developed. Precinct B includes three current enterprises – ROBE, Enirgi, and the old wool-sourcing complex - with large amounts of buffer land, some of which may allow expansion of plant capacity but which is not likely to be sub-divided to accommodate new businesses.	0	**Precinct B**	Compared to scenario 5, Precinct B has been enlarged at its outer areas – whether this additional land will be attractive to industry is not clear.	95	**Precinct B**	Compared to scenario 5, Precinct B has been enlarged at its outer areas – whether this additional land will be attractive to industry is not clear.	109
Precinct C	A portion of Precinct C is occupied by a trucking company. There appears to be scope for a mix of industrial and transport related firms to occupy other land here.	25	**Precinct C**	As per Scenario 5 but larger.	40	**Precinct C**	·As per Scenario 5.	16
Precinct D	Precincts D is partly developed. The upper half of Precinct D has the Vinidex plant and there is components of the land which acts as a buffer. There is scope for an additional manufacturing operation adjacent to the Vindex plant.	15	**Precinct D**	Compared with scenario 5, Precinct D has been expanded to include an additional 30ha of developable land. This would appear suitable for a range of purposes.	47	**Precinct D**	Compared to scenario 5, Precinct D has been enlarged at its outer areas – whether this additional land will be attractive to industry is not clear.	81
Precinct E	Precinct E is central Bomen and is about 90% developed. One of the most developed precincts in Bomen, with small amounts of unused land. Less scope for large scale operation in the precinct but suitable for infill by small-scale operations.	4	**Precinct E**	Compared to scenario 5, Precinct B has been enlarged at its outer areas – whether this additional land will be attractive to industry is not clear.	4	**Precinct E**	As per Scenario 5.	4
Precinct F	One of most developed precincts in Bomen, with small amounts of unused land. Less scope for large scale operation in this Precinct but suitable for small-scale operations. Precinct F is adjacent to Teys.	3	**Precinct F**	As per Scenario 5.	37	**Precinct F**	As per Scenario 5.	3

	Not Applicable.		**Precinct H**	Precinct H is a new area to the north of Precinct A but, compared with scenario 7, only adds 40ha.	40	**Precinct H**	Precinct H is in a large area to the north of Trahairs Road and Precinct A. An alternative to Precinct K (scenario 4).	250
	Not Applicable.		**Precinct K**	·Precinct K is a new area to the west between Olympic Highway and the edge of the SAP. Given its close proximity to urban residential space, it is likely to be restricted to high amenity firms.	299	**Precinct J**	Precinct J is north of Precinct B and the solar farm and east of Byrnes Road. Overlooks the Eunony Valley which will constrain the types of activities likely to be completed. Second best options to Precinct H and Precinct K (scenario 4).	176
Precinct G (Commercial Gateway)	The Gateway Precinct is largely undeveloped with approximately 50ha available for development.	51	**Commercial Gateway**	The Gateway Precinct is (sub precinct of A & K) largely undeveloped with approximately 31haavailable for development.	31	**Commercial Gateway**	The Gateway Precinct is (sub precinct of A largely undeveloped with approximately 50 hectares available for development.	23
Teys / Teys Extension (Buffer)	Teys abattoir. This is a large-scale beef abattoir, but we would note that Teys' largest operations in Queensland are 20-30% larger than the Bomen plant. Teys owns significant land, which gives it the potential to expand the operation. It is investing in some complimentary downstream food manufacturing, Scope for other firms to establish major operations in this Precinct likely to be limited.	0	**Teys / Teys Extension (Buffer)**		0	**Teys / Teys Extension (Buffer)**		0
Water Treatment	The water treatment occupies around 31ha of industry buffer land	0	**Water Treatment**		0	**Water Treatment**		0
Sale Yards	The Sale Yards are a significant activity, but this land is fully committed to this activity and not usable for other industrial uses.	0	**Sale Yards**		0	**Sale Yards**		0
Solar	The Solar Farms are utilising industrial land and employ a small number of people. Assumed to be not available for more intensive industrial use in the medium or long-term.	0	**Solar**		0	**Solar**		0
Total		**396**	**Total**		**829**	**Total**		**947**

11.3 Industry Land Use and Potential Land Use Requirements

The AEC Group report [46] assessed that the number of workers per hectare of developable land in Bomen would be about 16 per hectare of land. This was based on 12 per hectare for heavy manufacturing industry and transport and logistics and 27 per hectare for light manufacturing industry. By comparison with the Sydney industrial market, these ratios are low density usage. However, the Wagga Wagga market is very different to the Sydney market, in large because the availability of large tracts of low-cost land away from residential urban living has attracted firms/industries which need to use land extensively. Some of these firms operate/industries in Sydney but in conditions which are less than ideal, in terms of industry being in too close a proximity to residential areas and having inadequate buffers and operating in cramped conditions. Where the need for proximity to the Sydney market is less of a consideration for the overall economics of the operation, these industries have been moving out of Sydney and it is this shift which has been a factor in a number of firms establishing or looking to establish in Bomen.

The mix of industries presently operating in Bomen represent a low density use of land, well below the AEC Group scenario. At present (2018), 194 hectares of developed land are occupied by a mix of industries (including commercial) employing 1475 persons, and the actual density of persons per hectare is under 8 persons per hectare. Expansion plans of firms operating on these sites could lift this towards 10 persons per hectare in the long term. The current average of 8 per hectare disguises substantial variation between individual firms, with some low amenity firms using land as “buffer” to their operations. In the case of recycling businesses – an area identified for potential growth - one operates with a very low density while the other operates on a smaller site. Regardless, the reality of the current Bomen mix points towards a low density use of land as a more reasonable assumption and guide to future land use by industry.

Industrial jobs account for about 82% of employment in Bomen, and manufacturing presently accounts for 80% of this industrial employment. As discussed elsewhere, it is likely that this mix of industrial/non-industrial and the manufacturing/transport and logistics mix within industrial land holdings will be broadly the pattern in the future. The specific low-density typology adopted (Table 17) has a plot ratio of 0.25 for heavy industry and transport and logistic industries – that is, 25% of developable is occupied by building/factory floorspace, with the balance parking/open space and green space/buffer lands. For light manufacturing, the assumed plot ratio is 0.4. In terms of gross floor area (GFA) per worker, 300 square metres per worker has been applied for heavy industry and 200 square metres per worker has been applied to light manufacturing. These estimates of GFA per worker, in conjunction with the plot ratios, generate density per hectare for industrial land of 10.3 workers per hectare. In practice, some firms will have combinations with higher/lower plot ratios and higher/lower GFA per worker but depending on the mix still on average generating similar density per hectare.

For commercial and other non-industrial land uses, higher plot ratios and lower GFA per worker indicate about 28 persons per hectare of gross floor area (GFA). In aggregate, for both industrial and non-industrial uses this would generate an average density of 11.7 persons per hectare. This is higher than the current Bomen ratio but, with the expanded Bomen precinct incorporating some levels of buffer (green space) and aggregating the low amenity industrial firms, is probably about comparable.

[46] AEC Group (2014) *Riverina Intermodal Freight and Logistics Hub Feasibility and Economic Impact Assessment, Final Report March 2014*

Table 17 also presents a high-density typology broadly in line with the AEC Group estimates. For industrial land, this generates 14 workers per hectare, in line with the AEC Group estimates. For commercial land uses, it generates 55 workers per hectare. In aggregate, it would generate about 16 workers per hectare. The implication of this higher density uses if it eventuated would be significantly less demand for land. However, this is an unlikely scenario.

Table 17. Projected Bomen Land Use Densities

Projected Bomen Density (High Probability)	Worker per ha	Higher Density (Low Probability)	Worker per ha	Assumed Employment Share %
Light Industry	19.5	**Light Industry**	25.0	29
Heavy Industry (incl Energy)	8.3	**Heavy Industry (incl Energy)**	10.9	33
Transport and Logistics	8.3	**Transport and Logistics**	10.9	21
Industry Average	10.3	**Industry Average**	13.6	82
Commercial	40.0	**Commercial**	83.3	9
Retail and Food Services	30.0	**Retail and Food Services**	66.7	7
Education	10.0	**Education**	16.0	2
Non-industrial Average	27.9	**Non-industrial Average**	54.8	18
Total Average	11.7	**Total Average**	15.7	100

11.4 Potential Employment Generated by the Three Concept Structure Plan Scenarios

To ascertain the potential employment capacity of the land in Bomen under the three concept scenarios, low-density (i.e. a low number of persons per hectare) and high-density land use typologies for industrial and non-industrial sectors were applied to the land made available by each of the scenarios. In Section 13, these typologies are discussed, and the rationale are discussed in some detail.

Table 18 illustrates the potential employment under each of these scenarios with the low- and high-use density ratios for each of the three concept scenarios. In each case, the employment assumes 80% of the developable land is occupied. Full (100%) utilisation is in theory possible, but in practical terms some amount of unused or under-utilised space is inevitable. This also allowed for the need for some space to accommodate growth beyond 2060.

In Table 19, macroplan then compared the potential employment generated by the developable land in the three scenarios with the employment projections for Bomen to 2060, to indicate whether or not the scenarios could accommodate the envisaged growth. A positive number indicates that the scenario has enough land supply to host the jobs projected in the series with its value representing the potential additional jobs the scenario could host. A negative number indicates that the scenario has insufficient land supply to meet series employment projections, with its value representing the number of jobs lost as a result of this insufficient land supply.

Table 18. Potential Employment Generated by The Three Concept Structure Plan Scenarios

Concept Structure Plan	Developable Land (Hectares)	Potential Employment (No. of persons)	
		Low Usage	High Usage
Scenario 4			
Industrial	890	7,350	9,700
Non-industrial	31	800	1,550
Scenario 5			
Industrial	327	2,700	3,550
Non-industrial	51	1,300	2,500
Scenario 7			
Industrial	981	8,100	10,650
Non-industrial	23	600	1,150

In terms of industrial jobs, the lower growth projection (series 1) is accommodated on all three scenarios (Table 19). Scenario 5 (the compact scenario) was expected to be inadequate (in deficit) to meet the higher growth projections (series 2 and 3) if, as is more likely, industry is predominantly a low-density user of land.

In the case of the highest growth projection (series 3), even with a high-density use of land, whether the supply of land will be adequate with Scenario 5 is borderline. The greater amount of land in Scenario 7 and Scenario 4 means there is a surplus of land on all three growth projections.

In the case of non-industrial land in the designated gateway area, Scenario 5 has a substantial surplus. On the other hand, with a low density use of land, Scenario 7 has a small surplus with the lower growth and a shortfall with the two higher growth series. Scenario 4 also faces a slender surplus and shortfall with the two higher growth series.

In summary, macroplan brought together the projections for growth in Wagga Wagga LGA and Bomen, to compare them with the supply of employment land generated by the three refined concept structure plan scenarios. This gave a top-down view on the ability of the concept scenarios to enable growth (summarised in Table 19). This informed the final structure plan (as discussed in Section 12) developed at the workshop in Wagga Wagga in September 2019. The final structure plan (refer to Figure 26) provides for more growth than was embodied in the compact scenario (scenario 5) but allowed some of the more problematic expansion areas in the two high growth scenarios to be curtailed.

The final structure plan envisages less growth in the B-D precincts on the east side of Byrnes Road and has no Precinct J to the northeast of Byrnes Road. It also has no Precinct K on the west of the Olympic Highway. Longer term growth is made provision for by expansion north – the Precinct H. However, while the gross area was still over 900 hectares, with the benefit of more intensive investigation, the final structure plan also included more provision for green infrastructure, biodiversity and riparian land. The net figure was lower than the two high growth scenarios. Nonetheless, it includes sufficient land to accommodate the high growth projection (series 3) to 2060.

As part of the work for the development of the structure plan, the three employment growth series for Bomen were also used as an indicative guide to when land would likely be needed. This allowed the development of land

– and the infrastructure investment - in the final structure plan to be looked at in three stages. Precinct H, for example, which provides for longer term growth, is in the third stage. In Section 13, the likely staging of the land in the Bomen is discussed in some detail.

Table 19. How the Concept Structure Plan Scenarios meet Potential Employment Growth

	Series 1			Series 2			Series 3		
Scenario 4	**Employment Growth 2018-60**	**Land Supply Surplus/Deficit**		**Employment Growth 2018-60**	**Land Supply Surplus/Deficit**		**Employment Growth 2018-60**	**Land Supply Surplus/Deficit**	
		Low Usage	**High Usage**		**Low Usage**	**High Usage**		**Low Usage**	**High Usage**
Industrial	2,200	5,150	7,500	3,350	4,000	6,350	4,950	2,350	4,700
Non-Ind.	500	300	1,050	750	50	800	1,100	-300	450
Scenario 5									
		Low Usage	**High Usage**		**Low Usage**	**High Usage**		**Low Usage**	**High Usage**
Industrial	2,200	500	1,350	3,350	-650	200	4,950	**-2,300**	**-1,400**
Non-Ind.	500	800	2,050	750	550	1,800	1,100	200	1,400
Scenario 7									
		Low Usage	**High Usage**		**Low Usage**	**High Usage**		**Low Usage**	**High Usage**
Industrial	2,200	5,900	8,450	3,350	4,750	7,300	4,950	3,100	5,700
Non-Ind.	500	100	650	750	**-160**	400	1,100	**-500**	50

Employment refers to the projected change in employment between 2018 and 2060 as identified in Section 10.2. The Surplus/Deficit is the difference between the change in employment and the amount of employment which the scenarios 4,5 and 7 will generate when fully developed (Table 18).

Table 20. Supply/Demand SAP Land

Supply / Demand for Industrial Land

			Land Demand		
			Series 1	Series 2	Series 3
		Hectares	267	406	603
Land Supply	Scenario 4	890	Adequate Supply		
	Scenario 5	327	High Risk of Shortfall		
	Scenario 7	981	Adequate Supply		

Scenario 5 – the more compact scenario – is **at risk of a shortfall in supply of land** for industrial firms which would place a constraint on growth in Bomen and hence in Wagga Wagga.

Supply / Demand for Gateway Land

			Land Demand		
			Series 1	Series 2	Series 3
		Hectares	22	33	49
Land Supply	Scenario 4	31	Some Risk of Shortfall		
	Scenario 5	51	Adequate Supply		
	Scenario 7	23	High Risk of Shortfall		

Scenarios 4 and 7 would **supply adequate land** for industrial firms but with **some risk in terms of the supply of non-industrial land** proposed for the gateways.

11.5 SWOT Analysis of the Three Concept Structure Plan Scenarios

As part of the work for the development of the final structure plan, macroplan undertook a SWOT analysis to determine the most and least favourable features of each concept structure plan scenarios.

Scenario 4 SWOT

S

Strengths

- Accommodates the series 1, 2 and 3 growth projections, in relation to industrial land supply.
- The extended RiFL increases the SAP's freight capacity.
- Supply and availability of land for industrial uses will assist in maintaining land affordability.
- Commercial gateway sub precinct would allow for broad community use and therefore may support the financial viability of the development.
- Has a greater land supply dedicated to advanced manufacturing and agribusiness which have been identified as projected growth industries.

W

Weaknesses

- There is inadequate land supply for non-industrial land in series 3.
- The location of the rail terminal overlay use which would include freight and logistics uses does not optimise important road transport connectivity.
- Business may not want to locate west of the Olympic Highway (precinct K) with it outside of Bomen's core.

O

Opportunities

- Inclusion of additional non-industrial land supply for commercial and amenity uses.
- Cluster rail terminal uses in proximity to key transport corridors including Merino Drive and Olympic Highway.
- Potential to attract both small and big business due to a variety of lot sizes.
- Potential to create a diverse park with tech innovators, light and heavy industry all co-located.
- Opportunity to stage industrial land supply within the Olympic Highway and Byrnes Road, in the short to medium term before considering developed opportunities to the west of Olympic Highway.

T

Threats

- The rail terminal overlay is an unnecessary land use restriction.
- If there is no demand for land west of the Olympic Highway, and land use may not be flexible with land relatively proximate to residents.
- If the extended RiFL is underutilised, it will be occupying land that may be better utilised by other industries.

Scenario 5 SWOT

S

Strengths

- Accommodates the series 1 projections, in relation to industrial and non-industrial land supply as well as the high usage land supply within series 2 and 3.
- Requires less infrastructure and servicing.
- Directs growth to land surrounding RiFL encouraging maximum utilisation.

W

Weaknesses

- There is inadequate land supply for industrial land in series 2 and 3 for low density usage (most probable) of industrial land.
- Rail terminal overlay may miss opportunity for other industrial uses which are compatible with the RiFL hub.
- Commercial gateway sub precinct located to the south potentially limits accessibility for all users of the precinct.
- Has potential to impact on land affordability in the longer term due to land supply constraints.

O

Opportunities

- Potential for higher optimisation of land use and co-location.
- Higher employment density may encourage agglomeration economies.
- Intensive livestock agriculture sub precinct allows for agribusiness to be co-located/in proximity to its primary supplier encouraging value added business opportunities.

T

Threats

- If the SAP streamlined planning pathways and governments business attraction incentives are successful, the volume of land in this scenario may prove inadequate hence a constraint on subsequent growth.

Scenario 7 SWOT

S

Strengths

- Accommodates the series 1, 2 and 3 growth projections, in relation to industrial land supply.
- The extended RiFL increases the SAP's freight capacity.
- Supply and availability of land for industrial uses will assist in maintaining land affordability.
- Commercial gateway sub precinct would allow for broad community use and therefore may support the financial viability of the development.
- Has a greater land supply dedicated to advanced manufacturing and agribusiness which have been identified as projected dominate industries.

W

Weaknesses

- There is inadequate land supply for non-industrial land in series 2 and 3.
- Likely to require more infrastructure and servicing due to developable area.
- The location of the rail terminal overlay use which would include freight and logistics uses does not optimise important road transport connectivity.
- Limited supply of intensive livestock agriculture uses which may limit the opportunity for agribusiness.

O

Opportunities

- Cluster rail terminal uses in proximity to key transport corridors including Merino Drive and Olympic Highway.
- Potential to attract both small and big business due to a variety of lot sizes.
- Opportunity to stage industrial land supply within the Olympic Highway and Byrnes Road, in the short to medium term before considering developed opportunities to the north and east of the precinct.

T

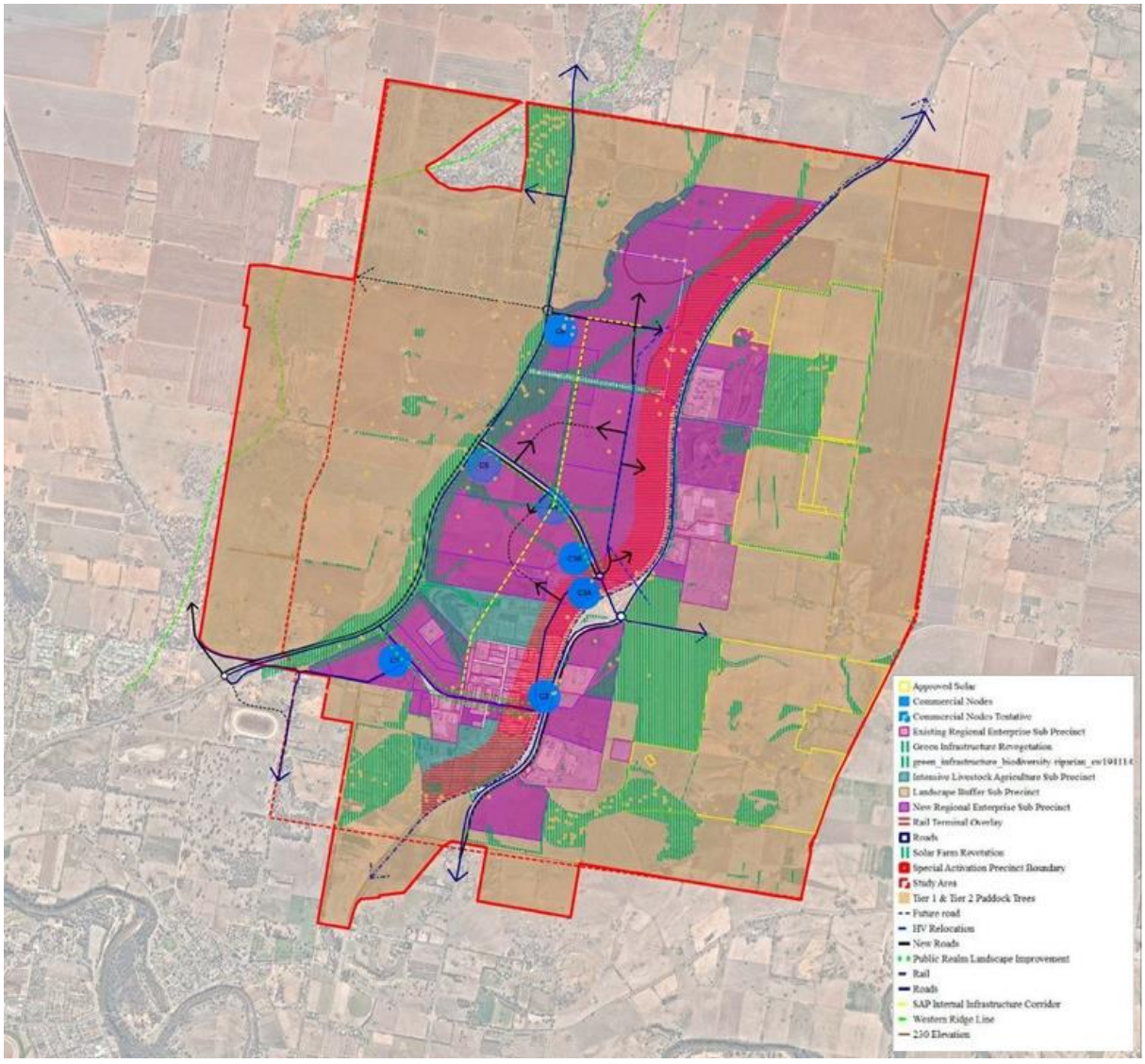
Threats

- The rail terminal overlay is an unnecessary land use restriction.
- If the extended RiFL is underutilised, it will be occupying land that may be better utilised by other industries.
- Community opposition to development of Byrnes Road may impact on business investment to the precinct.

Section 12: **Final Structure Plan**

As part of the development of the preferred structure plan for the Wagga Wagga SAP Investigation Area, the three concept scenario options were analysed in further detail in a full enquiry by design workshop held in September 2019. This included consideration of macroplan's analysis of the three concept scenarios including the projected employment forecasts and land requirements. Based on inputs from macroplan, the broader consultant team and stakeholders, the below structure plan was developed. The structure plan identifies an additional 919 hectares of land for development and allows for green infrastructure (approximately 164 hectares), and physical infrastructure such as roads (approximately 151 hectares). This would produce 604 hectares of land for employment purposes.

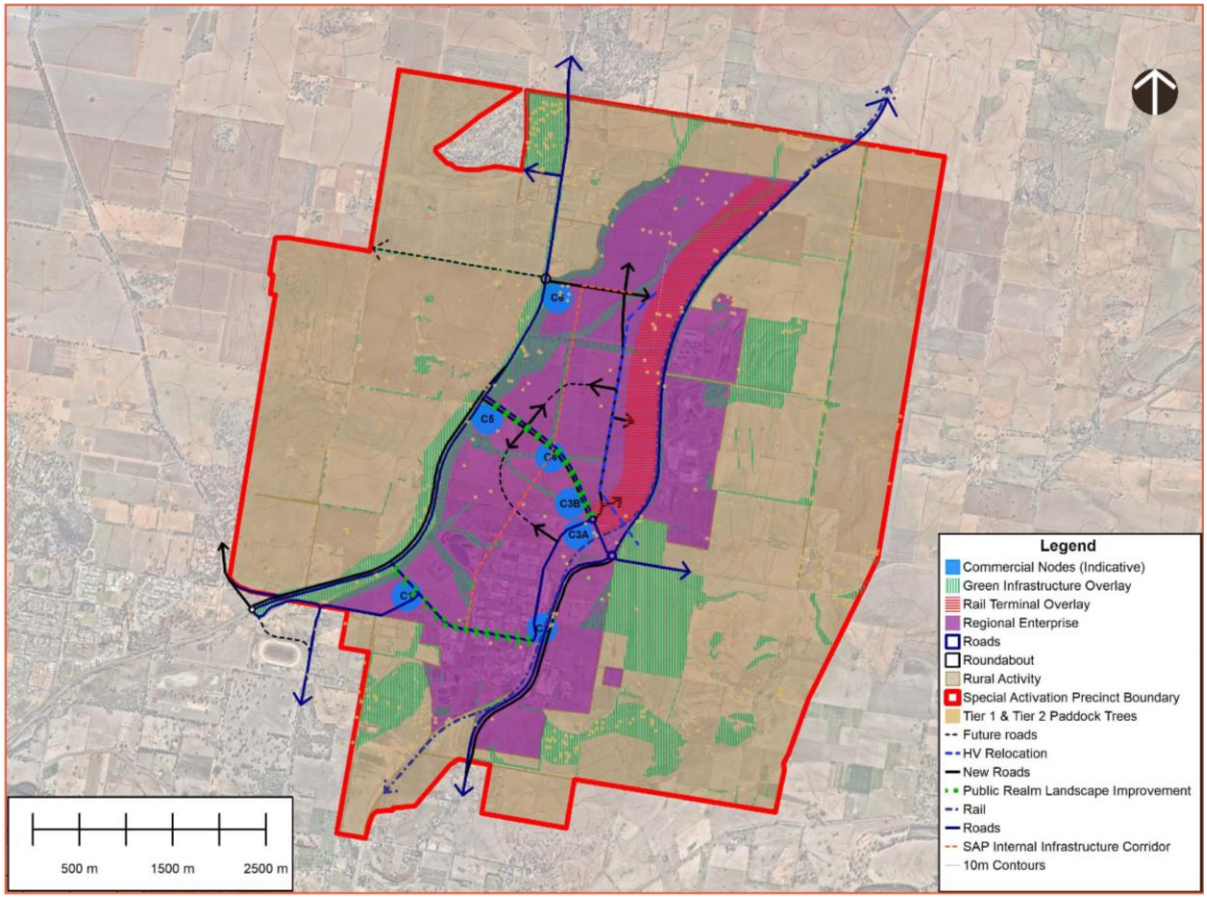
Figure 26. Preferred Structure Plan



Source: Jensen Plus (2019)

Following the Final Enquiry by Design workshop, the preferred Structure Plan was subject to further testing and refinement. At the time of this study, the Structure Plan showed indicative staging and land use sub-precincts, which were used as a basis for ongoing testing and analysis of the structure plan. Following this study, the Draft Master Plan and planning framework for the Wagga Wagga Special Activation Precinct was developed by the NSW Department of Industry, Planning and Environment. The draft planning framework proposes processes to determine staging (i.e. the Delivery Plan) and zoning controls and performance measures for noise, odour and air quality that would have a similar effect on controlling land use as the earlier sub-precincts approach. As such, the final Structure Plan in the draft planning framework no longer indicates staging and sub-precincts. The final structure plan, as included in the Draft Wagga Wagga Master Plan currently on exhibition is shown in Figure 27.

Figure 27. Final Wagga Wagga SAP structure plan



Source: Jensen Plus (2019)

Section 13: **Evaluation of Final Preferred Plan**

13.1 Overview

This section assesses the ability of the preferred structure plan to accommodate the projected employment growth for Bomen and looks at the projections for growth in Bomen with the base case (i.e. no SAP) and the three series for higher growth if a SAP is implemented. The projected employment growth series as detailed in Section 10.2 have implications for the demand for land in Bomen and as well as the likely timing of the development of Stages 1, 2 and 3 of the new Regional Enterprise Land (i.e. employment lands) designated in the Bomen structure plan.

13.2 Employment Growth in Bomen

As discussed in Section 10, for each of the projections for aggregate employment growth in the Wagga Wagga LGA, there will be significant implications for jobs in the Bomen Employment Lands area (Bomen) within the Wagga Wagga SAP Investigation Area.

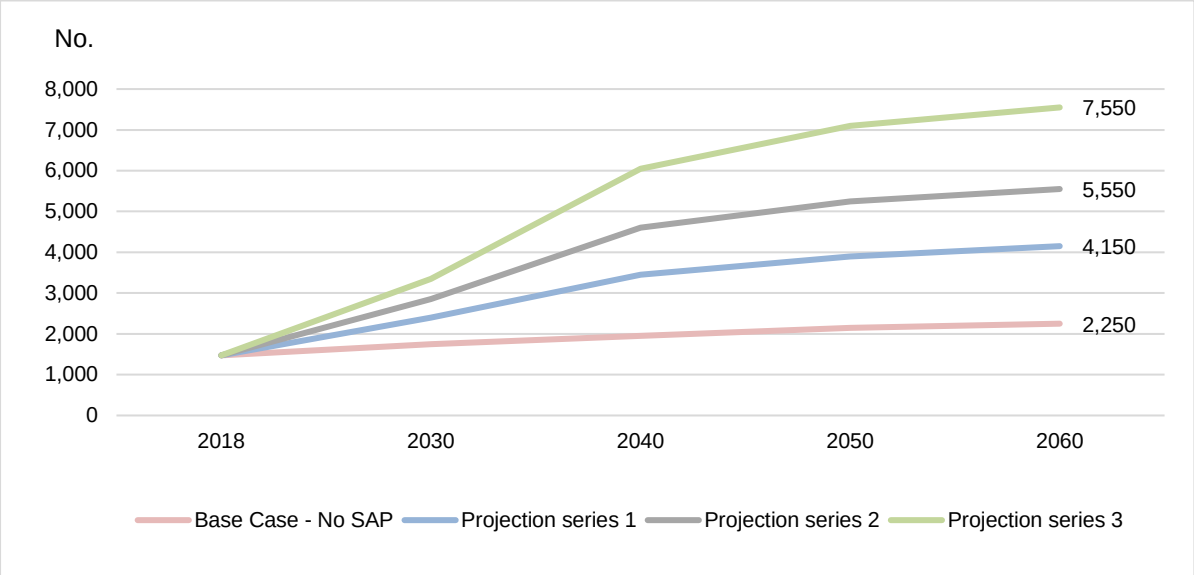
At present, about 1,180 jobs or over 80% of the total 1,475 jobs in the Bomen are industrial jobs and this represents 26% of industrial jobs in the Wagga Wagga LGA. The Bomen accounts for 4.5% of total jobs in Wagga Wagga.

In the base case, that is in the absence of a SAP, growth in jobs in Bomen will be modest in the period 2018-40, rising by only about 500 jobs (including about 400 MWT jobs) towards 2,000 in 2040, with further modest growth to about 2,250 jobs in 2060.

However, the SAP is designed specifically to stimulate jobs in the industrial sector in Wagga Wagga LGA and therefore three growth projections estimate a further increase in jobs growth in Bomen.

As illustrated in Figure 27, the series 1 projections have employment in Bomen rising to about 3,400 in 2040 and 4,150 in 2060. Series 2 will see employment in Bomen rising to about 4,600 in 2040 and 5,550 in 2060. Series 3 will see employment in Bomen rising to about 6,050 in 2040 and 7,550 in 2060.

Figure 28. Bomen Employment Projections With and Without a SAP



13.3 Industry Land Use, Potential Land Use Requirements and Demand

As discussed in Section 12, the final structure plan identifies an additional 604 hectares of employment lands for development over the next 40 years over three stages. Based on the low employment density ranges discussion in Section 11.3 and Table 17, all three employment growth series can be accommodated within the final structure plan for the period 2040 and 2060 as discussed in Section 13.4 below.

Each of the projections for growth generate jobs in Bomen due to the stimulus provided by the policies implemented under the special activation precinct policies. The largest impact is expected to be in the periods 2018-30 and 2030-40.

A component of the impact will be jobs generated by established firms which will see more intensive use of their current land holdings. The balance and larger component will be jobs generated by new businesses establishing in Bomen, or current businesses making significant expansion to their operations which require larger sites and, where existing sites do not allow expansion, re-location. In the case of the latter, this will then create sites which need to be re-purposed for new tenants.

In the period 2018-30, jobs generated by existing firms on current sites are expected to account for a net 200-300 jobs – this allows for some firms actually reducing employment levels due to increased efficiency or declines in activity of specific firms. In this period jobs which will generate a need for more employment land will range from 728 (series 1) – 1,674 (series 3) (Table 21). In 2030-40, the momentum will see a further 979 (series 1) – 2,655 (series 3) jobs in Bomen creating demand for new land. In 2040-60, the impetus created by the Activation precinct policies is expected to have lost some of its momentum, with only a further 669 (series 1) – 1423 (series 3) jobs generating demand for land.

Table 21. Period Growth in Employment by Sector In Bomen (i.e. New Regional Enterprise Area)

		2018-30	2030-40	2040-60	2018-60
Employment in Existing Areas		200	50	50	300
Projection series 1	*Net Industrial Employment*	*597*	*803*	*549*	*1,949*
	Net Non-Industrial	*131*	*176*	*121*	*428*
	Total	**728**	**979**	**669**	**2,377**
Projection series 2	*Net Industrial Employment*	*954*	*1,401*	*738*	*3,093*
	Net Non-Industrial	*209*	*307*	*162*	*679*
	Total	**1,163**	**1,708**	**900**	**3,772**
Projection series 3	*Net Industrial Employment*	*1,373*	*2,177*	*1,167*	*4,717*
	Net Non-Industrial	*301*	*478*	*256*	*1035*
	Total	**1,674**	**2,655**	**1,423**	**5,752**

The employment land needed under each of the growth series to meet the growth in jobs in 2018-30 will range from 62 hectares (series 1) to 143 (series 3) (Table 22). In 2030-40, additional demand leads to cumulative demand rising to 146 hectares (series 1) to 370 hectares (series 3). By 2060 cumulative demand is for 203 hectares (series 1) to 492 hectares (series 3).

Table 22. Demand for Land Generated by Growth (hectares)

		Period				Cumulative to		
		2018-30	**2030-40**	**2040-60**	**2018-60**	**2030**	**2040**	**2060**
Projection series 1	*Net Industrial Employment*	*58*	*78*	*54*	*190*			
	Net Non-Industrial	*4*	*5*	*4*	*13*			
	Total	**62**	**84**	**57**	**203**	**62**	**146**	**203**
Projection series 2	*Net Industrial Employment*	*93*	*137*	*72*	*302*			
	Net Non-Industrial	*6*	*9*	*5*	*21*			
	Total	**99**	**146**	**77**	**322**	**99**	**245**	**322**
Projection series 3	*Net Industrial Employment*	*134*	*212*	*114*	*460*			
	Net Non-Industrial	*9*	*14*	*8*	*31*			
	Total	**143**	**227**	**122**	**492**	**143**	**370**	**492**

13.4 Aggregate Supply of New Regional Enterprise Areas

The total amount of new employment land created in the Bomen precinct, as proposed in the preferred structure plan, is 604 hectares. An indicative staging plan for delivery of this land is proposed and is discussed below (Table 23 and Map in Figure 28). However, when the proportion of an estate reaches close to 80% capacity (or 20% spare capacity), the capacity to accommodate new firms' specific needs starts to become more problematic

and lack of supply tends to put upward pressure on prices which in turn discourages new firm entry. That is allowing for spare capacity, 604 hectares translates to 483 hectares of land being utilised (Table 23). At that point, additional supply needs to be added.

Table 23. Indicative Staging of Development in Bomen (i.e. Land in New Regional Enterprise Area)

Employment Land – Hectares	Total	Cumulative	At 80% Capacity	Cumulative	Potential Employment
Stage 1	350	350	280	280	3,280
Stage 2	90	440	72	352	4,118
Stage 3	164	604	131	483	5,654

13.4.1 Stage 1 Supply

Stage 1 development incorporates the in-fill potential in the existing Bomen industrial areas (areas 1A, 1D and 1E in Figure 28) which is estimated to generate 192 hectares of employment land or, allowing for spare capacity, 154 hectares. In addition, with the development of the RiFL Hub in the area to the north of the Livestock Yards, it is expected that a number of firms will have a clear preference for locating in these areas (areas 1B and 1C in Figure 28) and, based on the initial proposed road infrastructure, it is projected that 350 hectares will be available as part of Stage 1, which allowing for slack (20% spare capacity) will deliver 280 hectares of employment land, catering for 3280 jobs.

Stage 1 development will accommodate the series 1 projected growth in demand for industrial land in Bomen across the full period 2018-60. It will accommodate the series 2 projected demand for 2018-40, however sometime into 2040-60 it would be approaching capacity constraints. In the case of series 3 projected demand, it will accommodate demand for 2018-30 but with capacity constraints emerging in 2030-40.

We would note that, even in the case of series 1 (lower) growth, it is possible that the land requirements of specific firms may see the need for some development of Stage 2, or in the extreme case Stage 3, land. For example, prior development may mean that the size of parcel of land needed by a firm may not be available within Stage 1, or similarly in the case of a firm needing a low amenity location. In those circumstances, the infrastructure investment required for those specific sites beyond stage 1 would need to be assessed on the merits of the proposal. There may be industrial uses which require minimal infrastructure.

13.4.2 Stage 2 Supply

Stage 2 land is to the west of the RiFL industrial area (Figure 28) and its choice is based on it entailing comparatively modest additional infrastructure for it to be activated.

As discussed above, with series 1 projected growth in demand, Stage 2 would not need to be activated before 2060. However, with series 2 projected demand, it would need to be activated in about 2050, and with series 3 projected demand, it would need to be activated in about 2035. However, as also noted, specific projects could see sections of Stage 2 activated ahead of these notional timelines.

13.4.3 Stage 3 Supply

Stage 3 land is to the north of Trahairs Road (Figure 28). It includes land which is earmarked for a potential extension to the RiFL rail freight terminal to handle longer freight trains. It entails more substantial commitments in additional infrastructure and notably so if the growth supports or requires the RiFL extension.

Broadly, Stage 3 provides for the long-term growth in Bomen and Wagga Wagga LGA. On the 2018-60 time horizon, it would probably only need to be activated with series 3 projected demand with, in that case, the time-line for investment decisions about 2040.

However, if the land is zoned for industrial use and part of the activation precinct, it will provide a useful release valve in the event that actual demand for land proves higher than anticipated. That may or may not reflect higher growth in employment, but it may reflect a number of very land-extensive industries investing in Bomen. In that event, in the absence of Stage 3 lands, an unanticipated shortage would inevitably lead to upward pressure on land prices which could stifle growth.

13.4.4 Summary of employment land staging

If we compare Stage 1 with projected demand, it will meet demand generated from series 1, without the need to consider Stages 2 and 3. In the case of series 2, it will meet demand out to 2040, but there will be a shortfall and need for some additional land in 2040-60. In the case of series 3, Stage 1 will meet demand during the period 2018-30, but Stage 2 will need to be activated sometime in 2030-40, circa 2035, while Stage 3 will need to be activated circa 2040 to meet demand in the period 2040-60. Figure 29 shows the timeline.

The three-growth series provide an indicative guide to when Stages 2 and 3 will need to be activated. However, while they give a broad idea of the potential demand in these periods, there is no control over the precise timing or take-up of land in certain areas within the Bomen precinct. While development of land in proximity to existing infrastructure (Stage 1) is probably optimal and is likely to be taken up first, that is a function of the individual decisions by firms. There could be circumstances where, for example, the business needs of a specific firm require Stage 2 or Stage 3 land. In those circumstances, it is expected that policymakers would be flexible to judge such an investment on its merits.

Figure 29. Map of Bomen with Indicative Staging of Development

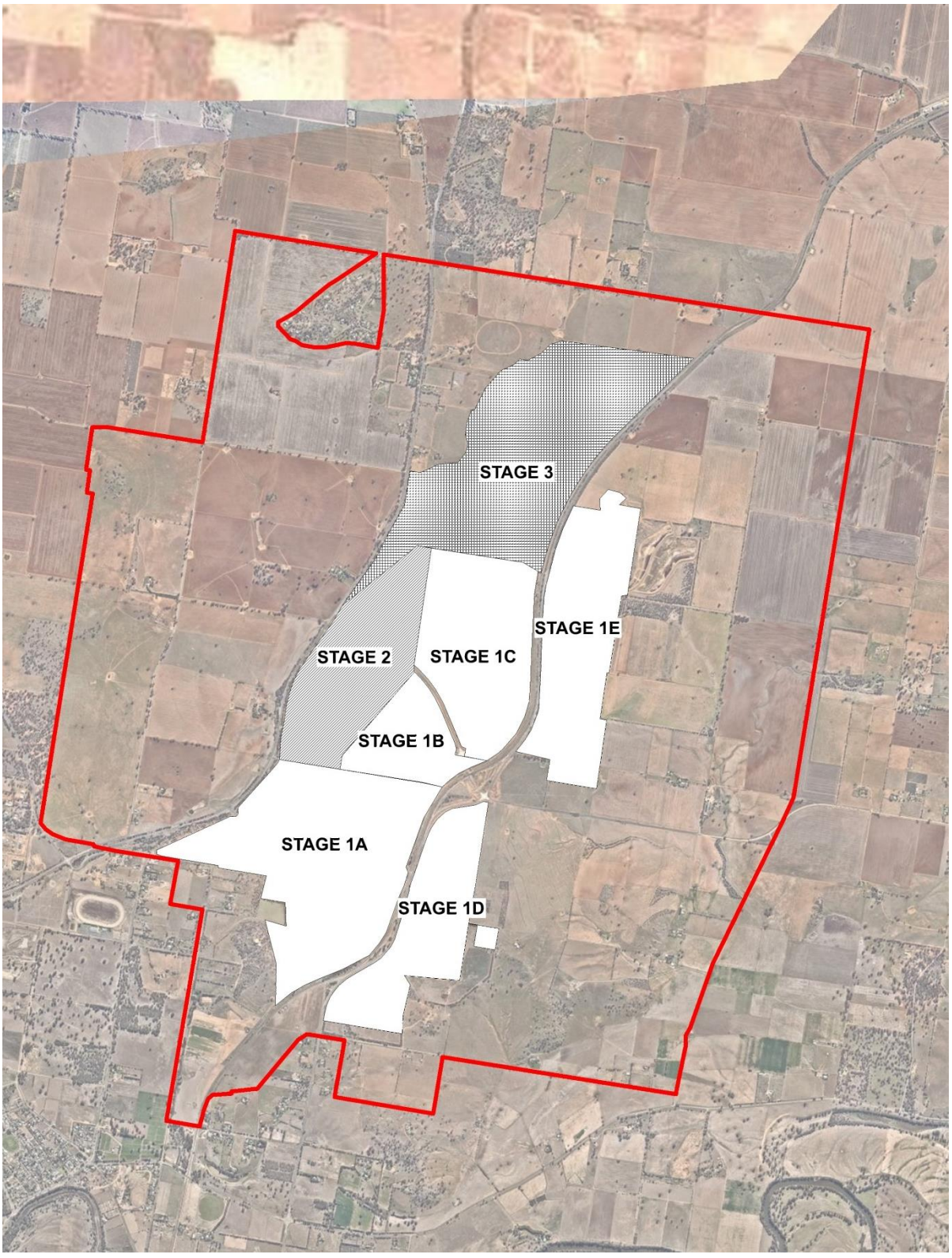
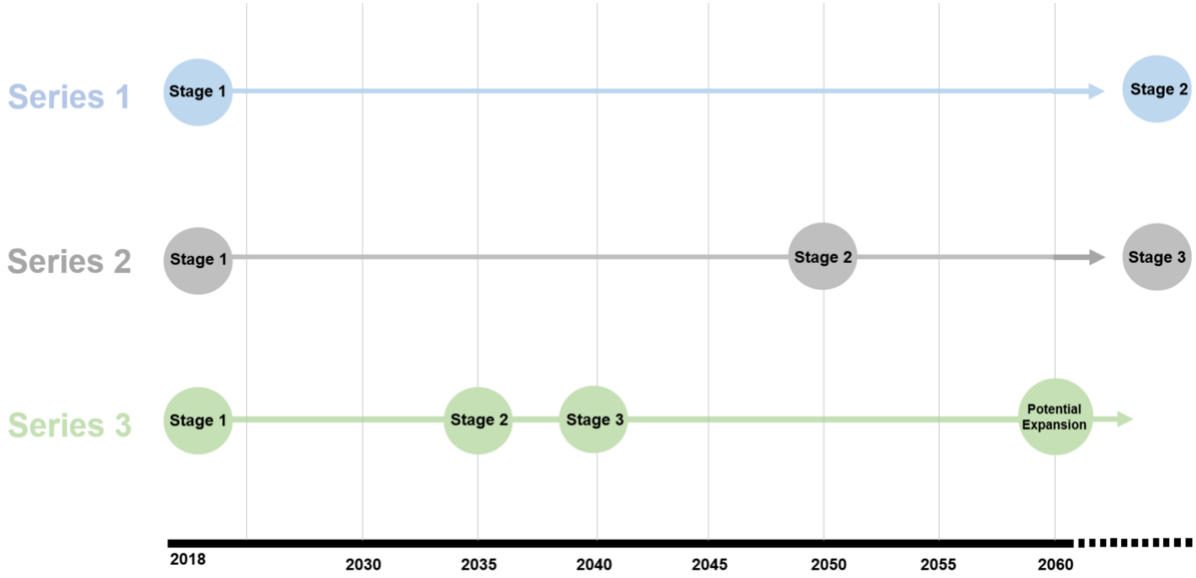


Figure 30. Indicative Staging of Development in Bomen (i.e. New Regional Enterprise Area) 2018-2060



Section 14: **Employment Attraction**

14.1 Current Challenges to Attract Employment to Wagga Wagga

Australia has a national shortage of STEM qualified graduates meaning even in capital cities wage premiums are common (in some industries more than others). Thus, strategies such as increasing salaries are likely to have limited impact, unless the premium is significant, which may not be feasible for some businesses. This has left many regional towns competing to attract and retain Australian employees.

With many regional towns finding it challenging to source Australian employees, the Federal Government has launched a new visa scheme requiring migrants to live and work in regional areas for three years before they can get permanent residency in the hope it will encourage migrants to settle in these areas long term. This policy measure should help support regions such as Wagga Wagga to source skilled labour. However, a key issue faced by regions is retaining these employees. Regional towns research conducted by Australian National University indicated that 50-70% of migrants will leave a region within a five year period and if they are going to stay in Australia, move to one of the big cities[47]. The Managing Director of Great Southern Electrical in Wagga Wagga recently stated that the migrant workers he has recruited often end up in the major centres, particularly younger employees. He noted that "because we require technically trained people, it's quite difficult to get university-trained people or even vocationally trained people to stay in regional areas"[48].

14.2 Initiatives for Employment Attraction

To assist with addressing these issues in relation to attracting and retaining employee's, macroplan suggest local businesses consider the following as part of attracting employment in addition to policy initiatives by government and educational offerings by local educational institutions:

- **Facilitating pathways for local people:** We recommend businesses turn their attention to the local regional population and create new pathways for local people. This could include developing programs to support future and existing staff to obtain the qualifications, competencies, skills and knowledge required to move into new roles, particularly in occupations where there are skill shortages. In Wagga Wagga LGA this could be facilitated through joint partnerships with CSU and TAFE NSW. If businesses are sponsoring programs which encourage personal development as well as supporting local employment opportunities, people may be less inclined to leave the region.

- **Flexibility in the workplace:** Flexible working arrangements help staff balance their work life with their life away from paid work. Flexibility may include how work is done, when it is done and where it is done. The most common options include:
    - part-time work
    - job-sharing
    - working from home

[47] https://www.abc.net.au/news/2019-11-19/new-regional-visas-launch-explained/11703788
[48] https://www.abc.net.au/news/2019-11-19/new-regional-visas-launch-explained/11703788

- compressed hours
- flexible start and finishing times
- unpaid leave

Flexible working arrangements have become increasingly valued. Research undertaken by Robert Half in 2018[49], found that many Australian's value flexible working arrangements more than a higher salary. The research showed that the most common benefit in which professionals would be willing to accept a lower salary for was flexible work hours (47%) followed by the option to work from home (40%). These benefits could be a key drawcard for STEM occupations as an alternative to trying to compete with metropolitan salaries.

- **Relocation support:** Relocation support for employees moving from the city or other regional locations can be both financial and/or just general support. For example, general support from an employer may include providing information and offering advice to new staff and their families on issues such as accommodation, schools, childcare, community facilities, sporting clubs and local events. Financial support on the other hand may not be in the form of increased salaries but may include providing accommodation free of charge for a set period (e.g. a few months while the employee and their family get settled).

Outside of actively trying to attract and retain staff, the attractiveness of the region as a place to work will be supported by the region's growing population and its connectivity to metropolitan centres. The depth of the labour market itself will increase local employment opportunities, for example, an increasing population means an increased requirement for health services, resulting in job creation. As opportunities for employment continue to grow there may be less hesitation to migrate inwards and outwards because, for example, both members of a couple will be likely to attain employment.

[49] 2018 Robert Half Salary Guide

Section 15: **Investment Attraction**

15.1 Why Wagga Wagga SAP

To secure an ideal tenant mix, macroplan is of the opinion that the Wagga Wagga SAP will need to leverage its competitive offer backed by Government and industry support. Below details features of the SAP that are secure as well as some initiatives and incentives the public and private sector could offer to attract big business. The features of the SAP that will be key selling points for attracting business include:

- RiFL and the Inland Rail
- Government Investment
- Gateway planning
- Strategic location midway between Sydney and Melbourne
- Anchor tenants
- Industry best practice and innovative ideas and processes

Key attractors Government could consider include:

- Minimising taxes/charges
- Subsidies
- Invitations
- Decreasing regional pay roll tax (as is done in Victoria)

15.2 Key Attributes of The Wagga Wagga SAP – Why Business Will Want to Invest

There are features of the Wagga Wagga SAP that will be key to supporting and attracting investment and businesses to the SAP, these include:

- **Investment in Infrastructure**: businesses will have investment confidence from Government commitments in key transport infrastructure such as the RiFL Hub and Inland Rail that will improve the connectivity, efficiency and productivity of Wagga Wagga to other markets.
- **Local Government Investment:** Wagga Wagga City Council's previous transport infrastructure investment to accommodate B-Triple vehicles, its purchase of a large quantity of land within the Wagga Wagga SAP Investigation Area; and its commitment and partnership with Visy to develop the RiFL Hub provides investor confidence to co-locate and operate businesses within Wagga Wagga LGA.
- **Streamlining the planning process:** greater certainty regarding the planning pathway, timeframes and processes will be key to attracting future investment and minimising the upfront business risks.
- **Strategic Location:** being a nodal location, broadens the investment appeal given Wagga Wagga LGA is halfway between Sydney and Melbourne and is connected to multiple international gateways across the eastern Australian seaboard.
- **Sustainability initiatives and brand marketing:** businesses that are innovative and implement sustainable practices have the ability to market "sustainability" as part of their social and corporate responsibility. This

could promote other businesses to invest in sustainable measures and processes and / or could attract other entrepreneurs and innovative advance manufacturing and renewable energy businesses to the Wagga Wagga SAP. In addition, sustainable initiatives such as carbon neutral energy sources could further support green marketing for businesses which are often important to consumers and other businesses.

The lower cost of land vis-à-vis the capital cities will be also be a factor but it is not by itself the deciding factor. The locational considerations are more significant as is the availability of large tracts of land away from residential urban living which has and will attract firms/industries which need to use land extensively. But in terms of the cost of land, the factor that has constrained investment has been the cost of obtaining approval to use the land. That includes the costs per se and the cost of lost production. which can be very significant. If a plant can be built and operating 3 years sooner in Queensland, that is a very significant factor which has a major impact on decisions. That is where streamlining the planning process is so critical. In terms of the three series, the effectiveness of the actual changes in the planning process will be a factor in which series prevails in the future.

15.3 Securing Private Sector Investment

To secure an ideal tenant mix, the Wagga Wagga SAP will need to consider leveraging its competitive offer backed by Government support. To secure private sector interest and investment, consideration should be given to government initiatives and incentives that could be offered to attract businesses. Our learnings from consulting with industry in Bomen has highlighted that some businesses have already explored alternative locations (interstate) to operate from and they stated in many cases that attractive incentives were offered by Government in other states, given the economic and social benefits of investment and job creation. Macroplan has identified initiatives from Queensland and Victoria for the NSW Government's consideration in developing policies to make regional NSW more competitive.

15.3.1 Queensland – Priority Development Area (PDAs)

The Priority Development Area (PDA) model is used in Queensland, with a focus on:

- supporting economic growth,
- accelerating development
- unlock under-utilised or surplus government owned land; or
- drive development for community purposes

A PDA can be declared under state legislation, which allows for shortened time frames to stimulate economic, community and social outcomes through enabling developments to be market ready (sooner). The state government uses Economic Development Queensland in supporting and streamlining fast tracked redevelopment. The PDA where possible is supporting a fast track development model, through reduced development approval timeframes from the efficient processing of applications.

The SAP could be seen as offering a more investor friendly model competitive with the PDA.

15.3.2 Victoria – Regional Development Areas

The Victorian Government has developed the Regional Jobs and Infrastructure Fund (RJIF), which provides financial support for strategic projects and infrastructure delivery in order to retain or create new jobs in regional areas. A number of grants and packages are primarily focused on supporting private businesses targeted at improving economic outcomes for regional Victoria. These include:

- **Regional Job Funds**: focuses on grants including investment attractions, investment in facilities expansion, and the introduction of new technology.
- **Regional Investment Fund:** focused on providing grants to businesses which can demonstrate business and environmentally sustainable outcomes (e.g. conversion of waste to energy), transport infrastructure that directly supports economic activity and precincts and projects that deliver improved supply chain efficiency.

In addition to the above, regional development is supported through tax incentives and development subsidies including funding for common enabling infrastructure to create investment ready industrial land (e.g. gas, water, road and rail infrastructure).

In the 2019/20 State Budget, the Victorian Treasurer announced a number of measures that will have a positive impact on businesses in regional Victoria, with reductions to transfer duty for commercial and industrial properties and a further reduction in the regional payroll tax rate. By 2022-23, the payroll tax rate applicable to regional employers will be cut to 25% of the metropolitan rate. However, the concession is subject to certain tests, including that at least 85% of the employer's wages are paid to employees working in regional areas.[50]
Victoria is seen as being more investor friendly from a planning perspective, which the SAP will largely address, but Victoria also is more aggressive in offering financial incentives.

15.4 Additional support for the Wagga Wagga SAP

The governance and implementation of the Wagga Wagga SAP should also consider the following initiatives to attract investment to Wagga Wagga:

- Development charges / subsidies recognising significant employment benefits to the region
    - To the extent that development charges act as a tax rather than a user cost, consideration should be given as to the adverse impact of such charges in discouraging investment. While, as discussed earlier, the cost of land is not by itself the deciding factor, it still matters
    - Comparing the competitiveness of the States' tax systems, e.g. the payroll tax regimes, is complex but the initiatives by Victoria indicate the need to consider the competitiveness of NSW taxes as a factor in attracting business. The discounts on payroll tax offered by Victoria might be considered a subsidy but nonetheless it needs to be considered in the competitiveness equation.
- Invitations / business concierge to target and support businesses
    - Particularly for smaller businesses, which can grow into larger businesses. Encouragement and assistance in working through the development process can be a significant factor in firms committing to a location. The SAP itself will simplify the process but it is still a process that needs to be worked through and this support could be a factor which adds to the effectiveness of the actual changes in the planning process in attracting investment.

[50] https://budget.vic.gov.au/budget-papers See Budget Overview page 17

Conclusion

Wagga Wagga LGA's is located within the strong agricultural economy of the Eastern Riverina Region and provides services which support both the Eastern Riverina and the wider region. Wagga Wagga LGA hosts education and health facilities, a defence base, and is located mid-way between Australia's two largest urban population centres - Sydney and Melbourne. The proposed investment in the construction of the RiFL Hub and the Inland Rail will provide additional opportunities for industries and employment in the LGA. The liveability and affordability of the Wagga Wagga LGA, both in terms of housing and industrial space, is one of its attractions and this is likely to influence investment in the medium and long term.

While manufacturing in Australia experienced significant structural decline in the period 1996-2016, the sector has broadly held its own in Wagga Wagga LGA. However, a survey of manufacturing and logistics businesses in the Bomen Employment Land area highlighted the difficulties and costs faced by these businesses in obtaining development approvals which has caused investment opportunities to be lost to other states or overseas. This indicates that there is potential for improved approval processes to stimulate investment and job growth.

The NSW Government has introduced Special Activation Precincts (SAP) as a new way of planning and delivering infrastructure projects in certain regional locations in NSW, to attract and grow businesses, stimulate the local economy and provide more local employment opportunities. The Wagga Wagga SAP, which includes a broader study area i.e. approximately 4,180 hectares of land, known as the Wagga Wagga SAP Investigation Area and aims to address impediments to investment within Bomen as well as facilitate job creation and regional economic development.

To determine the possible economic, employment and population growth outcomes as a result of the introduction of a SAP in Bomen, macroplan has assessed the impact of 'no policy-change', that is the expected growth of Wagga Wagga LGA's population and economy on the basis of no SAP. Macroplan used the DPIE (2016) projections to 2036 and ABS (2018) longer-term population projections as the base to construct this benchmark, which has Wagga Wagga LGA's population rising from 68,000 in 2018 to 87,000 in 2060.

The delivery of the Wagga Wagga SAP in Bomen will result in a significant positive impact on growth in employment in the Bomen Employment Lands area and in turn leading to a significant positive impact on the future growth in population and employment in the entire Wagga Wagga LGA. Based on assumptions on the size and impact of the SAP, macroplan estimated three series of employment projections for Bomen and corresponding employment and population projections for Wagga Wagga LGA for the period 2018-2060. The series 1 projection has Wagga Wagga LGA's population rising to 97,000 in 2060, while the series 2 projection has the population reaching 100,000 in 2050 and 110,000 in 2060, while the series 3 projection has the 100,000 mark being reached in 2040 and the population reaching 120,000 in 2060.

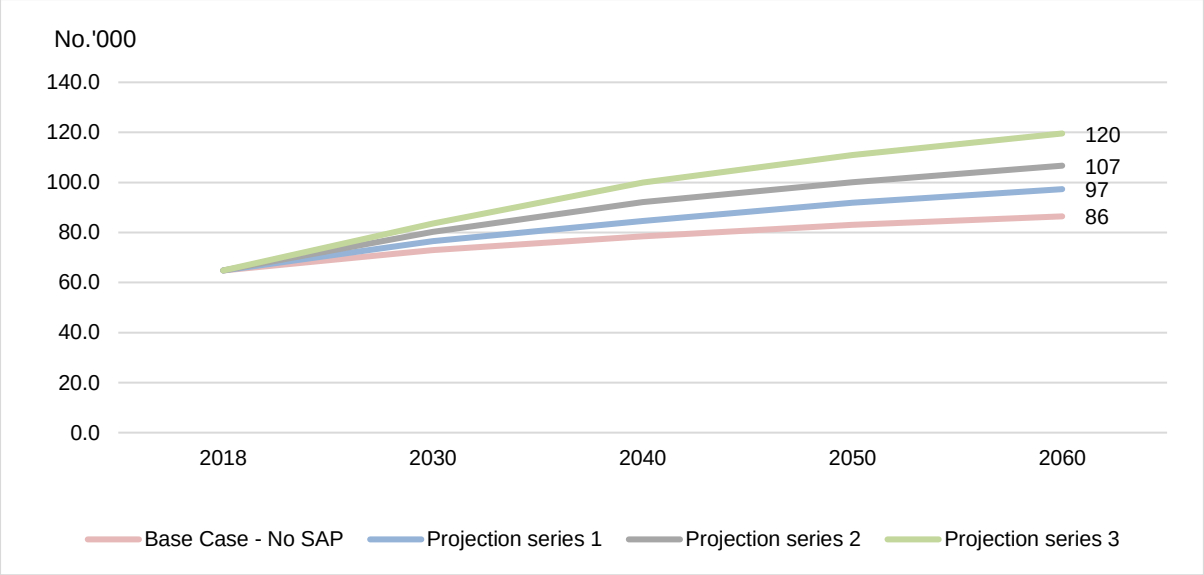
More specific to Bomen, the base case series – which incorporates the impact of the RIFL and inland rail in the absence of a SAP - has employment in the Wagga Wagga SAP Investigation Area rising by just 750 in the period 2018-60. The series 1 has employment rising 2,700, while the series 2 and series 3 projections have employment rising by 4,050 and 6,050 respectively. In terms of demand for land – based on a range of low- and high-density land uses by industry – macroplan estimated the requirement for additional developable land. Taking the low-

density land use as most probable, this informed the assessment of the three refined concept scenarios and whether each would risk under- or over-supplying the market, and the decision on the quantum of land that would be required in the final structure plan.

The final structure plan developed considered the transport and other infrastructure requirements needed as well as the potential timeline for the three stages for investment in the development of new lands in Bomen. Stage 1 could accommodate growth to 2030 including on the high growth scenario. Stage 2 may need to be activated with medium growth (series 2) outcome circa 2050 but with high growth bringing that forward to the mid-2030s. Stage 3 may provide for longer term growth on the low and medium growth scenarios, but with the high growth outcome requiring activation in circa 2040.

Macroplan has identified the expected growth in the key industry sectors in Bomen including; heavy and light manufacturing – both of which include a mix of advanced manufacturing and food processing - and transport and logistics, retail and food and accommodation services, and professional, technical and administration support service suppliers.

Figure 31. Wagga Wagga LGA Population Projections With and Without a SAP



Appendix A – Methodology on Population and Employment Projections

ABS Statistics

In this report, unless otherwise stated, macroplan has used the latest series of published official data from the Australian Bureau of Statistics (ABS).

The ABS Census provides detailed 5-yearly data (latest being August 2016) on population, age profile, education, status of employment, occupation of employees by industry sector, employees by industry sector by place of residence and place of work, all of which has been used to provide a detailed economic and socio-demographic profile of Wagga Wagga LGA and the LGAs in the Eastern Riverina region. This data is available at LGA level and also for smaller geographic areas, e.g. suburbs or designated zones within LGAs. Place of work data at the DZN (designated zone) level for the small area covering Bomen has been used to estimate 2016 employment in the Bomen Employment Lands. However, comparable data for this Bomen area is not available for previous Census years. In addition, the ABS publish detailed annual population statistics at the LGA level which include minor upward adjustments to the Census population estimates. (That is, the population estimate for 2016 is higher than the Census figure.) This provides a consistent series of Wagga Wagga's total population for the period 2001-2018. The latest estimate for population is June 2018 and this has been used as the starting point for looking back at history and looking forward with projections.

List of ABS sources

ABS Census – various but primarily 2006, 2011 and 2016
ABS 3235.0 - Regional Population by Age and Sex, Australia, 2018 (published August 2019)
http://stat.data.abs.gov.au/Index.aspx?DataSetCode=ABS_ANNUAL_ERP_LGA2018

Base Case and DPIE/ABS Medium Growth Population Projections

For the Wagga Wagga economic report, 2018 has been set as the starting year and projections to 2030, 2040, 2050 and 2060 have been set as the key 10-year target years. The official DPIE 5-yearly projections align with the Census years which is reasonable in most instances. However, with a starting point of 2018 and with the DPIE projections only going to 2036 and the need to adjust all the projections, and with the end decade years of 2040 and 2060 being primary target years, the projections have used the end decade years.

The starting year 2018 is chosen on the basis that the latest available ABS estimates for Estimated Resident Population (ERP) are for June quarter 2018. This figure does not align with the DPIE estimates which were published in 2016 (before ABS estimates were available).

As a starting point in constructing population projections have used the DPIE medium scenario projections for population growth for 2016-2036 for Wagga LGA, presented in 5-yearly periods, and the ABS (2018) B-series to extend that out to 2060.

The DPIE estimates for the June quarter 2016 diverge from the subsequent ABS estimates for 2016 and the DPIE projected growth rate for 2016-21 is not aligned with actual growth rate in the years 2016-18. Beyond 2018, the growth for the period 2018-20 has been determined by taking the average of the actual annualised growth rate for 2016-18 and the DPIE projected annual growth rate 2016-21, to generate an estimate for 2020 broadly consistent with the DPIE projections. Then for the five-year periods 2020-25-30-35, the DPIE projected growth rates for 2021-26-31-36 have been applied to the estimate for 2020. For the five-year periods beyond 2035-2060, the relative difference between the DPIE projection for Wagga Wagga LGA and the ABS (2018) B-series population projection for regional NSW for the period 2031-36, has been applied to the ABS projected growth rates for the period 2035-2060 for regional NSW. This generates an "official" series of projections as a starting point.

Age Profile

In terms of the age profile, the latest ABS estimate for 2018 has estimates of the age profile and this is taken as the starting point age profile. The DPIE medium scenario projections for the shares of the 5-year age cohorts for 2021-26-31-36 has been used to generate estimates for 2020-25-30-35. For the periods beyond 2035-2060, the changes in the shares of the 5-year age cohorts in the ABS (2018) B-series population projection for regional NSW for the period 2035-60 have been used. For the period 2040-60, we note that the ABS population projections indicate a further aging of the population.

Base Case Population Projections for Wagga Wagga

Macroplan has taken the above DPIE/ABS medium scenario for population growth, as adjusted above, as the starting point. In generating a base case and the series 1-3 projections, we take no view on birth rates or mortality rates (accept the official projections on these variables) but change the assumption on net migration.

In the case of the base case population projection, a higher net migration factor has been applied on the premise that the higher competitiveness of Wagga Wagga, in terms of cost of housing/doing business vis-à-vis capital cities, encourages a marginally higher level of movement to these regional centres. This is before any account is taken of any impacts of government assistance or changes in planning policy (e.g. SAP). These impacts generate the higher net migration in the series 1-3 projections. The assumptions in relation to public infrastructure investment (including the RiFL investment) and the planning changes are discussed in detail below (Employment Projections and SAP)

In terms of the age profile, the higher net migration is assumed to be led by 20-39 age cohorts but with these adults coming as households or forming households and thus also leading to an increase in the 0-19 age cohorts. The upshot is a younger age profile. Macroplan has assumed similar birth rates for this group.

Series 1-3 Growth Projections

This base case population growth and age profile has then been overlaid with the additional population required to accommodate higher employment scenarios. In translating employment to population, over and above the assumption made below (Employment Scenario) the following assumptions are made:

- unemployment rate is steady through the period at 5.5% (as per Census 2016)

- the increase in population is generated by net migration of working age people and their families into the region. That net inflow can occur via a combination of fewer younger working age people migrating out of the region and more working age people migrating into the region.
- reflecting the net in-migration of a younger population, the number of retirees (65+) does not change and the share of retirees' declines.
- The share of the 15-64 age cohorts will rise and this will lead to a higher than otherwise workforce participation rate (PAR ratio).

Employment Projections

The estimate of employment in 2018 uses the Census year estimates of unemployment (5.5%) and the workforce participation rate (67.7%) and applies that to the estimate for the 15+ age group for 2018. This is based on place of residence. The Census estimate for employment by place of residence is (after allocating the labour force not stated pro rata) is marginally higher than the Census place of work estimate which however might be understated. Thus, it is not clear whether there is a net flow of workers in or out of Wagga Wagga but the figure either way is not significant. For consistency, and to align with the population projections, we have used the estimate based on place of residence for the aggregate projections for Wagga Wagga.

Transport for NSW (TfNSW) has employment estimates for the Greater Sydney metropolitan area. These estimates do not relate directly to Wagga Wagga but do contain the assumption that the participation (PAR) rate (% of persons 15 years or over in the workforce) for the period 2016-41 will remain steady. Given the change in the age profile towards an older population, this assumption incorporates an increase in the PAR rate for the individual age groups. With constant PAR rates for the individual 5-year age cohorts, the overall PAR rate would decline by at least three percentage points in the period 2016-36.

We would note that the NSW Intergenerational report noted that "Workforce participation, the proportion of people over 15 years and over seeking or in employment, is projected to fall from 64 per cent today to 59 per cent in 2056 as the population ages. This is despite a marked increase in the share of older people who participate in the workforce, including many who will work beyond the 'traditional retirement age' of 65." [51]

On that basis, the base case has assumed that the PAR rate will decline by about 4.8 percentage points over the period 2016-60. However, as discussed below, the series 1-3 projections, generated by an influx of younger workers, incorporate much lesser declines in the PAR rates.

This trend decline has been applied to the DPIE/ABS medium growth population projections for the 15+ population, but with allowance for the age cohort effect, to generate labour force estimates. The same methodology has been applied to projections beyond 2036 using the ABS population projections. The assumption of an unchanged unemployment rate has been applied to the labour force to generate estimates of employed persons.

The employment scenario number has then been over-laid with the impact of estimates for direct, indirect and induced employment growth generated by the change in policy represented by the SAP, to produce series 1, 2

[51] https://www.treasury.nsw.gov.au/sites/default/files/2017-01/Budget_Paper_5_-_Intergenerational_Report_2016_-_full_report.pdf (pg. 7 Intergenerational report)

and 3 projections for employment. Note also that the base case, which has marginally higher growth than the DPIE estimates, assumed a net inflow of workers/people to generate the higher number. These employment projections lead the population projections but there is a two-way impact between the two.

The base case and the series 1-3 projections, which incorporate higher employment and population growth, lead to younger age profiles and increase the 'average' PAR rate. In the case of the series 3 projections, the PAR rate declines by only 1.2 percentage points.

For employment by industry, projected sectoral shares have been applied to the benchmark estimates of employed persons. Changes in industry shares generally reflect observed long-term trends. In the case of manufacturing, the rate of decline in its share is less accentuated going forward reflecting a view that, after the significant structural decline in the period 2001-16, the remaining manufacturing is concentrated in areas with a natural competitive advantage. In the case of health and aged care, this remains the sector with the fastest rising share.

Employment Projections, RIFL and the SAP

The base case and series 1-3 projection all entail growth in employment in Bomen linked to policy changes and public investment, directly and indirectly leading to growth in employment and population in Wagga Wagga. The link between policy changes and public investment and employment in Bomen is set out in the following.

The base case is built on the DPIE (2016) projections, assuming moderately higher growth. The DPIE projections do not specify what has been assumed in terms of the impact of the (expanded) inland rail and the investment in the RIFL at Bomen which is due to start operating in 2020. The base case assumes some benefit from inland rail and the RIFL, and from the strong pro-growth commitment by the Wagga Wagga Council. However, the benefit of the RIFL is substantially less than has been asserted in the cost-benefit analysis (CBA) of the RIFL conducted by AEC (2014)**52**. This analysis assumed the area would be fully occupied by industry over 15-20 years or by about 2038, with no reference to probable demand. This is a supply-side analysis, i.e. the land will accommodate 'xxx jobs' and we assume the jobs will come. On the basis of 28.33 persons per developed hectare and 120 hectares, the AEC study had the RIFL 'creating' 3,400 jobs.**53** In the absence of changes in planning rules (key element of the SAP), however, the probability that the CBA-assumed investment by industry and employment will materialise is, in our view, very low.

The RIFL and other proposed infrastructure Investment by the State Government in Bomen to be undertaken as part of the SAP, are enabling investment. But the major cost impediment to business has been the planning system and a more efficient planning framework will be the major change which draws in investment. Both ingredients are essential but the larger change is the proposed changes to the planning rules. We would also note that there is an element of uncertainty as to the benefit which the planning changes will generate, which is contingent on the detail of how they work in practice.

52 AEC Group (2014) Riverina Intermodal Freight and Logistics Hub Feasibility and Economic Impact Assessment Final Report 2014. Report was to Wagga Wagga Council.

53 The AEC Report did not explicitly state it would create 3,400 operational jobs but it stated it would employ 28.33 per hectare of gross floor area (GFA) and that it would create 120 hectares of GFA (120 times 28.33 = 3400).

Series 1 has growth in employment of 1900 in Bomen in the period 2018-2040. This is a high probability scenario – it is based on a 'reasonable' success rate in attracting investment in response to the impact of changes in planning rules. Other higher growth scenarios require higher success rates to which a lower probability is attached. Series 1 has the changes in planning rules enabling the RIFL to fulfill its potential in generating investment and employment. When the RIFL is added to other enabling investment, there is a significant infrastructure investment with series 1. However, the enabling (including RIFL) investment in Bomen requires the improved planning framework to deliver results. Series 1 is also informed by feedback from existing firms in Bomen with known investment plans contingent on the planning reforms (in their absence, the firms advised that investment will not proceed or will go elsewhere).

Series 2 adds another 1200 additional jobs in the period 2018-40. This higher growth, over and above necessary additional enabling infrastructure investment to accommodate that higher growth, requires a higher success rate (in response to planning changes) in attracting investment to Bomen. The probability of this outcome is lower than with series 1. Series 1 captures the firms for which Wagga Wagga has significant locational advantages (which have to date been offset by the cost of planning rules). Series 2 is then trying to capture investments where the locational advantages of Wagga Wagga are more marginal which is why a lower probability necessarily attaches to this outcome.

Series 3 is based on the NSW State Government's stated ambition for Wagga Wagga to be one of the regions which could reach populations of more than 100,000 by 203854 (2040 in this analysis). To achieve this ambition, series 3 would require an additional 1400 jobs over and above series 2. To achieve this scenario the SAP would have to have to successfully attract a significant amount of new businesses and investment from firms that would not otherwise locate in Wagga Wagga. To achieve this ambitious target, investment attraction activities undertaken as part of SAP delivery will need to be streamlined and well targeted. Delivery of additional enabling infrastructure, such as roads and utilities, and creation of a high amenity precinct may also assist with attraction of additional businesses and employment.

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