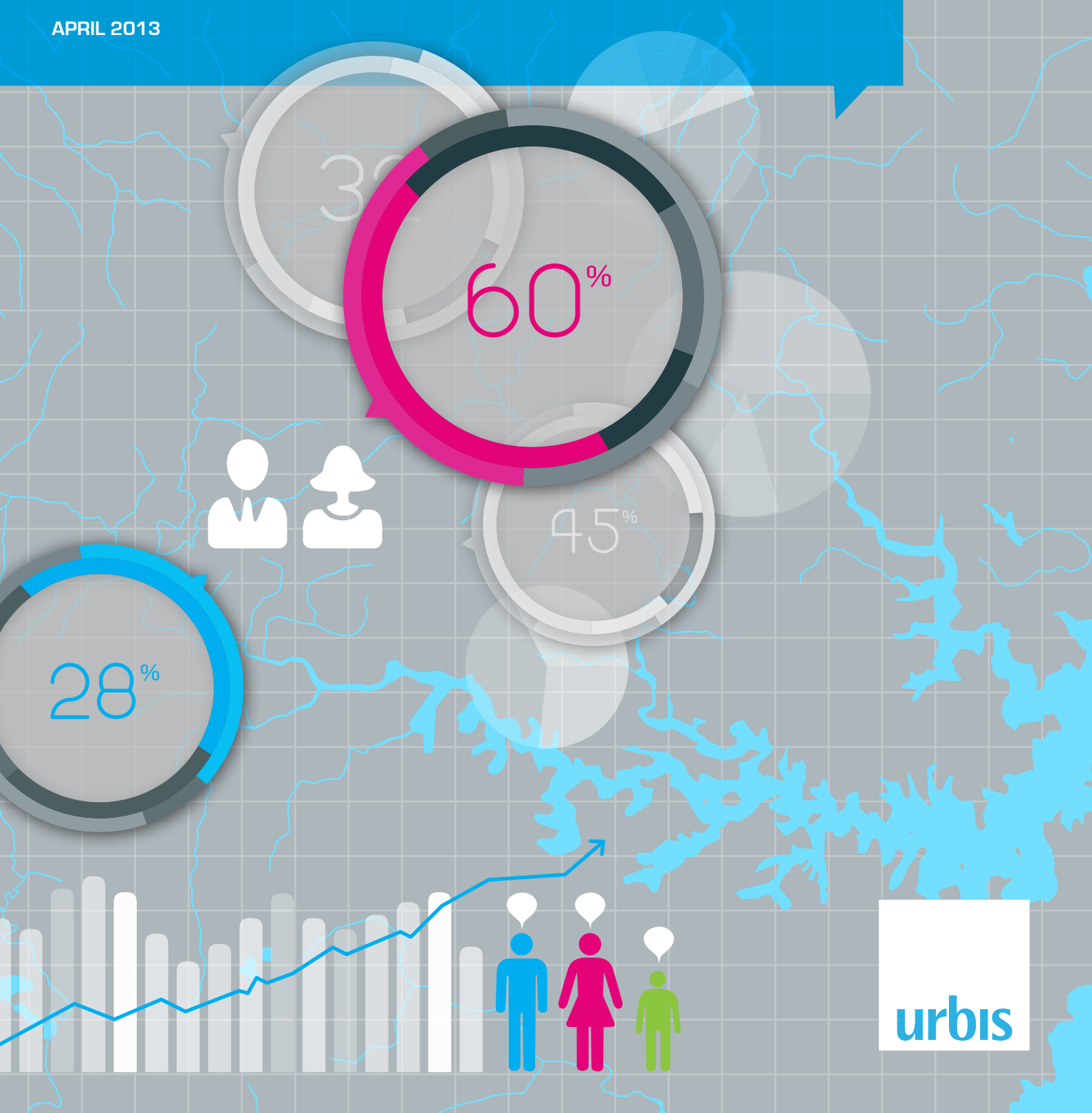
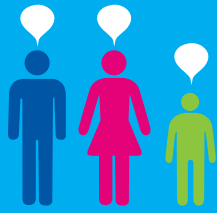


BROADER WESTERN SYDNEY EMPLOYMENT AREA ECONOMIC ISSUES AND DRIVERS STUDY

APRIL 2013



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CONTENTS

Executive Summary.....	5
1 Introduction.....	23
BACKGROUND	23
THE BROADER WSEA	23
HISTORY OF THE WSEA	24
STUDY OBJECTIVES AND APPROACH	25
DEFINITIONS.....	26
DATA SOURCES.....	26
ASSUMPTIONS AND LIMITATIONS	26
2 The Broader WSEA	29
OVERVIEW	29
LAND USE CONTEXT.....	30
PHYSICAL CHARACTERISTICS	31
KEY INFRASTRUCTURE.....	31
DEMOGRAPHICS.....	32
3 Economic Context.....	37
OVERVIEW	37
GLOBAL TRENDS	37
THE NATIONAL ECONOMY	39
THE NSW ECONOMY	41
THE WESTERN SYDNEY REGION.....	42
4 Sectoral Analysis.....	49
OVERVIEW	49
MANUFACTURING.....	49
CONSTRUCTION	51
TRANSPORT, POSTAL AND WAREHOUSING	51
SERVICES SECTOR	52
AGRICULTURE AND AGRIBUSINESS	53
HEALTH CARE AND SOCIAL ASSISTANCE	53
RETAIL SECTOR	54
INFORMATION AND COMMUNICATIONS TECHNOLOGY	55
SECTORAL ANALYSIS CONCLUSIONS	55
5 Industry Trends.....	57
OVERVIEW	57
DECLINE OF MANUFACTURING	57
THE CHANGING FACE OF MANUFACTURING - FROM 'MAKING' TO 'CREATING'	57
THE ROLE OF TECHNOLOGY IN MANUFACTURING.....	58



THE 'UPSIZERS'	59
CONSOLIDATION AND CO-LOCATION	59
E-RETAILING	60
CONVERGENCE AND THE 'DIGITAL ECONOMY'	60
CONCLUSIONS OF SECTORAL ANALYSIS AND INDUSTRY TRENDS	61
6 Employment Land Analysis	63
OVERVIEW	63
EMPLOYMENT LANDS MARKET ANALYSIS	64
EMPLOYMENT LANDS DISTRIBUTION	65
BUSINESS PARKS - DISTRIBUTION	70
EMPLOYMENT LAND SUPPLY	71
SYDNEY REGION SUPPLY	71
CONSTRAINTS TO EMPLOYMENT LAND SUPPLY WSEA	76
➤ Drivers of Demand	79
OVERVIEW	79
EMPLOYMENT LANDS – KEY DEMAND DRIVERS	80
AVAILABILITY OF LAND	84
BUSINESS PARKS – KEY DEMAND DRIVERS	85
EMPLOYMENT LANDS – KEY TRENDS	87
8 Forecast Demand	89
OVERVIEW	89
QUALITATIVE DEMAND ANALYSIS - GENERAL EMPLOYMENT LANDS	89
QUALITATIVE DEMAND ANALYSIS - OFFICE-BASED/BUSINESS PARK LANDS	90
DEMAND MODELLING	91
9 Opportunities + Interventions	99
OVERVIEW	99
DELIVERY OF INFRASTRUCTURE	99
CATALYST PROJECTS	100
THE ESTABLISHMENT OF A 'HUB'	101
CAPACITY BUILDING	104
ECONOMIC INCENTIVES	105
SUSTAINABLE INDUSTRY	107
10 Conclusion	108

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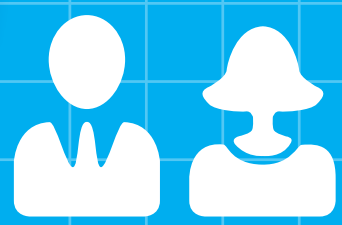
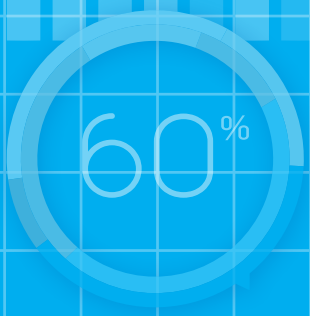
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EXECUTIVE SUMMARY

INTRODUCTION

This Economic Issues and Drivers Study (the Study) has been prepared on behalf of the NSW Department of Planning and Infrastructure (DP&I) to examine the economic impacts and drivers associated with the planning and future development of the Broader Western Sydney Employment Area (Broader WSEA). This study informs Structure Planning of the Broader WSEA for predominantly employment generating uses to support the long term economic growth of Sydney.

The NSW Government's '*Draft Metropolitan Strategy for Sydney to 2031*' (Draft Metropolitan Strategy) projects that Sydney requires some 625,000 additional jobs over the next 20 years to meet the employment needs of its growing population. The Broader WSEA is expected to play a key role in accommodating this employment growth and is identified as one of nine 'City Shapers' within the Draft Metropolitan Strategy. These 'City Shapers' have the potential to shape how the City functions and are critical in delivering the strategic vision for Sydney.

According to the vision in the Draft Metropolitan Strategy, by 2031 Greater Western Sydney will be home to more than half of the Sydney population and 50% of new jobs. The Broader WSEA has the potential to provide significant tracts of employment land with the capacity to accommodate the economic and employment growth needs of the city well into the future.

This Study aims to inform the Structure Plan for the Broader WSEA to quantify the likely demand for employment land over the next 30 years and to inform the land use mix and staging of release in consideration of current and projected market dynamics and trends.

STUDY OBJECTIVES AND APPROACH

The objectives of the Study are to:

- Provide accurate and current data on employment land supply and demand across the Sydney Region to inform the development of the Broader WSEA Structure Plan.
- To incorporate quantitative and qualitative analysis to provide robust economic input to the Structure Plan.
- To provide recommendations regarding the appropriate amount and type of employment and other land uses to be incorporated into the Structure Plan.
- To consider potential opportunities and possible interventions to alter the growth scenario and drive greater job diversity.
- To inform the staging and implementation of the Structure Plan.

The approach adopted for the study included the following key principles and steps:

- Utilise existing data and primary research to analyse quantitative and qualitative factors influencing supply and demand for employment lands across the Sydney Region.
- Examine and consider the role and function of the Broader WSEA in the stock of employment land across the Sydney Region.
- Identify and analyse global and industry trends to anticipate the key drivers of demand for employment lands into the future.
- Consider a variety of scenarios for the growth and development of the Broader WSEA and the implications for job creation and diversity.
- To draw upon local and industry knowledge to inform practical and realistic recommendations.



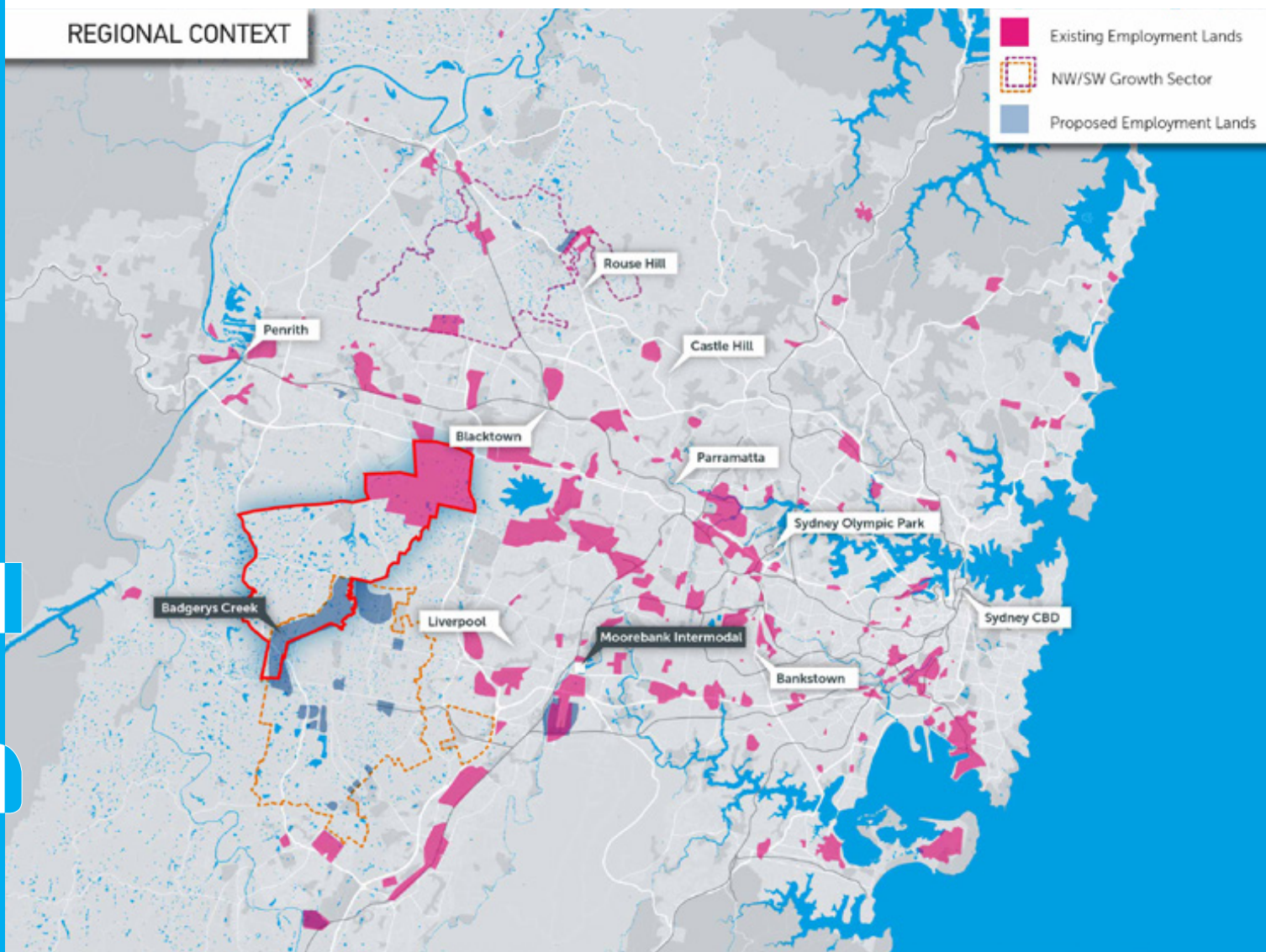
A program of stakeholder interviews was implemented as part of the Study in order to better understand the issues driving industrial development in the Broader WSEA and Greater Sydney region. The interview process provided valuable insights into the dynamics of Sydney's industrial property market as well as local issues that are influencing development on the ground. Interviews were conducted with a mix of stakeholders including landowners, industrial property developers, agents, local and State government and academics. Key issues raised during the interview process have been used to calibrate the findings of the study and inform the key recommendations.

THE BROADER WSEA

The Broader WSEA comprises approximately 10,700 ha of land generally bounded by the M4 Motorway to the north, the M7 Motorway to the east, the Northern Road to the west and the South West Growth Centre (SWG) to the south (refer **Figure ES1**). The area incorporates land within four local government areas, being Penrith, Liverpool, Blacktown and Fairfield (respective to share of land within the study area). The Broader WSEA is strategically located at the western limit of the Sydney Metropolitan Area between the North-West Growth Centre (NWGC) and SWGC. A significant proportion of the future residential population of Sydney is projected to be accommodated in these Growth Centres.

The study area incorporates part of the existing Western Sydney Employment Area (WSEA) identified and zoned under *State Environmental Planning Policy (Western Sydney Employment Area) 2009* (WSEA SEPP) in its northern extent and a section of the SWGC in its south-eastern extent. Of note, the Broader WSEA also includes the 1,700 ha Commonwealth-owned site at Badgerys Creek earlier earmarked for the second Sydney Airport.

FIGURE ES1 – BROADER WSEA – REGIONAL CONTEXT



ECONOMIC CONTEXT

The Organisation of Economic Cooperation and Development (OECD) notes that structural change in advanced economies often sees output shift from agriculture to manufacturing and then to services as economies develop.

Australia's economy is in the midst of this transition, resulting in structural economic changes at a national and State level characterised by a shift towards a services-based economy. Four global 'mega-trends' are widely recognised to be the drivers of these structural changes and are expected to continue over the next decade:

- National and global policy actions to address climate change;
- Demand and competition from emerging economies;
- The widespread adoption of new information technologies; and
- Demographic change, principally a growing and ageing population¹.

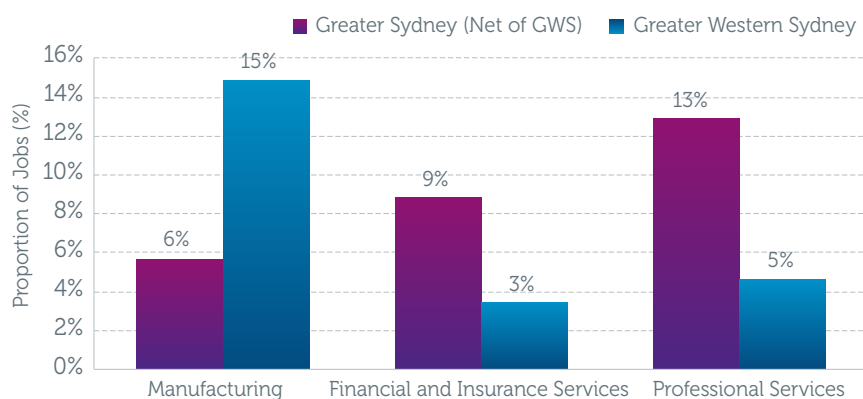
The manifestations of these structural changes in NSW include:

- A decline in the share of Gross State Product (GSP) for trade exposed sectors such as manufacturing and wholesale trade;
- Growing demand for health care and aged care facilities and services due to an aging population;
- Growing demand and higher prices for energy and industrial commodities;
- Increased demand for higher value goods and services (both domestic and international);
- Increasing competition in the Information and Communications Technology (ICT) and financial services sectors; and
- Opportunities for emerging industries and businesses in renewable energy and carbon reduction technologies.

The structure of Western Sydney's economy makes it particularly vulnerable to the trends described above when compared with the broader Sydney region. This is due to the overrepresentation of manufacturing jobs combined with an underrepresentation of jobs in high growth sectors such as financial and professional services, as illustrated in **Figure ES2**.

FIGURE ES2 – WESTERN SYDNEY – EMPLOYMENT BY INDUSTRY

TOTAL EMPLOYMENT BY INDUSTRY GREATER WESTER SYDNEY AND GREATER SYDNEY 2011

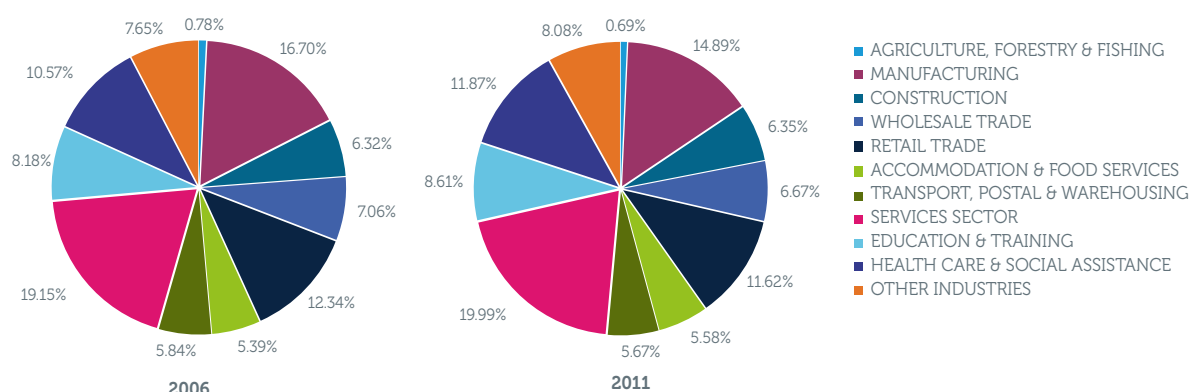


Source: ABS Census 2011

Over the five years from 2006 to 2011, the economy of Western Sydney has become increasingly service oriented with growth in the Services and Health Care and Social Assistance sectors. Over the same period declines have been experienced in manufacturing and wholesale trade in line with national and global OECD trends as shown in **Figure ES3**.

FIGURE ES3 – CHANGE IN WESTERN SYDNEY EMPLOYMENT SECTORS

CHANGE IN WESTERN SYDNEY EMPLOYMENT SECTORS GREATER WESTERN SYDNEY 2006 TO 2011



Source: ABS Census 2011

It should be noted that despite its decline, manufacturing remains a significant part of the Western Sydney economy. Further, whilst the sector has a declining share of GSP, total employment in the sector is likely to grow over the long term, albeit slower than other sectors.

SECTORAL ANALYSIS AND INDUSTRY TRENDS

A high level analysis of key industry sectors and trends that influence the potential mix of employment uses likely to be attracted to the Broader WSEA is provided in **Table ES1**.

TABLE ES1 – SECTORAL TRENDS AND IMPLICATIONS FOR BROADER WSEA

SECTOR	NOTABLE TRENDS	IMPLICATIONS FOR BROADER WSEA
Manufacturing Sector	<ul style="list-style-type: none"> Decline of traditional manufacturing as a share of economic output. Changing focus from 'making' to 'creating'. 'Upsizing' of traditional manufactures into importers. Increasing automation driving lower job densities. Advanced technologies changing the face of manufacturing such as 3D printing and scanning. Overall growth in job numbers in manufacturing in the long term, albeit at a slower rate compared to other sectors. 	<ul style="list-style-type: none"> With an over representation of jobs in the manufacturing sector in the region, Western Sydney is particularly vulnerable to the decline of this sector. Broader WSEA has competitive advantages for manufacturing operations in terms of access to workforce, available land area and separation from sensitive land uses such as residential development property prices. Broader WSEA is well placed to accommodate 'upsizers' with reasonable supply of large sites which are limited elsewhere in the Sydney region, with these groups diversifying from local manufacturing into import and distribution models requiring additional floorspace. Increasing proportion of 'professional' roles within the manufacturing sector driving greater job diversity for the Broader WSEA over time. Opportunities to build on the region's strength in manufacturing to position the Broader WSEA to become Sydney's Advanced Manufacturing Hub.

SECTOR	NOTABLE TRENDS	IMPLICATIONS FOR BROADER WSEA
Transport, Postal and Warehousing Sector	<ul style="list-style-type: none"> Increasing role of technology leading to larger warehouses and lower employment densities. Consolidation of facilities to achieve economies of scale resulting in larger facilities and corresponding need for larger sites. Growth of e-retailing driving changes in distribution patterns and associated warehousing spaces. Move towards a single large national distribution centre supported by a number of smaller 'satellite' distribution centres. 	<ul style="list-style-type: none"> Strong presence of freight and logistics within the Broader WSEA and demand expected to continue in the foreseeable future subject to infrastructure provision. Availability of large sites within the Broader WSEA and access to the M7 (and potentially, the Outer Sydney Orbital) provides a competitive advantage for attracting large warehousing and distribution facilities. Broader WSEA likely to attract large national distribution centres with satellite centres occurring in the middle and inner ring suburbs in closer proximity to the customer base.
ICT and Creative Industry Sectors	<ul style="list-style-type: none"> Convergence of these sectors into the 'Digital Economy'. Increasing adoption of advanced information technologies across a variety of sectors and subsectors. Proliferation of small and medium sized enterprises in this sector driving innovation and job creation. 	<ul style="list-style-type: none"> Currently, Sydney's nominated 'Digital Precinct' is located in southern Sydney around Surry Hills, Ultimo and Pyrmont. Businesses in this sector likely to seek agglomeration and locations with good access to a range of services, amenities and transport choices. Growth and development in this sector will drive innovation in other sectors including manufacturing and warehousing and distribution. Roll out of NBN in Western Sydney could make the area more attractive for these businesses and opportunity to position the area as the next Digital Precinct or Hub.
Health Care and Social Services	<ul style="list-style-type: none"> Growing and ageing population underpinning strong growth in demand for health care and in particular, aged care. Growing prosperity of the population also driving demand for health services. Increasing workforce participation amongst female workers will drive increasing demand for childcare services. 	<ul style="list-style-type: none"> Medical hubs already emerging in Western Sydney including Westmead Specialist Medical Precinct and Penrith Health and Education Precinct. Health infrastructure is population driven and generally attracted to centre locations therefore unlikely to see significant jobs in this sector in the Broader WSEA in the absence of a catalyst such as a new hospital. Potential demand for child care services in the Broader WSEA as the worker population increases.
Education	<ul style="list-style-type: none"> Australia increasingly recognised for world-class tertiary education facilities. Growing demand for education from international students. Emergence of the 'knowledge hub' characterised by a clustering of university campuses, research facilities and aligned businesses. Emergence of international university campuses. Ongoing development of schools within residential areas. 	<ul style="list-style-type: none"> Education clusters or precincts require an anchor such as a University, TAFE or research facility. University of Western Sydney (UWS) currently has five campuses and will focus the majority of its growth in Parramatta. Federal grant recently given to UWS to establish a 'hub' around the UWS Penrith Campus. Therefore unlikely to establish facilities elsewhere in the region in the foreseeable future. Dedicated research partnerships with industry may be the best mechanism to attract the tertiary education sector into Broader WSEA.



SECTOR	NOTABLE TRENDS	IMPLICATIONS FOR BROADER WSEA
Professional Services	<ul style="list-style-type: none"> ▪ Rapid growth sector due to restructuring of the economy towards services rather than goods. ▪ Trend towards co-location of administrative headquarters with operational facilities and warehousing and distribution centres. ▪ Rising proportion of office content within industrial/ warehousing developments. ▪ Majority of office demand will be centre based whilst some will be accommodated within business parks. 	<ul style="list-style-type: none"> ▪ Broader WSEA's current lack of public transport and mix of amenities makes it difficult to attract stand-alone commercial office spaces. ▪ Professional and financial service businesses generally seek out centre locations to be proximate to clients and associated businesses. ▪ Distance of the Broader WSEA from the CBD and core urban areas likely to discourage businesses from relocating here due to risks to workforce retention. ▪ Anecdotal evidence of emerging demand for co-location of office space with warehousing within the existing WSEA. ▪ May see some increasing demand for office space within the Broader WSEA in association with industrial and warehousing development as manufacturing continues to professionalise and a critical mass of logistics operations develops.
Retail Trade	<ul style="list-style-type: none"> ▪ Growth of E-retailing ▪ 'Black Box' distribution centres ▪ Major retailers doing their own distribution rather than outsourcing to specialist logistics firms. ▪ Future retail development will continue to be focused around residential growth. ▪ In the absence of a significant residential population to underpin larger format retail centres, retail provision in a business park setting will continue to be smaller scale with a convenience focus. 	<ul style="list-style-type: none"> ▪ Growth in e-retailing driving different distribution patterns influencing the type and location of demand for warehousing and distribution sites. ▪ Observed trend for consolidation into a single national distribution centre supported by a number of smaller satellite distribution centres which have proximity to the customer base and can deliver goods within a few hours of the receipt of the order. ▪ The Broader WSEA is well positioned to attract demand for larger distribution centres including 'Black Box' distribution centres as occurs in the existing WSEA. ▪ Retail offer within Broader WSEA would likely be focused on servicing the local workforce, therefore dominated by convenience food and beverage with a likely mix of: <ul style="list-style-type: none"> – Smaller food catering tenancies such as cafés – Fast food/drive through take-away outlets; and – Service stations servicing passing auto traffic. ▪ A larger supermarket based centre could only be considered in a business park setting is also supported by a local resident population.

Analysis of industry sectors and trends indicates that demand for employment land within the Broader WSEA over the short to medium term is expected to remain rooted in freight and logistics and general industry where the precinct offers competitive advantages for businesses.

But this does not automatically translate into a homogenous landscape of warehouses and an inherently limited range of employment opportunities. Trends already occurring within the manufacturing sector are resulting in a change in the type and mix of jobs within the sector to include a greater proportion of 'professional' roles. The ELDP 2010 Report indicated that in 2006 around 25% of all jobs in Sydney employment lands were in professional and managerial roles and this proportion has likely increased since.

As advanced manufacturing evolves in Sydney, this trend is expected to continue to grow, with many more jobs at the front-end, design part of the value chain. Opportunities and interventions to drive greater job diversity within the Broader WSEA are also available and are discussed further in subsequent sections of this report.

SYDNEY REGION EMPLOYMENT LAND ANALYSIS

EMPLOYMENT LAND SUPPLY

The Sydney Region currently has supply of some 15,394 ha of zoned employment land of which around 70 per cent (10,775ha) is developed and 30 per cent (4,620 ha) remained undeveloped at January 2012². The bulk of undeveloped employment land is located in the Western Sydney and Central Coast regions.

The Broader WSEA constitutes a total area of approximately 10,700 ha. Excluding the zoned land within the existing WSEA (1,800 ha), this equates to an additional supply of potential employment land of some 8,900 ha. In order to appreciate the scale of the study area and its potential contribution to the supply of employment land for the Sydney Region, this equates to just over 80% of the existing, developed employment lands stock of the Sydney Region.

Of the undeveloped land in the Sydney Region (including the Central Coast), some 830 ha is serviced (water and sewer connection) and therefore potentially ready for development. This zoned and serviced land represents three years supply at a high take up rate of 300 ha per annum or ten years supply at a low take up rate of 80 ha per annum. Recent history suggests that take up is likely to be at the mid to lower end of this range as shown in **Table ES2**.

TABLE ES2 – ANNUAL TAKE UP RATES – 2008-2011

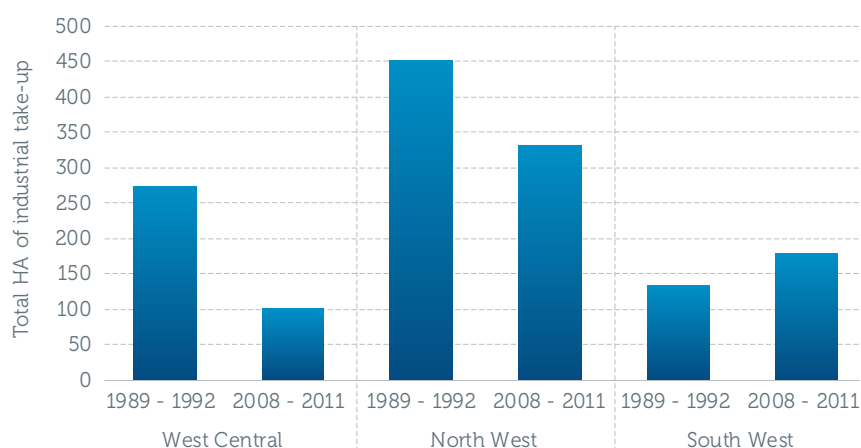
YEAR	TAKE UP RATE PER ANNUM (HECTARES) - SYDNEY REGION TOTAL	TAKE UP RATE PER ANNUM (HECTARES) - WESTERN SYDNEY
2008	264	232 (88%)
2009	205	150 (73%)
2010	153	115 (75%)
2011	120	113 (94%)
TOTAL	742	610 (82%)
AVERAGE	186	153 (82%)

Source: NSW DP&I Employment Lands Development Program.

In order to better understand and project likely future take up of employment land, a review of historic take up rates of employment land in Western Sydney was undertaken, as shown in **Figure ES4**.

FIGURE ES4 – HISTORIC TAKE UP RATES – EMPLOYMENT LANDS

4 YEAR TAKE-UP OF INDUSTRIAL LAND (HA) BY SUB REGION



Note: 1989-1992 ELDP used Council development consent data to measure take-up, whereas recent 2008-2011 ELDP uses Sydney Water development status data (i.e. vacant to developed).

The analysis shows that take up rates over the past four years in Western Sydney have been slower than 25 years ago with the exception of the South-West subregion allowing for the fact that the different indicator used may have exaggerated the total. This is despite significant increases in population over the same time period (noting the differences in data collection methodologies). This is reflective of a number of potential factors:

- Weaker consumer driven markets (which in turn drive the need for storage and distribution of consumer goods);
- Cyclical economic factors;
- Mismatches between supply and the needs of the market in terms of lot sizes, serviceability and/or infrastructure;
- Access to finance during the global financial crisis (GFC) due to weak economic conditions;
- Structural economic differences with reduction in industry sector share of total employment; and
- Constraints to obtaining finance for development that is not connected to infrastructure (as it is difficult to secure debt funding against non-income generating land).

As shown in **Table ES2**, take up of employment land in the Sydney Region is on average, moderate with a four year average annual take up rate of 186 ha. Based upon this average annual take up rate, Sydney has just under four and a half years supply of zoned and serviced employment land which falls slightly below the accepted supply benchmark of five to seven years.

In contrast, the Sydney Region has supply of Strategy Identified employment lands of 24-91 years and 13-47 years of undeveloped zoned, unserviced supply (based upon low and high take up rates respectively). This supply is well in excess of accepted supply benchmarks for these land categories. It therefore appears, that any short term supply issues are related to land servicing, rather than the reservation or zoning of land.

In terms of business parks, there currently exists some 232ha of zoned, undeveloped business park land within the Western Sydney region, located within the two growth centres. Some capacity also remains within established business parks in the Sydney region including Norwest Business Park which has 15% vacancy.

In addition, the Draft Blacktown Local Environmental Plan (LEP) currently on public exhibition proposes to rezone some 180 ha of industrial land to B7 - Business Park. Should the Draft LEP be gazetted in its current form the supply of undeveloped, zoned business park land in Western Sydney would almost double to some 410 ha.

DRIVERS OF DEMAND

Analysis of historic take up rates of employment lands and associated distribution, economic conditions and industry trends, along with a targeted program of stakeholder interviews has identified some clear drivers for employment land demand in the Sydney region.

Interrogation of the key issues raised during the interview process revealed that in general for the development of employment lands, preferred locations are:

- Close to transport links;
- Proximate to motorways and high capacity arterial roads;
- Access to freight distribution infrastructure such as intermodal terminals and public transport opportunities;
- Close to the customer base - particularly for distribution centres; and
- Close to other industrial land and separated from residential land.

Other factors noted as important influences on location decisions include:

- Low rent/land price;
- Access to appropriately sized sites;

- Proximity to appropriately skilled workforce; and
- Quantum of infrastructure/servicing cost or contributions.

The above factors indicate that location decisions are driven by the need for an efficient supply chain as well as by price and ‘quality’ of land/building stock. Analysis of these factors has identified four key ‘demand drivers’ being:

- Population growth and demographics – this encompasses both the location of the customer base and the workforce;
- Property prices – relative to the price point at which the business is sufficiently profitable and competitive with other potential locations;
- Infrastructure – allows for efficiency of operations and efficiency of connections throughout the supply chain; and
- Availability of land – sites that meet the demands of modern operations and offer opportunities for efficiencies through the adoption of new technologies, new operating practices and economies of scale.

EMPLOYMENT LAND TRENDS

Trends in employment land demand patterns and business movements and relocations within Sydney region employment lands have been examined to identify the key ‘push and pull’ factors driving demand in the existing WSEA. These are the factors influencing the location decisions of those businesses which have chosen to move to the existing WSEA over other areas of the Sydney region. An understanding of these dynamics assists in projecting likely future patterns of demand within the Broader WSEA.

The analysis revealed that relocations within the Sydney employment lands market are prevalent from the Inner Ring suburbs such as Matraville and Alexandria as well as the suburbs of Wetherill Park, Smithfield and Rosehill to the WSEA.

These relocation decisions are generally driven by a combination of attributes of the WSEA which make it a desirable business location (pull factors) and issues related to the functionality or competitiveness of alternative locations (push factors).

The key push and pull factors driving this pattern are summarised in **Table ES3**.

TABLE ES3 – KEY PUSH AND PULL FACTORS, BROADER WSEA

KEY PUSH FACTORS	KEY PULL FACTORS
<ul style="list-style-type: none"> ▪ Ageing building stock that does not meet the needs of modern operations and is expensive to upgrade. ▪ Ageing infrastructure that may not accommodate modern vehicles and equipment. ▪ Encroachment of other, sensitive land uses such as residential which limits the productivity and efficiency of operations. ▪ Value for money – higher underlying land values drive higher rents per square metre when compared with other locations such as Western Sydney. ▪ Increasing traffic congestion in Inner and Middle Ring areas that impacts upon productivity. ▪ Limited supply of large sites that can accommodate expansion or consolidation of operations. 	<ul style="list-style-type: none"> ▪ Availability of large sites which are in limited supply elsewhere. ▪ Presence of motorway infrastructure providing access to broader Sydney Metropolitan area. ▪ Low underlying land values allowing for lower rents. ▪ Greenfield precinct enabling custom built facilities to meet modern industry requirements. ▪ Purpose built infrastructure to accommodate modern heavy vehicles. ▪ Separation from residential land uses reducing conflict and restrictions on operations. ▪ Access to a skilled workforce. ▪ Emergence of industry clusters.

This analysis reflects the WSEA’s competitive advantages in attracting development and investment in core industrial sectors.



QUALITATIVE DEMAND ASSESSMENT

In order to provide a comprehensive view of likely future demand for land within the Broader WSEA qualitative and quantitative demand assessments were undertaken as part of the Study. The qualitative assessment focuses on the key drivers of demand for general employment lands development and for business park location.

GENERAL INDUSTRIAL EMPLOYMENT LANDS DEVELOPMENT

The Broader WSEA is considered against the key demand drivers identified for employment lands in **Table ES4**.

TABLE ES4 – BROADER WSEA QUALITATIVE DEMAND ASSESSMENT

ADVANTAGES	DISADVANTAGES
Infrastructure	
<ul style="list-style-type: none"> Proximity to key regional infrastructure corridors including the M4 and M7 Motorways supports access to distribution networks and nodes such as the Port and Airport. 	<ul style="list-style-type: none"> The distance from Sydney CBD, Port and Airport negatively affects supply chain efficiencies. Represents a competitive disadvantage compared to other, more established industrial areas closer to centres.
<ul style="list-style-type: none"> Proximity to planned infrastructure such as intermodal terminals (Moorebank and Eastern Creek) and the Outer Sydney Orbital. 	<ul style="list-style-type: none"> Lack of comprehensive network of infrastructure and services increases establishment costs and constrains land supply.
	<ul style="list-style-type: none"> Lack of transport options, including public transport affects access to workforce and ability to attract and retain staff.
	<ul style="list-style-type: none"> Lack of existing social or economic infrastructure to act as a catalyst or anchor for other employment uses such as a University, Hospital, Airport or similar.
Population and demographics	
<ul style="list-style-type: none"> Access to a significant and growing labour market in the broader Western Sydney region, particularly within the North West and South West Growth Centres. 	<ul style="list-style-type: none"> Lack of existing retail amenity, community infrastructure and social services to support working population.
<ul style="list-style-type: none"> Skills and qualifications of Western Sydney workforce attractive to many businesses. 	<ul style="list-style-type: none"> Current lack of proximate residential housing, including executive housing opportunities, to support a broader range of employment generating development.
Land availability	
<ul style="list-style-type: none"> Large expanse of predominantly cleared land which can offer large floorplate development lots and long term pipeline of supply. 	<ul style="list-style-type: none"> Some topographical constraints in certain parts of the study area limit the feasibility of development for industrial purposes.
<ul style="list-style-type: none"> Generally flat or undulating landscape, suitable for industrial development. 	<ul style="list-style-type: none"> Creeklines dissecting the study area and associated floodplain reducing total developable lands.
<ul style="list-style-type: none"> Separation from sensitive land uses such as residential development reducing the potential for land use conflict. 	<ul style="list-style-type: none"> Gaps in infrastructure and servicing restricting the real availability of land for development.
<ul style="list-style-type: none"> A mix of large landholdings and smaller, fragmented landholdings offering opportunities for a diverse range of lot sizes and property prices. 	<ul style="list-style-type: none"> Fragmented land ownership may inhibit implementation and delivery.
	<ul style="list-style-type: none"> Land ownership patterns may affect access to sites for some operators.

ADVANTAGES	DISADVANTAGES
Property prices	
<ul style="list-style-type: none"> Competitive land values when compared with other, more established industrial lands in the Sydney Region. 	<ul style="list-style-type: none"> Cost of development of greenfield industrial land due to infrastructure and servicing requirements.
<ul style="list-style-type: none"> Opportunities for greenfield industrial development which are not commonly offered elsewhere in the Sydney region. This allows for custom-built facilities to suit the needs of modern operations at competitive rents/prices. 	
<ul style="list-style-type: none"> A mix of product types and price points. 	

The qualitative demand assessment for the Broader WSEA for employment lands development indicates that the area has a number of competitive advantages including availability of large lots and property prices which mean that it is well placed to attract development for industrial uses.

BUSINESS PARKS

A similar exercise was undertaken for business park development based upon the key success criteria identified for business parks, as shown in **Table ES5**.

TABLE ES5 – BROADER WSEA QUALITATIVE DEMAND ASSESSMENT - BUSINESS PARKS

ADVANTAGES	DISADVANTAGES
Access to public transport – preferably rail	
<ul style="list-style-type: none"> Located in close proximity to the M4 and M7 motorways with access to a number of key interchanges. The Broader WSEA is proximate to the potential alignment of the Outer Sydney Orbital corridor. This is a mass transit corridor which could potentially accommodate public transport such as heavy rail. A possible link between the South West Rail Line and the North West Rail Link could be established along the Outer Sydney Orbital alignment providing passenger rail services to the Broader WSEA. 	<ul style="list-style-type: none"> There is no existing or committed public transport to the Broader WSEA in current government agendas. The Broader WSEA is unlikely to have the residential population density required to justify heavy rail services to the area in the short to medium term.
Links to freight corridors and transport nodes	
<ul style="list-style-type: none"> Connections to the proposed Moorebank Intermodal Terminal would potentially drive some demand from the south of the Broader WSEA. Proposed intermodal and freight line located within the Broader WSEA in the Eastern Creek precinct that may assist in driving co-location of business park users with the freight based operations. 	<ul style="list-style-type: none"> The Broader WSEA is distant from the port and airport and there is currently no freight rail or intermodal facility servicing the area and no committed projects in this regard. The existing WSEA suffers from a lack of comprehensive infrastructure and significant investment in infrastructure would be required to make the area attractive and suitable for higher intensity employment uses.
Land area of 50-180 ha to allow for expansion	
<ul style="list-style-type: none"> Significant supply of land available in single ownership parcels to facilitate development over time. Commonwealth site presents an opportunity for the establishment and growth of a business park style development in the longer term. 	
Critical mass of employees – at least 8,000 jobs (concentrated in one location, rather than dispersed)	
<ul style="list-style-type: none"> Significant supply of land available in single ownership parcels to facilitate development of this scale over time. 	<ul style="list-style-type: none"> Require a driver to stimulate demand for this intensity of employment development in a single location within the Broader WSEA.



ADVANTAGES	DISADVANTAGES
Proximity to workforce – within 30 minute commute	
<ul style="list-style-type: none"> Located between the two Sydney growth centres which are expected to house a significant proportion of the Sydney population into the future. The skills and qualifications of the Western Sydney workforce would be attractive to many businesses. 	<ul style="list-style-type: none"> Currently limited residential population density within the Broader WSEA and immediate surrounds. Lack of transport connections to the Broader WSEA from surrounding residential areas.
Relationship with nearby economic or social infrastructure such as a University, hospital or other.	
<ul style="list-style-type: none"> Significant supply of land available in single ownership parcels to facilitate major economic or social infrastructure in the future. 	<ul style="list-style-type: none"> No existing or committed catalyst infrastructure to drive the development of a business park or similar cluster of higher density employment.

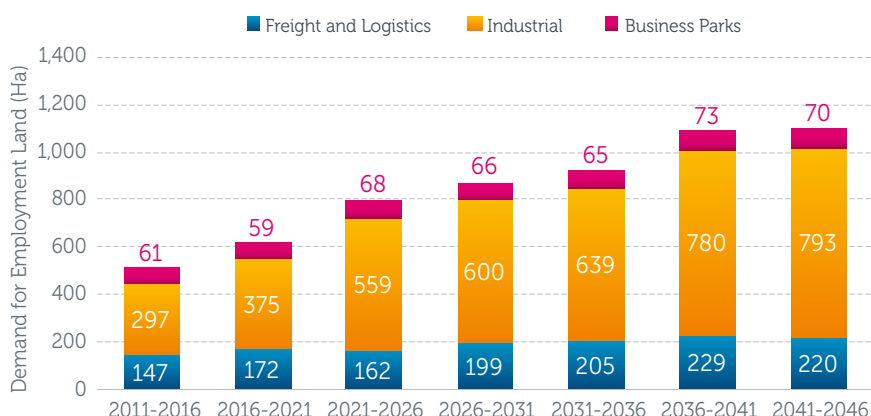
The qualitative demand assessment of the Broader WSEA for business park development highlights a number of shortfalls in location and infrastructure which would impact upon the establishment of a successful business park within the precinct under current conditions. However as infrastructure investment in the area increases and development of the precinct evolves over time these pertinent factors may change, requiring a review of this analysis. Whilst the establishment of a business park within the Broader WSEA is not expected to happen in the short-term, it is important that opportunities for this form of higher intensity employment generating development to evolve are not precluded as market demand emerges and deepens.

FORECAST DEMAND

Figure ES5 illustrates the results of the demand modelling undertaken for the project, showing employment lands demand within the Greater Western Sydney Region to 2046 for employment uses broken into three key categories being Freight and Logistics, General Industrial and Business Parks.

FIGURE ES5 – DEMAND FOR EMPLOYMENT LAND

DEMAND FOR EMPLOYMENT LAND GREATER WESTERN SYDNEY, 2011 TO 2046



Source: Urbis, Bureau of Transport Statistics 2012, ABS Census 2011

The results of the modelling indicate that aggregate demand for employment land in Greater Western Sydney to 2046 is:

- 1,335 ha for Freight and Logistics uses, with a lower range of 1,169 ha and an upper range of 1,500 ha;
- 4,042 ha for General Industrial development, with a lower range of 2,508 ha and upper range of 5,577 ha; and
- 462 ha of office employment lands in Business Parks, with a lower range of 390 ha and upper range of 535ha.

There is currently 5,754 ha of undeveloped zoned and proposed (in published strategies) industrial land in Western Sydney, 2,386 ha of which is already within the Broader WSEA. This includes 1,078 ha of proposed industrial land identified in the SWGC Structure Plan which overlaps with the Broader WSEA. Allowing for a 20% contingency for roads, services and environmental conservation, it can be assumed that some 4,603 ha could be potentially developed in the future. Demand forecasting indicates total industrial employment land demand within Western Sydney to 2046 of 5,377 ha. This translates to net demand for general employment lands (encompassing demand within the freight and logistics and industrial sector) within the Broader WSEA of 774ha to 2046, which is in addition to the 1,078 ha of proposed industrial lands already identified in the SWGC Structure Plan. This equates to a net additional demand of approximately 1,850 ha within Broader WSEA to 2046.

In relation to 'office based' employment demand in Western Sydney, which is forecast at 1,541 ha, some 70% of this is projected to be accommodated within centres (based on the share of new employment directed to business parks and centres within Western Sydney over the past 10 years). The remaining, 30% of demand is projected to be directed to business parks, which could account for approximately 462ha business park land to 2046. Current supply of undeveloped, zoned business park land in Western Sydney is estimated at 232ha. A further 180ha is identified as potential business park land within the Draft Blacktown Local Environmental Plan currently on exhibition. Net demand for business park land which could be accommodated within the Broader WSEA is therefore approximately 230 ha excluding the potential from Blacktown's proposal. This demand is not expected to emerge until the later stages of the 30 year timeframe and would be subject to the provision of appropriate infrastructure and amenities. Further demand for business park development within the Broader WSEA may emerge beyond the 30 year timeframe and may be driven through catalyst infrastructure or projects as described later in this report.

Demand forecasting therefore indicates the need to plan for a total of approximately 2,080 ha of future employment lands within Broader WSEA, comprising approximately 1,850 ha of industrial based employment land and a further 230 ha of office-based employment land. Development of this supply over the next 30 years could potentially generate some 36,109 industrial jobs and a further 20,781 office-based jobs.

The potential supply of new employment land in the Broader WSEA significantly exceeds demand over the next 30 years. As such, the staging and sequencing of release of land within the Broader WSEA requires careful consideration.

Beyond 2046, the Broader WSEA is expected to attract further demand for a mix of employment uses though the exact industry mix cannot be accurately predicted at this time horizon. Assuming the continuation of similar industry and economic trends and the delivery of a significant catalyst project on the Commonwealth-owned site, the development of the Broader WSEA at full capacity has the potential to generate some:

- 170,000 industrially based jobs
- 42,000 office-based jobs.



OPPORTUNITIES AND INTERVENTIONS

A number of opportunities and interventions exist that have the potential to further drive the growth and development of the Broader WSEA beyond the assumptions made for the purposes of this Study. Many of these mechanisms would likely enhance the density and diversity of employment opportunities achievable within the Broader WSEA. These opportunities and interventions include:

DELIVERY OF INFRASTRUCTURE

One of the biggest challenges for growth and development of the WSEA and Broader WSEA is the provision of infrastructure at both regional and local levels. The sheer scale of the precinct and its distance from the core urban areas of Sydney mean that the cost of infrastructure delivery to the area is significant. The resultant gaps in economic and community infrastructure within the area are resulting in supply constraints which lead to delayed growth and a reduced ability for the region to compete with other better serviced employment precincts within Sydney.

Alternative ways of funding infrastructure within the Broader WSEA must be considered if the full potential of the area is to be realised. Potential models for consideration might include:

- Upfront funding of core infrastructure by Government;
- Establishment of an Infrastructure Investment Fund for Western Sydney with seed funding attracted from State revenue (possibly through the Restart NSW program) and ongoing funding through the pooling of local Section 94 contributions for the area and/or a levy applied to rates across the Sydney Metropolitan Area;
- Infrastructure bonds; and
- Tax Increment Financing.

The provision of enabling or catalyst infrastructure to the WSEA and Broader WSEA would change market dynamics in the region and drive demand for a wider variety of employment generating uses.

CATALYST PROJECTS

Catalyst projects are generally defined as those which instigate change, drive progress or stimulate activity and further investment beyond the limits of the project itself. A catalyst project within the Broader WSEA has the potential to change the economic and social fabric of the precinct and subsequently, its investment profile.

These projects might include catalyst infrastructure such as road or rail projects, health and education facilities, intermodal facilities, airports and ports or significant developments across large sites which introduce a range of new amenities, services or facilities which work to change the landscape or image of the precinct. Due to the scale of investment required, these types of projects generally require some form of Government involvement or leadership.

Potential catalyst projects within and surrounding the Broader WSEA with possible flow on effects for the investment and jobs profile of the precinct include:

- The proposed Moorebank Intermodal Terminal;
- The Outer Sydney Orbital;
- A dedicated freight rail line to the area and new intermodal terminal at Eastern Creek;
- The early roll out of NBN to the precinct; and
- The establishment of a 'hub' as discussed further below.

THE ESTABLISHMENT OF A 'HUB'

The concept of 'hubs' is driven by the trend for businesses to agglomerate in a single area, seeking the benefits of knowledge sharing in particular common, or related areas in order to maximise innovation and productivity. Certain industries are driven more by the forces of agglomeration than others – particularly those in which knowledge is their commodity, such as high-tech and creative industries, ICT and research and development.

With the shift towards a 'knowledge-based economy' in Australia and elsewhere in the world, 'hubs' are expected to become more prevalent and more important to economic development and to the competitiveness of Sydney with other Global Cities.

In considering the potential for a 'hub' in the Broader WSEA the nature and focus must be in a field in which the precinct has a natural competitive advantage. The most effective hubs are generally those where the types of businesses attracted to the hub would have otherwise evolved in the area naturally, but perhaps over a longer time period and/or in a more dispersed pattern. Encouraging the development of businesses in locations which are inherently uncompetitive is likely to limit the success and sustainability of the hub.

Some potential industry focuses for a 'hub' in the Broader WSEA might include:

- An advanced manufacturing hub with a focus on the development of technologies for advanced and digital manufacturing;
- A renewable energy and sustainable industry hub, drawing upon the strengths of the area in terms of land availability and large expanses of roof which could be utilised for the capture of both rainwater and solar power;
- A food science and technology hub building upon the area's history of poultry farming and horticulture; and
- A second Sydney Digital Precinct, should early NBN services be provided to the area.

The establishment of a hub in the Broader WSEA would require Government leadership and commitment to bring together relevant parties and create the momentum needed for the project to be a success. A level of investment in critical infrastructure would also be required for such a precinct to be viable.

CAPACITY BUILDING

Capacity building as applied to industry generally refers to a process by which barriers to productivity within a sector or business are identified and measures introduced or implemented to remove these barriers, allowing that sector or business to be more successful.

There are many successful businesses within the Western Sydney region which have been able to adapt to changes in economic conditions and industry dynamics, however many businesses which might otherwise make a significant contribution to job creation and/or diversity may not be reaching their full potential.

This is particularly important when considering small and medium enterprises (SMEs) which are critical to job provision and diversity and innovation. SMEs require certain support systems to be successful and are more vulnerable to economic fluctuations which may restrict their ability to access finance. In this respect; UWS notes that the critical factors for the success of SMEs include:

- Access to appropriately structured and supervised financial capital streams;
- Availability of low-entry cost premises with quality IT support and general amenity;
- Access to learning facilities including appropriately trained and experienced brokers and advisers in production, financing and marketing domains; and
- Access to innovation resources to enable pathways to growth and competitiveness.³

Opportunities for SMEs to establish within the Broader WSEA, particularly when combined with the

³ University of Western Sydney (2008) 'North West and West Central Sydney Employment Strategies.



establishment of a 'hub' as described previously, significantly enhances the potential for innovation and diversity within the precinct. The NSW Department of Trade and Investment (DT&I) is currently working with local industry on building capacity to engage in global supply chains. The outcomes of this program may provide opportunities for similar, targeted programs to build capacity within key Western Sydney employment sectors.

SUSTAINABLE INDUSTRY

Consultation with various landowners within the existing WSEA has revealed some interest in the implementation of sustainable features within industrial estates in the precinct such as rain water harvesting and solar energy/cogeneration.

Amongst the developers interviewed as part of the project, there were mixed views about whether such initiatives would be economically viable, as there is a concern that industrial tenants may be unwilling to pay additional rent to cover the introduction of sustainable features into their developments. There is also concern that these technologies remain too expensive for widespread use within industrial development which generally operates at lower profit margins than other forms of development and as such affects the ultimate viability of the project.

However, were these initiatives applied at a precinct scale with costs shared amongst landowners, they may become more economically viable. The benefits of these initiatives, apart from the direct environmental impact would ultimately be in the longer term energy savings and the potential marketing of 'Green Estates' which may attract premium rents. As the adoption of sustainable features within industrial development is not widespread in the Sydney region, the positioning of industrial estates within the Broader WSEA in this way may also attract a wider range of businesses and industries which are specifically seeking the 'Green' image.

ECONOMIC INCENTIVES

A range of potential incentives could be considered to encourage development and investment within particular areas or particular sectors.

Special Economic Zones (SEZs) are one form of incentive, generally applied to economically depressed areas as a way of encouraging investment, regeneration and economic activity.

A program of targeted incentives may be effective in improving the Broader WSEA's competitive advantage in attracting business investment. However, any such program would need to be based upon carefully formulated policy to determine the spatial extent of the zone and/or whether it should be applied only to specific industry sectors or business types.

In considering such a program for the Broader WSEA, it is also important to examine the potential implications of incentives on other, competing areas as such schemes may simply encourage businesses to relocate from other areas within the region and may not therefore translate to economic growth and diversity on a regional scale.

The 'Enterprise Zones' put forward in the NSW Government's Green Paper entitled '*A New Planning System for NSW*' could potentially be utilised to incentivise development within the Broader WSEA for certain land uses or business types which are seen as particularly desirable for the region. The details of the implementation of these zones will be released with the Government's White Paper and further analysis could be undertaken at that point with regard to their potential application within the Broader WSEA. It should be noted that any 'Enterprise Zone' within the Broader WSEA would need to be supported by appropriate physical infrastructure and would therefore require some level of up front capital investment.

CONCLUSION

The Study has examined the key economic drivers affecting the employment lands market in the Sydney Region and more specifically, the implications for potential future release and development of land within the Broader WSEA.

The latest ELDP report states that the Sydney Region has 15,394ha of existing zoned employment land. Of this, there is some 830 ha of undeveloped zoned and serviced employment land supply which represents just under four and a half years of supply at moderate annual take up rates. Whilst undeveloped zoned and serviced supply falls just under accepted supply benchmarks, Sydney's supply of undeveloped zoned and unserviced employment land and strategy identified employment land are both well in excess of supply benchmarks.

Demand modelling undertaken as part of the Study indicates that over the 30 year period to 2046 there is expected to be a total demand for employment land within the Western Sydney Region of 5,377ha. Taking account of existing supply in the region of both proposed and undeveloped zoned employment lands, this translates to a net demand of approximately 2,080 ha of employment land within the Broader WSEA, comprising approximately 1,850ha of industrial-based employment land and a further 230ha of office-based employment land.

Based upon observed and anticipated trends and known planned and committed infrastructure, demand within the Broader WSEA is likely to remain driven by freight and logistics and general industry in the short to medium term. The establishment of office-based employment land within the Broader WSEA will likely take time to develop and evolve as the population of the region expands, transport infrastructure improves and market demand deepens. As such, this component of demand is likely to evolve in the later stages of the 30 year horizon unless certain interventions or catalyst projects (as described earlier in this report) are delivered which alter the growth scenario.

Spatially, demand for employment land is expected to continue to move outwards from the CBD towards the west as:

- Businesses consolidate and seek larger sites;
- Businesses continue to seek greater supply chain efficiencies;
- Population increases in Western Sydney;
- Land values appreciate in established inner city industrial precincts; and
- Traffic congestion continues to increase in Inner and Middle ring areas of Sydney.

The Broader WSEA therefore plays an important role in the network of employment lands across Sydney, providing a supply of land, at competitive rates to meet the needs of the industrial property market. However, constraints to this supply exist, principally in the form of infrastructure and servicing which need to be addressed if the full development potential of the precinct is to be realised.

Whilst the Broader WSEA may not be required in its entirety to support employment lands development over the next 30 years, the area remains a strategically important employment land resource for the long term future as the single largest, relatively unconstrained area of potential strategy identified employment land to service the economic growth of the Sydney region. The opportunity cost of releasing this land to alternative uses would therefore be significant and it is recommended that the Structure Plan for the Broader WSEA reserve the bulk of these lands for future employment development as demand arises.





1 INTRODUCTION

BACKGROUND

Urbis has been engaged by the NSW Department of Planning and Infrastructure (DP&I) to examine the economic issues and drivers associated with the planning and future development of the Broader Western Sydney Employment Area (Broader WSEA). The purpose of the Economic Issues and Drivers Study (The Study) is to inform the preparation of a Structure Plan to secure the broad land use mix, development intensity and key road connections to guide the future growth of the area as an integral part of Sydney's employment lands network.

The NSW Government's '*Draft Metropolitan Strategy for Sydney to 2031*' (Draft Metropolitan Strategy) projects that Sydney requires some 625,000 additional jobs over the next 20 years to meet the employment needs of its growing population. The Broader WSEA is expected to play a key role in accommodating this employment growth and is identified as one of nine 'City Shapers' within the Draft Metropolitan Strategy. These 'City Shapers' have the potential to shape how the City functions and are critical in delivering the strategic vision for Sydney.

According to the vision in the Draft Metropolitan Strategy, by 2031 Greater Western Sydney will be home to more than half of the Sydney population and 50% of new jobs. The Broader WSEA has the potential to provide significant tracts of employment land with the capacity to accommodate the economic and employment growth needs of the city well into the future.

The Broader WSEA project is being led by the DP&I's Planning Strategies, Housing and Infrastructure office. The aim of the project is to deliver a Structure Plan to guide the long-term development of the Broader WSEA for predominantly employment generating uses. A team of specialist consultants including Urbis has been assembled to deliver studies in economic planning, transport infrastructure and services to inform the preparation of the Structure Plan.

THE BROADER WSEA

The Broader WSEA comprises approximately 10,700 ha of land generally bounded by the M4 Motorway to the north, the M7 Motorway to the east, the Northern Road to the west and the South West Growth Centre (SWGC) to the south (refer **Figure 1**).

The area incorporates land within four local government areas, being Penrith, Liverpool, Blacktown and Fairfield (respective to share of land within the study area). The Broader WSEA is strategically located at the western limit of the Sydney Metropolitan Area and between the North-West Growth Centre (NWGC) and SWGC. A significant proportion of the future population of Sydney is projected to be accommodated within these growth centres.

The area also encompasses part of the existing Western Sydney Employment Area (WSEA) identified and zoned under *State Environmental Planning Policy (Western Sydney Employment Area) 2009* (WSEA SEPP) in its northern extent and a section of the SWGC in its south-eastern extent. Of note, the Broader WSEA also includes the 1,700 ha Commonwealth-owned site at Badgerys Creek previously earmarked for Sydney's second airport.

A more detailed description of land use, land form, physical characteristics and infrastructure within and surrounding the Broader WSEA is provided in **Section 2** of this report.



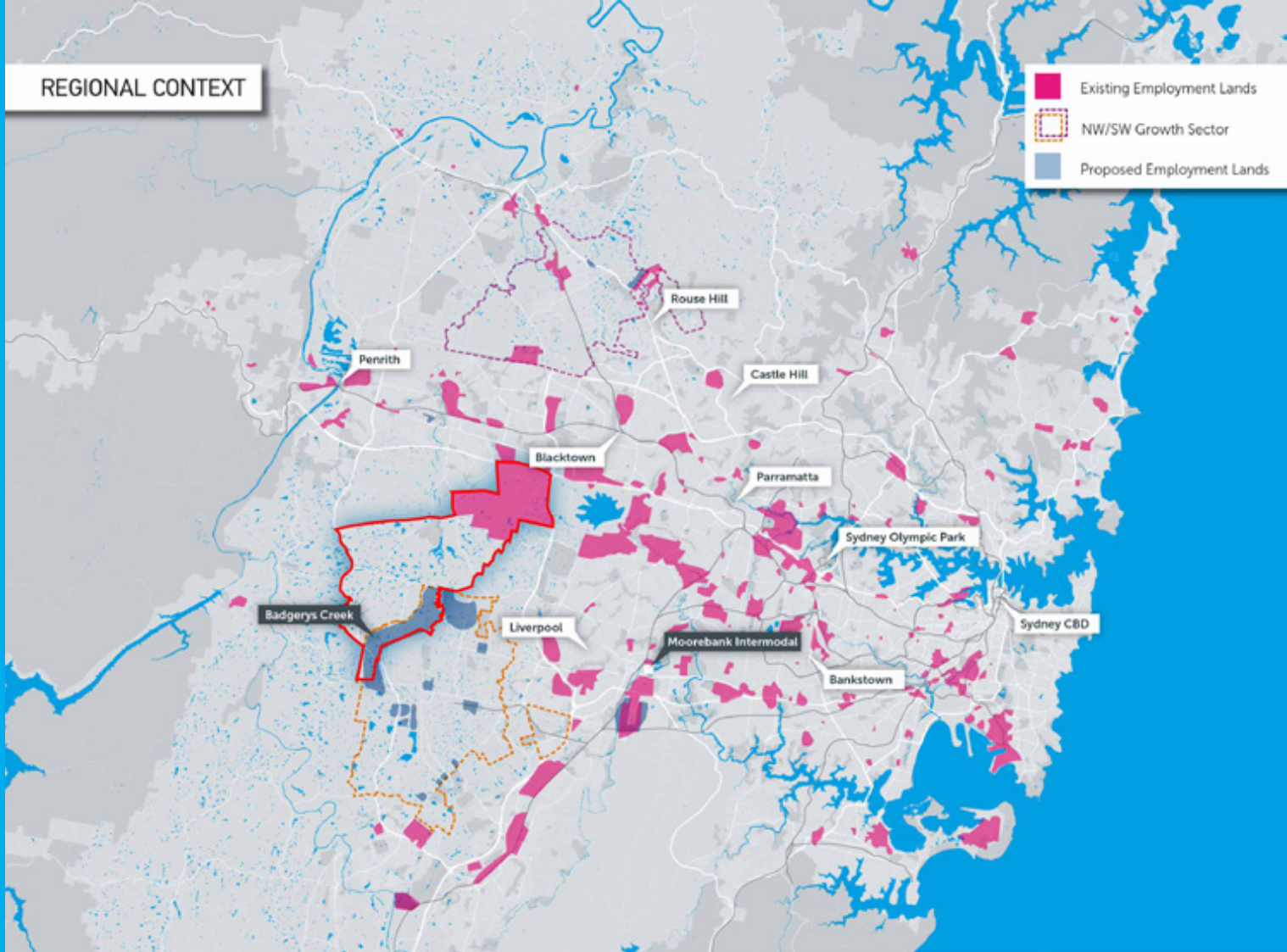


FIGURE 1 – REGIONAL CONTEXT - BROADER WSEA

HISTORY OF THE WSEA

Western Sydney is projected to accommodate a significant proportion of the future growth of the Sydney Region, both in terms of the population and the economy. Over the period between 2006 and 2011, the Greater Western Sydney (GWS) region experienced population growth of 4% compared with growth of just 1.8% across the broader Sydney Region over the same period.

However, the growth of jobs in Western Sydney has not kept pace with its expanding workforce, with many Western Sydney residents leaving the region to access employment. The WSEA has long been recognised for its potential to accommodate significant additional land for employment generating uses with the aim of strengthening the jobs base of Western Sydney in terms of overall jobs and job diversity.

In 2008, a SEPP was gazetted for the Western Sydney Employment Area (WSEA), consolidating the employment zones for large area of land around the junction of the M4 and M7 motorways for employment uses (refer to shaded area in the north-east of the Study Area in Figure 1). The WSEA SEPP remains in force and establishes the boundaries of the existing WSEA and the land use and development controls which apply to this area.

STUDY OBJECTIVES AND APPROACH

The DP&I's vision for the Broader WSEA is to:

- Make a significant economic contribution to the State;
- Be a major contributor to secure employment land satisfying future demand;
- Enable a range of employment opportunities for the State, Metropolitan Sydney and Western Sydney; and
- Predetermined and sequential development regime facilitating connection with surrounding areas and optimising public investment.

In line with these ultimate project objectives, the objectives of the Study are to:

- Provide accurate and current data on employment land supply and demand across the Sydney Region to inform the development of the Broader WSEA Structure Plan;
- To incorporate quantitative and qualitative analysis to improve the robustness of inputs to the Structure Plan;
- To provide recommendations regarding the appropriate amount and type of employment and other land uses to be incorporated into the Structure Plan for the area;
- To inform the staging and implementation of the Structure Plan; and
- To consider potential opportunities and possible interventions to alter the growth scenario and drive greater job diversity.

The approach adopted for the study included the following key principles and steps:

- Utilise existing data and primary research to analyse quantitative and qualitative factors influencing supply and demand for employment lands across the Sydney Region;
- Examine and consider the role and function of the Broader WSEA in the stock of employment land across the Sydney Region;
- Identify and analyse global and industry trends to anticipate the key drivers of demand for employment lands into the future;
- Consider a variety of scenarios for the growth and development of the Broader WSEA and the implications for job creation and diversity; and
- To draw upon local and industry knowledge to calibrate modelling and analysis and to inform practical and realistic recommendations.

A program of stakeholder interviews was implemented as part of the Study in order to better understand the issues driving industrial development in the Broader WSEA and Greater Sydney region. The interview process provided valuable insights into the dynamics of Sydney's industrial property market as well as local issues that are influencing development on the ground. Interviews were conducted with a mix of stakeholders including landowners, industrial property developers, agents, local and State government and academics. The key issues raised during the interview process have been analysed as part of this study and used to calibrate its findings.



DEFINITIONS

For the purposes of the Study, key terms and definitions are drawn from the DP&I's Employment Lands Development Program (ELDP) including the following of note:

- Business parks – *“a large distinct employment space, independent of a mixed use centre, which is generally master planned or under a single management regime.*
- ‘Employment Land’ – *“Land that is zoned for industry and/or warehouse uses including manufacturing; transforming and warehousing; service and repair trades and industries; integrated enterprises with a mix of administration, production, warehousing, research and development; and urban services and utilities.”*
- ‘Employment Lands Development Program’ – *“This is the State Government’s key program for managing supply of Employment Lands for the Sydney Region and assisting infrastructure coordination”.*
- ‘Existing supply’ – *“Land identified through Local Environmental Plans, State Environmental Planning Policies or other planning instruments as zoned for Employment Lands purposes”.*
- ‘Strategy identified land’ – *“Land which has been identified in endorsed NSW Government or council documents (including draft Subregional Strategies and Growth Centre Structure Plans) as future or potential employment lands and also zoned, undeveloped employment lands”.*
- ‘Take up’ – *“quantity in hectares of zoned employment lands which has changed from ‘undeveloped’ (vacant) to ‘developed’ (occupied) over a 12 month period based on Sydney Water data and confirmation by aerial photography and related information. It is defined as the point at which development has commenced on a site and the site is therefore no longer available for development”.*
- ‘Undeveloped and Serviced Employment Lands’ – *“Currently zoned Undeveloped Employment Lands which also have a water and sewer connection based on Sydney Water data or data received from Gosford City Council (for that LGA)”.*
- ‘Undeveloped Employment Lands’ – *“Currently zoned Employment Lands which were not occupied by an employment lands use, at the time of data collection. It may therefore be vacant or occupied by another use. This includes both newly zoned greenfield Employment Lands, as well as areas of undeveloped land within established urban areas which may have been vacated or have never been developed, or have been occupied by another use, such as housing”.*

DATA SOURCES

The study drew upon a range of data sources and types to maximise reliability in the findings. Key data used for the analysis and modelling included:

- Bureau of Transport Statistics (BTS) figures and projections for economic and population growth within the Sydney Region;
- Supply and demand data from the DP&I's ELDP. The most up to date set of data was used for the purposes of the study which was based upon the 2012 ELDP monitoring (unpublished);
- Qualitative data from the ELDP's Supply Audit undertaken in 2012;
- 2011 Census data on population and demographics;
- Relevant background studies and literature as referenced in the Study; and
- Primary data gathered during the stakeholder interview process.

ASSUMPTIONS AND LIMITATIONS

The Study represents a strategic analysis of the potential future development of land known as the Broader WSEA over a nominated 30 year time period. The methodology adopted for the study incorporates both economic modelling, qualitative assessment and primary research to provide a robust and reliable level of analysis. However, strategic assessments over such time horizons require the adoption of certain assumptions.

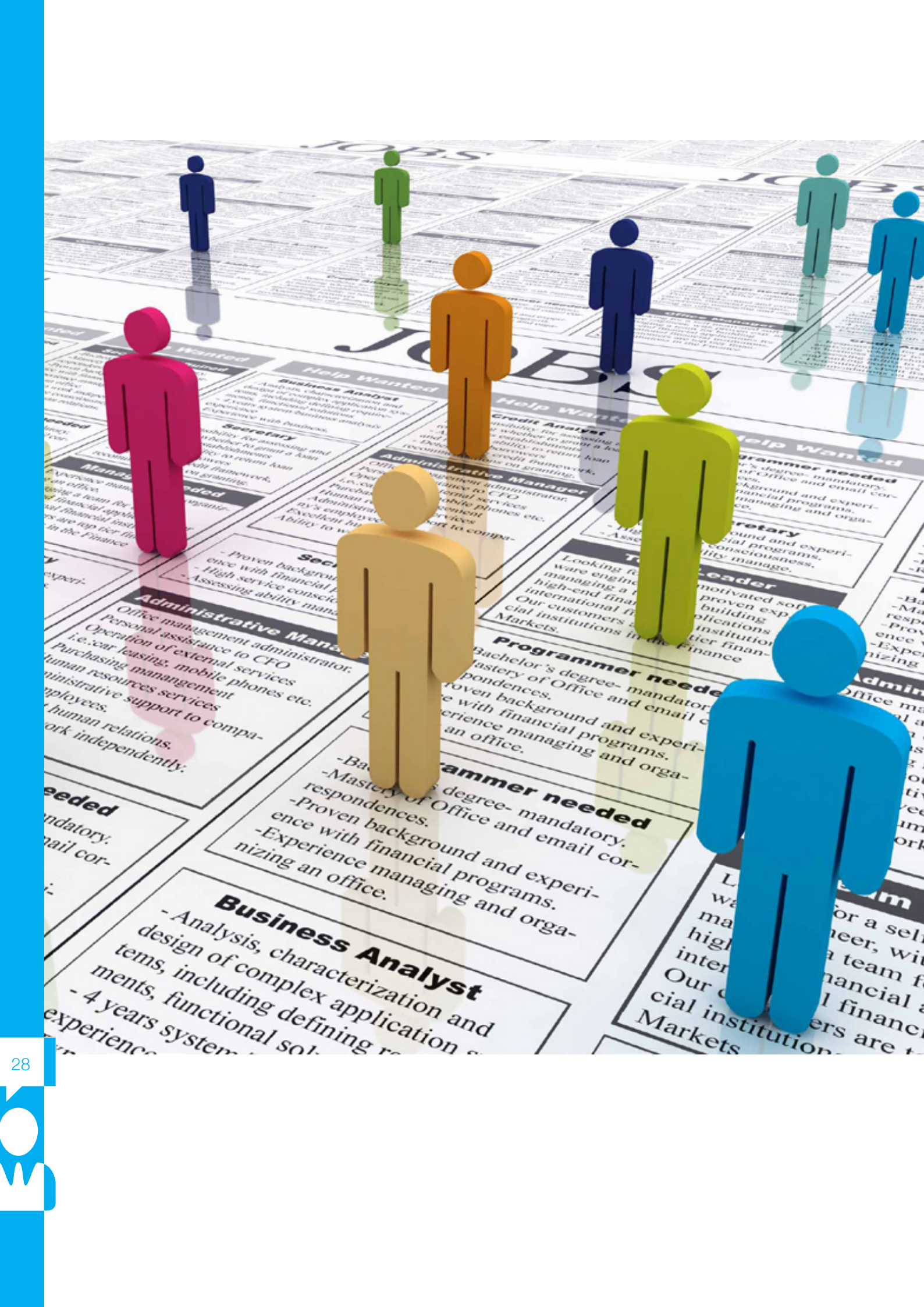
In reviewing the findings of the study the following key assumptions are noted:

- That the population projections of the BTS are realised over the project timeframe;
- The likely mix of employment types and associated job densities within the Broader WSEA are projected based upon observed economic and industry trends. For later stages of the Broader WSEA (beyond 35 years), emerging trends may influence employment mixes and densities and these projections should therefore be revised during more detailed precinct planning for these stages;
- At the time of writing this report a second airport at Badgerys Creek was not Government policy therefore the presence of an airport within the Study Area has not been accounted for in the model; and
- Modelling and analysis undertaken assumes no external intervention, catalyst projects or infrastructure beyond that existing or known to be committed which would otherwise alter the growth scenario.

It is noted that economic development and job creation are inherently linked with and influenced by a large variety of peripheral issues which in themselves could form the basis of targeted analysis in the context of the Broader WSEA. In reviewing this Study it must be recognised that given the scale of the Study Area and the likely timeframes for development, the Study is undertaken at a strategic level and does not analyse the full suite of peripheral issues and trends in detail. Some of the key limitations to note include:

- There is a relationship between economic development and jobs growth and the social and cultural dynamics of an area or sub-region and the importance of these characteristics to the business environment is recognised. However, it has not been possible within the Study brief to analyse these interrelationships in detail in relation to the Broader WSEA.
- Policy responses to climate change stand to have implications for the Western Sydney economy and labour market, perhaps more marked than other areas of Sydney due to the over-representation in the economy of more vulnerable sectors such as manufacturing and the heavy reliance of Western Sydney on private motor vehicles for transport. These changes also represent opportunities in Western Sydney for new markets and businesses in the 'green economy'. Operating in a low carbon economy is noted in the Study as a key trend and the potential implications for the Broader WSEA are noted at a high level. However, it has not been possible as part of this Study to undertake detailed modelling or analysis of the likely economic impacts of climate change policy on the Broader WSEA.



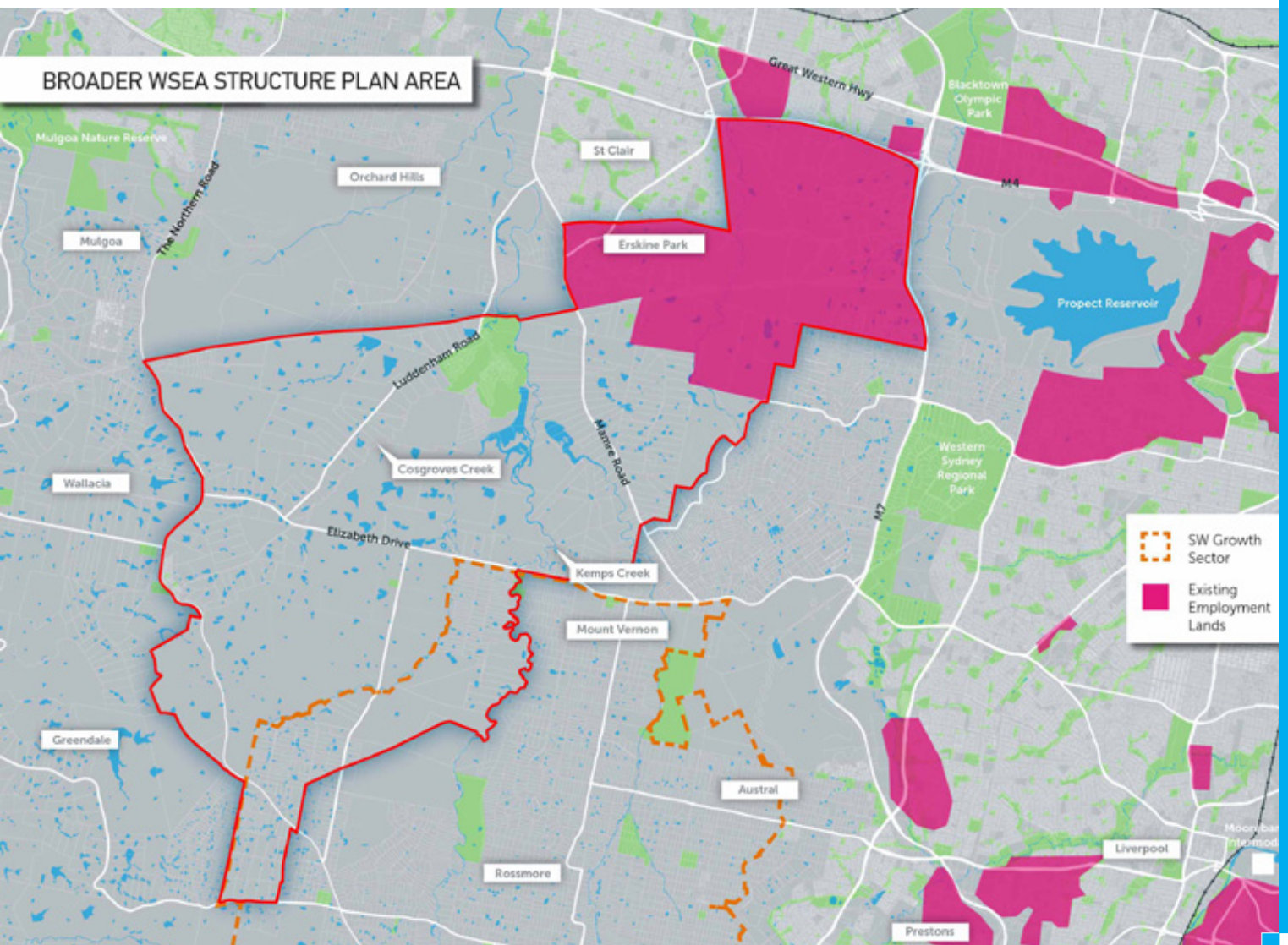


2 THE BROADER WSEA

OVERVIEW

The Broader WSEA is strategically positioned on the western fringe of the Sydney Metropolitan Area, between the NWGC and SWGC. The area is generally defined by the M4 and M7 corridors in the north and east, The Northern Road in the west and the SWGC boundary to the south. The area encompasses approximately 10,700 ha of land across four local government areas and represents the approximate equivalent of the area (in ha) of existing, developed employment land across the Sydney Region (refer to **Figure 2**).

FIGURE 2 – BROADER WSEA STUDY AREA



LAND USE CONTEXT

Land use within the Broader WSEA is industrial within the existing WSEA and beyond that predominantly rural with scattered rural-residential, residential, quarrying and agricultural uses. **Table 1** summarises the existing land uses within the Broader WSEA.

TABLE 1 – LAND USE WITHIN THE BROADER WSEA

PRECINCT/AREA	LAND USES
<ul style="list-style-type: none"> Existing WSEA 	<ul style="list-style-type: none"> Industrial land uses, principally freight and logistics operations.
<ul style="list-style-type: none"> Far western precinct - west of Luddenham Road to The Northern Road 	<ul style="list-style-type: none"> Agricultural and rural residential land uses
<ul style="list-style-type: none"> Central triangle between Luddenham Road, Mamre Road and North of Elizabeth Drive 	<ul style="list-style-type: none"> Agricultural uses including farming and horticulture (market gardens). Research and development including the CSIRO Research Station and Sydney University farmland. SITA Environmental Services Landfill Depot. The Twin Creeks golf estate including a golf course, country club and residential development.
<ul style="list-style-type: none"> South of the Sydney Water Pipeline (east of Mamre Road) 	<ul style="list-style-type: none"> Agricultural and rural residential land uses. Schools and community land uses.
<ul style="list-style-type: none"> South East Precinct (south of Elizabeth Drive and East of Badgerys Creek) 	<ul style="list-style-type: none"> Boral brickworks and clay/shale quarry Sydney Catholic Garden Cemetery Novartis Research Centre ANL Landscape supplies Poultry farming (Ingham)
<ul style="list-style-type: none"> South West Precinct (south of Elizabeth Drive and west of Badgerys Creek) 	<ul style="list-style-type: none"> Commonwealth land (former Badgerys Creek Airport site) Agricultural land uses.

Land use surrounding the Broader WSEA includes a mix of residential development within the growth centres and established low-density residential precincts within the Fairfield and Blacktown LGAs. The Orchard Hills Defence Base adjoins the site to the north-west and it is understood that this base is used principally for the storage of munitions. The Defence site is heavily vegetated with Cumberland Plain Woodland of ecological significance. A large tract of land to the east of the Defence base is earmarked for a future substation. The Western Sydney Parklands – a regionally significant green corridor managed by the Western Sydney Parklands Trust runs to the east of the M7 Motorway. Prospect Reservoir also lies to the east of the Broader WSEA and forms part of Sydney Water’s storage network. Recreational land uses in the area include the Sydney Equestrian Centre, Eastern Creek Raceway and the proposed Wet n Wild water park which is expected to be operational for the summer of 2013.

Nearby established industrial precincts include Wetherill Park to the east, St Marys to the north and Huntingwood West to the north-east.

Land within the Broader WSEA comprises a mix of small and large lots and a mix of private and large institutional landowners. **Figure 3** shows the Study Area highlighting allotments greater than 25ha in area.

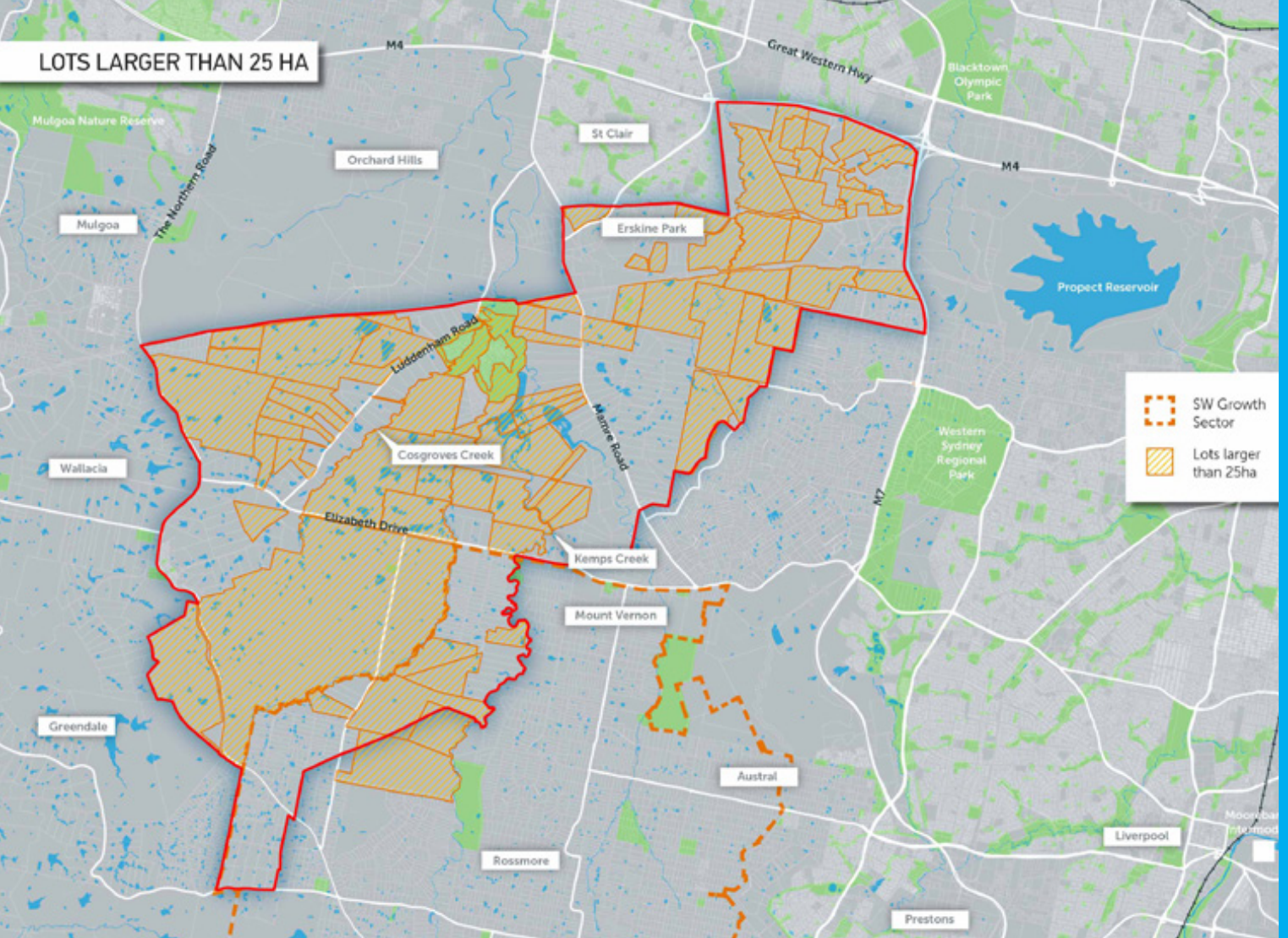


FIGURE 3 – BROADER WSEA – LOTS GREATER THAN 25HA

PHYSICAL CHARACTERISTICS

The Broader WSEA is largely cleared of vegetation as a result of historic land clearing for agricultural uses. Some 50% of the Study Area is considered to have only minor to moderate constraint with respect to urban development however a further 23% is considered to be precluded from urban development due to physical constraints principally associated with flooding.

The Broader WSEA is dissected north-south by the South Creek Riparian Corridor which is expected to have some environmental value.

Topography represents the other key constraint to the development of the land for certain employment uses with the presence of a number of ridgelines within the Study Area. Key ridgelines are located in the far western portion of the site, along The Northern Road corridor running north-south. Land to the east of Mamre Road, south of the Sydney Water Pipeline also contains land with slopes in excess of ten percent. Topography is a key consideration for industrial development due to the significant additional construction costs associated with the development of large floorplate industrial buildings on sloping land.

KEY INFRASTRUCTURE

The Broader WSEA is bounded by two key road infrastructure corridors – the M4 and the M7 with its north-eastern corner positioned at the junction of these two motorways. The location of the existing WSEA at this junction is the key reason for its development as a logistics hub. However, there are gaps in connecting road infrastructure within the existing WSEA that are currently limiting the capacity of this precinct to develop efficiently.

The remainder of the Broader WSEA currently has only one key east-west connection in Elizabeth Drive with the principle north-south routes being The Northern Road, Mamre Road and Luddenham Road. Significant investment in road infrastructure would be required to enable the Broader WSEA to be more intensively developed and this is the subject of a separate, but related study.

The Broader WSEA is traversed by the indicative alignment of the Outer Sydney Orbital – a potential mass-transit corridor identified within the Transport for NSW (TfNSW) ‘NSW Long Term Transport Master Plan’ (2012). This corridor may provide for passenger rail, freight rail or road transportation, or any combination of these modes subject to future need.

TfNSW’s ‘Draft NSW Freight and Ports Strategy’ (2013) also identifies a potential intermodal facility within the Study Area’s north-eastern corner, to be serviced by an extension of the Western Freight Line and connecting to Chullora. The timing of delivery of this infrastructure has not been defined but is expected to be a long-term horizon.

Only a relatively small proportion of land within the existing WSEA is serviced with water and sewer and a comprehensive and carefully staged servicing strategy would be required to bring further supply online for development. A servicing study has also been commissioned as part of the Broader WSEA project to inform this strategy.

DEMOGRAPHICS

The Broader WSEA lies within the GWS Region which has a population of almost two million people. GWS incorporates the LGAs of Penrith, Liverpool, Blacktown, Fairfield, The Hills, Holroyd, Hawkesbury, Camden, Campbelltown, Wollondilly, Blue Mountains and Bankstown. In 2011, the Region housed around 44% of the population of the Greater Sydney Region which is expected to grow to over 50% over the next two decades.

Population growth within the GWS has occurred rapidly over the past twenty years with recent growth rates for the Region twice that of Greater Sydney. Between 2006 and 2011, the population of the region grew by 4% whilst growth across the broader Sydney Metropolitan Area was recorded at 1.8% over the same period. This rate of growth is expected to be maintained within GWS over the coming decade with a compounding annual growth rate (CAGR %) of 1.4% to 1.6%. Beyond 2031, growth in the Region is expected to moderate slightly to between 1.1% to 1.3% up to 2046. The population of Greater Sydney is expected to experience a moderating annual growth rate between 0.6% and 0.9% over the same period.

Much of the GWS population growth is expected to occur within the SWGC and NWGC which together are expected to generate some 181,000 new houses and approximately 500,000 additional residents over the next 25 to 30 years⁴.

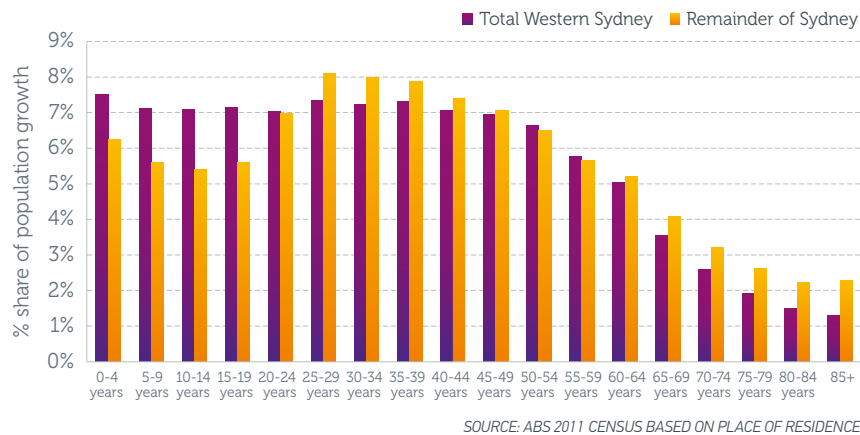
The population of GWS displays some notable characteristics which will influence the likely needs of the Region over the next thirty years in relation to economic and social infrastructure, transport, employment, health care and housing. These include:

- A relatively younger population than the Greater Sydney Area (or Sydney Statistical District (SSD)) with around 43% of the population aged 29 years or less (refer to **Figure 4**);
- An increasing retirement age (65+) cohort which is forecast to increase from 10.9% in 2011 to 16.4% by 2046;
- Stable growth of the GWS workforce between 2011 and 2046 at a rate of between 1.1% and 1.4%;
- Relatively static proportion of working-aged residents (between 15 and 65) since 2001 with the 2011 figure only 0.2% lower than that recorded in 2001 at 67.5%;
- A growing proportion of tertiary-educated residents;
- Higher unemployment rates than the Sydney average;
- Significantly higher levels of youth unemployment than Greater Sydney; and
- Greater proportion of ‘blue-collar’ workers within the GWS workforce when compared to Greater Sydney (refer to Figure 6).

⁴ Department of Planning and Infrastructure, Growth Centres website

FIGURE 4 – AGE PROFILE OF WESTERN SYDNEY REGION V SYDNEY REGION

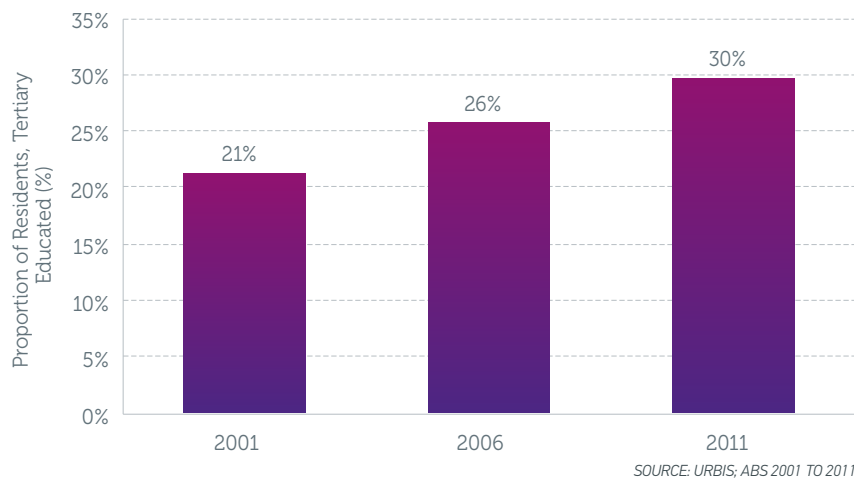
AGE PROFILE OF WESTERN SYDNEY AND REMAINDER OF THE REGION



According to 2011 Census data there are currently 848,562⁵ working residents in GWS and an available job pool of 622,565⁶. This indicates that underlying demand for employment is not being met in a number of sectors, with a shortfall of around 200,000 jobs. This shortfall presents an issue for employment self containment within the region, which is exacerbated when considering the alignment of local jobs with the qualifications of the population. **Figure 5** below illustrates the growing proportion of tertiary qualified residents in GWS, driving a growing need for more professional roles in the region.

FIGURE 5 – PROPORTION OF TERTIARY EDUCATED RESIDENTS

PROPORTION OF TERTIARY EDUCATED RESIDENTS GREATER WESTERN SYDNEY, 2001 TO 2011



To further examine the alignment of local jobs and the qualifications of the workforce within Western Sydney, **Figure 6** illustrates the breakdown in the types of roles which the workforce of Western Sydney are employed in compared with the broader Sydney Metropolitan Area. The figure shows a strong representation of ‘white-collar’ roles in GWS (including managers, professionals, sales and clerical and administration jobs) when compared with ‘blue collar’ jobs such as machinery operators, labourers and technicians. There remains however a marked difference in the proportion of the GWS population employed in ‘blue collar’ roles when compared with the broader Sydney region.

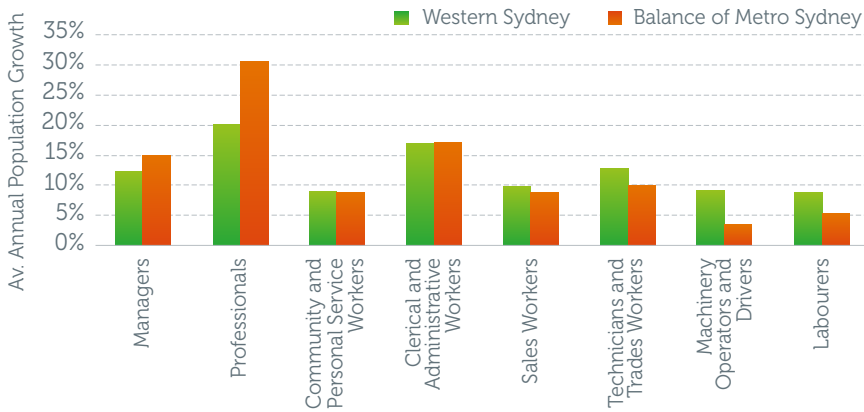
5 Australian Bureau of Statistics, Census 2011. Note that as this figure is taken from the Census rather than Journey to Work (JTW) data it is likely to be slight underrepresentation of total available job pool, therefore the scale of the jobs deficit may vary accordingly. JTW data was unavailable at the time of writing this report.

6 Australian Bureau of Statistics, Census 2011



FIGURE 6 – EMPLOYMENT BY OCCUPATION, WESTERN SYDNEY 2011

**PROPORTION OF EMPLOYMENT BY OCCUPATION
GREATER WESTER SYDNEY AND BALANCE OF SYDNEY, 2011**



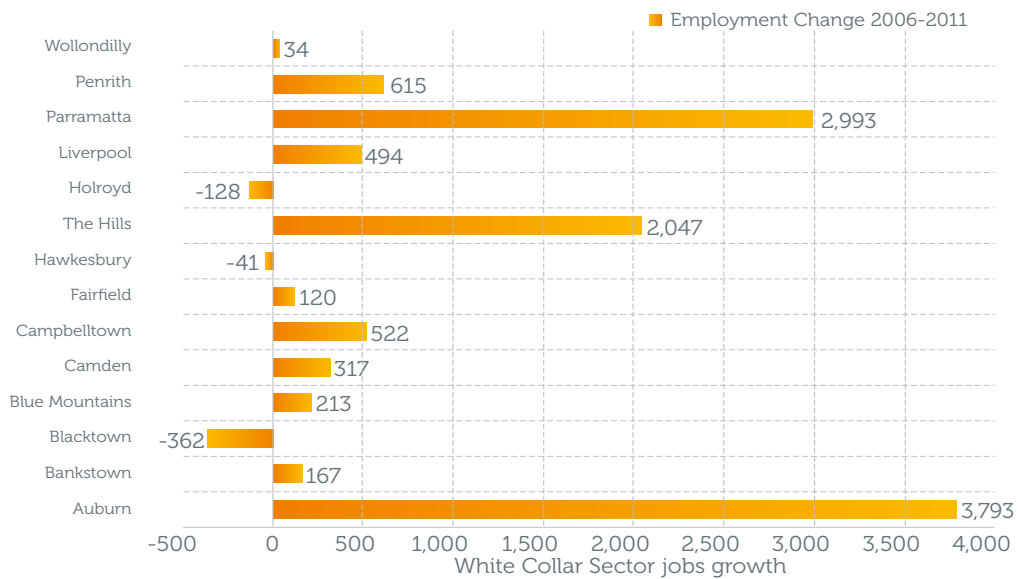
Source: ABS Census 2011

Overall, across the total GWS job pool, some 68% of jobs are in ‘white collar’ roles whilst 31% are in ‘blue collar’ occupations. As a comparison, across the broader Sydney region some 80% of jobs are in ‘white collar’ roles with just 19% being in ‘blue collar’ occupations.

Whilst the proportion of ‘white collar’ employment within the GWS region is notably lower than that of the broader Sydney Metropolitan area, **Figure 7** shows that the number of ‘white collar’ jobs within Western Sydney has increased over the past five years in most LGAs in the region with the exception of Holroyd, Hawkesbury and Blacktown.

FIGURE 7 – WHITE COLLAR EMPLOYMENT CHANGE WESTERN SYDNEY, 2006-2011

**WHITE COLLAR EMPLOYMENT CHANGE
GREATER WESTERN SYDNEY, 2006 AND 2011**



SOURCE: URBIS; ABS CENSUS 2006 AND 2011

A study by the Urban Reserach Centre at the University of Western Sydney (UWS) further examines the complexities of the employment structure of the GWS region and concludes that:

“Substantial initiatives are required to re-engineer and steer the Western Sydney economy and labour market towards a sustainable future that meets the region’s long-term social and economic aspirations”

(UWS (2008) ‘North West and West Central Sydney Employment Strategies’.

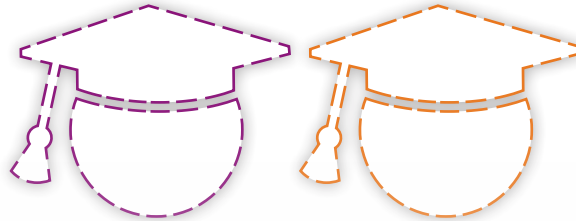


GWS JOBS POOL

68%
WHITE COLLAR
JOBS

GWS JOBS POOL

31%
BLUE COLLAR
JOBS



3 ECONOMIC CONTEXT

OVERVIEW

In assessing the future demand for employment lands within the Broader WSEA it is vital to understand the local market characteristics and dynamics upon which macro-economic conditions impact significantly. This section summarises the Global, national, State and local economy, in terms of structure, performance, trends and outlook. The chapter does not represent a comprehensive analysis of economic trends and conditions but focuses upon those key drivers which will influence the quantum and type of demand likely to be experienced in the Sydney Region for employment lands over the coming few decades.

GLOBAL TRENDS

The Organisation of Economic Cooperation and Development (OECD) notes that structural change in advanced economies often sees output shift from agriculture to manufacturing and then to services as economies develop. Australia's economy is in the midst of this transition, resulting in structural changes at a national and State level characterised by a shift towards a services-based economy.

A report by Access Economics prepared for the NSW Innovation Council⁷ identifies four global 'mega-trends' which are expected to have a significant influence on the Australian and NSW economy over the next decade, being:

- National and global policy actions to address climate change;
- Demand and competition from emerging economies;
- The widespread adoption of new information technologies; and
- Demographic change, especially a growing and ageing population.

The anticipated implications of these trends for the national and State economy are summarised in **Table 2**.

TABLE 2 – IMPLICATIONS OF THE FOUR MEGA-TRENDS

MEGA-TREND	DESCRIPTION AND PROJECTED IMPLICATIONS
1. Carbon Constrained Future	<ul style="list-style-type: none">▪ Climate change is expected to drive national and international policy action which will have direct and indirect impacts upon industry in NSW.▪ The establishment of a national renewable energy target (RET) will drive incentives for investment in renewable technologies.▪ Carbon pricing will likely drive more conservative energy consumption and the adoption of less emissions-intensive technologies.▪ Climate change will create opportunities for emerging industries and businesses specialising in carbon reduction technologies.

7 Access Economics (2010), *The NSW Economy in 2020: A foresighting study*.



MEGA-TREND

DESCRIPTION AND PROJECTED IMPLICATIONS

2. Demand and competition from emerging economies

- Globally there is expected to be a continuing shift over the next decade towards emerging economies - particularly China and India.
- This shift will result in continued strong demand and higher prices for energy and industrial commodities.
- The expanding middle-class of China and India is expected to translate into increased demand for higher value goods and services – refer to **Figure 8** which projects where this spending is expected to occur.

FIGURE 8 – CONSUMPTION PATTERNS, CHINA TO 2025

VALUE OF CHINA’S EMERGING MIDDLE CLASS

WHAT WILL URBAN CHINESE CONSUMERS BUY?

For urban China (real renminbi, base year =2000)

Product category	Projected change in absolute consumption, billion renminbi ¹	Absolute growth, 2004-25, billion renminbi ²	Projected compound annual growth rate, 2004-25 ³ %
Food ²	1,223	4,786	6.7
Recreation, education	507	2,908	9.5
Transportation, communication	452	2,468	9.3
Apparel	369	953	6.3
Housing, utilities	321	2,992	11.8
Health care	257	2,325	11.6
Household products	223	634	6.6
Personal products	119	652	9.3

¹ BASE CASE FORECAST, Q1 2006; 1 RENMINBI = 0.12
² FIGURES DO NOT SUM TO TOTAL, BECAUSE OF ROUNDING

SOURCE: NATIONAL BUREAU OF STATISTICS OF CHINA; MCKINSEY GLOBAL INSTITUTE ANALYSIS

3. Rapid development of the information economy

- Development of the economies of Asian countries may result in greater competition in the information technology and financial services sectors.
- The widespread adoption of advanced information technologies is expected to have a profound direct and indirect effect on the NSW economy.
- The rollout of the NBN in NSW is expected to be a catalyst for further advancement with increased investment in the ICT sector.
- These technological advancements will also create greater openness in markets and a reduction in barriers to entry for interstate and overseas firms which may result in increased competition in the ICT sector.
- Intelligent technologies are expected to provide potential for significant improvements in the delivery of health, education, energy, transport and water services.

4. An ageing and growing population

- The population of NSW is expected to increase to around 8 million by 2020.
- By 2015, the proportion of the population aged over 65 years is expected to be 15.3% - an increase of almost 2% over the five years from 2010.
- The changing demographic is expected to translate into increased demand for health care, aged care and seniors housing.
- The ageing population will also result in a change in consumption patterns with increased demand for leisure, tourism and financial services.
- The decline in the ratio of the working population to those not working will result in fiscal challenges for Government.
- Projected population growth will also drive greater demand for housing with flow on effects for employment generating development.

Source: Access Economics (2010), *The NSW Economy in 2020: A Foresighting Study*

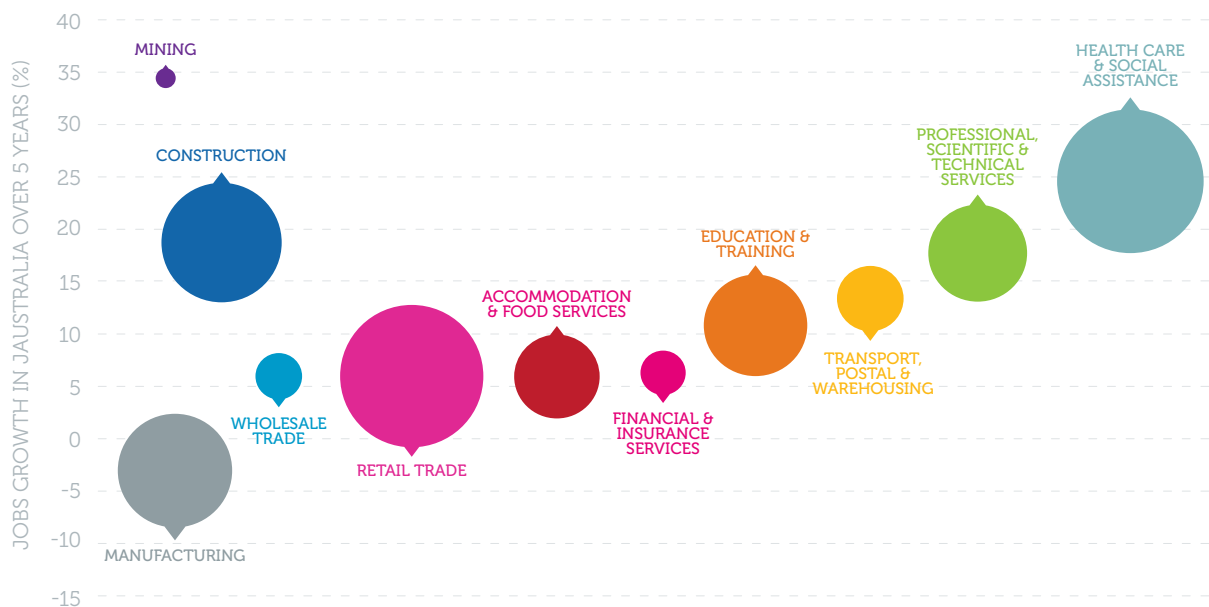
The above trends will result in structural changes to the national and State economies that will present both opportunities and challenges as discussed in the following sections.

THE NATIONAL ECONOMY

The structure of Australia's key industry sectors and their contribution towards employment and Gross Domestic Product (GDP) has undergone significant change over the past two decades. These structural changes and key trends over the past five years are illustrated in **Figure 9**. The figure depicts three key measures of the performance of individual sectors as follows:

- Contribution of the sector towards employment – indicated by the size of the bubble;
- Growth of jobs within the sector over the past five years – indicated by the position of the bubble against the Y-axis; and
- Employment growth trends – whether employment in the sector is growing or contracting. This is indicated by the direction of the nib on each bubble.

FIGURE 9 – INDUSTRY COMPOSITION



Source: DEEWR (2011) *Industry Projections to 2015/16; Urbis*

The figure shows that the mining sector has experienced the biggest growth over the past five years, followed by Health Care and Social Assistance. Health care and social assistance was also the largest sector in terms of overall jobs, along with construction, retail trade and manufacturing. The combined 'services sector' incorporating Financial and Insurance Services and Professional, Technical and Scientific services was also a major contributor, along with Education and Training.

As intimated by the global trends described previously, employment within the manufacturing sector is declining, but still forms a significant part of the jobs base nationally. Jobs within the retail and wholesale trade sectors are trending downwards in terms of the rate of growth but still recorded growth over the five years to 2011. In reflection of the broader economic shifts occurring in Australia and many other OECD countries, employment within the Professional Services, Education and Training and Health Care and Social Assistance is trending upwards. Growth is also occurring within the Accommodation and Food Services sector possibly reflecting increases in prosperity which are also driving growth in the services and education sectors.



At a national level, these dynamics can be attributed to a number of key factors:

AUSTRALIA'S AGEING DEMOGRAPHIC.

As the population ages, its needs and desires shift and change. Australia's growing proportion of older residents is driving demand for health care and health sector products including specialised retirement and aged care housing. This demographic trend is expected to continue to underpin growth in this sector for the foreseeable future.

THE SUSTAINED HIGH VALUE OF THE AUSTRALIAN DOLLAR.

The growth of the mining sector is determined by commodity prices with fluctuations impacting the value of the Australian dollar. Consistently high terms of trade and low levels of public debt have been linked to a sustained high value of the Australian dollar, which has had both positive and negative economic impacts.

On the positive side, investment in the mining sector is boosting the productive capacity of the economy, which has the potential to drive long-term benefits. The higher Australian dollar has lowered the cost of imported goods for consumers and businesses, thereby boosting the purchasing power of wages. Higher mining export earnings have also boosted government revenues which have enabled it to distribute income to households through tax cuts.

On the negative side, the competitiveness of non-mining related sectors has been affected as a result of the higher terms of trade and the reallocation of labour and capital resources to the mining sector. The effects of this are most pronounced in the trade exposed manufacturing and tourism sectors. In NSW these effects have been felt more deeply than in mining rich states such as Western Australia and Queensland due to the lack of mining revenues to buffer the poorer performance of other industry sectors.

AUSTRALIA'S TWO-SPEED ECONOMY

As a resource rich country, Australia has been somewhat shielded from the impact of the GFC due to the high performing mining sector. The dichotomy which exists in the national economy between mining and other sectors which have been depressed by global economic conditions has been referred to as Australia's 'two-speed economy'. The effect of this has been that the impact of the GFC on the Australian economy has been masked to a degree when considering certain economic indicators. However, not all sectors have benefited from this.

While having a positive income effect for the Australian economy, the mining' sector's increased share of Australia's exports exposes the economy to fluctuating commodity prices which flow through to the value and ultimately income derived from exports. This downside risk was illustrated in 2009 where GDP fell amongst our main trading partners, resulting in less economic activity and as a result less demand for raw materials and fuel sources. This ultimately had a negative impact on the income derived from exports.

Australia's over-reliance on the mining sector leaves the national economy vulnerable to global economic shocks and events which might occur in the coming decades, once the effects of the mining boom have dissipated. Further, whilst a significant contributor to GDP, the contribution of the mining sector in terms of employment is disproportionately low.



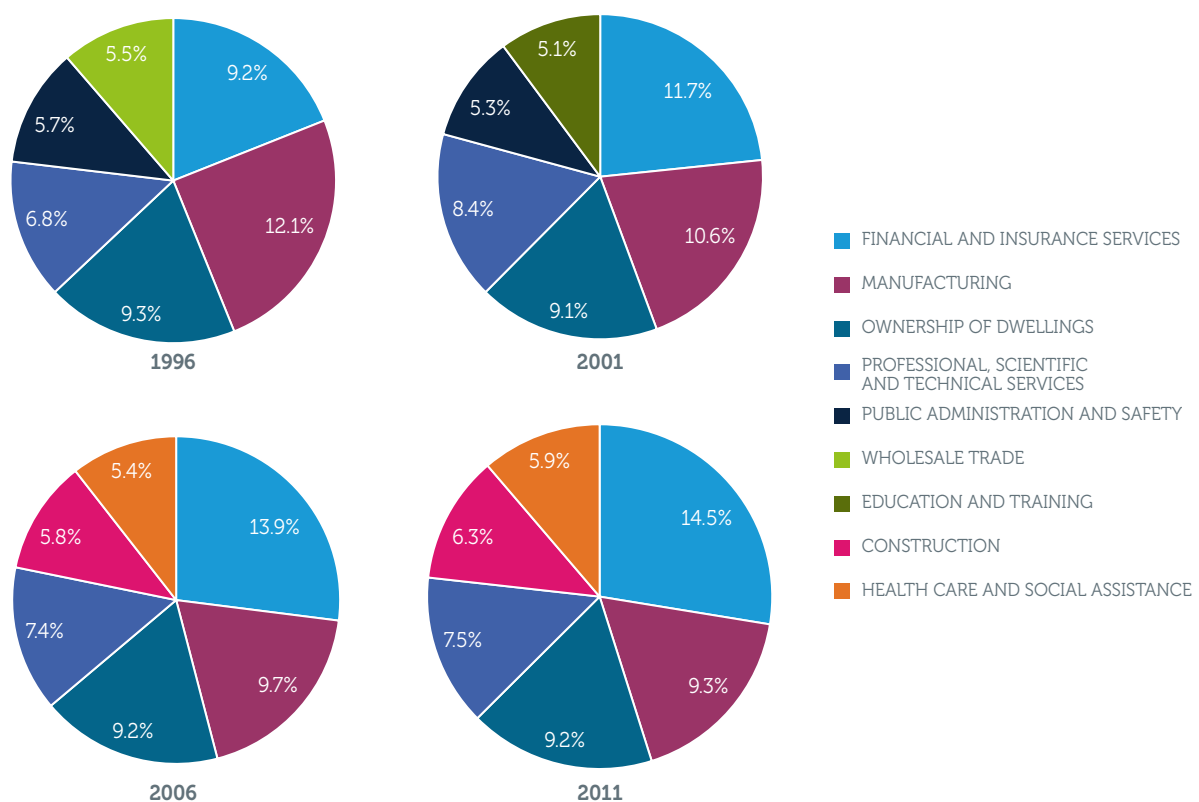
THE NSW ECONOMY

The same trends which have been driving structural changes in the national economy have led to adjustments in the State economy but with more pronounced effects as noted above. NSW has historically relied heavily upon the manufacturing sector as its economic base, therefore the State has been particularly vulnerable to the significant declines in the sector over the past two decades. **Figure 10** illustrates the changes in the NSW economy over the period since 1996 in terms of industry sector share of Gross State Product (GSP).

FIGURE 10 – NSW INDUSTRY SECTOR SHARE OF GSP OVER TIME

KEY INDUSTRY SECTORS

NSW 1996, 2001, 2006 AND 2011, SHARE OF GROSS STATE PRODUCT



Source: ABS, Australian National Accounts, State of Accounts 2010-2011

The figure shows the more dramatic effect of manufacturing decline in NSW where the sector has transitioned from the single largest contributor to GSP at 12.1% in 1996 down to 9.3% in 2011. The sector remains a critical part of the economy however, both in terms of GSP and employment – exceeded only by the Financial and Insurance Services sector.

The key trends of note over in the NSW economy over the past five years include:

- Growth in the Financial and Insurance services sector from 13.9% to 14.5%.
- Growth in the construction sector from 4.9% to 6.3% in 2011;
- Growth in the Professional, scientific and technical services from 6.8% to 7.5% in 2011;
- Slight growth in the health care and social assistance sector from 5.4% to 5.9% in 2011;
- Decline in public administration and safety sector from 5.7% to 4.9% by 2011; and
- Decline in wholesale trade from 5.5% to 4.56% in 2011.



These trends are generally reflective of the broader shift from an industrial/manufacturing-based economy to a service-based economy. As this trend continues it is expected that:

- Trade exposed sectors such as manufacturing and wholesale trade will continue to represent a declining share of NSW GSP;
- The 'high cost' operating environment of NSW in terms of energy and construction costs will affect its ability to compete for business with other, lower cost States;
- The strength of the construction and professional services sectors in NSW will continue to drive broader economic growth in the State;
- Significant latent demand for housing will translate to future demand for housing and a future market for the residential construction sector, despite the plateauing of residential property prices in 2012; and
- A high rate of savings since the GFC will translate to future purchasing potential amongst consumers once consumer confidence improves.
- The financial and professional services sectors will continue to underpin economic growth in the State however global competition in these sectors is expected to increase as Asian economies develop.

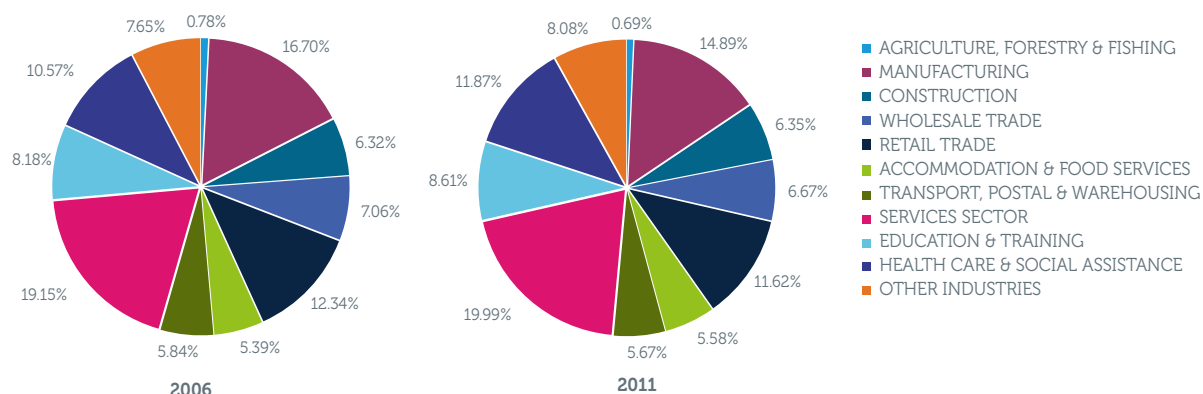
NSW lacks the strong mining sector of the other states such as Western Australia and Queensland and must therefore position itself to leverage from its competitive advantages in other key employment sectors.

THE WESTERN SYDNEY REGION

The Western Sydney economy remains heavily rooted in manufacturing and retail trade, although there has been an increase in jobs within the services sector over the past five years, as shown in **Figure 11** and **12**.

FIGURE 11 – WESTERN SYDNEY EMPLOYMENT SECTORS

CHANGE IN WESTERN SYDNEY EMPLOYMENT SECTORS GREATER WESTERN SYDNEY 2006 TO 2011



Source: ABS Census 2006 & 2011

The figures show that in the five years between 2006 and 2011, the region experienced a decline in retail sector employment in line with the decline in the sector's contribution to national GDP⁸ due to both short-term or cyclical factors and changes in consumer buying habits away from goods and towards services such as finance, health and education.

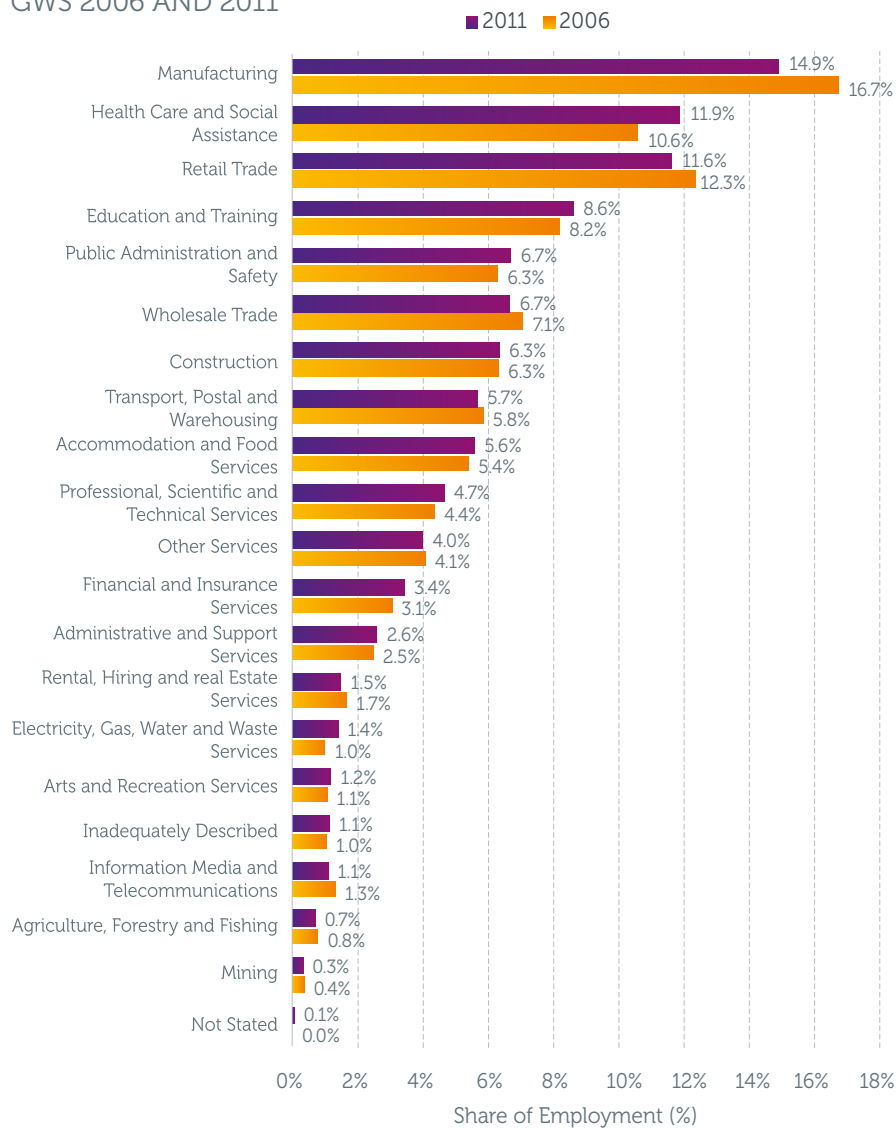
Over the same period, employment within the health care and social assistance sector increased significantly to become the second largest employer in the region. This is consistent with national trends and potentially reflects a competitive advantage for Western Sydney in this sector due to population growth and proximity

to an aligned workforce. Other sectors which increased their share of Western Sydney employment between 2006 and 2011 include professional services, education and training, transport and warehousing and accommodation services whilst employment declined in the region in the construction, retail and wholesale trade sectors.

FIGURE 12 – CHANGE IN WESTERN SYDNEY EMPLOYMENT SECTORS

WESTERN SYDNEY INDUSTRY PROFILE

GWS 2006 AND 2011



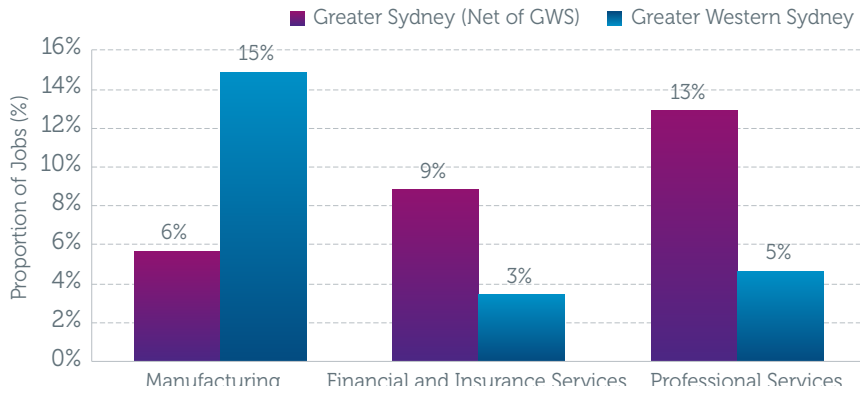
Source: ABS Census 2006 & 2011

The Western Sydney Region faces significant economic challenges as a result of the economic trends noted above which are driving structural economic change at a national and State level. The Western Sydney Region is even more vulnerable to these changes due to the lack of job diversity in the region which presents in a disproportionate number of jobs in the declining manufacturing sector when compared with high growth sectors such as financial and professional services. **Figure 13** on the next page illustrates this through the discrepancy in the employment structure of Western Sydney when compared with the Greater Sydney region.



FIGURE 13 – EMPLOYMENT BY INDUSTRY – WESTERN SYDNEY V SYDNEY REGION

TOTAL EMPLOYMENT BY INDUSTRY
 GREATER WESTER SYDNEY AND GREATER SYDNEY 2011



Source: ABS Census 2006 & 2011

Whilst the mix of employment across the broader Sydney Metropolitan Area is relatively balanced, Figure 13 shows a skewed distribution of jobs within GWS with 17% of Western Sydney jobs being within the manufacturing sector and only 7% across the financial services and professional services sectors combined. In contrast, when considering the Sydney Region, manufacturing accounts for 10% of employment with an equal share to the Professional services sector and a further 7% within the financial services sector. This lack of job diversity in GWS becomes more significant when considering the occupations of GWS residents as shown in Figure 14.

FIGURE 14 – WHITE COLLAR VERSUS BLUE COLLAR EMPLOYMENT, WESTERN SYDNEY LGAS

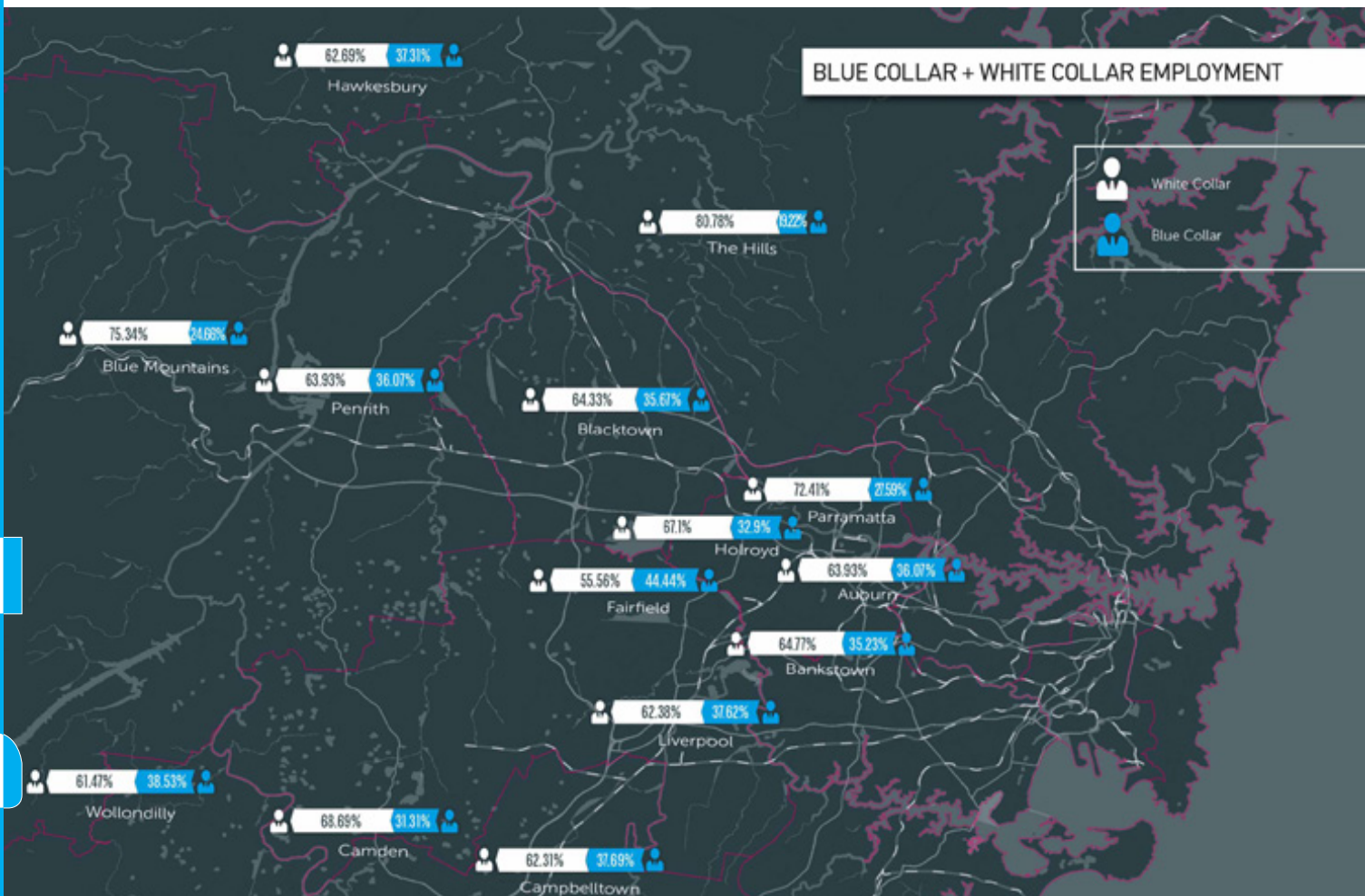


Figure 14 shows that of the GWS LGAs analysed, the majority of the workforce was engaged in ‘white collar’ roles with some LGAs recording up to 80% of the workforce in these occupations. Given the structure of the GWS economy and employment base, this supports the fact that many GWS residents leave the region to access employment and provides further evidence of the need to improve diversity within the GWS jobs pool.

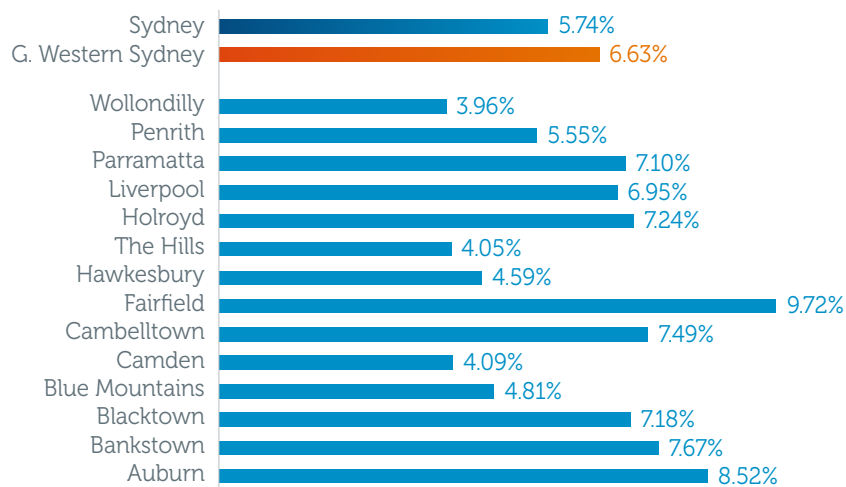
Some other notable statistics and trends in relation to the GWS workforce include:

- The largest shortfall of jobs in GWS occurs in the construction sector and a number of the services sectors (including financial services and professional scientific and technical services);
- The share of GWS working residents engaged in manufacturing has decreased significantly since 2006;
- The share of service sector workers in GWS has increased in line with the increased number of jobs available in that sector; and
- The share of transport and storage workers in GWS has increased, however the number of available jobs in this sector within the region has declined.

The lack of job diversity in GWS limits its resilience against economic downturns such as the GFC which can lead to widespread job destruction across all employment sectors. The impacts of the GFC in Australia are still being felt in many sectors and the exacerbated impact of this within the GWS region has contributed to the relatively higher levels of unemployment within the region compared with the wider Sydney Statistical District (SSD) as shown in **Figure 16**.

FIGURE 15 – UNEMPLOYMENT RATES, WESTERN SYDNEY V SYDNEY STATISTICAL DISTRICT

UNEMPLOYMENT RATES 2010



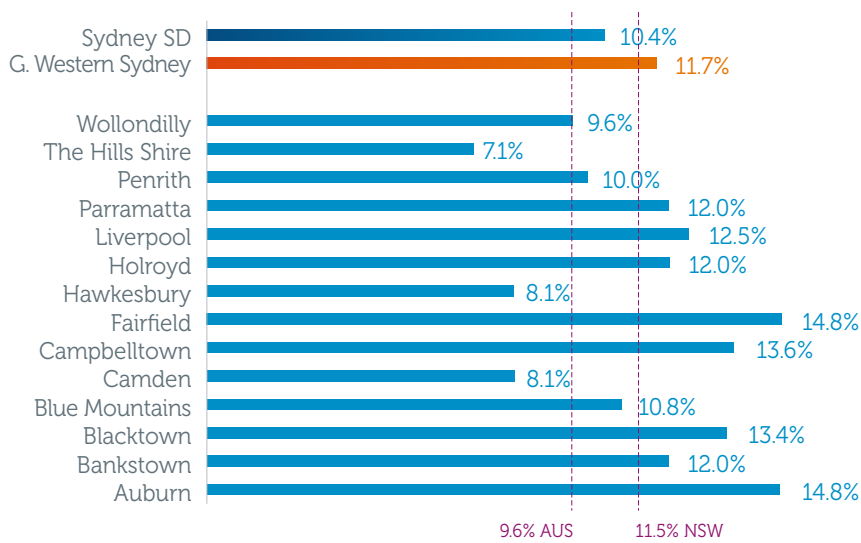
SOURCE: URBIS, ABS CENSUS 2011

The discrepancy in youth unemployment is even more marked as shown in **Figure 16** over the page with unemployment rates in the age group 15-24 at an average of 11.7% across the Western Sydney region compared with an average across the Sydney SD of 10.4% and a national average of 9.6%.



FIGURE 16 – YOUTH UNEMPLOYMENT RATES IN WESTERN SYDNEY

YOUTH UNEMPLOYMENT (AGED 15-24)

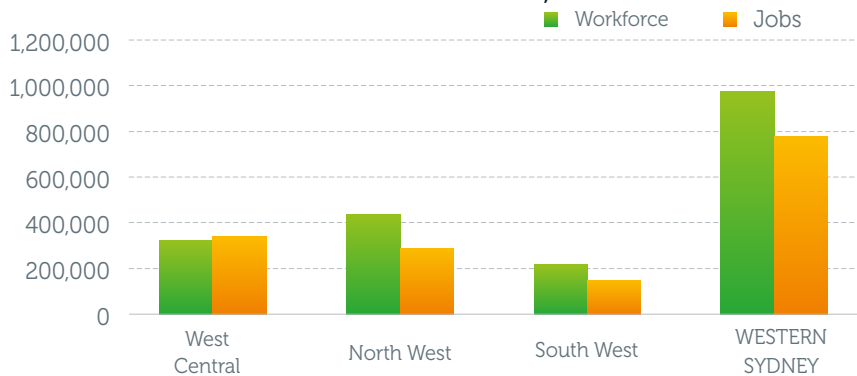


Source: ABS Census 2011

There are numerous factors which contribute to the higher levels of unemployment in the GWS region - many of which are beyond the scope of this study. However, equitable access to appropriate employment is an important consideration in any economic development strategy. Currently, there are insufficient jobs within the GWS region to provide local employment opportunities for residents. By comparing the number of jobs available in GWS against the size of the labour force, it is apparent that GWS has a net jobs shortfall of some 180,000 jobs (refer to **Figure 17**) and is therefore a net exporter of labour to other parts of Sydney.

FIGURE 17 – WESTERN SYDNEY JOBS SHORTFALL, 2011

WESTERN SYDNEY JOBS SHORTFALL, 2011

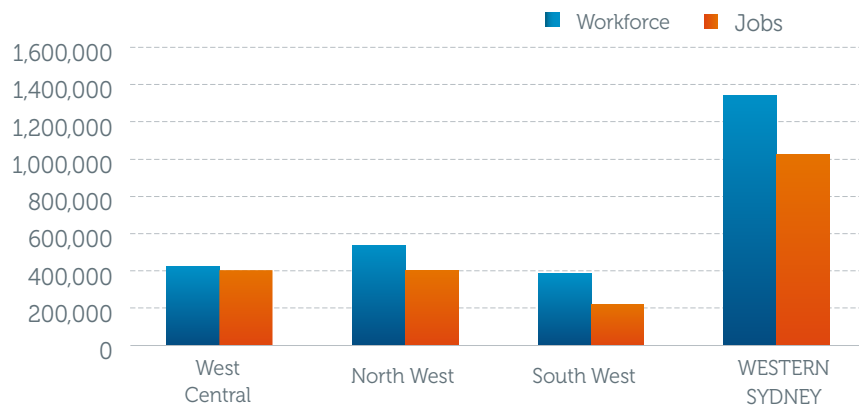


Source: ABS Census 2011

The shortfall illustrated above is projected to get worse over the next twenty years unless structural economic change occurs within the GWS region. **Figure 18** illustrates the projected job shortfall in Western Sydney at 2031 which shows that the shortfall of jobs increases to around 300,000.

FIGURE 18 – PROJECTED JOBS SHORTFALL IN WESTERN SYDNEY, 2031

WESTERN SYDNEY JOBS SHORTFALL, 2031

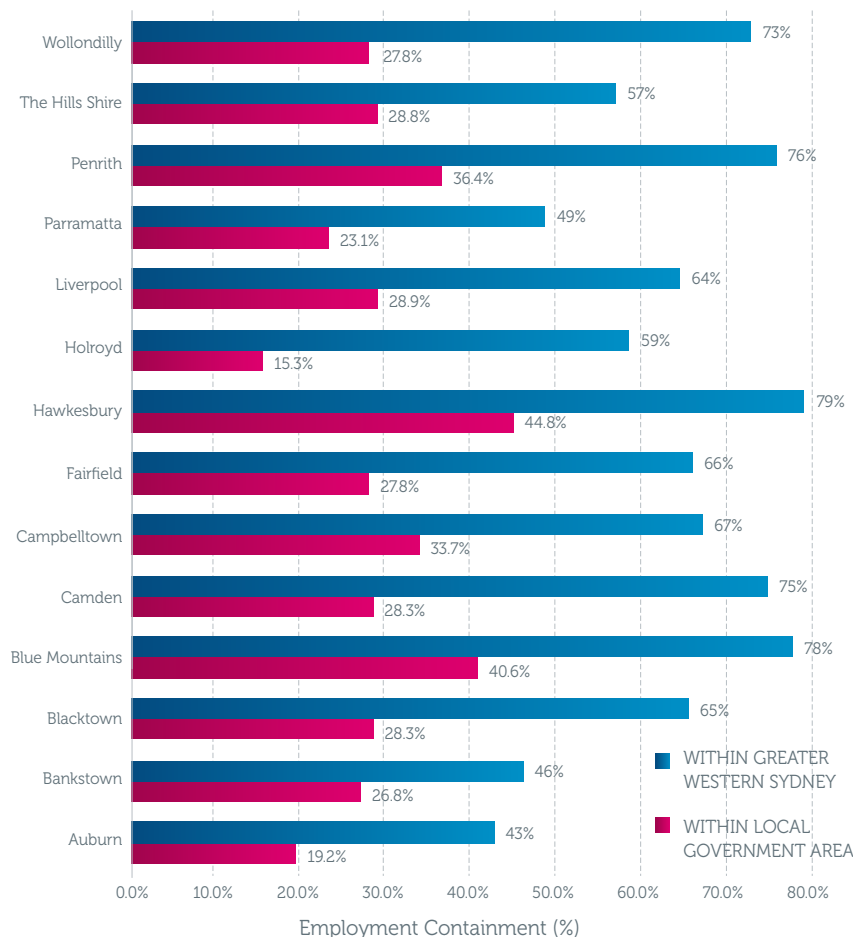


Source: Urbis

Employment self-containment is a common measure of the proportion of residents who live and work in the same geographical region. As a policy goal promoting employment self-containment seeks to reduce the number of local workers who need to leave the area to access employment with a number of sustainable flow-on effects including reducing congestion, reducing pollution related to vehicular emissions and promoting a better work-life balance and general level of wellbeing for residents. Employment containment across the GWS region is illustrated in **Figure 19**.

FIGURE 19 – EMPLOYMENT CONTAINMENT

EMPLOYMENT CONTAINMENT GREATER WESTERN SYDNEY REGION, 2011



Source: ABS Census 2011



Figure 19 shows the proportion of workers from each GWS LGA that work within their LGA and that work in the GWS region. The figure shows that employment self-containment levels vary across GWS LGAs with higher containment recorded in more isolated LGAs such as Penrith, Wollondilly, Hawkesbury, Camden and the Blue Mountains, and lower containment in suburbs such as Auburn, Bankstown, Parramatta, Holroyd, and The Hills.

In general, GWS has an average employment containment of 64% with a range within the constituent LGAs from 15% to 45%. In the context of projected population growth, the capacity of existing east-west transport connections, the lack of existing and committed public transport options, and the sheer distance of much of the GWS region from the concentration of jobs in the east of the city, the levels of job self-containment within the GWS region will need to increase over the next 30 years to ensure the region has equitable access to employment opportunities.



4 SECTORAL ANALYSIS

OVERVIEW

An analysis of key industry sectors was undertaken to establish the likely future contribution of each sector to the economy and employment base of Sydney and more particularly the Western Sydney Region.

Two measures are commonly used to measure the relative performance of industry sectors within an economy:

- Contribution to employment – this can be useful as a proxy for industry sector expansion and contraction; and
- Industry sector share of GSP - provides an indication of the industry sector's share of a States production.

To establish a true picture of the importance of an industry sector to an economy these two factors must be considered together, with either one in isolation reflecting only one aspect of its contribution or performance.

A useful example of the potential dichotomy within these two measures is that of the mining sector, particularly at a national level. Whilst mining makes a significant contribution to GDP its contribution in terms of employment is disproportionately low.

Of key relevance to this study is the performance of the industrial sector and its various subsectors. Overall, as a sector, industry's share of NSW GSP has fallen over the past decade. This has been particularly evident within the Manufacturing Sector which fell from 13.4% of GSP in 1990 to 8.4% in 2012. Conversely, there has been an increase in share of GSP over the same period to the Transport, Postal and Warehousing Sector and the Construction Sector from 4.4%-5.1% and 5%-5.7% respectively. This highlights the restructuring of the NSW industrial sector, which has seen manufacturing becoming less central in terms of production than it traditionally has been. This trend is also reflected in the decline in employment in manufacturing between 2006 and 2011. This restructuring is common among OECD countries as industrial market dynamics shift towards the developing countries of Asia.

A more detailed account of trends within key employment sectors within the GWS region is provided in the following sections.

MANUFACTURING

The decline of manufacturing nationally is a trend which has been occurring over the past two decades. However, more recent economic conditions have accelerated this trend with an annual average decline in manufacturing jobs of 1.5% over the past five years, higher than the 0.9% seen over the previous ten years. Over the five years to May 2012 the Department of Education, Employment and Workplace Relations (DEEWR) estimated that manufacturing employment contracted by 74,000 jobs (7.1%). The reasons for this accelerated decline are likely related to the sustained high Australian dollar and lower levels of consumer confidence persisting since the GFC in 2008. The trend is also reflected in the declining industry share of manufacturing from 20% in the mid-1980s to 11.1% in 2010⁹ due in part to manufacturing decline and in part to the higher growth rates of other sectors, especially mining and services.¹⁰

At a State level, the manufacturing sector has seen a declining share of NSW's GSP and exports since 1996. This trend is reflected in the economic structure of the GWS region with the manufacturing sector declining to 12.16% of total GWS jobs in 2011 down from 13.85% in 2006 – a loss of some 6,853 jobs over the five year period¹¹.

As previously noted the GWS jobs base is particularly vulnerable to this trend, however manufacturing remains the largest industry in GWS in terms of contribution to total employment. Despite its overall decline, it should be recognised that the manufacturing sector is a highly diverse industry sector, with varying degrees of economic growth, depending on the level of exposure to trade-related factors.

9 AIG Group (2012), *A More Competitive Manufacturing Industry*, February 2012

10 NSW Business Chamber (2011), *Manufacturing Futures*, April 2011.

11 Australian Bureau of Statistics, 2006 and 2011 Census



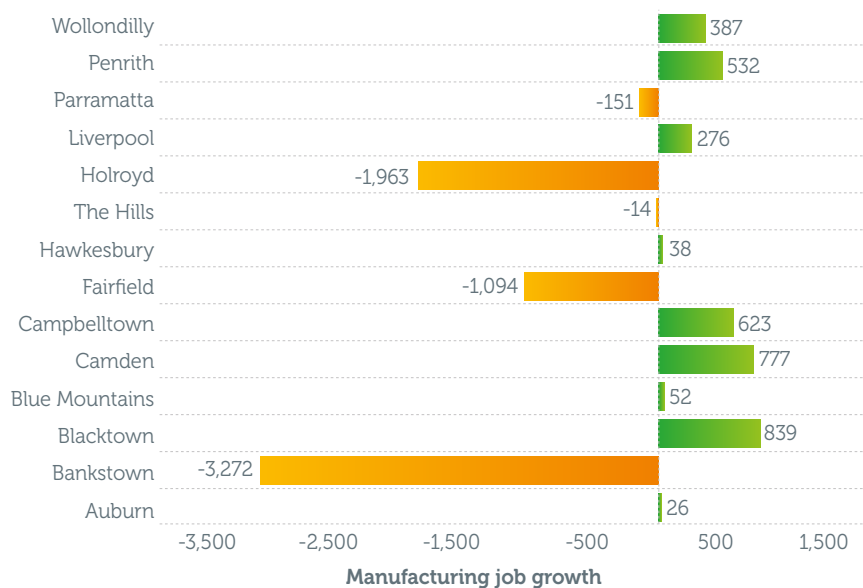
There are a number of successful sub industries within the manufacturing sector that have adapted to changing economic conditions and demand cycles, including many within GWS. Such sub industries in the GWS region which recorded jobs growth between 2006 and 2011 include:

- Beverage and Tobacco Product Manufacturing;
- Manufacturing (non-defined); and
- Machinery and Equipment Manufacturing.

Many of these more successful industries and businesses are those which have moved up the value chain in terms of the products manufactured or the technologies used. Businesses which are able to respond and adapt to changing economic conditions and/or create niches in advanced manufacturing are likely to remain viable and sustainable businesses for the region. In consideration of Western Sydney's competitive advantages in this sector, including lower land prices, availability of employment land and access to an aligned workforce, manufacturing is expected to remain a key part of the Western Sydney economy over the next decade. **Figure 20** shows that in some LGAs within Western Sydney, the manufacturing sector has actually grown over the past five years most notably in Blacktown, Camden, Campbelltown and Penrith.

FIGURE 20 – MANUFACTURING EMPLOYMENT IN WESTERN SYDNEY LGAS – 2006-2011

MANUFACTURING EMPLOYMENT CHANGE GREATER WESTERN SYDNEY, 2006 AND 2011



Source: ABS Census 2006 & 2011

CONSTRUCTION

Employment in the construction sector is largely driven by the housing and commercial needs of an expanding population and public and private infrastructure investment. The Construction sector can be broadly divided into residential and non-residential buildings and engineering projects. Traditionally residential construction has employed more workers than non-residential. In general, construction jobs in GWS increased between 2006 and 2011 by some 1855 jobs.

Recent trends in the sector include:

- A 3.6% increase in building installation services, which incorporates installations such as plumbing and electrical wiring required before a building can be considered finished, and includes both residential and non-residential building types;
- Significant increase in residential building construction from 5% in 2006 to 18.4% in 2011; and
- Slight improvement in non-residential construction and heavy and civil engineering construction, typically driven by investment in larger infrastructure projects.

As the Western Sydney region contains both of Sydney's designated Growth Centres, it is well positioned to take advantage of latent housing demand and to service the construction industry with raw materials and services. As such the construction sector in GWS is expected to remain stable over the coming decade.

TRANSPORT, POSTAL AND WAREHOUSING

The Transport, Postal and Warehousing (TPW) Sector consists of businesses engaged in providing transportation of passengers and freight, by road, rail, water or air. These types of businesses generally require industrial land and building space for their operations, and this sector therefore has a strong influence on demand for employment lands.

Containerised freight is expected to triple in volume over the next twenty years and the way in which this freight is stored, moved and distributed through the Sydney region stands to have a substantial impact upon demand for employment land. Western Sydney is emerging as a significant freight and logistics hub due to its location, land value and availability and most importantly, its connections with the Sydney motorway network. Currently, 85% of containers from Port Botany are bound for destinations within 40 kilometres of the Port, many within Western Sydney and the motorways provide the most efficient form of distribution for most of this containerised freight.

The WSEA is expected to remain attractive to businesses in this sector, subject to the resolution of existing infrastructure gaps to unlock further land for development by making it conveniently accessible to the motorway network. Future growth and demand within this sector is also closely linked to and influenced by future trends in freight movement within NSW and key freight infrastructure such as the port and airport as described in **Section 7** of this report.

Over the five year period between 2006 and 2011 the TPW sector increased its employment contribution State-wide by 1.36% and its share of NSW GSP from 4.9% to 5.2%.

Whilst growth in the sector is closely correlated with population growth and growth in containerised freight, the future growth in demand for logistics sites is expected to increase at a slower rate than growth in trade volumes and population growth due to:

- Improvements in supply chain management;
- Adoption of new technology in logistics;
- Longer hours of operations; and
- More efficient utilisation of sites resulting in lower land requirements per quantum of trade.



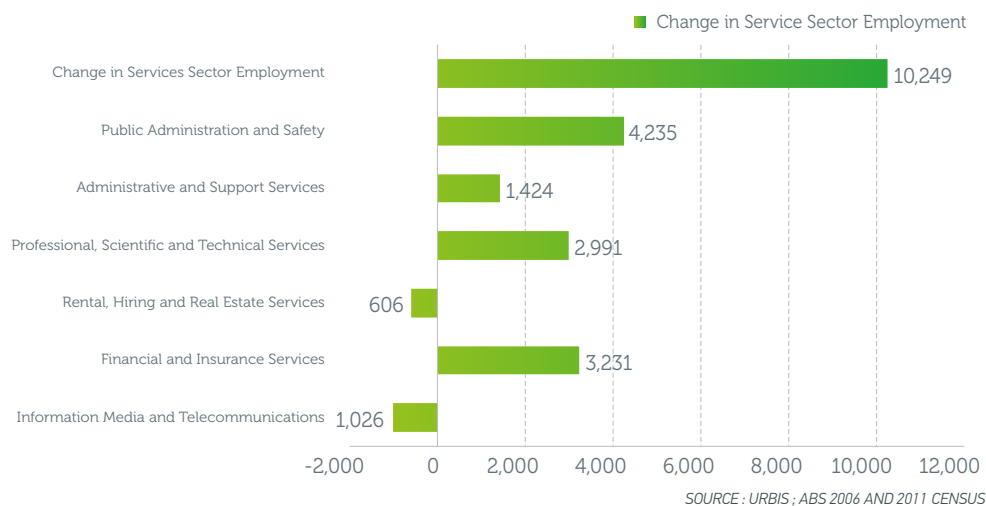
SERVICES SECTOR

The services sector is a rapidly growing sector nationally and in NSW driven by the underlying trend towards a service-based economy.

The structure of the Western Sydney economy has seen the effects of this shift, though the employment base remains heavily reliant upon the manufacturing and retail trade sectors as at the last Census. Growth in the services sector within Western Sydney is seen as the answer to greater job diversity in the region as this sector has a high proportion of 'white collar' or professional roles. Within Western Sydney between 2006 and 2011 'white collar' employment increased in a number of subsectors including most notably, public administration and safety, Professional, scientific and technical services and Finance and insurance services as shown in **Figure 21**.

FIGURE 21 – WHITE COLLAR EMPLOYMENT CHANGE, SERVICES SUB-SECTORS

SERVICES SECTOR EMPLOYMENT GREATER WESTERN SYDNEY, 2006 TO 2011



The composition of the services sector in GWS displays a mix of public and private sector employment. Whilst there has been strong growth in the services sector overall in the GWS region, the IT and real estate services sub-sectors experienced a contraction in overall employment over the five years from 2006 to 2011.

Key trends in services sector employment in the GWS region over the past five years include:

- Growth in total services sector jobs within GWS of 26,074, representing almost 40% of the region's jobs growth over this period.
- The strongest growth was experienced in the Financial Services Sector with recorded growth of 17.8% over this period. Some 88% of jobs growth in this sector was directed to Auburn LGA - likely within Sydney Olympic Park.
- Public sector employment growth was focused in the centres of Parramatta and Liverpool with 65% and 25% of new public sector services jobs directed to these centres respectively.
- The Hills Shire attracted the bulk of new jobs in the Professional, Scientific and Technical Services sector at 38% with the remainder being distributed throughout various other GWS LGAs.

Whilst the services sector is expected to play an increasingly significant role in the GWS economy, it is anticipated that the bulk of new jobs in these sectors will be concentrated in existing centres in the region. The Broader WSEA may attract some demand in the longer term for out-of-centre, business park style accommodation however this is likely to be a longer-term prospect in the absence of a significant catalyst.

AGRICULTURE AND AGRIBUSINESS

Agriculture accounts for only 2.5% of the State economy, however its contribution to export revenue is significant at 8.2% of all exports. In general however, the contribution of the sector is declining and is expected to be influenced by the shift to a low carbon economy.

Agriculture in the Sydney Basin has been a topic of great interest in recent times with concern that the expanding urban area of Sydney is encroaching within the productive agricultural lands which provide the city with local fruit and vegetables. Food production is also seen as a key opportunity for NSW and Australia to compete in the global market where quality is a key driver over cost. Indeed, agriculture is seen as one sector where Australia might successfully turn competitors into customers with the burgeoning Asian middle class driving demand for Australia's high quality produce.

It is questionable however, whether the Sydney Basin will play a key role in the agricultural sector moving forward given the inherent conflicts which exist between many agricultural enterprises, particularly intensive livestock agriculture and urban development.

Further, with a notable trend in agricultural enterprises towards economies of scale, the availability of sufficient and appropriate land within the Sydney Basin to support a commercially viable agricultural business is likely to become more and more limited.

Whilst there remains an agricultural presence within the Broader WSEA, predominantly in the form of intensive horticultural operations and poultry farming, it is considered unlikely that these businesses will be a significant ongoing contributor to the economic development of the Broader WSEA in the longer term.

Consideration has been given however to the establishment of a research hub focused on agribusiness which may provide opportunities to leverage off the agricultural history of the area and the growing interest in locally grown produce. The concept of 'hubs' is further examined in Chapter 9 of this report.

HEALTH CARE AND SOCIAL ASSISTANCE

Health care and associated services are largely population driven, and related to a region's demographic breakdown, particularly its age profile. The Health Care and Social Assistance sector is a rapidly growing employment sector both in NSW and across Australia. Nationally the greatest growth in the Health Care and Social Assistance sector has been at the opposite ends of the age spectrum, with Residential Care Services increasing by 42,000 (aged care, hostels etc) and Child Care Services which increased by 25,000 (34%) between 2006 and 2011. This is reflective of underlying trends including increasing life expectancy, an ageing population, increasing female participation in the workforce and an increasing birth rate.

Given the sector's relationship with the population demographic it services, the spatial demand for land for health infrastructure and associated services is generally focused around population centres. Existing health and medical precincts within Western Sydney include Westmead Specialist Health Precinct which has associations with the University of Western Sydney Hawkesbury Campus, Liverpool Hospital and surrounds and the Penrith Health and Education precinct which is centred around Nepean Hospital.

As the Broader WSEA is principally an employment precinct and is not expected to accommodate significant residential development, it is considered unlikely that population thresholds within the catchment would trigger a need for significant investment in health infrastructure in the study area.

The exception to this is likely to be childcare services, the demand for which is determined usually by a worker population. The provision of these services can vary between places of work and place of residents, with workers either utilising centres close to their home or workplace. As such there is likely to be potential demand for childcare services within the Broader WSEA as the worker population increases.



The following factors are likely to influence demand for childcare services within the Broader WSEA:

- The gender profile of the workforce will impact the propensity of demand for childcare service by future Broader WSEA workers;
- Worker income is a factor, with childcare service less likely to be sought by lower income workers, who would more likely seek non-paid childcare arrangements with a relative or friend; and
- Convenience for parents is a significant factor when it comes to choosing childcare services – this impacts the preferred locations of childcare services which typically co-locate with schools and shopping centres which can cut down on travel time for parents.

RETAIL SECTOR

Australian retail turnover rose by 0.9% in January 2013 according to the ABS, following a fall of 0.4% in December 2012 (8501.0 - Retail Trade, Australia, January 2013). Over the long-term food retailing remains the largest contributor to growth in retail turnover (up 0.2% in trend terms in January 2013). Across the country NSW has contributed the most to long-term growth (1.3%), retaining its position as the state with highest retail turnover.

With the largest population and above average weekly income, NSW has strong fundamentals for maintaining a positive long-term growth in demand within the retail sector. This will be underpinned further by the roll out of Australia's National Broadband Network (NBN) which will facilitate an increase in e-commerce locally and globally. Growth in e-retailing translates to different distribution patterns which drive adjustments in the type and location of demand for warehousing and distribution sites. This will likely drive demand for warehousing and distribution within the Broader WSEA.

In addition to this, the Broader WSEA will likely require additional retail floor space as it is developed, driven by demand for retail services by local workers. This will serve a precinct worker catchment rather than a broader residential catchment, and as such will include product categories and tenants that typically service workers rather than residents.

In an industrial estate, the Trade Area for a retail development is typically smaller than for a suburban shopping centre (unless considering a bulky goods development which typically has a very large trade area). Retailers within industrial areas have a high reliance on capturing worker expenditure rather than household shopping trips and worker spend is generally limited to food catering (principally lunches and beverages) which may be supplemented with a limited range of top up goods.

As the worker population of the Broader WSEA expands it is likely that there will be demand for some retailing, likely to comprise of:

- Smaller food catering tenancies such as cafés;
- Fast food/drive through take-away outlets;
- Service stations servicing passing auto traffic; and
- Supermarket/grocery retailing targeted at top-up shoppers.



INFORMATION AND COMMUNICATIONS TECHNOLOGY

The widespread adoption of advanced ICT is arguably one of the biggest drivers of societal and economic change globally over the past few decades. The ICT sector has changed the way in which people access and share information, the way in which we produce and market goods, the way in which services are delivered and the way in which businesses are operated. This has resulted in gains in efficiency, productivity and innovation across a wide range of other sectors and subsectors.

NSW and in particular, Sydney benefits from a relatively high share of the nation's ICT sector accommodating 39% of the nation's ICT businesses at June 2009 and 40% of ICT industry value added output. In 2010, the sector employed some 161,000 people across the State which is expected to grow to 183,000 by 2020. By 2020, the ICT sector is expected to account for around 4.9% of industry value added to the State economy (Department of Trade and Investment, 2013).

As home to over 60% of Australia's ICT regional headquarters and operations centres, Sydney appears to be in a strong position to take advantage of the growth and development which is anticipated to occur in this sector. However, there is expected to be strong competition from other States also seeking to attract the ICT industry.

The roll-out of the NBN is expected to drive further growth and change in this sector which will facilitate adjustments in a variety of other sectors and businesses in terms of the development of new products and business models. The extent of penetration of ICT into other business and industry sectors means that the scope for investment and development of ICT to drive broader structural economic change is substantial.

The roll out of the NBN is expected to be a catalyst for change in sectors such as health, education, energy and utilities and creative industry. The NBN is therefore expected to provide a direct stimulus to the broader economy by facilitating a range of new products and services which are not currently feasible with existing infrastructure capabilities.

The early installation of NBN within the Western Sydney region, perhaps within the Broader WSEA therefore offers a unique opportunity to position the region as Sydney's next 'Digital Precinct' or hub and drive the growth and development of other sectors in the region.

SECTORAL ANALYSIS CONCLUSIONS

Analysis of industry sectors and trends indicates that demand for employment land within the Broader WSEA in the short to medium term is likely to remain rooted in freight and logistics and general industry where the precinct offers significant competitive advantages.

However, this does not automatically translate into a homogeneous landscape of warehouses and an inherently limited range of employment opportunities. The following section explores trends already occurring within the manufacturing sector which are resulting in a change in the type and mix of jobs within the sector to include a greater proportion of 'professional roles'. As advanced manufacturing evolves in Sydney, this trend is expected to continue to grow.

Further into the future, investment in infrastructure, catalyst projects or other economic engineering interventions may drive the growth and development of other sectors in the Broader WSEA in line with the long term vision for the precinct. Some of these opportunities are examined in **Section 9** of this report.





5 INDUSTRY TRENDS

OVERVIEW

Based upon the sectoral analysis and industry consultation a number of key trends of particular relevance to the Broader WSEA were identified to inform demand forecasting. These trends include:

- The decline of manufacturing.
- The shift from 'making' to 'creating'.
- The 'Upsizers'
- The increasing role of technology.
- Consolidation and co-location.
- The growth of E-Retailing.
- Convergence and the 'Digital Economy'

These trends and the potential implications for the Broader WSEA are discussed in the following sections.

DECLINE OF MANUFACTURING

Global economic conditions and the sustained high value of the Australian dollar have contributed towards a decline in the manufacturing sector over the past decade with its contribution to the State economy falling from just over 12% in 2000 to less than 10% in 2010. This trend is not isolated to NSW or Australia, but is recognised across most OECD countries as advanced economies further develop and mature.

Despite the significant decline in manufacturing over the past twenty years, the sector remains a major contributor to GSP, generating more than \$35 billion or 8% of the State's total as well as some 280,000 jobs. Whilst this contribution is likely to decrease further over the next decade, the extent of the decline is expected to reach a plateau as industries adapt to changing economic conditions and dynamics such as increasing global competition and an increasingly high cost operating environment.

Businesses which adapt and move up the 'value chain' are likely to remain competitive as the sector shifts its focus to higher value products and advanced technologies. In contrast, continued decline is expected in the manufacture of lower value goods where the high Australian dollar and competition from developing economies makes off-shore production a more viable business model.

However, there are some signs of a return to some local manufacturing as developing economies themselves become more advanced and their competitive advantage begins to erode. Cultural shifts in developing Asian countries such as China and India are already impacting upon the availability of cheap labour as labour markets become increasingly unionised. These cultural and economic shifts, combined with increasing transport costs due to rising fuel and electricity prices may mean that on-shore manufacturing becomes increasingly attractive to some businesses over the coming decades.

THE CHANGING FACE OF MANUFACTURING - FROM 'MAKING' TO 'CREATING'

Whilst pressure on the manufacturing sector is expected to continue, there are already signs of the evolution of the sector in Australia and other OECD countries reflected in the 'unbundling' of the manufacturing value chain to separate the 'thinking' and 'making' components. Design and engineering of products is becoming an increasingly important part of the manufacturing sector in Australia and an area in which the country is well-placed to compete in the global marketplace.

Therefore, whilst there is expected to be continued decline in the production of less complex, lower value goods as described above, opportunities for growth remain in the manufacture of high-value products where quality and design are considered more important than cost. There is a growing shift within the manufacturing sector towards the front-end of manufacturing, through the design, technology and engineering processes where sub-industries are able to establish important niche markets for value-added products.



This is reflected, at least in part, by the professionalization of industry, evidenced by the increasing proportion of 'white collar' jobs within the manufacturing sector over the last decade. Whilst some of this might be attributed to the increase in automation within manufacturing resulting in the loss of 'blue collar' roles, the increasing number of professional roles within the sector is also indicative of the shift towards the 'creating' side of manufacturing.

Advanced technologies are further driving this trend with 3D printing and scanning, or 'desktop manufacturing' allowing for product design and engineering to be done via computer programs. The 3D printer then extracts the 'geometries' of the product and turns them into physical objects through the use of lasers to manipulate a chosen material. Whilst the technology is still in its early life, it is rapidly becoming more widespread and has the potential to change the face of manufacturing into the future in terms of the types of facilities and machinery required by manufacturing operations and the types of jobs and skills required within the manufacturing sector.

THE ROLE OF TECHNOLOGY IN MANUFACTURING

As discussed previously, technological advancements have impacted upon industry in a variety of ways, including directly through the techniques and machinery used in product manufacture or processes and indirectly through developments in building materials and construction techniques which can change the parameters within which certain industries can operate.

Many industries are taking advantage of technology to improve efficiency, diversify product and add value. The increasing mechanisation and use of advanced technology in manufacturing has resulted in greater efficiency and reduced labour costs (as well as a reduction in job densities within the sector). Emerging technologies such as 3D printing as previously discussed will further drive this trend. Investment in automation is also increasing with firms employing machinery rather than people to perform a variety of key tasks and operations.

Within the freight and logistics sector investment in robotics and automated technologies is increasing changing the way in which product sorting, stacking, recording and distribution is undertaken, reducing the need for hands-on human involvement. This is reflected in the increasing proportion of build cost expended on internal fit out and explains the significant rise in the value of industrial building approvals recorded in the DP&I's ELDP despite sustained declines in industrial land take up.

Seemingly simple advancements in construction techniques and building materials have also driven trends in industrial development by allowing industrial buildings to get larger and higher. The use of fibre reinforced concrete slabs and laser screed technology in building construction has vastly improved the 'flatness' achievable across a large concrete slab, therefore allowing the floorplates of industrial buildings to expand without creating operational or safety concerns. In response, machinery such as forklifts has been designed to stack higher without breaching safety standards and roof heights have therefore increased substantially. These seemingly minor developments have enabled the development of the 'big box' warehouses we see in the WSEA today as firms seek the benefits of economies of scale to remain competitive.

In summary, notable manifestations of the adoption of advanced technology in industry and industrial development include:

- An increasing proportion of capital investment in the internal fit out of buildings.
- A reduction in employee densities in the manufacturing and logistics sectors.
- Increased feasibility of more intense industrial and warehouse buildings as machinery makes better use of height in its operations.
- More efficient use of employment land as industrial operations utilise building height rather than land for expansion.

As innovation drives further technological advancements it is anticipated that manufacturing will continue to evolve both in terms of the processes used and the development typologies observed within the sector.

THE 'UPSIZERS'

Another observed response to increasing global competition in the manufacturing sector is the transition of manufacturers to importers and distributors. As it becomes less economically viable to manufacture products locally, some firms have ceased 'making' altogether and instead import the same or a diversified range of products and distribute them. Shelta Umbrellas is one such example. Typically, this shift drives the need for larger premises for storage and distribution and the trend has therefore been dubbed 'upsizing' (Professor Peter Phibbs, University of Sydney, 2013). This trend represents an opportunity market for the Broader WSEA.

CASE STUDY: THE 'UPSIZERS' – SHELTA UMBRELLAS

'Shelta Umbrellas' began as a family business in Kent Street, Sydney in 1911, manufacturing firstly rain umbrellas before expanding into beach and garden umbrellas in the 1930s.

In 1953, the business relocated out of the city to North Sydney and then further out again to Homebush in 1985.

Feeling the squeeze from increasing global competition – in particular China, Shelta diversified into the importation of outdoor furniture in 1994 with sales of this new product more than doubling since 2000. The company now imports almost 800 40ft containers a year with some 70% of this being furniture. The shift in the business required larger premises and the firm moved to Prospect in 2004 where the warehouse remains.

CONSOLIDATION AND CO-LOCATION

In the drive to reduce costs and remain competitive, industrial operations are increasingly seeking the benefits of economies of scale to maximise efficiency. In relation to industrial development, this trend has principally manifested in the consolidation and/or co-location of operations from a number of smaller sites, to a single large site.

Within the freight and logistics sector the consolidation model also aligns with changing distribution patterns driven by the growth of e-retailing – discussed further below. This model sees firms consolidate distribution centres into one single location, often becoming the national or State distribution centre, supported by a number of smaller satellite centres within the middle and inner ring suburbs which allow for point in time delivery of goods to the Sydney Metropolitan market. Some evidence also exists to support a trend towards co-location of office space with warehousing or industrial operations. This is reflected in the incremental increase in the proportion of commercial office floorspace observed in many modern industrial developments from the traditional 5-10% up to 15-20% or higher in some cases.

The consolidation trend is evidenced by the substantial increase in the size of warehouses over the past decade from a 'large' warehouse size of some 10,000 square metres to 50-90,000 square metres today (enabled through innovations in construction materials and equipment as discussed earlier in the report). This trend is driving a growth in demand for large industrial sites which can support buildings and operations of this scale.

Other key manifestations related to the trend towards greater efficiencies in the freight and logistics sector include:

- Consolidation of operational locations, warehouses and similar facilities, typically into a single facility for each territory serviced;
- Use of the largest road transport vehicle for each task;
- Increasing hours of operation, including double shifting, out of hours deliveries and collections;
- Increasing use of technology to replace physical goods and documentation transfer;
- Location becoming increasingly important; and
- Agglomeration of warehousing.



E-RETAILING

Urbis estimates the value of the Australian online market at \$9.4 billion (2010), equivalent to 3.6% of the consumer retail market; or 3.9% of reported ABS retail. Although growth in this sector is expected to moderate over time it is forecast to remain strong at 16% growth per annum over the next decade. Based on demand and supply side fundamentals it is expected that online retailing could potentially provide for 15% of the consumer retail market in Australia, however will likely take up to 20 years to fully capture its market share. There are a number of key drivers behind the growth in this sector in Australia specifically, including:

- Higher consumer prices on an international scale;
- Narrower local product ranges;
- A relatively wealth population; and
- A willingness to adopt new technologies.

Of the potential market share of 15% two-fifths are likely to be delivered from or picked up from a shop. The expected net effect on shops and shopping centres is reduced to around 8% in the long term. While international suppliers have been dominant in the early adoption phase of online retailing, in the future the share of the online market's source of product will be determined by the extent to which mainstream Australian business embrace online retailing. Changes in the US market in the post-internet retail era illustrate the shift in sales trends for physical stores and the online channel.

In terms of employment lands, the growth in e-retailing translates to different distribution patterns which drive adjustments in the type and location of demand for warehousing and distribution sites. This is manifesting in the establishment of consolidated larger national distribution centres on the fringes of the urban area with good motorway connections supported by a small number of smaller satellite distribution centres which have proximity to the customer base and can deliver goods within a few hours of the receipt of the order.

Another emerging typology associated with e-retailing is the 'Black Box' distribution centre. These large warehouses act as storage facilities for supermarkets and other major retailers, accepting online orders which are packaged up within the facility. Customers then visit the site to pick up the prepaid order.

CONVERGENCE AND THE 'DIGITAL ECONOMY'

The 'Digital Economy' is generally considered to be the result of the convergence of the ICT and creative industry sectors and includes a wide variety of subsectors. The NSW Department of Trade and Investment (DT&I) is focused on positioning NSW to be a global leader in this growing area with a vision that:

"By 2020, NSW is recognised globally for leading innovation and driving productivity gains in key sectors of the economy, enabled by strong, vibrant and connected ICT and Creative Industries".

To achieve this vision, the DT&I has prepared a 'NSW Digital Economy Industry Action Plan'. A key part of this action plan is growing Sydney's Digital Precinct to support the development of an 'innovation ecosystem' for NSW.

Growth in this sector is being driven by start-ups and small and medium sized enterprises (SMEs) which benefit from the reduced barriers to entry created through the digitisation of content. The sector is considered to provide opportunities for local industry development with a focus on 'Digital Precincts'. Currently, Sydney's Digital Precinct is generally recognised to be in the city's south around the suburbs of Surry Hills, Ultimo and Pyrmont.

NBN infrastructure would have a significant impact upon the growth of this sector and could be a catalyst for the evolution of more 'Digital Precincts' throughout the Sydney region. Early roll out of this infrastructure in the Broader WSEA may make this area more attractive for the establishment of ICT businesses with subsequent benefits for job diversity, innovation and economic growth in the region. It should be noted however, that these sorts of businesses are likely to seek out agglomerations with access to a range of services, amenities and transport choices.

CONCLUSIONS OF SECTORAL ANALYSIS AND INDUSTRY TRENDS

A high level analysis of key industry sectors and trends that influence the potential mix of employment uses likely to be attracted to the Broader WSEA is provided in **Table 3** below.

TABLE 3 – SECTORAL TRENDS AND IMPLICATIONS FOR BROADER WSEA

SECTOR	NOTABLE TRENDS	IMPLICATIONS FOR BROADER WSEA
Manufacturing Sector	<ul style="list-style-type: none"> Decline of traditional manufacturing as a share of economic output. Changing focus from 'making' to 'creating'. 'Upsizing' of traditional manufactures into importers. Increasing automation driving lower job densities. Advanced technologies changing the face of manufacturing such as 3D printing and scanning. Overall growth in job numbers in manufacturing in the long term, albeit at a slower rate compared to other sectors. 	<ul style="list-style-type: none"> With an over representation of jobs in the manufacturing sector in the region, Western Sydney is particularly vulnerable to the decline of this sector. Broader WSEA has competitive advantages for manufacturing operations in terms of access to workforce, available land area and separation from sensitive land uses such as residential development property prices. Broader WSEA is well placed to accommodate 'upsizers' with reasonable supply of large sites which are limited elsewhere in the Sydney region, with these groups diversifying from local manufacturing into import and distribution models requiring additional floorspace. Increasing proportion of 'professional' roles within the manufacturing sector driving greater job diversity for the Broader WSEA over time. Opportunities to build on the region's strength in manufacturing to position the Broader WSEA to become Sydney's Advanced Manufacturing Hub.
Transport, postal and warehousing Sector	<ul style="list-style-type: none"> increasing role of technology leading to larger warehouses and lower employment densities. Consolidation of facilities to achieve economies of scale resulting in larger facilities and corresponding need for larger sites. Growth of e-retailing driving changes in distribution patterns and associated warehousing spaces. Move towards a single large national distribution centre supported by a number of smaller 'satellite' distribution centres. 	<ul style="list-style-type: none"> Strong presence of freight and logistics within the Broader WSEA and demand expected to continue in the foreseeable future subject to infrastructure provision. Availability of large sites within the Broader WSEA and access to the M7 (and potentially, the Outer Sydney Orbital) provides a competitive advantage for attracting large warehousing and distribution facilities. Broader WSEA likely to attract large national distribution centres with satellite centres occurring in the middle and inner ring suburbs in closer proximity to the customer base.
ICT and Creative Industry Sectors	<ul style="list-style-type: none"> Convergence of these sectors into the 'Digital Economy'. Increasing adoption of advanced information technologies across a variety of sectors and subsectors. Proliferation of small and medium sized enterprises in this sector driving innovation and job creation. 	<ul style="list-style-type: none"> Currently, Sydney's nominated 'Digital Precinct' is located in southern Sydney around Surry Hills, Ultimo and Pyrmont. Businesses in this sector likely to seek agglomeration and locations with good access to a range of services, amenities and transport choices. Growth and development in this sector will drive innovation in other sectors including manufacturing and warehousing and distribution. Roll out of NBN in Western Sydney could make the area more attractive for these businesses and opportunity to position the area as the next Digital Precinct or Hub.



SECTOR	NOTABLE TRENDS	IMPLICATIONS FOR BROADER WSEA
Health care and social services	<ul style="list-style-type: none"> ▪ Growing and ageing population underpinning strong growth in demand for health care and in particular, aged care. ▪ Growing prosperity of the population also driving demand for health services. ▪ Increasing workforce participation amongst female workers will drive increasing demand for childcare services. 	<ul style="list-style-type: none"> ▪ Medical hubs already emerging in Western Sydney including Westmead Specialist Medical Precinct and Penrith Health and Education Precinct. ▪ Health infrastructure is population driven and generally attracted to centre locations therefore unlikely to see significant jobs in this sector in the Broader WSEA in the absence of a catalyst such as a new hospital. ▪ Potential demand for child care services in the Broader WSEA as the worker population increases.
Education	<ul style="list-style-type: none"> ▪ Australia increasingly recognised for world-class tertiary education facilities. ▪ Growing international students demand. ▪ Emergence of the 'knowledge hub' characterised by a clustering of university campuses, research facilities and aligned businesses. ▪ Emergence of international university campuses. ▪ Development of schools within residential areas. 	<ul style="list-style-type: none"> ▪ Education clusters or precincts require an anchor such as a University, TAFE or research facility. ▪ University of Western Sydney (UWS) currently has five campuses and will focus the majority of its growth in Parramatta. ▪ Federal grant recently given to UWS to establish a 'hub' around the UWS Penrith Campus. Therefore unlikely to establish facilities elsewhere in the region in the foreseeable future. ▪ Dedicated research partnerships with industry may be the best mechanism to attract the tertiary education sector into Broader WSEA.
Professional services	<ul style="list-style-type: none"> ▪ Rapid growth sector due to restructuring of the economy towards services rather than goods. ▪ Trend towards co-location of administrative headquarters with operational facilities and warehousing and distribution centres. ▪ Rising proportion of office content within industrial/warehousing developments. ▪ Majority of office demand will be centre based whilst some will be accommodated within business parks. 	<ul style="list-style-type: none"> ▪ Broader WSEA's current lack of public transport and mix of amenities makes it difficult to attract stand-alone commercial office spaces. ▪ Professional and financial service businesses generally seek out centre locations to be proximate to clients and associated businesses. ▪ Distance of the Broader WSEA from the CBD and core urban areas may discourage businesses from relocating here due to risks to workforce retention. ▪ Anecdotal evidence of emerging demand for co-location of office space with warehousing within the existing WSEA. ▪ May see some increasing demand for office space within the Broader WSEA in association with industrial and warehousing development as manufacturing continues to professionalise and a critical mass of logistics operations develops.
Retail Trade	<ul style="list-style-type: none"> ▪ Growth of E-retailing ▪ 'Black Box' distribution centres ▪ Major retailers doing their own distribution rather than outsourcing to specialist logistics firms. ▪ Future retail development will continue to be focused around residential growth. ▪ In the absence of a significant residential population to underpin larger format retail centres, retail provision in a business park setting will continue to be smaller scale with a convenience focus. 	<ul style="list-style-type: none"> ▪ Growth in e-retailing driving different distribution patterns influencing the type and location of demand for warehousing and distribution sites. ▪ Observed trend for consolidation into a single national distribution centre supported by a number of smaller satellite distribution centres which have proximity to the customer base and can deliver goods within a few hours of the receipt of the order. ▪ The Broader WSEA is well positioned to attract demand for larger distribution centres including 'Black Box' distribution centres as occurs in the existing WSEA. ▪ Retail offer within Broader WSEA would likely be focused on servicing the local workforce, therefore dominated by convenience food and beverage with a likely mix of: <ul style="list-style-type: none"> – Smaller food catering tenancies such as cafés – Fast food/drive through take-away outlets; and – Service stations servicing passing auto traffic. ▪ A larger supermarket based centre could only be considered in a business park setting also supported by a local resident population.

6 EMPLOYMENT LAND ANALYSIS

OVERVIEW

When considering the future of the Broader WSEA it is important to examine it in the context of employment lands across the Sydney Region, as the various employment lands precincts across the city function as an interrelated network. Each precinct plays a role in accommodating employment land demand for a variety of different employment generating uses, dependent upon the physical and spatial attributes of the land.

Employment land across the Sydney Region is strategically identified in the Government's Draft Metropolitan Strategy and is monitored at a State level through the ELDP. The ELDP constitutes a team within the DP&I with responsibility for managing the supply of employment lands across the State. An annual ELDP report is issued with the latest data on employment land supply, broken into three categories:

- Undeveloped, zoned and serviced land;
- Undeveloped, zoned land (not serviced); and
- Strategy Identified Land (being land which is earmarked in endorsed strategies for employment use but not yet zoned).

These terms are defined in the glossary in Chapter 1 of the report.

The latest ELDP release indicates that the Sydney Region has 15,394ha of existing zoned employment land with 30% of this stock (4,620ha) remaining undeveloped at January 2012. Much of the undeveloped stock is located in the Western Sydney and Central Coast regions. Of the undeveloped, zoned employment lands across the Sydney Region, some 830ha are also serviced (water and sewer connection) and therefore potentially ready for development. This zoned and serviced land represents three years supply at a high take up rate of 300ha per annum or ten years supply at a low take up rate of 80ha per annum. Take up of employment land over the past four years has been declining as shown in the table below.

TABLE 4 – TAKE UP OF EMPLOYMENT LAND

YEAR	TAKE UP PER ANNUM
2008	264 hectares
2009	205 hectares
2010	153 hectares
2011	120 hectares
Average	186 hectares

As shown in the table above, take up of employment land in the Sydney Region is moderate, with a four year average annual take up rate of 186 hectares. Based upon this average annual take up rate, Sydney has 4.5 years supply of zoned and serviced employment land which falls just below the accepted supply benchmark of 5-7 years.

In contrast, the Sydney Region has supply of Strategy Identified employment lands of 24-91 years and 13-47 years of zoned, unserviced supply (based upon low and high take up rates respectively). This supply is well in excess of accepted supply benchmarks for these land categories. It therefore appears clear that any supply issues are related to land servicing, rather than the reservation or zoning of land.

The Broader WSEA constitutes a total area of approximately 10,700 ha. Excluding the zoned land within the existing WSEA (1,800 ha), this equates to a potential additional supply of employment land of some 8,900ha. In order to appreciate the scale of the study area and its potential contribution to the supply of employment land for the Sydney Region, this equates to just over 80% of the existing, developed employment lands stock of the Sydney Region.



EMPLOYMENT LANDS MARKET ANALYSIS

The past 12 months has seen a marked increase in gross industrial leasing activity from those recorded for the previous 12 months from 618,197m² to 866,560m², exceeding the five year average of 836,509m²¹.

However, this increased activity is largely attributed to the relocation of tenants to alternate premises offering higher grade, more modern space with improved efficiencies and is therefore not representative of material growth in occupied space across the Sydney region. Vacancy rates have remained above historic averages, particularly in lower grade and smaller scale industrial stock below 5,000m².

A two tier dynamic has emerged over the past 12 months whereby Sydney's industrial market has experienced strong acquisition demand from institutional and wholesale investors seeking high quality Prime Grade assets, while Secondary Grade facilities have experienced soft enquiry levels from investors and tenants alike. The secure, long term leases and competitive yields that Prime Grade assets offer have encouraged income return-seeking institutional buyers back into the market, while the consolidation and cost reduction strategies discussed earlier in this report have seen warehouse and logistics tenants in particular seeking quality facilities that assist the performance of their businesses.

Domestic and foreign institutional investors have dominated the market over the past 12 months with GPT, GIC of Singapore, Goodman Group, Charter Hall, DEXUS and Aviva all purchasing assets over the past 12 months. Strong demand combined with a lack of industrial facilities on the market has seen yields tighten and capital value grow across Prime Grade markets.

Recent lease transactions in the existing WSEA have indicated some modest rental growth over the past 12 months.

Some key factors expected to drive demand for industrial space over the short to medium term include:

- High Australian dollar supporting imports which in turn will support underlying demand for industrial space in Sydney;
- NSW planned investment in infrastructure which would assist freight movement across Sydney supporting industrial demand; and
- Improving economic conditions and growing container movements at Port Botany will put upward pressure on land values and rents in those subregions enjoying ready road and rail infrastructure access.

Market expectations over the coming 12 months are for rental growth in prime industrial space, however secondary stock is expected to underperform. Increased demand is expected from retailers (low –end retailers and e-traders) with companies such as Bunnings and Bantex entering significant pre-commitments over the past 12 months.

Additionally, there has been increased demand from logistics companies seeking 15,000 – 45,000m² spaces to accommodate expansions and improve warehouse configuration. With a lack of prime grade stock in that range, the market expects demand to be met though pre-lease commitments and speculative activity (such as that recently undertaken by DEXUS at Erskine Park where 28,000m² is available).

Western Sydney currently has a competitive advantage over other employment areas in the Sydney Region in terms of property values and motorway accessibility. Industrial land users traditionally located around Sydney's East and South subregions (i.e. Botany, Mascot, Banksmeadow etc) have progressively moved west as the city's population and urban footprint has expanded and competition from alternative land uses increases. As such current manufacturing, transport and warehousing activity and demand is concentrated along major transport corridors and arterial roads such as the Hume Highway, the Great Western Highway, and the M4, M5 and M7 Motorways. Industrial land development opportunities in the East and South subregions have in recent years been priced out by other subregions because of their diminishing industrial land base (a function of increased inner-city residential densities and planning pressures) and the demand pressure created by Port Botany users.

Relocations have also been observed from established industrial precincts such as Wetherill Park and Smithfield to the existing WSEA driven by need for expansion, ageing building stock and/or increasing congestion. Known relocations to the existing WSEA are illustrated in **Figure 22**.

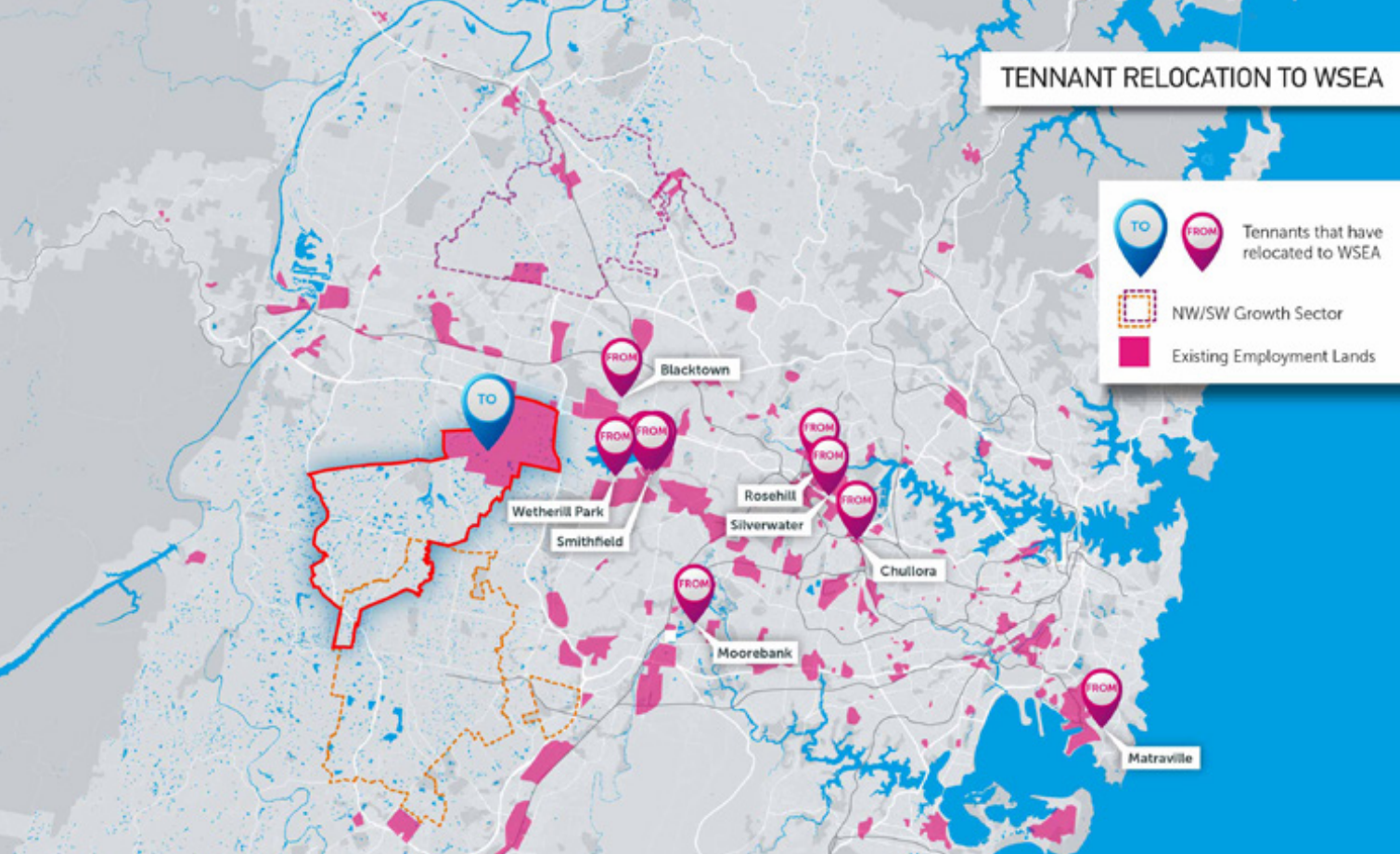
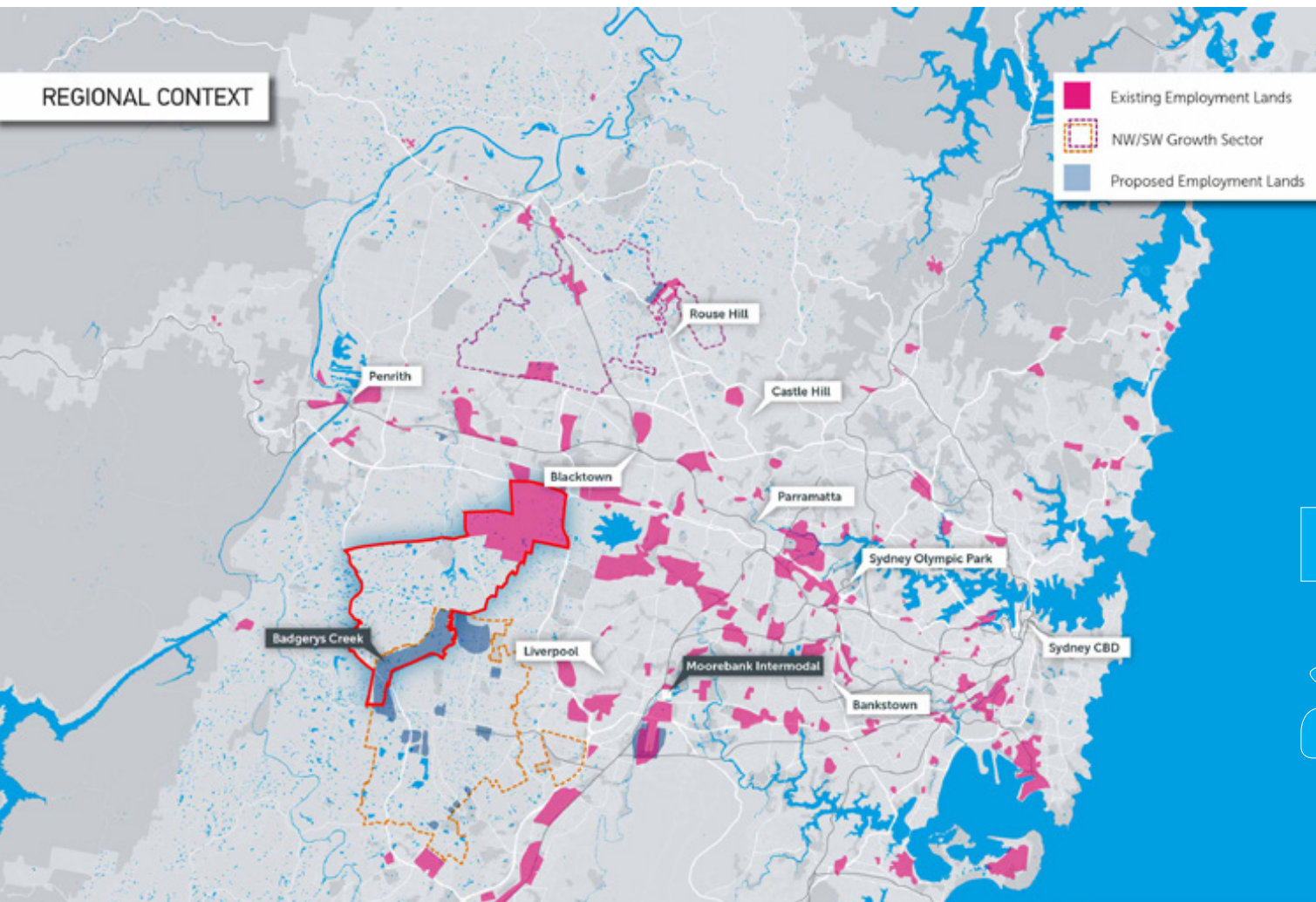


FIGURE 22 – RELOCATION PATTERNS TO EXISTING WSEA

EMPLOYMENT LANDS DISTRIBUTION

Employment lands across the Sydney Region are spatially distributed as shown in Figure 23.

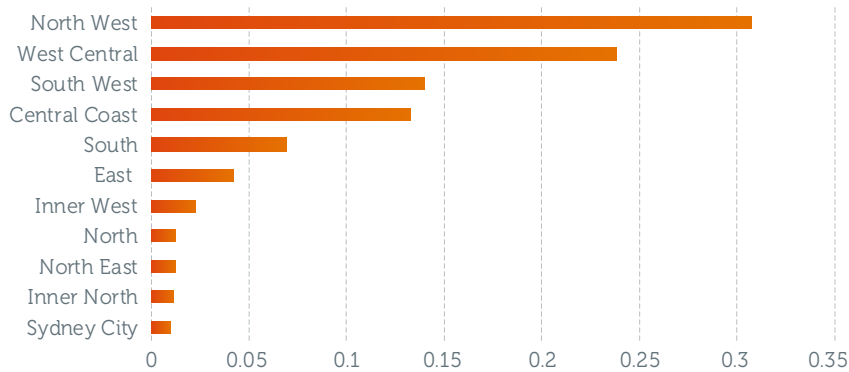
FIGURE 23 – DISTRIBUTION OF SYDNEY REGION EMPLOYMENT LANDS



The figure illustrates the dispersed nature of employment land across the Sydney Region with a radial spread outwards from the Port and Airport along major infrastructure corridors and aligned with population growth patterns. The largest concentration of employment land occurs in Western Sydney, with some 69% of zoned supply located within the three Western Sydney Subregions (see **Figure 24**).

FIGURE 24 – SHARE OF EMPLOYMENT LAND BY SUBREGION

SHARE OF TOTAL EMPLOYMENT LAND IN THE REGION
(DEVELOPED AND UNDEVELOPED)



Source: ELDP Update Report 2012 (Unreleased)

The evolution in the distribution of employment lands across Sydney can be linked to a variety of social, economic and environmental factors which can provide important insights into the key spatial drivers of demand for employment land. **Figure 25** illustrates the distribution of employment lands across Sydney in relation to the Port and Airport.

FIGURE 25 – DISTRIBUTION OF EMPLOYMENT LANDS - SYDNEY



It is useful to compare the spatial distribution of employment land in Sydney with that of other major Australian cities to identify patterns in land use distribution as they specifically relate to employment lands.

Figures 25 to 29 show the distribution of employment lands across Melbourne, Brisbane, Perth and Adelaide for comparison. Table 5 on the next page summarises the key points to note in relation to this comparative analysis.

FIGURE 26 – DISTRIBUTION OF EMPLOYMENT LANDS - MELBOURNE



FIGURE 27 – DISTRIBUTION OF EMPLOYMENT LANDS – BRISBANE

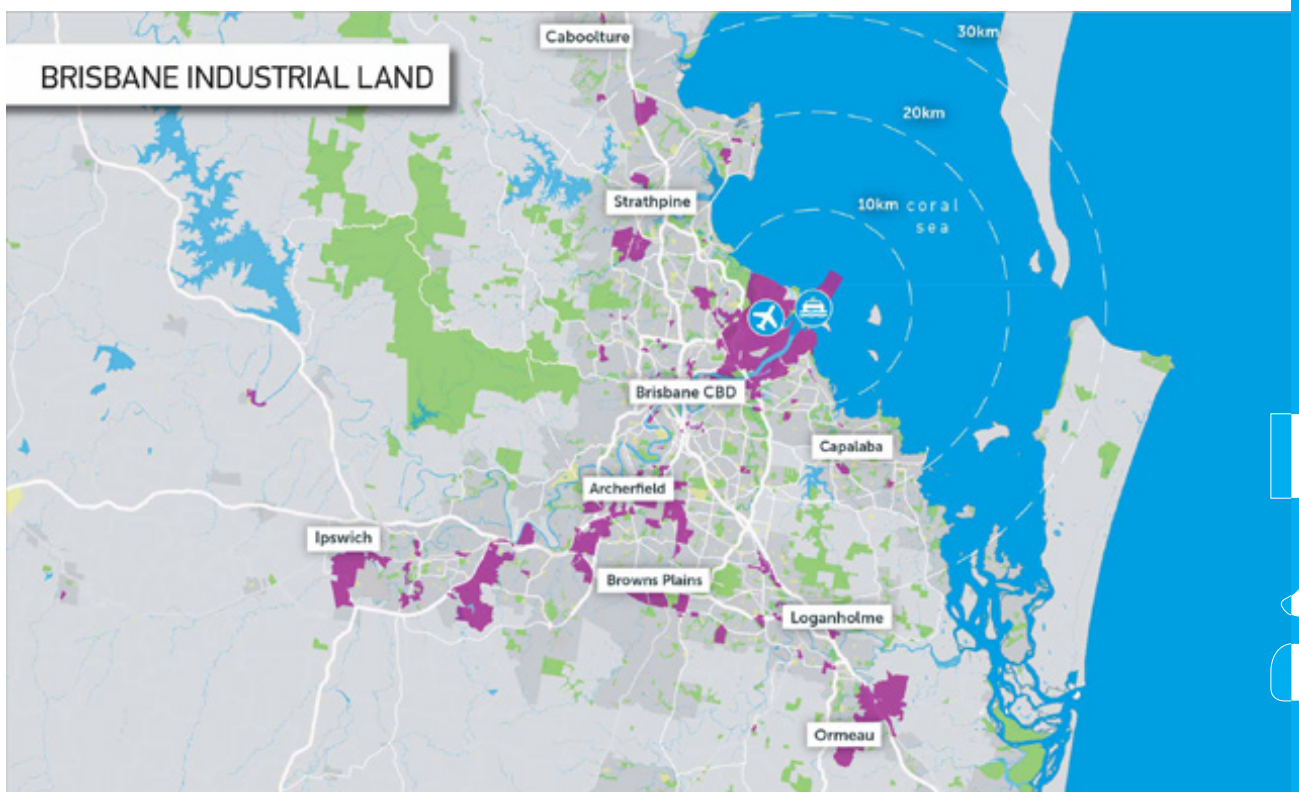


FIGURE 28 – DISTRIBUTION OF EMPLOYMENT LANDS – PERTH

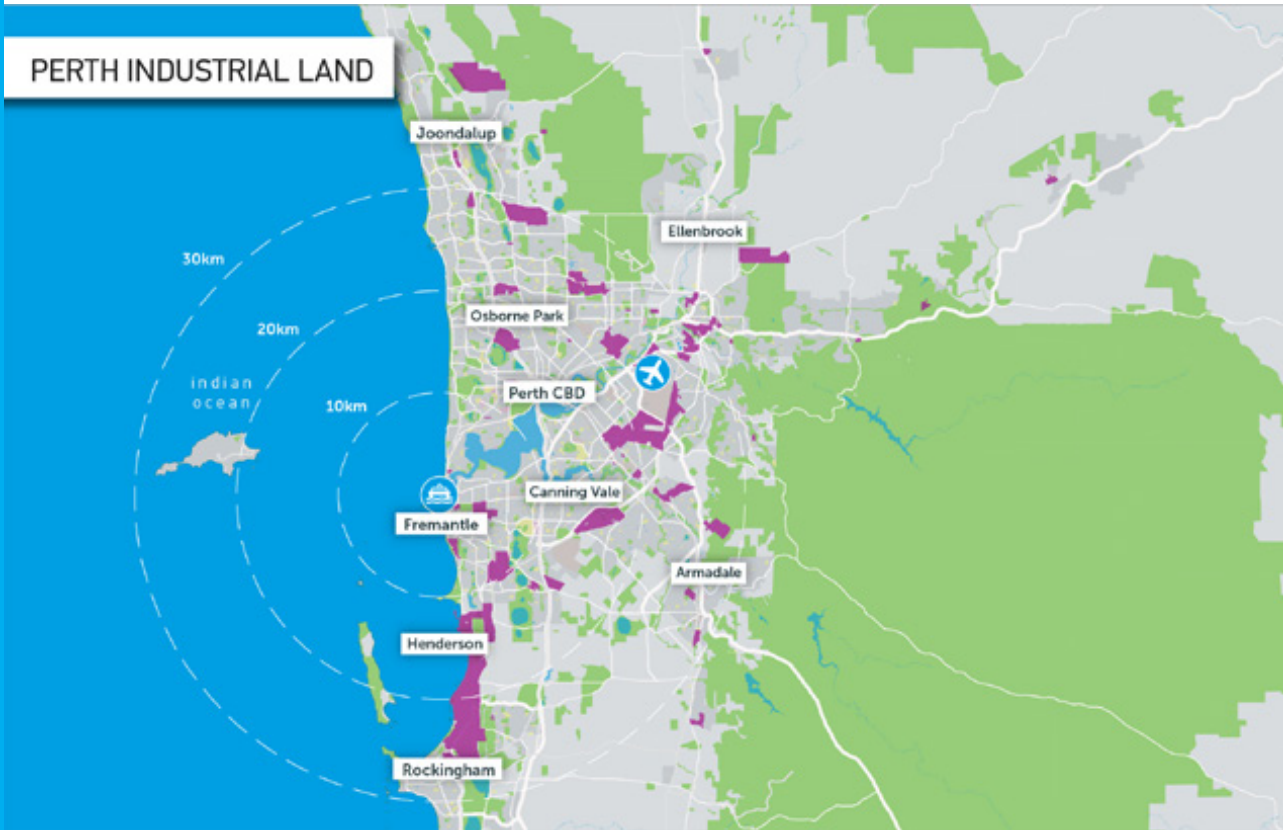


FIGURE 29 – DISTRIBUTION OF EMPLOYMENT LANDS – ADELAIDE



The distribution of employment lands across these five major cities is discussed in **Table 5**.

TABLE 5 – COMPARATIVE ANALYSIS OF EMPLOYMENT LANDS DISTRIBUTION – MAJOR AUSTRALIAN CITIES

CITY	COMPARATIVE ANALYSIS OF DISTRIBUTION
Sydney	Sydney's employment lands are dispersed along major infrastructure corridors with agglomerations in the western part of the city, much of it more than 20km from the airport and CBD.
Melbourne	Melbourne has extensive supply of employment lands which are geographically dispersed, generally following the expansive urban area of the city. Melbourne exhibits large agglomerations of employment land in proximity to key freight nodes. One such area exists to the west of the CBD, in close proximity to the Port (within 10-20km) with a further agglomeration to the north of the CBD proximate to the airport.
Brisbane	The majority of Brisbane's employment land is located directly around the Port with remaining areas on the periphery of the City. Distribution is focused to the south-west of the CBD along key infrastructure corridors at Archerfield and Ipswich. The port and airport in Brisbane are located in close proximity (similar to Sydney) making this location particularly attractive for trade-related operations. However it is noted that as a result, the area suffers from congestion.
Perth	Perth has a more limited supply of employment land by comparison with other major cities. Distribution is focused around the airport on the periphery of the City and along the coast south of Fremantle Port, over 20km from the CBD.
Adelaide	Adelaide's employment land is also more limited in supply and is heavily concentrated around the Port to the north of the CBD. A second agglomeration exists to the south of the City at Lonsdale, over 20km from the CBD and airport. This area previously accommodated oil refineries and car manufacturing plants (including Mitsubishi and Chrysler), however many of these have since closed.

In comparing the distribution of employment lands across the major cities, there appear to be three key influences on Sydney's employment lands distribution:

SYDNEY IS A COASTAL CITY

As a coastal city, Sydney's urban expansion is restricted principally to the west of the CBD with opportunities for growth restricted to the north, south or east. As a result, competition between land uses is particularly fierce, especially within ten kilometres of the CBD. In this environment, it is difficult for employment lands to compete with higher value land uses such as commercial and residential development, therefore we see agglomerations of employment land quite distant from the CBD (greater than 20 kilometres). This contrasts with employment land distribution in most of the other major cities where employment land precincts are commonly located within 20 kilometres of the CBDs.

This can be at least partly attributed to the geography of these cities. Brisbane, Perth, Melbourne and Adelaide have more centrally located CBDs and therefore benefit from growth and development opportunities in a broad radius around the CBDs to cater for a wider variety of land uses. A greater available of land around the CBD reduces competition between land uses and allows employment lands to be commercially viable in closer proximity to the city centre.

LOCATION OF PORTS AND AIRPORTS

Despite a constrained land supply proximate to the CBD, Sydney differs from the other four major cities studied in the co-location of both its principle port and airport in the same precinct, within 10 kilometres of the city centre. Employment lands surrounding this airport/port precinct exist in a fragmented fashion, interspersed with often conflicting land uses including residential development. Brisbane is the only other city to have its port and airport co-located in the same precinct however these key infrastructure nodes are located further out on the periphery of the city, within a large, established industrial area.



Melbourne, Adelaide and Perth have separate port and airport precincts, generally on the city fringes proximate to large agglomerations of employment lands. Melbourne in particular, has a large supply of employment land within 20 kilometres of the CBD, generally focused around the Port.

TOPOGRAPHY

Topography is critical to the successful establishment of employment land precincts due to the need for large, flat sites on which to construct large floorplate buildings. As industrial development is often delivered at very low margins, the need for significant earthworks and the construction of retaining walls can often impact upon the feasibility of development.

Sydney's underlying topography is undulating and many areas of the Sydney Region are inherently unsuitable for employment lands. Topographic considerations have been a key driver of employment land location and distribution due to the lack of 'flat' land available for development. Brisbane has similar topographic issues, however, Melbourne has extensive areas of flat land making it ideally suited for industrial development. This in part explains why the price of industrial property in Melbourne has remained competitive in comparison with other major Australian cities as shown in **Figure 30**.

FIGURE 30 – INDUSTRIAL LAND VALUES, MAJOR AUSTRALIAN CITIES

INDUSTRIAL LAND VALUES

MELBOURNE COMPARED TO FOUR CITIES, \$PER SQ.M



Source: Urbis

Across the five cities Sydney and Perth are the most expensive cities for small and large lots with land values in excess of \$500 per square metre for small lots and \$400 per square metre for large lots. Melbourne and Brisbane are moderately priced by comparison at around \$320 per square metre for small lots and \$250-\$300 per square metre for large lots. Adelaide remains the cheapest city at around \$200 per square metre for small lots and \$150 per square metre for large lots.

BUSINESS PARKS - DISTRIBUTION

Business parks have the capacity to attract a variety of high tech, value added industries and businesses which seek the benefits of agglomeration. It is recognised that the recruitment and retention of good staff is at the core of a successful business and increasingly these staff will demand a proximate and high quality living environment when choosing their place of employment. Safety and security is also a paramount concern for business and the cultural fabric of an area can act as a key attractor for businesses and staff and can also influence job take up and participation rates within a region. These factors, along with underlying land economics and land use planning have driven business park distribution in the Sydney region as illustrated in **Figure 31**.

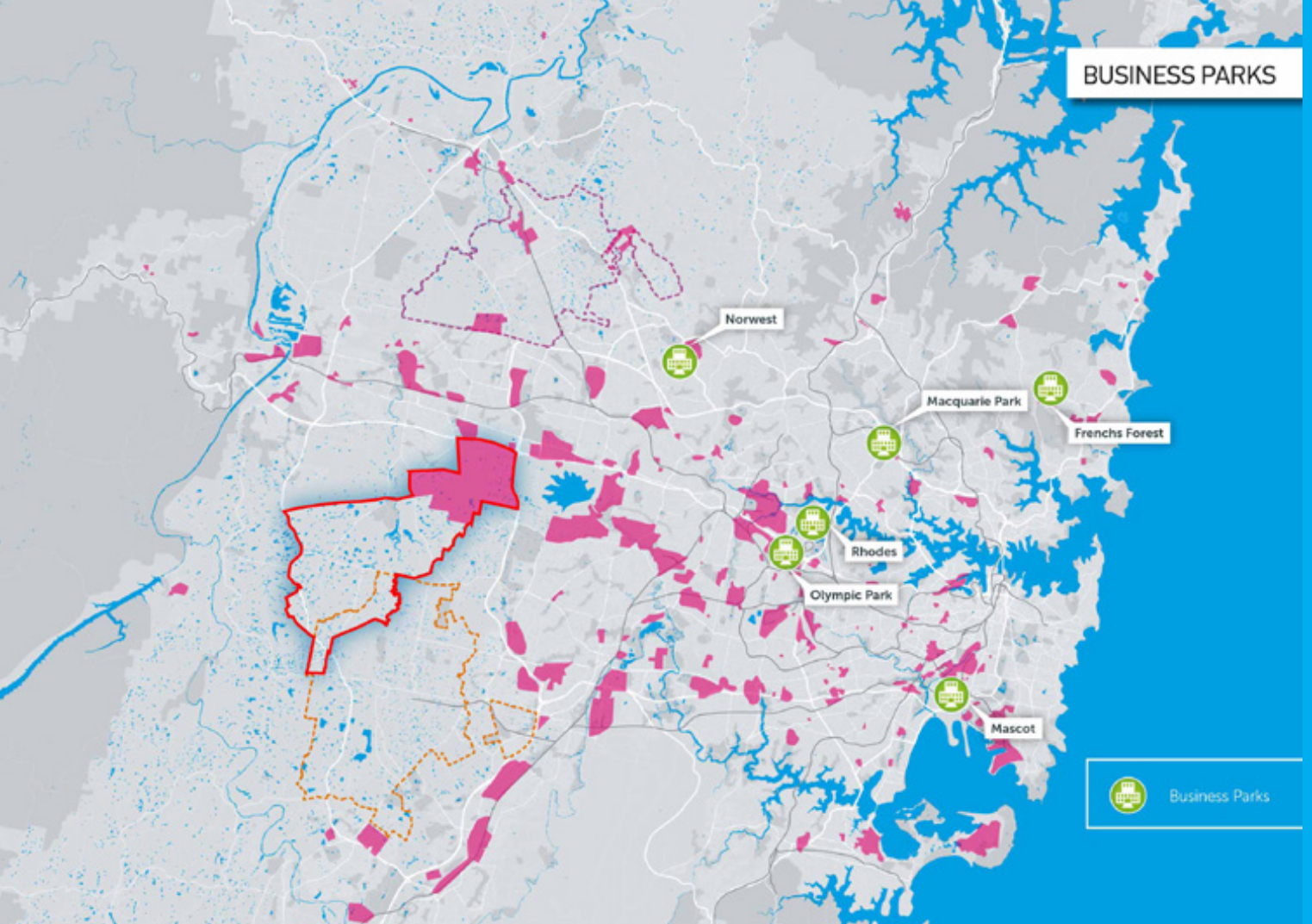


FIGURE 31 – DISTRIBUTION OF SYDNEY'S BUSINESS PARKS

The figure shows that Sydney's business parks are generally concentrated in the north, along key rail and road corridors. Commercial activities in the north appear to have 'leap-frogged' from the CBD, to North Sydney to St Leonards, to Chatswood, Macquarie Park and Norwest.

In order to identify the key drivers of demand for business park development, a comparative analysis was undertaken of a variety of business parks across the Sydney region and elsewhere in Australia and overseas. The comparison looked at the physical characteristics of the location, the demographics of the surrounding population and the economic structure of the locality and is detailed in **Section 7** of the report.

EMPLOYMENT LAND SUPPLY

SYDNEY REGION SUPPLY

As previously noted, Sydney currently has supply of some 15,394 ha of employment land of which around 70% is developed (10,775 ha) and 30% (4,620ha) remained undeveloped at January 2012. The bulk of undeveloped employment land is located in the Western Sydney and Central Coast regions.

Of the undeveloped land in Sydney Region (including the Central Coast), some 830ha are also serviced (water and sewer connections) and therefore potentially ready for development. This zoned and serviced land represents three years supply at a high take up rate of 300ha per annum or ten years supply at a low take up rate of 80ha per annum. Recent history suggests that take up is likely to be at the lower end of this range. Recent take-up rates are shown in **Table 6**.



TABLE 6 – TAKE UP OF EMPLOYMENT LAND (HA/ANNUM)

YEAR	TAKE PER ANNUM (Ha) SYDNEY REGION	TAKE UP PER ANNUM (Ha) WESTERN SYDNEY
2008	264	232 (88%)
2009	205	150 (73%)
2010	153	115 (75%)
2011	120	113 (94%)

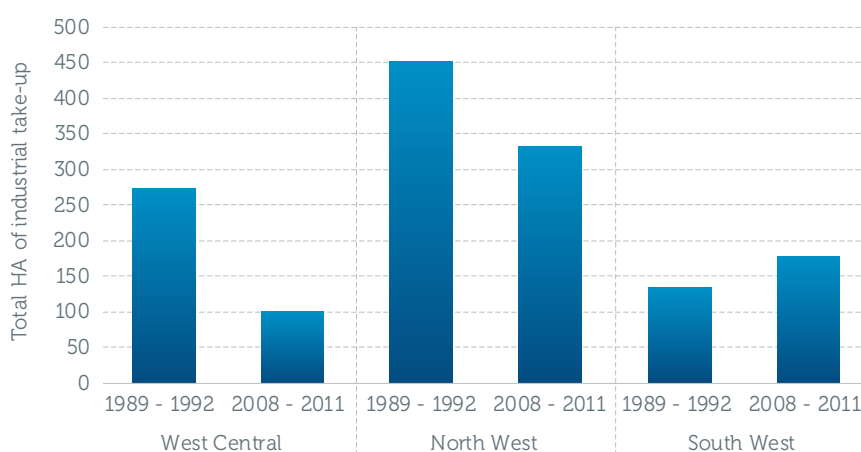
Source: NSW DP&I ELDP

Whilst there is significant supply of zoned employment land in Western Sydney take-up over the past five years has been slower than 25 years ago (with the exception of the South-West sub region), despite the growth in population, as shown in **Figure 32**. It should be noted that the ELDP programs from 1989-1992 utilised different data sets than those used for the recent ELDP, therefore there will be some inherent difference in the yielded results. With this in mind, other reasons for the notable differences in take up over time include:

- Weaker consumer driven markets (which in turn drive the need for storage and distribution of consumer goods);
- Cyclical economic factors;
- Mismatches between supply and the needs of the market in terms of lot sizes, serviceability and/or infrastructure;
- Access to finance during the global financial crisis due to weak economic conditions;
- Structural economic differences with reduction in industry share of total employment sectors; and
- Problems with obtaining finance for development that is not connected to infrastructure (as it is difficult to secure debt funding against non-income generating land).

FIGURE 32 – HISTORIC TAKE UP RATES OF EMPLOYMENT LAND, SYDNEY REGION

4 YEAR TAKE-UP OF INDUSTRIAL LAND (HA) BY SUB REGION



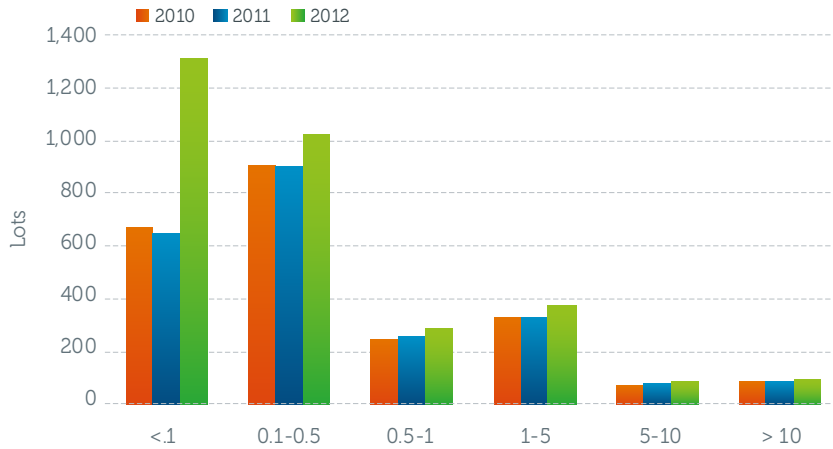
Note: 1989 -1992 ELDP utilised different data set. ELDP based on Council development consent data to measure take-up rather than Sydney water data used currently.

Whilst the industrial market is showing signs of improvement and activity is nearing pre-GFC levels, take-up rates in the short term future are expected to remain at moderate levels. On this basis, the Sydney supply of zoned and serviced employment land should be sufficient to meet quantitative demand for up to five years.

The type of supply available is also an important consideration in identifying mismatches between supply and market demand. Across the Sydney region there is a good supply of smaller lots between 0.1 and 0.5ha in area, however supply reduces in terms of total number of parcels as lot size increases. **Figure 33** shows Sydney employment land supply by lot size. Whilst the figure shows a small proportion of large lots, due to their size these lots represent a large proportion of overall employment land supply in ha.

FIGURE 33 – SYDNEY EMPLOYMENT LAND SUPPLY BY LOT SIZE

TOTAL NUMBER OF INDUSTRIAL LOTS
SYDNEY



Source: ELDP Update Report 2012 (Unreleased)

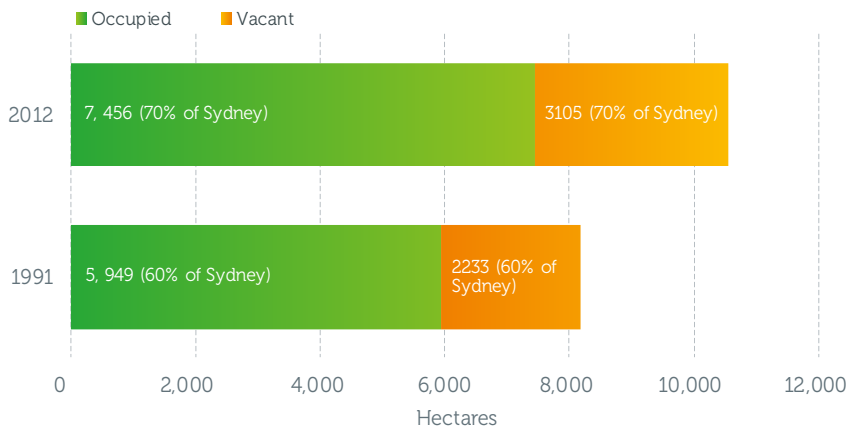
WESTERN SYDNEY REGION SUPPLY

Western Sydney has increased its share of Sydney's employment land supply over the past decade (70% in 2012 compared to 60% in 1991), demonstrating a shift of industrial activity to towards the west (refer **Figure 34**). Figure 34 also shows the overall increase in employment land supply (between 1991 and 2012) and the change in occupancy rates. Occupancy rates increased from 38% in 1991 to close to 42% in 2012 reflecting an increase in the utilisation of zoned land over the past decade. A breakdown of the increase in occupied land since 1991 shows that:

- Occupied land increased by 25% or at an annual average rate of 1.2%; and
- Total land supply (occupied and vacant) increased by around 29% over the same period or an average annual rate of 1.4%.

FIGURE 34 – WESTERN SYDNEY EMPLOYMENT LAND SUPPLY 1991-2012

OCCUPIED AND VACANT LAND
WESTERN SYDNEY 1991 AND 2012 AS % OF INDUSTRIAL LAND IN SYDNEY



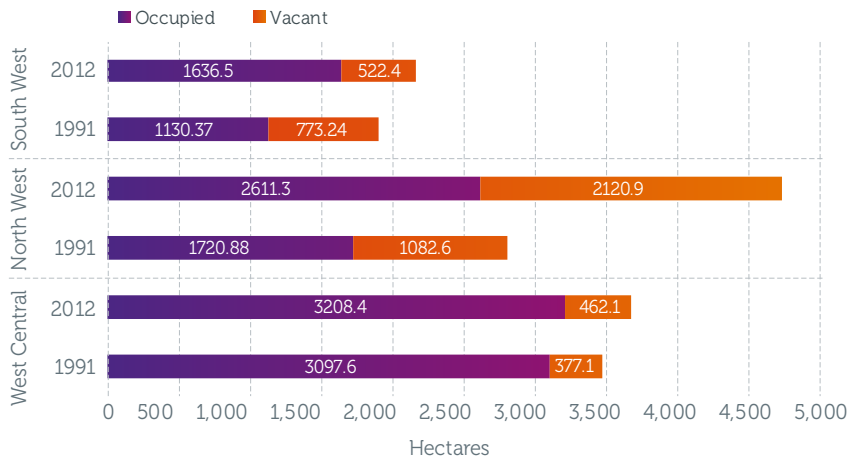
Source: ELDP Update Report 2012 (Unreleased)

A further break down of the increase of employment lands supply by sub region within Western Sydney is shown in **Figure 35**. The analysis shows that the bulk of new employment land was provided in the North West Subregion, principally due to the existing WSEA which lies in this subregion. The West Central Subregion remains the largest provider of developed employment lands in Western Sydney although the rate of growth in this subregion has decreased over the past 20 years.



FIGURE 35 – TOTAL EMPLOYMENT LANDS IN WESTERN SYDNEY BY SUBREGION (1991& 2012)

TOTAL EMPLOYMENT LANDS WESTERN SYDNEY, 1991 AND 2012



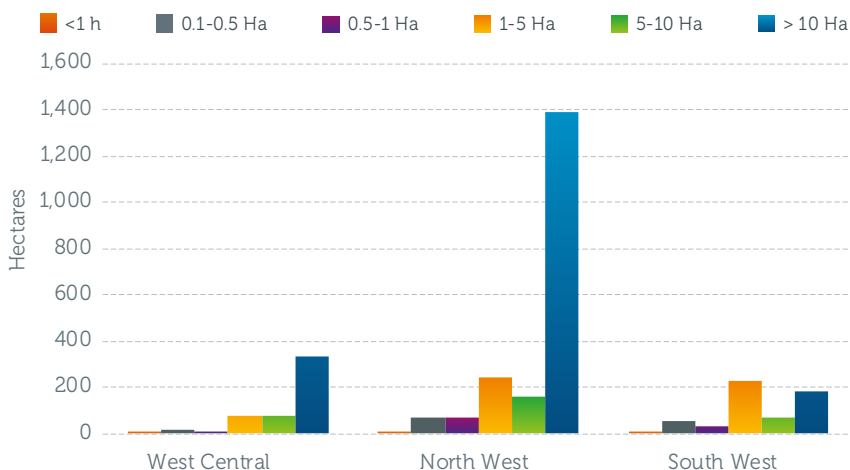
Source: ELDP Update Report 2012 (Unreleased)

The majority of employment land supply within Western Sydney exists in lots less than one hectare in size, however the three sub-regions appear to offer a reasonable amount of supply across a range of lot sizes. When assessing the supply by parcel size across the whole of the Sydney region, Western Sydney accounts for more than 50% of lots in almost all parcel sizes, with the exception of lots smaller than 0.5 hectares where Western Sydney accommodates some 46% of stock across Sydney.

Over the past few years there has been a steady increase in diversity in the supply of unoccupied lots in relation to parcel size. This would indicate that supply should exist for a variety of different industrial users, particularly in Western Sydney. However, there exist a number of constraints to the supply of employment lands in Western Sydney which may limit the real availability of zoned employment land stock in the region. Further interrogation of employment land stock through qualitative analysis has been undertaken by the DP&I to better understand some of these limitations and the findings of this analysis are discussed later in this report, but include issues such as infrastructure funding, servicing and environmental constraints. Stakeholder consultation undertaken to inform the preparation of this Study has also recorded anecdotal evidence of supply limitations in relation to smaller lots available for purchase by small and medium sized businesses (SMEs) seeking to own their own site. **Figure 36** illustrates the supply of unoccupied employment land within Western Sydney by lot size demonstrating the high number of large vacant sites within the north-west subregion which includes the existing WSEA.

FIGURE 36 – UNOCCUPIED LOTS BY PARCEL SIZE, WESTERN SYDNEY

TOTAL UNOCCUPIED LAND AREA, WESTERN SYDNEY, 2010



Source: ELDP Update Report 2012 (Unreleased)

BUSINESS PARK LAND SUPPLY

An analysis of the supply of business park land within the Sydney region was also undertaken to inform the Study. The analysis included consideration of capacity within existing business parks, as well as existing zoned business park lands. **Table 7** examines a number of established business parks throughout Sydney and their respective characteristics and vacancy rates.

TABLE 7 – BUSINESS PARK SUPPLY, SYDNEY REGION

BUSINESS PARK	DISTANCE FROM CBD	STOCK (SQ/M)	VACANCY RATES (JAN '13)	KEY TENANTS	KEY FEATURES	KEY EMPLOYMENT SECTORS
Austlink Business Park	24km	24,000	NA	<ul style="list-style-type: none"> ▪ Panasonic 	<ul style="list-style-type: none"> ▪ Major road interfacing ▪ Mainly targeted at industrial sector tenants ▪ Site allow for large floor plates 	<ul style="list-style-type: none"> ▪ Manufacturing ▪ Wholesale Trade ▪ Retail Trade ▪ Professional, Scientific and Technical Services
Macquarie Park	12km	807,527	6.70%	<ul style="list-style-type: none"> ▪ AC Nielsen ▪ Telstra ▪ Optus ▪ Komatsu ▪ Sony ▪ Toshiba, ▪ Ericsson ▪ Hyundai 	<ul style="list-style-type: none"> ▪ Orbital network interfacing ▪ Extensive local population growth ▪ Site allows for large floor plates ▪ Key national tenants ▪ Large footprint capable of expansion ▪ Access to knowledge centres ▪ Rail network interfacing 	<ul style="list-style-type: none"> ▪ Information, Media and Telecommunication ▪ Wholesale Trade ▪ Retail Trade ▪ Professional, Scientific and Technical Services
Norwest Business Park	25 km	272,474	15.10%	<ul style="list-style-type: none"> ▪ Woolworths ▪ Established retailers ▪ An executive residential estate 	<ul style="list-style-type: none"> ▪ Major road interfacing ▪ Extensive local population growth ▪ Major national tenants ▪ Large footprint ▪ Integrated with non-employment land uses 	<ul style="list-style-type: none"> ▪ Financial and Insurance Services ▪ Wholesale Trade ▪ Retail Trade ▪ Professional, Scientific and Technical Services
Frenchs Forest Business Park	13 km	4,894	NA	<ul style="list-style-type: none"> ▪ Dell ▪ Bright Point 	<ul style="list-style-type: none"> ▪ Major road interfacing ▪ Industrial tenant mix ▪ Small allocation of office employment ▪ Site allow for large floor plates 	<ul style="list-style-type: none"> ▪ Financial and Insurance Services ▪ Retail Trade ▪ Professional, Scientific and Technical Services
Rhodes	16 km	143,927	6.70%	<ul style="list-style-type: none"> ▪ Australand ▪ Unisys ▪ Nestle ▪ NAB Customer Contact Centre 	<ul style="list-style-type: none"> ▪ Close access to rail ▪ Integrated with residential land uses ▪ Large floor plates, grade A stock 	<ul style="list-style-type: none"> ▪ Financial and Insurance Services ▪ Retail Trade ▪ Professional, Scientific and Technical Services
Olympic Park	16 km	156,141	5.10%	<ul style="list-style-type: none"> ▪ Commonwealth Bank ▪ Fujitsu ▪ Samsung ▪ National Foods ▪ Westpac 	<ul style="list-style-type: none"> ▪ Orbital facing ▪ Rail interfacing ▪ Multi land use integration ▪ Extensive parking facilities 	<ul style="list-style-type: none"> ▪ Financial and Insurance Services ▪ Retail Trade ▪ Professional, Scientific and Technical Services



The table indicates that there is some capacity remaining in most of the business parks analysed, particularly within the Norwest Business Park in north-west Sydney which has 15% vacancy. This does not take account of redevelopment which might occur within these business parks as building stock ages.

In addition to these established areas, there is land zoned for business park development within the SWGC and NWGC at Austral, Leppington North, Box Hill, Box Hill Industrial, Marsden Park Industrial and Riverstone West precincts. Total zoned land within these precincts equates to a further 231.53 hectares of currently undeveloped business park land supply in Western Sydney.

The Draft Blacktown Local Environmental Plan (LEP) also proposes to rezone some 180 ha of industrial land to 'Business Park'. The Draft LEP is currently on public exhibition and if gazetted in its current form would almost double the existing, undeveloped business park land within Western Sydney to just over 400 ha.

CONSTRAINTS TO EMPLOYMENT LAND SUPPLY WSEA

As discussed previously, the Sydney Region appears to be well supplied with employment land with the possible exception of zoned and serviced supply. However, estimates of supply as recorded in the DP&I's ELDP may not be reflective of the true availability of sites for industrial and employment related development.

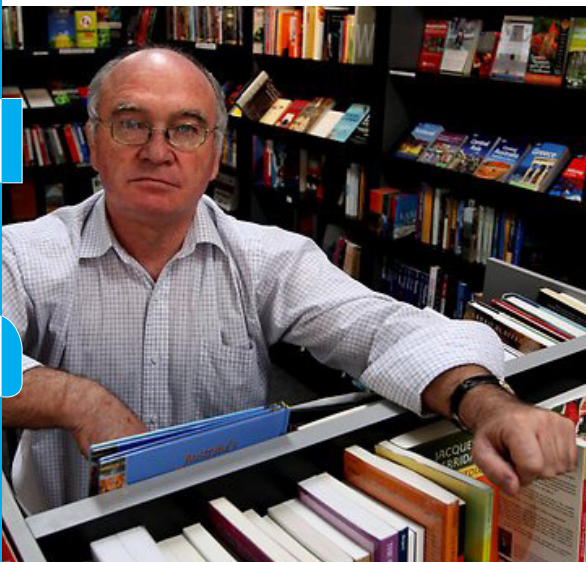
The DP&I recently completed an audit of key employment lands precincts which aimed to provide a better understanding of constraints to the development of existing, zoned employment lands and the likelihood of these lands being available for development over the short to medium term. The audit involved consultation with key stakeholders and inspections of the 20 precincts across Sydney to observe key issues and constraints.

The audit identified five key impediments to the take up of existing employment lands, being:

1. Infrastructure Delivery
2. Environmental Factors
3. Existing Land Uses
4. Market Factors
5. Planning Considerations and processes

To rectify these supply constraints, the DP&I is preparing a prioritised pipeline of infrastructure projects which need to be delivered in order to unlock further employment land for development. In the interim it is appropriate that any projections of demand for employment land should consider a contingency for zoned or identified lands which are unable to be developed in a timely fashion due to inherent constraints as described above.





➤ DRIVERS OF DEMAND

OVERVIEW

An analysis of historic take up rates of employment lands and associated distribution, economic conditions and industry trends along with a targeted program of stakeholder interviews has identified some clear drivers for employment land demand in the Sydney region.

In general, preferred locations for employment land development were:

- Close to transport links and key infrastructure nodes;
- Close to motorways/high capacity arterial roads;
- Proximate to the customer base - particularly for distribution centres; and
- Close to other industrial land and separated from residential land.

Other factors influencing location decisions included:

- Low rent/land price;
- Access to larger sites;
- Proximity to appropriately skilled workforce; and
- Quantum of infrastructure/servicing cost or contributions.

Analysis of the above factors indicates that location decisions are generally driven by the need for an efficient supply chain as well as by price and quality and point to four key 'demand drivers' for employment land being:

- Population growth and demographics – this determines both the location of the customer base and the workforce;
- Property prices - relative to the price point at which the business is sufficiently profitable;
- Infrastructure - allows for efficiency of operations and efficiency of connections throughout the supply chain; and
- Availability of land - sites which meet the demands of modern operations and offer opportunities for efficiencies through the adoption of new technologies and economies of scale.

The key drivers of demand for the establishment of successful business parks was also examined as part of the study. Business parks generally attract a significantly higher proportion of commercial office space than typically seen in other employment lands and therefore have different drivers to typical industrial development.

A comparative analysis of business parks across Sydney, Australia and internationally was undertaken to identify the characteristics or attributes which were common to each – or the key 'success factors'. The analysis revealed that whilst many of the drivers of business park location were the same as those for other types of employment lands, there were a number of additional factors for success including:

- Access to public transport corridors (preferably rail);
- Land area which allows future expansion and preferably under single or consolidated ownership;
- Critical mass of employees;
- Proximity to workforce (within 30 minutes commute); and
- Relationship to other economic infrastructure e.g. hospitals, universities, educational facilities, research institutes or clusters of knowledge-based activity.



EMPLOYMENT LANDS – KEY DEMAND DRIVERS

The key drivers of demand for employment lands are discussed in greater detail in the following sections as they relate to the Broader WSEA and in the context of the greater Sydney region.

POPULATION GROWTH AND DEMOGRAPHICS

As the population of the Sydney Region grows, there is a need to identify more land for housing and employment to accommodate the needs of new residents. This is reflected in the direct and indirect correlation between population growth and demand for employment land. This direct relationship exists in the demand for employment land created by the need to accommodate the jobs which new residents will require. The indirect relationship exists via the links between the housing needs of the growing resident population with the industrial market as it seeks to supply the needs of the construction sector in meeting this housing demand.

By tracking historic population growth spatially against employment land distribution it is clear that demand for employment land has followed the expanding population – that is, as the population has moved outwards from the CBD, so too has employment land.

Further interrogation of this trend reveals that this demand is not driven by population growth alone – it is also influenced by the demographics of that population – that is, demand for particular types of employment lands follows an appropriately skilled workforce. This is particularly evident when considering the distribution of business parks throughout the Sydney Region against the proportion of tertiary educated residents as shown in **Figure 37**.

FIGURE 37 – PROPORTION OF TERTIARY EDUCATED POPULATION IN NORTH-WEST AND SOUTH-WEST

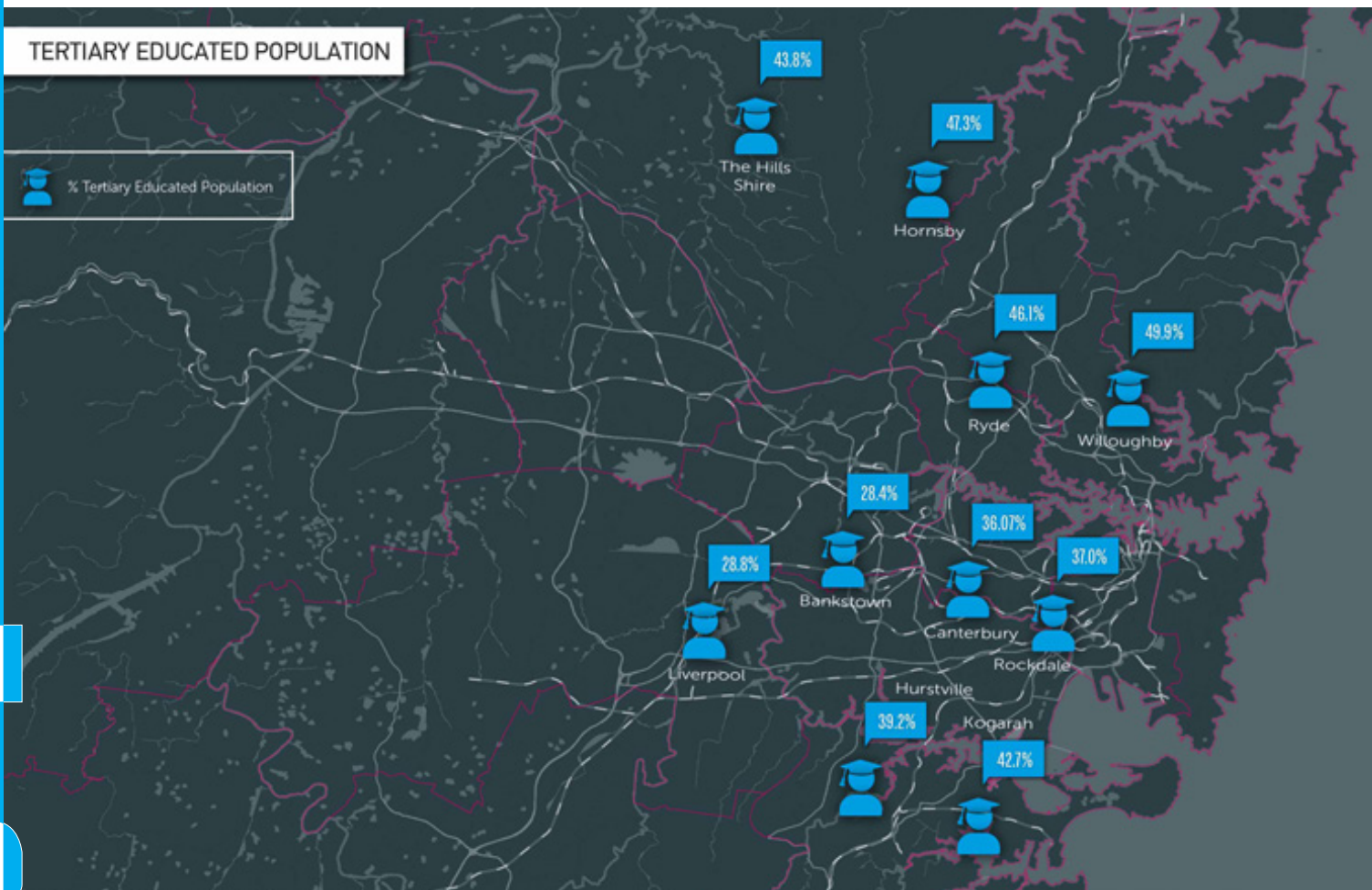


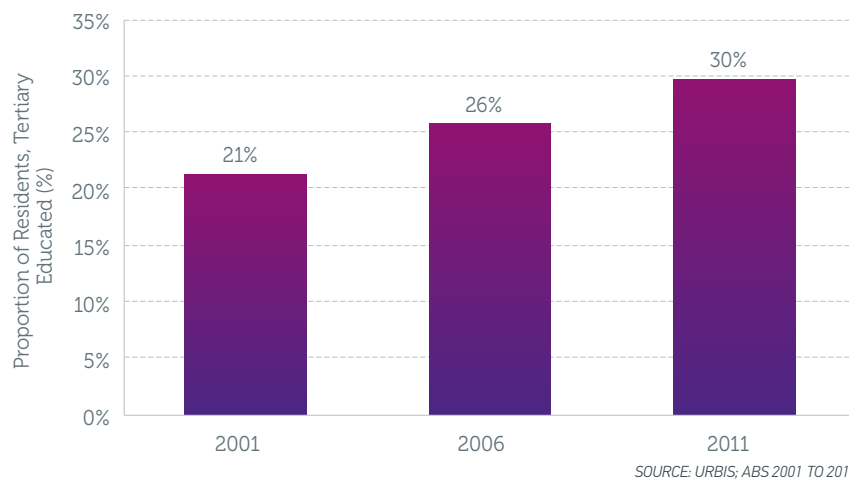
Figure 31 on page 71 of the report shows the distribution of business parks across the Sydney Region and highlights the distinct concentration of these in the north moving westwards out of the CBD along an arc known as the 'Global Economic Corridor' under the Draft Metropolitan Strategy. The same trend is not observed along a similar corridor in the south-west.

When comparing this pattern with the qualifications of the surrounding population, as shown in Figure 37 there appears to be a correlation between the proportion of tertiary qualified residents and the distribution of business parks implying a link between this typology of employment land development and an aligned local workforce.

The Broader WSEA is positioned between the NWGC and SWGC which are expected to house a significant proportion of Sydney's population over the next 20 to 30 years. Demographic analysis of the Western Sydney population reveals that there is an increasing representation of tertiary qualified residents which is expected to continue to grow (see **Figure 38**). The Broader WSEA would therefore be well positioned to take advantage of the expanding professional workforce of Western Sydney as it grows and develops.

FIGURE 38 – PROPORTION OF TERTIARY EDUCATED RESIDENTS

PROPORTION OF TERTIARY EDUCATED RESIDENTS GREATER WESTERN SYDNEY, 2001 TO 2011



PROPERTY PRICES

Underlying land values and rents are a key driver of location decisions for industrial operators particularly in the current high cost, highly competitive environment of the Sydney region. Industrial development is typically delivered at lower margins than development for other land uses, therefore land value has a greater role in determining the overall feasibility of development. In the drive to reduce overheads, rent and underlying land values which influence costs such as taxes and insurance can be a critical influence on the economic viability of a business.

There is always a price point at which certain locations begin to become unviable for industrial development and property prices therefore have a strong influence on employment land demand. Generally, demand for employment land will be stronger in areas where prices are low. However, this must be balanced with other business costs such as transport, productivity and the efficiency of supply chains.

A study of the correlation between industrial property prices and demand undertaken by Urbis in Melbourne (2012) revealed a strong relationship with demand being low in inner ring areas of the city where land prices were highest. In contrast, in outer ring areas where property prices were lower demand for employment land was high.

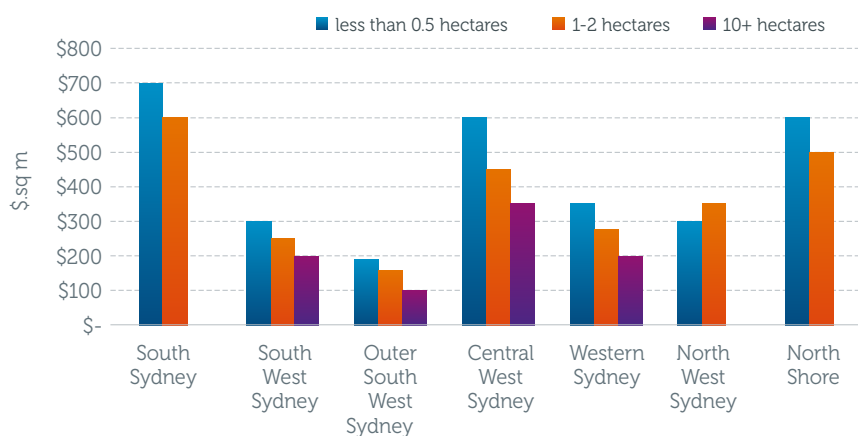


When compared with other Sydney subregions, the Outer South West Region, including Minto, Ingleburn and Campbelltown has the lowest employment land values across all lot sizes, followed by South-West and Western Sydney (where the existing WSEA is located) as shown in **Figure 39**.

FIGURE 39 – INDUSTRIAL LAND VALUES SYDNEY REGION

INDUSTRIAL LAND VALUES

DECEMBER 2012



Source: Savills Research, January 2013

The Broader WSEA is likely to be highly competitive with other employment land precincts in the Sydney region due to its lower underlying land values. In this respect, demand for employment land for industrial development is likely to be strong within the precinct subject to the balancing of other costs.

Due to the distance of the Broader WSEA from key infrastructure nodes such as the port and airport transport costs would be potentially higher than inner or middle ring locations, although motorway access would alleviate the effects of this distance. The distance from core urban areas and the concentration of business activity might also be seen as a potential cost to productivity for certain businesses, though this is less likely to be an issue for industrial or warehousing operations. Potential productivity losses are likely to be of greater concern to commercial office operations, particularly those which value the benefits of agglomeration.

As a greenfield area, the cost of infrastructure and servicing must also be factored in and in some cases these costs can be significant. However, in many cases upgrading existing infrastructure in established employment lands precincts can be just as costly. Efficient delivery of infrastructure within the Broader WSEA is critical to its competitiveness with other employment land precincts, as discussed further below.

INFRASTRUCTURE

Access to high quality infrastructure and an efficient transport system is critical to an efficient supply chain. Analysis has shown that demand for employment land is highest in areas with good motorway and/or rail access with demand for employment land increasing in areas benefiting from infrastructure investment and delivery. Demand analysis undertaken by Urbis in the Melbourne industrial market has observed direct spikes in employment land demand at the completion of certain key road projects (Urbis, 2012). This was certainly the case with the existing WSEA precinct which emerged strongly as a freight and logistics hub soon after the completion of the M7 Motorway.

The influence of transport infrastructure on employment land demand is highlighted in the distribution of employment land across Sydney which is dispersed along key transport corridors. Planned improvements to infrastructure will therefore have a strong influence on future demand for employment land and its geographical distribution. A number of key infrastructure projects and upgrades have been identified by the State Government and documented in strategies such as the NSW Long Term Transport Master Plan (2012) and Draft NSW Freight and Ports Strategy (2013).

Key infrastructure elements and issues which have the potential to influence patterns of demand for employment lands into the future are summarised in **Table 9** overleaf.

TABLE 9 – KEY INFRASTRUCTURE PROJECTS/PROPOSALS

INFRASTRUCTURE	DESCRIPTION
Road	<p>Road remains the most efficient method of moving freight in terms of both cost and time. Despite increasing congestion on Sydney’s road network, in the absence of a viable rail alternative it is likely that the majority of freight will continue to be moved by road in the medium term. Efficient road networks are therefore critical to businesses in the freight and logistics sector.</p> <p>Key road upgrade projects of relevance to the WSEA and Broader WSEA include:</p> <ul style="list-style-type: none"> ▪ Outer Sydney Orbital Corridor – whilst not specifically identified for a road, this ‘Mass Transit Corridor’ may accommodate a combination of road and rail transport which would service the Broader WSEA. ▪ Westconnex – comprising an extension of the M4 Motorway east of North Strathfield, duplication of the M5 east to King Georges Road and capacity improvements on existing roads including Parramatta Road. <p>The completion of the Westconnex project would make connections between the WSEA/ Broader WSEA and the rest of the Sydney Metropolitan Area, including the Port and Airport even stronger with implications for demand for employment land.</p>
Rail	<p>The efficiency of moving freight by rail in NSW is limited by a number of factors, most notably including:</p> <ul style="list-style-type: none"> ▪ The lack of a dedicated freight rail network across the State and particularly within the Sydney Region. Most of the freight rail network is shared with passenger rail which generally takes precedence in terms of access and timetabling. ▪ The cost of moving freight by rail is generally higher than the cost of moving it by road. ▪ The amount of cargo which can be moved by rail is limited by the design of rail infrastructure including weight limits and the height of rail bridges. ▪ Environmental considerations such as noise can often restrict freight movement on the rail network. ▪ Reliability remains an issue, particularly for ‘point in time’ deliveries. <p>The State Government aims to double the rail mode share for freight movement from 20% to 40% by 2020 (NSW Draft Freight and Ports Strategy, 2013), requiring significant improvements in freight rail infrastructure. A number of investments have been made or are earmarked to improve the freight rail network, including:</p> <ul style="list-style-type: none"> ▪ ARTC investment in improved rail infrastructure at Port Botany to improve access and egress by rail. ▪ Southern Sydney Freight Line – a 36km, dedicated freight line designed to improve the movement of freight by rail through Sydney and interstate. This project is almost complete. ▪ Northern Sydney Freight Corridor – earmarked for completion in 2016. This is expected to increase capacity on the freight rail network by 50%. ▪ New intermodal infrastructure – discussed below. ▪ Outer Sydney Orbital – whilst only a corridor currently, the Outer Sydney Orbital is intended to be a ‘Mass Transit Corridor’ which might accommodate rail or road infrastructure, or a combination of the two.
Port	<p>Port Botany is Australia’s second largest container port and plays a significant role in the importation of a variety of freight, including bulk liquids and gases. The Port is currently undergoing a major \$1 billion expansion to provide an additional container terminal which will see container trade through Sydney forecast to increase at a rate of 5% to 7% over the next 20 years.</p> <p>Nearly two thirds of the State’s containerised freight (64%) travels to and from Western Sydney LGAs including Liverpool, Fairfield, Blacktown, Holroyd, Auburn, Parramatta, Campbelltown, Penrith and Bankstown. This is forecast to grow to 70% by 2030¹³.</p>
Airport	<p>Kingsford Smith Airport in Sydney is Australia’s largest domestic and international freight hub. In 2011 Sydney airport handled around 530,000 tonnes of air freight - 52% more than Australia’s next largest air freight hub Melbourne Airport. This is projected to double over the period to 2033 to over one million tonnes¹⁴.</p>



INFRASTRUCTURE	DESCRIPTION
Intermodal facilities	<p>There are a number of plans for the expansion of the existing intermodal network in Sydney to accommodate future industrial growth and associated demand for intermodal facilities. The Intermodal Logistics Centre (ILC) at Enfield is a part of this expansion, and is expected to accommodate a quarter of total intermodal demand¹⁵.</p> <p>In addition to this, in April 2012, the Australian Government committed to the construction of an Intermodal Terminal (IMT) at Moorebank and a second, privately led intermodal project is also under assessment on an adjacent site. Delivery of one of these facilities would drive demand in the south-west and generate demand for redevelopment of existing employment lands in this area. Additionally, the site which does not proceed would likely present an ideal site for supporting employment lands.</p> <p>Additionally in the south west, the Macarthur Intermodal Shipping Terminal – MIST has recently been purchased by Qube and is planned to undergo an expansion. The proposed new and expanded intermodal facilities will contribute to the vital infrastructure necessary to cater for the proposed increases in freight movement throughout the Sydney Region.</p> <p>The Draft Freight and Ports Strategy released by the NSW Government in February 2013 also identifies a proposed intermodal terminal at Eastern Creek within the existing WSEA. It is proposed that this facility be serviced by a new rail freight line connecting to the Western Line into Chullora.</p>

AVAILABILITY OF LAND

The DP&I's ELDP tracks and monitors the supply of employment land across the Sydney region using data from Sydney Water. This data enables the ELDP team to track serviced supply of land which should be ready for development. As previously cited in this report, Sydney currently has 830ha of undeveloped, zoned and serviced employment land spread across the broader region with almost 92% of this being in Western Sydney.

Much of the remaining supply of land in the inner ring areas comprises infill sites with constraints such as lot size, encroachment and competition from alternative land uses, operational restrictions and ageing building stock and infrastructure which restricts the capacity of these areas to meet the needs of some modern operations. Some of these maturing employment precincts are undergoing a transition to a mix of higher order employment uses, more aligned with the physical, spatial and economic characteristics of the area (discussed further later in this chapter).

The WSEA and Broader WSEA remains the single largest potential supply of employment land in the Sydney region which can offer large, greenfield sites that can be developed to custom specifications to suit the operational requirements of modern and emerging industries and business typologies.

The availability of suitable land in the Broader WSEA will therefore drive demand for employment land development, particularly of the type which cannot be readily serviced elsewhere in the Sydney market. This includes those operators seeking out large industrial sites which are in short supply in other, more mature employment lands precincts in Sydney.

However, there remain gaps in servicing and infrastructure in the area which mean that the actual supply and availability of land for development in Western Sydney may be overestimated. Any future release of land within the Broader WSEA would need to be adequately serviced with appropriate infrastructure if it is to attract demand from a variety of operators.

BUSINESS PARKS – KEY DEMAND DRIVERS

A benchmarking exercise was undertaken for the purposes of the study to identify the common success factors across business parks nationally and internationally.

Table 10 illustrates the national benchmarking undertaken in respect of business park development, assessing various attributes and characteristics including land use mix, access to infrastructure and general land size and ownership pattern.

TABLE 10 – NATIONAL BENCHMARKING – BUSINESS PARKS

BUSINESS PARK	PROXIMITY TO INSTITUTIONS (EDUCATIONAL, HEALTH)	RAIL ACCESS	MAJOR ROAD ACCESS	RING ROAD ACCESS	FREIGHT RAIL ACCESS	NON EMPLOYMENT BASED USES	LARGE LAND PARCELS
Austlink Business Park	X	X	✓	X	X	X	✓
Macquarie Park	✓	✓	✓	✓	X	✓	✓
Norwest Business Park	✓	X	✓	✓	X	✓	✓
Frenchs Forest Business Park	✓	X	✓	X	X	X	✓
Rhodes	✓	✓	✓	X	X	✓	✓
Olympic Park	✓	✓	✓	✓	X	✓	✓

The benchmarking exercise revealed the following:

- In almost 70% of cases, the business park was adjoining or proximate to supporting economic or social infrastructure such as a hospital, university or similar;
- 50% had rail access;
- All examples had major road access;
- All examples were developed on large land parcels;
- 50% of examples incorporated non-employment uses; and
- 50% had good access to a ring road.



Table 11 illustrates a similar benchmarking exercise undertaken for international business parks, examining key notable features along with spatial and physical attributes and access to infrastructure.

TABLE 11 – INTERNATIONAL BENCHMARKING – BUSINESS PARKS

BUSINESS PARK	DISTANCE FROM CBD	STOCK (SQ/M)	KEY TENANTS	KEY FEATURES	PROXIMITY TO INSTITUTIONS (EDUCATIONAL, HEALTH)	RAIL ACCESS	MAJOR ROAD ACCESS	NON EMPLOYMENT BASED USES
Southern Gateway, Manukua Nz	18km	140ha	Commercial	<ul style="list-style-type: none"> Adjacent to airport 	X	X	✓	X
Santa Giulia, Milan Italy	5km	120ha	Mixed commercial and residential	<ul style="list-style-type: none"> Adjacent to urban and agriculture areas 	X	✓	✓	✓
Stratford, London UK	10km	140ha	Mixed commercial, residential and retail	<ul style="list-style-type: none"> Proximity to labour force 	✓	✓	✓	✓
Polanen Park Amsterdam Netherlands	13km	40ha	Industrial	<ul style="list-style-type: none"> Adjacent to green space and a major waterway 	X	✓	✓	X
Chiswick London, UK	8km	45ha	Commercial	<ul style="list-style-type: none"> Proximity to labour force and transport links 	✓	✓	✓	X
Smales Farm North Shore City NZ	10km	10.8ha	Commercial	<ul style="list-style-type: none"> Adjacent to transport links 	✓	X	✓	✓

Of the international examples considered the key points of note included:

- All examples were within 20km of a CBD or centre;
- All examples had access to major arterial roads;
- Most examples had rail access;
- Half of the examples were proximate to supporting key economic or social infrastructure; and
- Half of the examples incorporated non-employment uses.

The most successful business park examples studied – based upon density of development and employment mix achieved had a combination of most factors. Across the business parks reviewed, employment densities were greater in mixed use and mature areas. Other common success factors included clustering of specific industries with at least one dominant industry group. The largest centres nationally (Norwest and Macquarie Park) were integrated with surrounding land uses – for instance, education and residential uses.

Based upon the analysis undertaken the key locational drivers that influence the development of successful business parks include:

- Labour Force - Access to a qualified and suitable workforce. Typically, the retention rate of employees tends to be greater when the workforce is within close proximity to their place of employment;
- Population – successful business parks require a reasonable surrounding residential population to drive demand for office floorspace;
- Connectivity - Access and proximity to major transport networks including road and rail, suppliers, customers and associated businesses;
- Agglomeration – The benefits of knowledge sharing achieved by the co-location of industries which are aligned or which have synergies has been identified as a key factor driving demand for businesses relocating into specialised business parks;
- Cost per sq.m for larger floor plates – the economies of scale of larger lot sizes;
- Consolidation of company workforces and operational efficiency;
- Amenity/infrastructure – the amenity, services and transport infrastructure available to service local workers;
- Rental and Capital Costs - Rental and capital values are important to businesses in terms of operating costs; and
- Suitable facilities and expansion potential - Changes in the economy and business needs may result in changes in the demand for accommodation.

Typically businesses will only relocate to suburban business parks or suburban CBD locations if the type of business does not have a direct requirement for proximity to the principle CBD in order to conduct business. Businesses which are less likely to achieve superior results through agglomeration with similar business types or access to infrastructure/services found in non-metropolitan/CBD locations are more likely to choose business park locations where office space is more affordable. As such, business park locations would typically be attractive to SMEs and/or light industrial operators willing to trade off proximity for lower rents.

EMPLOYMENT LANDS – KEY TRENDS

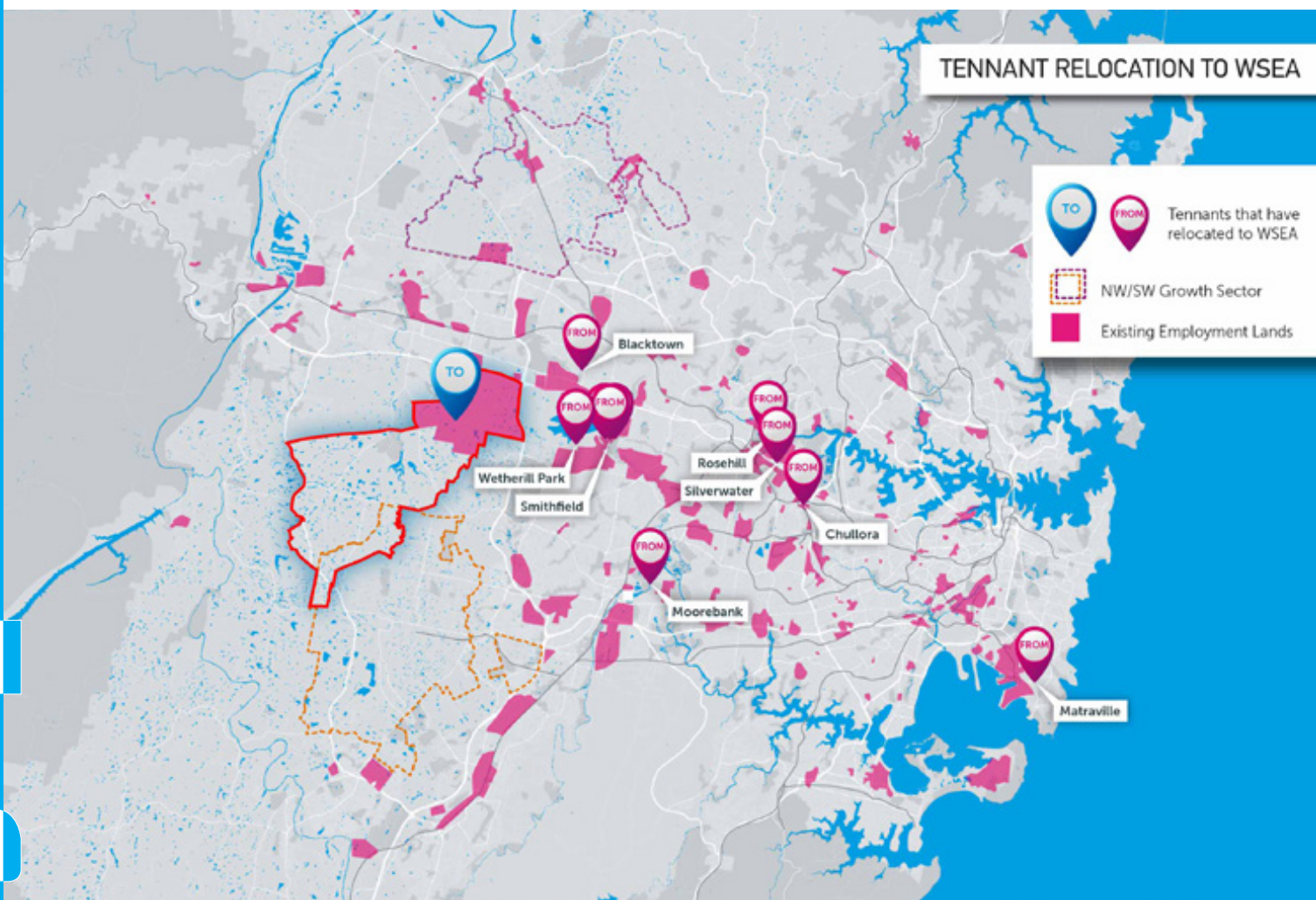
Sydney's network of employment lands is made up of in the order of 300 sub-precincts, each with its own character and associated mix of employment generating uses. In order to understand better how this network functions and the potential future role of the Broader WSEA, an examination of recent relocation patterns to the existing WSEA was undertaken, as shown in **Figure 40** on the next page. This exercise reveals some of the key drivers of location decisions for operators within the WSEA and also demonstrates that the take up of land within the WSEA is not necessarily reflective of real growth in the industrial property market, but is perhaps more a factor of changing dynamics in the employment lands network of the Sydney Region. Some of these dynamics are explained below:

- A combination of factors affecting the land economics of mature employment precincts in the Inner Ring are making sustained use for industrial land uses unviable, including:
 - Increasing pressure from alternative, higher order land uses which can offer better returns;
 - High underlying land values in these precincts;
 - The presence of a mix of often incompatible land uses encroaching on these precincts limiting efficiency of operations; and
 - Ageing infrastructure and building stock making inner and middle ring sites less suitable for modern industrial operations with significant cost to upgrade making renewal for industrial development unviable.
- Despite the presence of these factors, there remains a need for certain businesses to be located proximate to the port and airport, therefore there will be continued demand for some employment lands in the Inner Ring surrounding these key infrastructure nodes.



- As transport infrastructure to the west improves, the viability of locating in the outer suburbs becomes greater and is driving some decisions to relocate to the outer ring suburbs, including the WSEA.
- Transport infrastructure and ageing building stock in established employment land precincts such as Silverwater and Wetherill Park is driving some decisions to relocate further west.
- The rising cost of upgrading ageing building stock to meet the needs of modern industrial operations – such as ridge height and clearance within warehouse buildings, along with the costs of upgrading old infrastructure and services in more mature employment land precincts is tipping the balance in favour of the development of new, custom built facilities on greenfield employment land.
- Traffic congestion and efficient transport links is also driving employment land demand in Sydney towards key infrastructure nodes such as motorway interchanges where adequate servicing can be provided. For example, increasing congestion on the Cumberland Highway is affecting demand for employment land within the Wetherill Park and Smithfield precincts and is also likely to be a contributing factor in relation to the Chullora employment lands precinct.
- Heavy industry remains present in a limited number of clusters throughout the region such as St Marys/ Dunheved and Botany/Banksmeadow and is driven principally by historic land use character and separation from sensitive land uses such as residential. Potential contamination of these lands makes them more difficult to convert to alternative land uses, particularly residential uses and therefore acts to limit competition for these alternative uses which might otherwise be a factor in their geographic or spatial evolution.

FIGURE 40 – RELOCATION PATTERNS TO EXISTING WSEA



8 FORECAST DEMAND

OVERVIEW

In order to project the likely demand for employment land within the Broader WSEA over the next 30 years, a combination of qualitative and quantitative demand analysis was undertaken, informed by historic take up rates and patterns of employment land distribution, observed economic and industry trends and stakeholder consultation. The demand analysis includes both qualitative and quantitative assessment to maximise the reliability of the findings.

The following sections detail the demand study undertaken and the key findings of the combined analysis to draw conclusions to inform the Structure Planning for the Broader WSEA.

QUALITATIVE DEMAND ANALYSIS - GENERAL EMPLOYMENT LANDS

The Broader WSEA is considered against the key demand drivers identified for general employment lands in **Table 12** below.

TABLE 12 – QUALITATIVE DEMAND ANALYSIS – GENERAL EMPLOYMENT LANDS

ADVANTAGES	DISADVANTAGES
Infrastructure	
<ul style="list-style-type: none"> Proximity to key regional infrastructure corridors including the M4 and M7 Motorways supports access to national distribution networks and nodes such as the Port and Airport. Proximity to planned infrastructure such as intermodal terminals (Moorebank and Eastern Creek) and the Outer Sydney Orbital. 	<ul style="list-style-type: none"> The distance from Sydney CBD, Port and Airport negatively affects supply chain efficiencies. Represents a competitive disadvantage compared to other, more established industrial areas, closer to centres. Lack of comprehensive network of infrastructure and services increases establishment costs and potentially constrains land supply. Lack of transport options, including public transport affects access to workforce and ability to attract and retain staff. Lack of existing social or economic infrastructure to act as a catalyst or anchor for other employment uses such as a University, Hospital, Airport or similar.
Population and demographics	
<ul style="list-style-type: none"> Access to a significant and growing labour market in the broader Western Sydney region, particularly within the North West and South West Growth Centres. Skills and qualifications of the Western Sydney workforce attractive to many businesses. 	<ul style="list-style-type: none"> Lack of existing retail amenity, community infrastructure and social services to support working population. Current lack of proximate residential housing, including executive housing opportunities, to support office demand and business park development.
Land availability	
<ul style="list-style-type: none"> Large expanse of predominantly cleared land which can offer large floorplate development lots and long term pipeline of supply. Generally flat or undulating landscape, suitable for large floorplate industrial development. Separation from other, sensitive land uses such as residential development reducing the potential for land use conflict. A mix of large landholdings and smaller, fragmented landholdings offering opportunities for a diverse range of lot sizes and property prices. 	<ul style="list-style-type: none"> Some topographical constraints in certain parts of the Study Area limit the feasibility of development for industrial purposes. Creeklines dissecting the study area and associated floodplain reducing total developable lands. Gaps in infrastructure and servicing restricting the real availability of land for development. Fragmented land ownership may inhibit implementation and delivery. Land ownership patterns may affect access to sites for some operators.



ADVANTAGES	DISADVANTAGES
Property prices	
<ul style="list-style-type: none"> Competitive land values when compared with other, more established industrial lands in the Sydney Region. 	<ul style="list-style-type: none"> Cost of development of greenfield industrial land due to infrastructure and servicing requirements.
<ul style="list-style-type: none"> Opportunities for greenfield industrial development which are not commonly offered elsewhere in the Sydney region. This allows for custom-built facilities to suit the needs of modern operations and competitive rents/prices. 	
<ul style="list-style-type: none"> A mix of product types and price points. 	
<ul style="list-style-type: none"> Low underlying land values leading to lower overheads associated with tax and insurances. 	

The above qualitative assessment indicates that the Broader WSEA has a number of competitive advantages including availability of large lots, property prices and motorway access which mean that it is well placed to attract development for general industrial and warehousing uses.

QUALITATIVE DEMAND ANALYSIS - OFFICE-BASED/BUSINESS PARK LANDS

A similar exercise was undertaken for office-based employment lands within business park style development based upon the key success criteria identified for business parks, as shown in **Table 13** below.

TABLE 13 – QUALITATIVE DEMAND ANALYSIS - OFFICE-BASED/BUSINESS PARK LANDS

ADVANTAGES	DISADVANTAGES
Access to public transport – preferably rail	
<ul style="list-style-type: none"> Located in close proximity to the M4 and M7 motorways with access to a number of key interchanges. 	
<ul style="list-style-type: none"> The proposed alignment of the Outer Sydney Orbital corridor traverses the Broader WSEA. This corridor has been identified as a mass transit corridor which could potentially accommodate public transport such as heavy rail. 	<ul style="list-style-type: none"> There is no existing or committed public transport to the Broader WSEA in current government policy or agendas.
<ul style="list-style-type: none"> A possible link between the South West Rail Line and the North West Rail Link could be established along the Outer Sydney Orbital alignment providing passenger rail services to the Broader WSEA. 	<ul style="list-style-type: none"> The Broader WSEA is unlikely to have the residential population density required to justify heavy rail services to the area, in short to medium term.
Links to freight corridors and transport nodes	
<ul style="list-style-type: none"> Proposed Moorebank Intermodal Terminal would potentially drive some demand from the south of the Broader WSEA. 	<ul style="list-style-type: none"> The Broader WSEA is distant from the port and airport and there is currently no freight rail or intermodal facility servicing the area.
<ul style="list-style-type: none"> Proposed intermodal terminal and freight line identified within the Broader WSEA in the Eastern Creek precinct. 	<ul style="list-style-type: none"> The existing WSEA suffers from a lack of comprehensive infrastructure and significant investment in infrastructure would be required to make the area attractive and suitable for higher intensity employment uses.

ADVANTAGES	DISADVANTAGES
Land area of 50-180 hectares to allow for expansion	
<ul style="list-style-type: none"> Significant supply of land available in single ownership parcels to facilitate development over time. Commonwealth site presents an opportunity for the establishment and growth of a business park style development in the longer term. 	
Critical mass of employees – at least 8,000 concentrated in one location (not dispersed)	
<ul style="list-style-type: none"> Significant supply of land available in single ownership parcels to facilitate development of this scale over time. 	<ul style="list-style-type: none"> Require a driver to stimulate demand for this intensity of employment development.
Proximity to workforce – within 30 minute commute	
<ul style="list-style-type: none"> Located between the two Sydney growth centres which are expected to house a significant proportion of the Sydney population into the future. The skills and qualifications of the Western Sydney workforce would be attractive to many businesses and industries. 	<ul style="list-style-type: none"> Currently limited residential population density within and directly surrounding the Broader WSEA. Lack of transport connections to the Broader WSEA from surrounding residential areas.
Relationship with nearby economic or social infrastructure such as a University, hospital or other.	
<ul style="list-style-type: none"> Significant supply of land available in single ownership parcels to facilitate major economic or social infrastructure in the future. 	<ul style="list-style-type: none"> No existing or committed catalyst infrastructure to drive the development of a business park or similar cluster of higher density employment.

The qualitative demand assessment of the Broader WSEA for business park development highlights a number of shortfalls in location and infrastructure which would impact upon the establishment of a successful business park within the precinct under current conditions. However as infrastructure investment in the area increases and development of the precinct evolves over time these pertinent factors may change, requiring a review of this analysis. Whilst the establishment of a business park within the Broader WSEA is not expected to happen in the short-term, it is important that opportunities for this form of higher intensity employment generating development to evolve are not precluded as market demand emerges and deepens.

DEMAND MODELLING

Future demand for industrial land in GWS has been estimated by forecasting employment numbers for the region, and applying an appropriate employment density (that is, ratio of land per employee). The modelling approach adopted involved the following key steps:

1. Forecasting total jobs growth in GWS based on working age population projections, providing estimates on the future GWS workforce;
2. Forecasting jobs per industry within GWS based on industry growth forecasts, providing a high and low range for each type of employment land use;
3. Converting jobs growth per industry into jobs growth by land use, accounting for identified trends that have been calibrated by case studies and consultation with relevant stakeholders (for example, land use efficiency gains); and
4. Converting forecast jobs growth into employment land demand.

From there, the total number and mix of jobs likely to be accommodated within the Broader WSEA over the period to 2046 has been estimated, along with the ultimate scenario of full development of the Broader WSEA beyond 2046. It should be noted that these projections do not consider the presence of an airport or similar catalyst infrastructure on the Commonwealth-owned site as this was excluded from the study brief.



EMPLOYMENT FORECASTS

Based on the official forecast growth rate applied to the 2011 Census, the GWS population is expected to grow by approximately 1.3 million residents between 2011 and 2046. This growth will translate to an increase in the working age population at 1.26% per annum and an increase in retirees at 0.64% per annum. The net result will be a reduction in the total workforce, relative to those in the population who are not working. This will be partially offset by an expected increase in labour force participation from 67.3% to 69.7% by 2046.

These forecasts have been based on a mixture of age group growth rates from the NSW DP&I and BTS and has been based on DP&I forecasts for the region, rebased to the 2011 ABS Census estimated resident population (ERP).

The resulting workforce and employment forecasts are summarised in **Table 14**.

TABLE 14 – WORKFORCE AND EMPLOYMENT FORECASTS, GREATER WESTERN SYDNEY, 2011 TO 2046

	2011	2016	2021	2026	2031	2036	2041	2046
Estimate Resident Population (ERP)	2,002,781	2,158,460	2,341,330	2,543,970	2,740,440	2,927,000	3,119,809	3,301,569
Youth (0-14)	433,795	461,430	498,800	534,070	563,830	588,570	627,152	663,934
Working Age (15-64)	1,351,191	1,439,330	1,535,080	1,644,870	1,752,530	1,858,030	1,980,482	2,095,812
Retiree (65+)	217,796	257,700	307,450	365,030	424,080	480,400	512,176	541,823
Labour Force Participation (%)	67.3%	67.6%	68.0%	68.3%	68.6%	69.0%	69.3%	69.7%
Labour Force Participation (No)	908,811	973,072	1,043,114	1,123,407	1,202,997	1,281,843	1,373,171	1,460,384
Unemployment (%)	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%
Unemployment (No)	60,249	64,509	69,153	74,475	79,752	84,979	91,033	96,815
Total Workforce	848,562	908,563	973,961	1,048,931	1,123,246	1,196,864	1,282,138	1,363,569
Jobs in GWS	622,565	675,195	733,024	799,388	866,666	934,809	1,013,561	1,090,855
Net Job Balance (%)	73.4%	74.3%	75.3%	76.2%	77.2%	78.1%	79.1%	80.0%
Share of Greater Sydney (%)	33.2%	34.6%	36.0%	37.7%	39.2%	40.6%	41.9%	43.0%

Source: Department of Planning and Infrastructure; Bureau of Transport Statistics; ABS 2011 Census; Urbis

The employment forecasts detailed above are based upon workforce forecasts for GWS and assumptions around the net job balance (%) with the balance of Sydney (where 'Net Job Balance' is the ratio of workforce to jobs within the region). The Net Job Balance is another measure of employment self-containment and indicates whether the region is functioning as an employment centre or a 'dormitory' suburb which houses workers rather than employing them.

The forecasts provided assume that GWS improves its existing Net Job Balance from 73.4% to 80% over the period to 2046.

INDUSTRY SECTOR FORECASTS

In addition to the aggregate employment growth of the GWS region, the forecast industry sector share is pertinent to the type of employment land demand. To best forecast this, a range has been provided comparing the maintenance of current trends industry sector share with an expected increase in:

- Services industry sectors;
- Growth in industrial sectors such as transport, postal & warehousing and construction industry sectors, driven by forecast growth in container TEU freight through Port Botany and continued population growth driving residential construction;
- A fall in the manufacturing sector employment share of overall employment, due to continued challenging trading environment (a high Australian dollar, lower cost competition from overseas and automation of the manufacturing process), although the rate of decline is expected to fall over time.

The application of BTS industry sector shares in these industry sectors has been used to estimate this growth, providing the upper/lower ranges of employment for each industry sector. Employment forecasts under each scenario are shown in **Tables 15** and **16**.

TABLE 15 – INDUSTRY SECTOR FORECAST -STATUS QUO, GWS, 2011 TO 2046

INDUSTRY SECTORS	2006	2011	2046	GROWTH NO.	GROWTH %
Agriculture, forestry & fishing	4,663	4,289	7,515	2,151	50.15%
Mining	2,107	2,000	3,504	1,003	50.15%
Manufacturing	99,555	92,702	162,432	46,494	50.15%
Elec., gas, water & waste services	5,994	8,676	15,202	4,351	50.15%
Construction	37,663	39,518	69,243	19,820	50.15%
Wholesale trade	42,111	41,520	72,751	20,824	50.15%
Retail trade	73,562	72,343	126,759	36,283	50.15%
Accommodation & food services	32,155	34,734	60,861	17,421	50.15%
Transport, postal & warehousing	34,802	35,279	61,816	17,694	50.15%
Information media & telecomm.	7,837	6,810	11,932	3,416	50.15%
Financial & insurance services	18,188	21,421	37,534	10,744	50.15%
Rental, hiring & real estate services	9,902	9,296	16,288	4,662	50.15%
Prof., scientific & tech. services	25,968	28,957	50,738	14,523	50.15%
Administrative & support services	14,773	16,196	28,379	8,123	50.15%
Public administration & safety	37,510	41,744	73,144	20,936	50.15%
Education & training	48,753	53,580	93,883	26,873	50.15%
Health care & social assistance	63,025	73,892	129,473	37,060	50.15%
Arts & recreation services	6,327	7,353	12,884	3,688	50.15%
Other	24,235	24,894	43,619	12,485	50.15%
Not Applicable/ Inadequately Described	7,361	7,361	12,898	3,692	50.15%
Total Jobs	596,491	622,565	1,090,855	312,244	50.15%

Source: ABS 2011 Census; Urbis



TABLE 16 –INDUSTRY SECTOR FORECAST, GWS, 2011 TO 2046

INDUSTRY SECTORS	2006	2011	2046	GROWTH NO.	GROWTH %
Agriculture, forestry & fishing	4,663	4,289	7,542	3,253	75.84%
Mining	2,107	2,000	4,722	2,722	136.10%
Manufacturing	99,555	92,702	97,591	4,889	5.27%
Elec., gas, water & waste services	5,994	8,676	16,420	7,744	89.25%
Construction	37,663	39,518	70,461	30,943	78.30%
Wholesale trade	42,111	41,520	73,969	32,449	78.15%
Retail trade	73,562	72,343	127,977	55,634	76.90%
Accommodation & food services	32,155	34,734	62,078	27,344	78.73%
Transport, postal & warehousing	34,802	35,279	70,323	35,044	99.33%
Information media & telecomm.	7,837	6,810	11,639	4,829	70.91%
Financial & insurance services	18,188	21,421	48,262	26,841	125.30%
Rental, hiring & real estate services	9,902	9,296	18,720	9,424	101.38%
Prof., scientific & tech. services	25,968	28,957	69,337	40,380	139.45%
Administrative & support services	14,773	16,196	32,715	16,519	102.00%
Public administration & safety	37,510	41,744	80,256	38,512	92.26%
Education & training	48,753	53,580	95,100	41,520	77.49%
Health care & social assistance	63,025	73,892	130,691	56,799	76.87%
Arts & recreation services	6,327	7,353	14,101	6,748	91.78%
Other	24,235	24,894	44,837	19,943	80.11%
Not Applicable/ Inadequately Described	7,361	7,026	14,116	7,090	100.90%
Total	596,491	622,230	1,090,855	312,579	50.24%

Source: ABS 2011 Census; BTS Employment Forecasts; Urbis

EMPLOYMENT LAND DEMAND FORECASTS

The industry sector forecast scenarios translate into employment land demand, with the upper and lower range representing the predicted upper and lower limits of what individual industry sectors are likely to achieve in terms of employment and subsequently demand for employment land. The median of this has been derived to provide an indicative quantum of employment land demand to inform Structure Planning for the Broader WSEA.

Projected demand for employment land in GWS as a result of the modelling exercise is shown in **Figure 41** overleaf.

FIGURE 41 – DEMAND FOR EMPLOYMENT LAND

**DEMAND FOR EMPLOYMENT LAND
GREATER WESTERN SYDNEY, 2011 TO 2046**

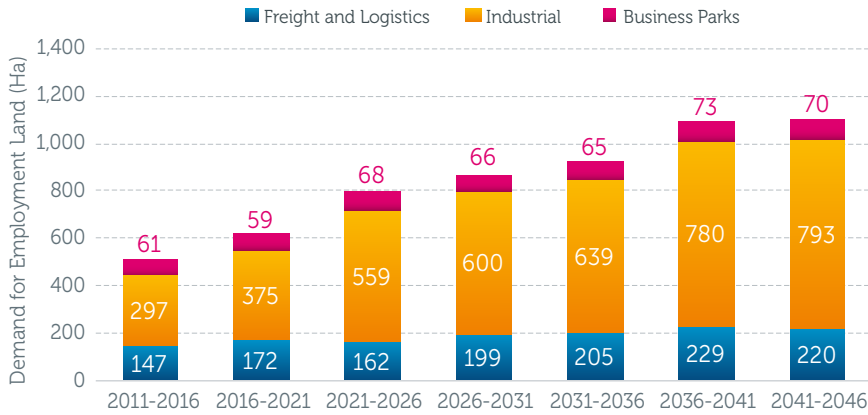


Figure 41 also illustrates projected demand for employment land over time to assist in informing the staging and sequencing of potential employment land release and development. This is particularly relevant when considering the infrastructure and servicing strategy for the Broader WSEA.

The figure shows that aggregate demand for employment land with the GWS region to 2046 is:

- 1,335 ha for warehouse, postal and transport, expected to be primarily driven by freight and logistics operators, with a lower range of 1,169 ha and an upper range of 1,500 ha;
- 4,042 ha of industrial demand, with a lower range of 2,508 ha and upper range of 5,577 ha; and
- 462 ha office employment lands in Business Parks, with a lower range of 390 ha and upper range of 535 ha.

Table 17 below provides a breakdown of demand for other land uses in addition to warehouse, postal, transport, industrial and business park land to 2046.

TABLE 17 – DEMAND (HA) BY LAND USE, GREATER WESTERN SYDNEY 2011 TO 2046

LAND USE	2011	2026			2036			2046			INCREASE 2011			
	ACTUAL	LOW	HIGH	MEDIAN	LOW	HIGH	MEDIAN	LOW	HIGH	MEDIAN	LOW	HIGH	MEDIAN	
Education	912	1,118	1,334	1,226	1,194	1,446	1,320	1,356	1,689	1,523	526	906	716	
Health	636	817	1,206	1,011	886	1,306	1,096	1,036	1,526	1,281	479	1,006	742	
Other	739	949	959	954	1,029	1,039	1,034	1,203	1,214	1,209	556	568	565	
Off-site	498	639	867	753	693	937	815	810	1,093	952	374	680	527	
Home		n/a												

Source: Urbis, ABS Census 2011, Department of Planning and Infrastructure

In addition to industrial and office based employment, other industry sectors types such as health and education have also been considered. For these sectors, the majority of demand will be focused in existing centres or hubs therefore these sectors are unlikely to represent a significant component of demand within the Broader WSEA in the absence of an aligned catalyst.

BROADER WSEA - NET DEMAND

In calculating net demand for employment land within the Broader WSEA, existing supply of employment land within the GWS must be considered. Currently, there is 5,754 ha of undeveloped zoned and proposed (in published strategies) industrial lands in Western Sydney. Of this, some 2,386 ha is already within the Broader



WSEA, including 1,078 ha of proposed industrial lands identified in the SWGC Structure Plan, overlapping the study area. Allowing a 20% contingency for roads, services and environmental conservation, it can be assumed that 4,603 ha of this existing employment land supply will be available as developable land.

On top of this industrially-based employment land, Western Sydney has zoned, undeveloped supply of office-based or business park lands of 232 ha¹⁶. This excludes land proposed to be rezoned under the Draft Blacktown LEP (approximately 180ha) as this currently exists as industrial land and is included in the supply figures for employment lands in GWS. As it remains uncertain whether this proposed rezoning will proceed it is appropriate that this parcel remain within the general employment land supply.

Demand forecasting indicates total industrial employment land demand within Western Sydney to 2046 of 5,377 ha. This is generally consistent with an annual take up in Western Sydney to 2046 of approximately 153ha which is in line with average take up in Western Sydney in recent years (see Table 6). This translates to net demand within the Broader WSEA of 774ha to 2046, in addition to the 1,078 ha of proposed industrial lands already identified in the SWGC Structure Plan in the south-eastern portion of the Study Area. In total therefore, there is a need to plan for a total of approximately 1,850ha of industrial land within Broader WSEA to 2046.

In relation to 'office based' employment demand in Western Sydney, which is forecast at 1,541 ha, some 70% of this is projected to be accommodated within centres (based on the share of new employment directed to business parks and centres within Western Sydney over the past 10 years). The remaining, 30% of demand is projected to be directed to business parks, which could account for approximately 462ha business park land to 2046. Current supply of undeveloped, zoned business park land in Western Sydney is estimated at 232ha. A further 180ha is identified as potential business park land within the Draft Blacktown Local Environmental Plan currently on exhibition. Net demand for business park land which could be accommodated within the Broader WSEA is therefore approximately 230 ha excluding the potential from Blacktown's proposal. This demand is not expected to emerge until the later stages of the 30 year timeframe and would be subject to the provision of appropriate infrastructure and amenities. Further demand for business park development within the Broader WSEA may emerge beyond the 30 year timeframe and may be driven through catalyst infrastructure or projects as described later in this report.

Total net demand for employment land within the Broader WSEA to 2046 is therefore approximately 2,080ha.

Based upon net demand for employment land within the Broader WSEA, combined with zoned land within the existing WSEA, development of land in the precinct to 2046 could potentially generate:

- 36,109 industrially based jobs
- 20,781 office-based jobs.

Demand modelling and analysis therefore concludes that the potential supply of new employment land in the Broader WSEA (that is, 8,900 ha) significantly exceeds projected demand over the next 30 years. As such, the staging and sequencing of release of land within the Broader WSEA requires careful consideration. It should be noted that the demand projections formulated through the study assume that all existing vacant zoned and published proposed employment lands stock in Western Sydney (5,754 ha) is fully developed by 2046.

DEMAND FORECAST CONCLUSIONS

As discussed previously the latest ELDP report states that the Sydney Region has 15,394ha of existing zoned employment land. This includes vacant stock, which is estimated to be 30% of zoned stock (4,620 ha). Within the Greater Western Sydney region there is 10,562ha of zoned employment land with 3105ha of this identified as vacant (29%).

Comparing the existing vacant stock of industrial land in the GWS region to demand forecasts provides an indication of the level of take up of the Broader WSEA region, and the extent to which the private sector is likely to develop up until 2046. With a combined employment land demand of 5,377 ha in Western Sydney, it is expected that by 2046 there will be a net demand of approximately 2,080 ha of new employment lands in Broader WSEA, comprising approximately 1,850 ha of industrial based employment land and a further 230 ha of office-based employment land. Development of this supply over the next 30 years could potentially generate some 36,109 industrial jobs and a further 20,781 office-based jobs.

Given that the potential supply of employment land within the Broader WSEA significantly exceeds forecast demand for industrial and office based employment land the staging and sequencing of further releases within the precinct will require careful consideration. Remaining land within the Broader WSEA which is not required to 2046 may support market demand for employment land in the longer term. Whilst it is not possible to provide accurate projections of the likely employment mix and density which might be accommodated within the Broader WSEA beyond 2046, based upon the extrapolation of currently identified trends and on the assumption that a catalytic development takes place on the Commonwealth-owned lands, the ultimate capacity of the Broader WSEA at full development might provide:

- 170,000 industrially based jobs; and
- 42,000 office-based jobs.

It is important to acknowledge that the office-based employment land component of projected demand will likely take time to develop and evolve and is not likely to emerge for another 25 to 30 years. This is typical of the evolution of business park developments which generally emerge from more traditional light industrial estates. Norwest, for example took some 20 years to evolve as the population of the north-west grew around it and transport links improved. In terms of the Broader WSEA, office-based employment land demand is expected to arise over time as the underlying land economics changes and investment in infrastructure occurs and a critical mass of businesses is present in the area,

In the interim, it is important that appropriate locations for these higher intensity employment land developments be identified and that opportunities for these developments are not precluded from evolving as market demand emerges and deepens.





9 OPPORTUNITIES + INTERVENTIONS

OVERVIEW

The Broader WSEA is the single largest tract of potential strategy identified employment land in Sydney and is therefore important not only to the economic growth of the Western Sydney region, but plays a vital role in the economic development of Sydney as a whole.

As the nature of manufacturing evolves in line with global trends and industrial lands are increasingly displaced from inner and middle ring areas of the City, the potential of the Broader WSEA to become the economic 'engine room' of Sydney is unparalleled elsewhere in the Greater Metropolitan Area.

But this does not mean that the area will be relegated to a vast expanse of warehouses, employing fewer and fewer people and further driving the jobs shortfall in Western Sydney in terms of both job numbers and job diversity. Trends already occurring within manufacturing are seeing a change in the type and mix of jobs within the sector to include a greater proportion of 'professional' employment opportunities. As advanced manufacturing evolves in Sydney, this trend is expected to continue to grow, with many more jobs at the front-end, design part of the value chain. Further, as the land economics change, infrastructure investment in the region improves and a critical mass of businesses establishes in the Broader WSEA, demand for higher intensity employment uses may begin to emerge.

As the nature of industry and business changes, so will the drivers behind location decisions and the attributes and characteristics of the land and sites required to accommodate them. It is therefore important that the Broader WSEA be positioned to respond to these changing needs and drivers to take best advantage of growth in these sectors into the future.

A range of opportunities exist for the Broader WSEA beyond those modelled in this study if certain interventions or mechanisms were to be implemented to alter the dynamics of the precinct to improve its competitive advantage and its investment profile. Some of these opportunities and interventions are discussed in the following sections.

DELIVERY OF INFRASTRUCTURE

One of the biggest challenges for growth and development of the WSEA and Broader WSEA is the provision of infrastructure at both regional and local levels. The sheer scale of the precinct and its distance from the core urban areas of Sydney mean that the cost of infrastructure delivery to the area is significant. The resultant gaps in economic and community infrastructure within the area are resulting in supply constraints which lead to delayed growth and a reduced ability for the region to compete with other better serviced employment precincts within Sydney.

The infrastructure gap is particularly prevalent in public transport which is a key driver of higher density and mixed use employment precincts. The planned South West and North West Rail Links will go some way to addressing this, but without a link through the Broader WSEA the full advantages of heavy rail services for employment precincts will not be realised in this location.

Road infrastructure is constrained within the existing WSEA and Broader WSEA. Funding for this infrastructure is heavily reliant upon developer contributions however contributions collected by the State Government to date represent only a small fraction of the total cost of this infrastructure.

Increasing developer contributions to cover the costs would also have implications for economic viability and competitiveness and may result in the stifling of development and investment in the area by the private sector.



Consideration of alternative funding mechanisms for infrastructure within the Broader WSEA is therefore required if the full potential of the area is to be realised. Potential models for consideration might include:

- Upfront funding of core infrastructure by Government;
- Establishment of a Western Sydney Infrastructure Investment Fund with seed funding attracted from State revenue (possibly through the Restart NSW program) and ongoing funding through the pooling of local Section 94 contributions for the area and/or a levy applied to rates across the Sydney Metropolitan Area;
- Infrastructure bonds; and
- Tax Increment Financing.

The provision of enabling or catalyst infrastructure to the WSEA and Broader WSEA would change market dynamics in the region and drive demand for a wider variety and greater intensity of employment generating uses.

CATALYST PROJECTS

Catalyst projects are generally defined as those which instigate change, drive progress or stimulate activity and further investment beyond the bounds of the project itself. A catalyst project within the Broader WSEA has the potential to change the economic and social fabric of the precinct and subsequently, the investment profile.

These projects might include catalyst infrastructure such as road or rail projects, intermodal facilities, airports and ports or significant developments across large sites which introduce a range of new amenities, services or facilities which work to change the landscape or image of the precinct. Due to the scale of investment required, these types of projects generally require some form of Government involvement or leadership.

The Broader WSEA benefits from a number of large sites in single ownership which would facilitate development of such a catalyst. The Commonwealth land within the southern portion of the Broader WSEA offers a unique opportunity for a Government led project which could drive the future growth of the area and potentially, the Western Sydney region.

Other key potential catalyst projects within and surrounding the Broader WSEA with potential flow on effects for the investment profile of the precinct include:

- The proposed Moorebank Intermodal Terminal;
- The Outer Sydney Orbital;
- A dedicated freight rail line to the area and new intermodal terminal at Eastern Creek;
- The early roll out of NBN to the precinct; and/or
- The establishment of a 'hub' as discussed further below.



THE ESTABLISHMENT OF A 'HUB'

The concept of 'hubs' is driven by the trend for businesses to agglomerate in a single area, seeking the benefits of knowledge sharing in a particular common, or related area in order to maximise innovation and productivity. This is a recognised social and economic phenomenon known as 'the forces of agglomeration' which explains the attraction of businesses to a dense labour market which offers a choice of skilled workers in their particular field and the presence of specialised service providers which results in greater potential for knowledge sharing or 'spillover'¹⁷. Certain industries are driven more by the forces of agglomeration than others – particularly those in which knowledge is their commodity, such as high-tech and creative industries, ICT and research and development.

With the shift towards a 'knowledge-based economy' in Australia and elsewhere in the world, 'hubs' are expected to become more prevalent and more important to economic growth and development and to the competitiveness of Sydney with other Global Cities.

Various studies of 'hubs' nationally and internationally indicate that the following key factors are necessary for the establishment of successful hubs:

- An agglomeration or concentration of related economic activities which has evolved naturally;
- A combination of large multi-national companies and small, local businesses operating in local and global markets;
- The presence of universities or research institutes in some way aligned with the nature of the business agglomeration;
- Entrepreneurs to build and grow new commercial ventures;
- Proximity to and ability to attract appropriately qualified and skilled staff to drive an engaged and productive workforce; and
- Creation of opportunities for interaction, problem solving and knowledge sharing across all parties within the hub.

Important to the consideration of potential knowledge hubs in the Broader WSEA is the issue of the nature and focus of the hub, which should ideally be in a field in which the precinct has a natural competitive advantage. Encouraging the development of businesses in locations which are inherently uncompetitive is likely to limit the success and sustainability of the hub.

Some potential industry focuses for a 'hub' in the Broader WSEA might include:

- An advanced manufacturing hub with a focus on the development of technologies for advanced and digital manufacturing (refer to Tonsley Park case study);
- A renewable energy and sustainable industry hub, drawing upon the strengths of the area in terms of land availability and large expanses of roof which could be utilised for the capture of both rainwater and solar power;
- A food science and technology hub building upon the area's history of poultry farming and horticulture; and
- A second Sydney Digital Precinct, should accelerated NBN services be provided to the area.

It is generally acknowledged that the establishment of a hub in the area would require Government leadership and commitment to bring together relevant parties and create the momentum needed for the project to be a success. A level of investment in critical infrastructure would also be required for such a precinct to be viable.



CASE STUDY – WESTERN SYDNEY PARKLANDS BUSINESS HUBS

The Western Sydney Parklands Trust (WSPT) was formed under the Western Sydney Parklands Act 2006 and manages much of the land within the Western Sydney Parklands. The Western Sydney Parklands stretch from Quakers Hill to Leppington, encompassing an area of some 5,280ha to the east of the M7 and Broader WSEA. As part of its mandate, the WSPT is required to undertake certain commercial developments to assist with funding the management of the parklands. The WSPT has identified a number of 'business hubs' within the parklands, planned to accommodate a variety of retail, commercial and light industrial activities to provide revenue and activate the parklands area.

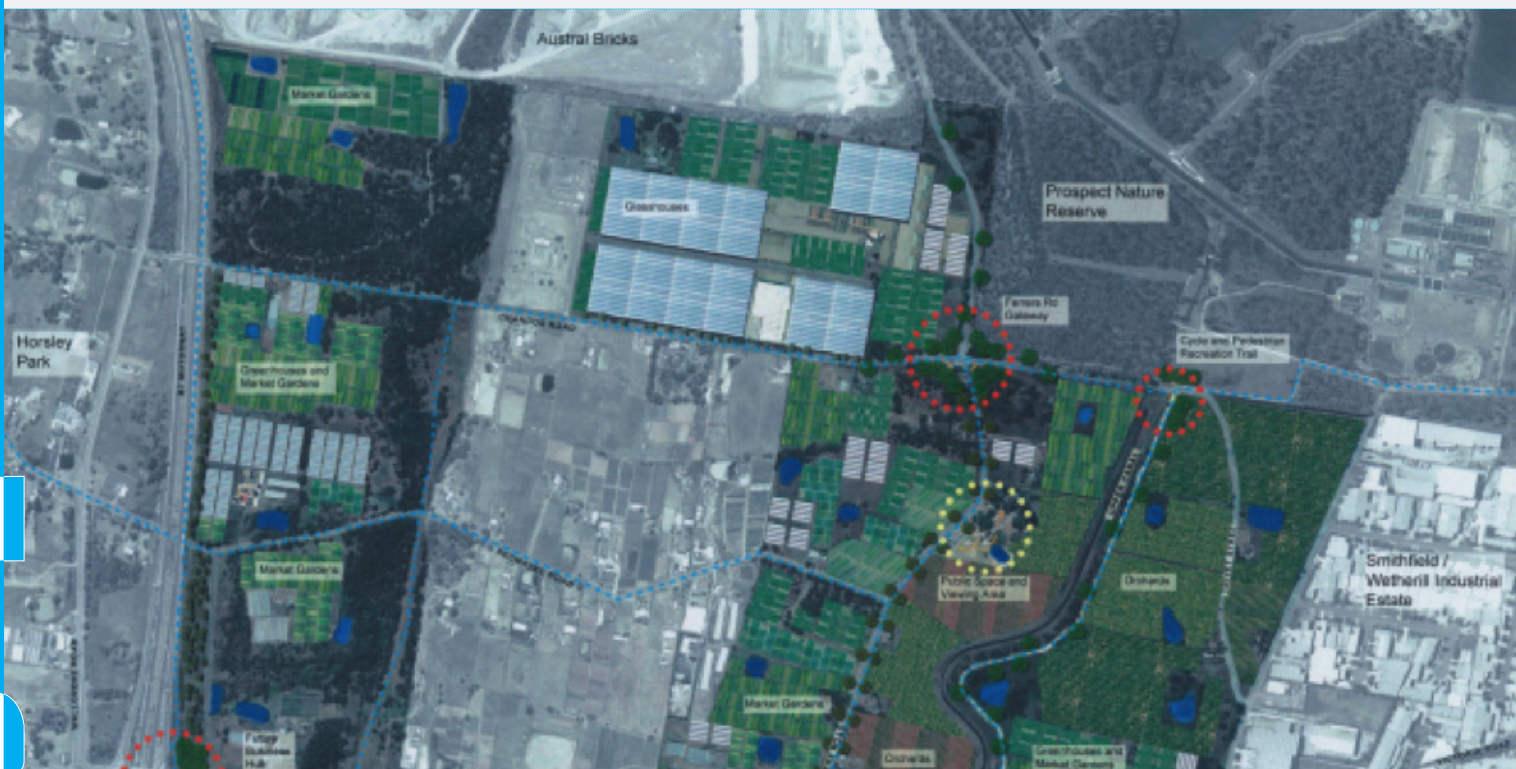
Two of these hubs which are currently under assessment are:

- Horsley Drive Business Hub – 21.6ha of land providing 20ha of industrial land in 12 lots. Once developed the site will provide some 100,000m² of NLA.
- Eastern Creek Business Hub – a 20ha site providing some 15.9ha of retail (including bulky goods) or 50-55,000m² NLA.

These lands are not captured in the employment land supply analysis as they are not zoned for employment land.

CASE STUDY – URBAN FARMING IN THE WESTERN SYDNEY PARKLANDS

A key direction of the WSPT is to establish urban farming within the Parklands in recognition of the agriculture and heritage of the area. The Horsley Park Precinct has been identified as the focus for urban farming within the Parklands and a master plan has been prepared to guide its development. The master plan provides opportunities for a variety of glasshouse, poly/greenhouse, market gardens, orchards and grove farming enterprises across 11 lots covering 159ha of land. The Trust is considering a range of commercial incentives related to lease costs and tenures to attract viable and sustainable farming businesses to the Precinct (Western Sydney Parklands Trust (November 2012), Horsley Park Precinct Urban Farming Masterplan).





CASE STUDY – PENRITH HEALTH AND EDUCATION PRECINCT

The Penrith Health and Education Precinct is centred around the Nepean Public and Private Hospitals, the Hospital Specialist Clinic, the Kingswood TAFE campus – Western Sydney Institute, the University of Western Sydney campus and the University of Sydney’s Sydney Medical School, Nepean. The Precinct has been master-planned to include a variety of new health and education uses, health industry, commercial development, residential development, recreation facilities and a potential railway station. Fully developed, the precinct is expected to generate some 12,000-13,000 new jobs by 2036. Notably – 1 in 4 new jobs in Penrith over the past decade have been generated from within the Precinct (PBA, 2013).

The Precinct includes the Werrington Business Park which received Federal Government funding in 2012 through the Suburban Jobs Program. Stage 1 of the business park is currently going through the planning and approvals process and will include a Corporate Centre and 5,500m² of commercial office space.

Other new proposals within the precinct include:

- The Nepean Medical Research Institute – currently being planned by Health Infrastructure NSW
- TAFE Allied Health Training facility – providing training for health professionals, to be completed in 2015.
- \$1.5 billion of other planned development in the precinct.



CAPACITY BUILDING

Capacity building as applied to industry generally refers to a process by which barriers to productivity within a sector or business are identified and measures introduced or implemented to remove these barriers, allowing that sector or business to be more successful.

There are many successful businesses within the Western Sydney region which have been able to adapt to changes in economic conditions and industry dynamics, however many businesses which might otherwise make a significant contribution to job creation and/or diversity may not be reaching their full potential.

This is particularly important when considering small and medium enterprises (SMEs) which are critical to job provision and diversity and innovation. SMEs require certain support systems to be successful and are more vulnerable to economic fluctuations which may restrict their ability to access finance. In this respect, the University of Western Sydney (UWS) notes that the critical factors for the success of SMEs include:

- Access to appropriately structured and supervised financial capital streams;
- Availability of low-entry cost premises with quality IT support and general amenity;
- Access to learning facilities including appropriately trained and experienced brokers and advisers in production, financing and marketing domains; and
- Access to innovation resources to enable pathways to growth and competitiveness.¹⁸

Opportunities for SMEs to establish within the Broader WSEA, particularly when combined with the establishment of a 'hub' as described previously significantly enhances the potential for innovation and diversity within the precinct.

CASE STUDY – NSW DEPARTMENT OF TRADE AND INVESTMENT

The NSW Department of Trade and Innovation has embarked on a pilot program of capacity building within local businesses in Albury as part of its 'Supply Chain Accelerator' program.

This Supply Chain Accelerator pilot is the first project to be delivered under the NSW Supply Chain Accelerator program. Approximately 15 manufacturing and engineering firms in Albury – Wodonga region will participate in the pilot initially. Over time, new firms will be approached to join the cluster to build critical mass and address gaps in supply chain capabilities.

The pilot includes three key elements:

- Identification of gaps and building the capabilities of individual firms within the cluster. Each participating firm will undertake a capability assessment addressing areas such as management and financial skills, equipment, intellectual property (IP), compliance, balance sheets, accreditation and workforce availability and skills.
- Provide firm capability training, targeting areas identified in the diagnostic. Training will be developed in consultation with supply chain prime contractors and in the context of 2014 tenders.
- Address cluster capability gaps by building firm capabilities to meet supply chain needs by expanding supply chain membership to bring in new capabilities and by supporting company diversification.

Dependent upon the results of the pilot, the DTI may consider rolling out a further pilot program and Western Sydney might provide an appropriate location to test the Supply Chain Accelerator program further.

ECONOMIC INCENTIVES

A range of potential incentives could be considered to encourage development and investment within particular areas or particular sectors. However, the application of incentives, either economic or planning related, is complex and by no means a simple or straightforward way of ensuring the economic growth of a region.

Special Economic Zones (SEZs) are one form of incentive, generally applied to economically depressed areas as a way of encouraging investment, regeneration and economic activity. SEZs are defined as 'geographically delineated areas administered by a single body, offering certain incentives or inducements to businesses which physically locate within the zone'.¹⁹

SEZs have been a topic of much discussion in the recent past with a recent NSW Parliamentary Committee on Economic Development inquiry into the establishment of these zones in rural and regional areas of NSW. The inquiry generated a mix of feedback from a variety of stakeholders, some of whom advocated for the application of such zones to stimulate growth within Western Sydney.

A program of targeted incentives may be effective in improving the Broader WSEA's competitive advantage in attracting business investment, however the program would require careful consideration, planning and monitoring, and would need to be implemented in conjunction with other programs such as infrastructure delivery in order to be truly effective.

A review of relevant literature on the subject reveals that successful SEZs must be:

- Of a scale large enough to create significant economic activity and investment, generally upwards of 50-100 ha;
- Appropriately located to maximise efficiency and competitiveness. Encouraging businesses to locate in areas which are inherently less competitive will affect the long term sustainability of the precinct and arguably contradict the principle aims of the SEZ;
- Supported by appropriate infrastructure (therefore may require some upfront capital expenditure);
- Critical mass of appropriately skilled population and a strong industry base; and
- Have strong drivers at a Federal and State level to target the most significant costs to business.

Any such program within the Broader WSEA would need to be based upon carefully formulated policy to determine the spatial extent of the zone and/or whether it should be applied only to specific industry sectors or business types. The type and mix of incentives applied would also require detailed analysis to maximise the potential effectiveness of the program. A general program of incentives, which is not carefully targeted and administered is unlikely to improve underlying competitiveness and will rarely be successful in attracting the right type of businesses to the area.

In considering such a program for the Broader WSEA, it is also important to consider the potential implications of incentives on other, competing areas as such schemes may simply encourage businesses to relocate from other areas within the region and may not therefore translate to real economic growth and diversity on a regional scale.

The 'Enterprise Zones' put forward in the NSW Government's Green Paper entitled 'A New Planning System for NSW' could potentially be utilised to incentivise development within the Broader WSEA for particular land uses or business types which are seen as particularly desirable for the region. The details of the implementation of these zones will be released with the Government's White Paper and further analysis could be undertaken at that point with regard to their potential application within the Broader WSEA. It should be noted that any 'Enterprise Zone' within the Broader WSEA would need to be supported by appropriate physical infrastructure and would therefore require some level of up front capital investment.

¹⁹ The World Bank (2008), *Special Economic Zones – Performance, Lessons Learned and Implications for Zone Development*.





SUSTAINABLE INDUSTRY

Consultation with various landowners within the existing WSEA has revealed some interest in the implementation of sustainable features within industrial estates in the precinct such as rain water harvesting and solar energy/cogeneration.

Amongst the developers interviewed as part of the project, there were mixed views about whether such initiatives would be economically viable, as there is a concern that industrial tenants may be unwilling to pay additional rent to cover the introduction of sustainable features into their developments. There is also some concern that these technologies remain too expensive for widespread use within industrial development which generally operates at lower profit margins than other forms of development and as such affects the ultimate viability of the project.

However, were these initiatives applied at a precinct scale with costs shared amongst landowners, they may become more economically palatable. The benefits of these initiatives, apart from the direct environmental impact would ultimately be in the longer term energy savings and the potential marketing of 'Green Estates' which may attract premium rents. As the adoption of sustainable features within industrial development is not widespread in the Sydney region, the positioning of industrial estates within the WSEA in this way may also attract a wider range of businesses which are specifically seeking the 'Green' image.

CASE STUDY – TONSLEY PARK ESTATE IN SOUTH AUSTRALIA

The Tonsley Park estate in South Australia is a master-planned employment precinct project led by the South Australian Department of Manufacturing, Innovation, Trade, Resources and Energy. The 60 ha site in the southern suburbs of Adelaide which is expected to accommodate over 6,000 knowledge-based jobs with links to Flinders University, Flinders Medical Centre, a Science Park and a TAFE. The estate is being positioned and marketed as the cutting edge in Sustainable Light Industry and is specifically targeting businesses in Energy, Water, Waste and material reuse. The precinct has been designed as a 'climate smart precinct' with the following sustainable concepts being considered:

- A 'Smart Grid' for electricity to maximise efficiency of on-site energy use,
- Photovoltaic solar power feed in;
- Urban wetlands for stormwater treatment and retention; and
- Rain gardens to capture water for reuse.
- The estate is being marketed as an operating Industrial Ecology site and includes education facilities such as:
 - A Sustainable Industries Education Centre – delivered through TAFE SA in collaboration with South Australian Universities and industry; and
 - A teaching and research facility developed by Flinders University to house the School of Computer Science, Engineering and Mathematics.

To date, the estate has attracted interest from a number of innovative, advanced manufacturing companies.



10 CONCLUSION

The Study has examined the key economic drivers affecting the employment lands market in the Sydney Region and more specifically, the implications for potential future release and development of land within the Broader WSEA.

The latest ELDP report states that the Sydney Region has 15,394ha of existing zoned employment land. Of this, there is some 830ha of undeveloped zoned and serviced employment land supply which represents just under 4.5 years of supply at moderate annual take up rates. Whilst undeveloped zoned and serviced supply falls just under accepted supply benchmarks, Sydney's supply of undeveloped zoned unserviced employment land and strategy identified employment land are both well in excess of supply benchmarks.

Demand modelling undertaken as part of the Study indicates that over the period to 2046 there is expected to be a total demand for employment land within the Western Sydney Region of 5,377ha. Taking account of existing supply in the region of both proposed and undeveloped zoned employment lands this translates to a net demand of approximately 1,850ha of industrial employment land and approximately 230ha of office-based employment land, totalling approximately 2,080ha of new employment lands within, the Broader WSEA to 2046.

Based upon the likely industry mix and associated employment densities, development of this new supply of employment lands (ie. 2,080ha) within the Broader WSEA to projected 2046 capacity would generate:

- 36,109 industrially based jobs; and
- 20,781 office-based jobs²⁰.

The demand modelling undertaken as part of the Study is based upon current and anticipated trends and known and committed infrastructure projects. The picture presented by the modelling is therefore generally reflective of the sustained growth of freight and logistics in the Broader WSEA, along with general manufacturing and industry and a component of office-based employment land. Based upon the analysis this is what the area, as currently planned, is most capable of supporting over the next 30 years. It should be noted that the manifestation of trends within the freight and logistics and manufacturing sectors over time, will drive changes in the number and type of jobs created within the Broader WSEA such that an increase in 'white collar' jobs can be expected whilst not explicit at a sectoral level.

Beyond 2046, the Broader WSEA is expected to attract further demand for a mix of employment uses though the exact industry mix cannot be accurately predicted at this time horizon. Assuming the continuation of similar industry and economic trends and the delivery of a significant catalyst project on the Commonwealth-owned site, the development of the Broader WSEA at full capacity has the potential to generate some:

- 170,000 industrially based jobs
- 42,000 office-based jobs.

Spatially, demand for employment land will continue to move outwards as firms consolidate and seek greater supply chain efficiencies, population growth moves to the west, land values appreciate in maturing employment land precincts reflecting competition from alternative land uses and road congestion continues to increase in inner and middle ring areas. The Broader WSEA is therefore well-placed to capture demand as it migrates west.

²⁰ Employment densities used for these projections are: Freight and Logistics - 0.056, Industrial - 0.050, Business Park - 0.011 (Urbis, 2013).

Spatially, demand for employment land is expected to continue to move outwards from the CBD towards the west as:

- Businesses consolidate and seek larger sites;
- Businesses continue to seek greater supply chain efficiencies;
- Population increases in Western Sydney;
- Land values appreciate in established inner city industrial precincts; and
- Traffic congestion continues to increase in Inner and Middle ring areas of Sydney.

The Broader WSEA therefore plays an important role in the network of employment lands across Sydney, providing a supply of land, at competitive rates to meet the needs of the industrial property market. The potential supply of new employment land in the Broader WSEA significantly exceeds projected demand over the next 30 years. As such, the staging and sequencing of release of land within the Broader WSEA requires careful consideration.

It is important to acknowledge that the office-based employment land component of projected demand will likely take time to develop and evolve and is not likely to emerge for another 25 to 30 years. This is typical of the evolution of business park developments which generally emerge from more traditional light industrial estates. Norwest, for example took some 20 years to evolve as the population of the north-west grew around it and transport links improved. In terms of the Broader WSEA, office-based employment land demand is expected to arise over time as the underlying land economics change, investment in infrastructure occurs and a critical mass of businesses and support services establishes in the area.

In the interim, it is important that appropriate locations for these higher intensity employment land clusters be identified and that opportunities for these developments are not precluded from evolving as market demand emerges and deepens.

Whilst the Broader WSEA may not be required in its entirety to support employment lands development over the next 30 years, the lands remain a strategically important employment lands resource for the long term future as the single largest, relatively unconstrained area of potential strategy identified employment land to service the Sydney region. The opportunity cost of releasing this land for alternative land uses would therefore be significant and it is recommended that the Structure Plan for the Broader WSEA reserve the bulk of the Broader WSEA for future employment development as demand arises.



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